

*Solving the skills shortages
in resources*

June 2012

Mind the gap





Mind the gap is based on research conducted by PwC between October 2011 and April 2012 with senior executives from more than 20 energy, resources and mining services companies operating in Australia. Thirty chief executive officers, business unit leaders, vice-presidents and general managers were interviewed and asked to prioritise the root causes of skills shortages in their organisations.

Acknowledgements

PwC thanks everyone who has contributed to this research, both in the Australian energy and resources sector and within PwC – and in particular, all those who generously gave their time to be interviewed.



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Key findings

Shortages in critical energy and resources skills have existed for a decade

Skills shortfalls in critical resources-related professions and trades were reported soon after commodity prices began to surge in 2002.

Despite the industry's best efforts, the shortages continue to grow and threaten the delivery of projects and growth plans. We contend that the persistence of skills shortages is largely due to entrenched attitudes among both the industry and the Australian community.

Australia isn't producing enough young people with relevant skills

Australian universities and TAFE colleges produce around 9,500 engineers, engineering associates and engineering technologists each year.

In addition, the industry is a leading provider of apprenticeships in Australia and it invests more money per employee on training than any other industry – and more than three times the average amount invested by all Australian industries.

Despite these investments in the skill development of young Australians, 80% of our interviewees believe that not enough young people were graduating from relevant educational programs.

The industry employs too few women

Hiring and retaining women at all levels increases a company's pool of skills, especially at a time when shortages exist. However, the sector lags other industries in employing skilled women, with only 18% of roles filled by women.

Entrenched and outmoded attitudes towards women's roles and career prospects remain. Many of the companies we spoke to were aware of the need to redress the gender balance and are taking steps to do so. At the same time, they recognise that more commitment to change is needed.

The sector employs a small share of Australia's skilled workers

The resources sector now employs more than 200,000 people directly and some 600,000 in support industries. Employment in the sector has grown significantly, with 62,400 mining jobs created in the five years to May 2010.

Yet despite the high demand for skills, the sector employs just 2% of all tradespeople and 3.6% of all engineers in all disciplines. Mining ranks as only the eleventh-largest employer of engineers in this country. The manufacturing sector remains one of the largest employers of professional engineers and tradespeople in Australia.

Many rich pools of skills remain untapped

Two-thirds of interviewees believe their organisations were not tapping all the best sources of talent. Some companies are taking steps to train Indigenous talent, but few have looked to other sectors or overseas for skills. Concerns over the suitability of overseas talent to work within Australia persist – concerns such as language abilities, quality of education, practical skills, communication confidence, and perceived work ethic.

Australian business leaders are reticent to look overseas for talent, with 88% of CEOs expressing the intent to recruit local talent wherever they have market needs.

Australians enjoy the comforts of home

A vital issue for 88% of our interviewees was the reluctance of Australian workers to move to other locations for work. Few engineering graduates move interstate to take up employment, and fewer still take up employment in remote areas of Australia. The trend is similar for tradespeople, with two-thirds employed in capital cities and only 2.5% working in remote regions.

There is evidence that recent immigrants to Australia are filling rapidly expanding resources roles in the mining states because Australians are unwilling to relocate.

Recommendations

Be disciplined about workforce planning

Workforce planning should be done with the same level of rigour and discipline applied to financial and operational planning.

To be relevant over the longer term, plans to close gaps must:

- deal with unexpected events such as delays in project start or turnover of critical talent
- anticipate events that affect the demand for and supply of skills, for example commodity price changes
- describe how to find, recruit, develop and keep the required skills.

Tap a diversity of skills

Many more women and Aboriginal and Torres Strait Islanders are needed in resources. To attract these groups requires a concerted effort.

For women, this means highlighting opportunities for them as early as high school, being accountable for diversity, providing flexibility in company culture and roles, and addressing unconscious biases.

In parallel, there should be a focus on supporting Aboriginal and Torres Strait Islanders through training to provide long-term, stable regional workforces.

Look overseas for skills

As well as maximising the number of suitable Australian workers, the industry must look beyond Australia for skills. Other countries, especially China and India, can provide qualified and capable professionals and tradespeople for our resources operations. Our calculations revealed that China and India produce more than 20 times the number of suitable engineering graduates than Australia.

Energy and resources companies must take advantage of the fact that Australia is viewed as a highly attractive destination for Asian engineering graduates.

Strengthen the 'brand'

The industry and the government must act to dispel certain prevailing myths and improve the industry's image among a wider range of occupations and populations. As well as women, Indigenous people and migrants, this must include Gen-Y, who do not see the industry as an attractive career choice.

Care must be taken to improve, then protect the image and reputation of the industry as an employer of choice.

Make it easier for people to move

Noting Australians' reluctance to relocate for work, many resources companies are making it more attractive for skilled workers to commute long distances.

The industry overall will need to adopt more sustainable approaches to commuting, or find ways to reduce the need for it. This can be done by:

- investing in regional infrastructure
- providing incentives to relocate and removing barriers
- taking advantage of new technologies to create more attractive working conditions.

Significant collaboration with and support from state and federal governments is needed.

Re-skill the workforce

With productivity in mind, resources companies have focused on recruiting skilled and experienced workers rather than developing new industry entrants.

Some companies are now looking to address skill development needs with solutions in three areas: developing people from other industries; outsourcing large-scale skill development; and influencing universities to deliver skills aligned to industry needs.

Look beyond the money

Historically, energy and resources companies have retained skilled employees through cash payments or increasingly attractive benefits packages.

Although the battle to attract and keep critical skills has raised wages across the industry, it has not achieved higher levels of retention or productivity.

It is time to focus on the less tangible aspects of the employee value proposition (EVP):

- providing compelling career paths
- investing in frontline leadership.

Introduction

The skills shortage in the resources sector is now 10 years old, and as the sector has found, resolving it is not easy. It is going to require some fundamental changes being made not just by the industry, but by the community, academia and government.



Matt Guthridge
Partner

Australia's mining boom is now 10 years old, as is the skills shortage that came with it. As the resources sector has found, resolving this persistent issue is not easy. It requires more than just introducing new initiatives. Fundamental to resolving this is addressing and changing long-held attitudes and dismantling well entrenched barriers:

- Attitudes that mean women and younger Australians do not see the energy and resources sector as a place to develop successful long-term careers.
- Attitudes about the suitability of overseas talent to work in Australia, which have left Asia's large pool of high quality engineers and scientists largely untapped.

These attitudes are entrenched and have led to a lack of women joining or staying in the industry, a failure to tap Indigenous talent, an ongoing

challenge in recruiting younger and overseas skills, the inability by universities to attract and produce sufficient numbers of engineers and geologists, and a lack of labour mobility in the economy. As one mining executive put it: "We understood the project pipeline concept very well; what we didn't do was invest in a people pipeline to go with it."

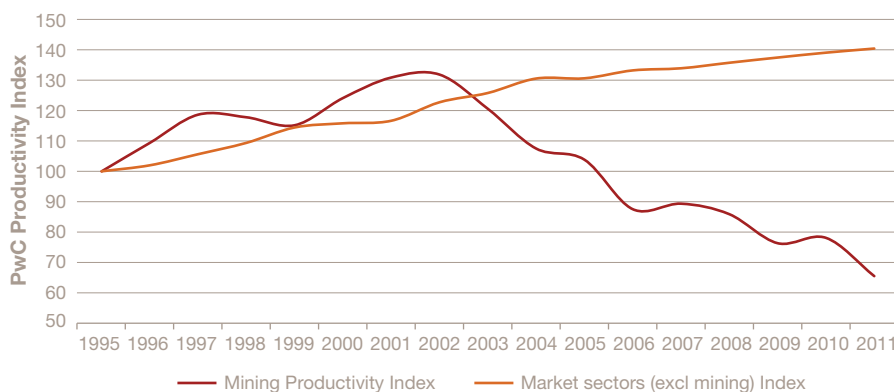
Skills shortages have had a definite impact on the nation's competitiveness¹ and the sector's productivity. Our research data reveals that the Australian mining sector's productivity has declined by 50% over the past decade (Figure 1). Although the reasons for the decline are complex, involving increased capital investment and improved terms of trade, our interviews confirmed that skills shortages have impeded companies' productivity. "We have vacancies at any point in time," explained one mining HR executive. "Ultimately that has to affect our productivity."

Shortfalls in critical mining-related professions and trades were reported soon after commodity prices began to surge in 2002 (Figure 2). The most significant shortages have been in the engineering and geological professions, with parallel shortages among electricians, fitters and engineering, construction and heavy automotive tradespeople (Figure 3). Despite the best efforts of the industry and governments, the shortages continue to grow and threaten the delivery of projects and growth plans of the sector.

Progress has been made when individual companies decide to challenge traditional attitudes related to the skills shortages. However, our view is that progress can be accelerated by bringing together governments, universities and industry leaders to jointly solve complex, sector-wide issues.

We must act now.

Figure 1: Mining labour productivity has declined by roughly 50 per cent since 2001



Source: Australian Bureau of Statistics

¹ Patrick Durkin. 'Australia's competitive edge lost', Australian Financial Review, May 31, 2012.

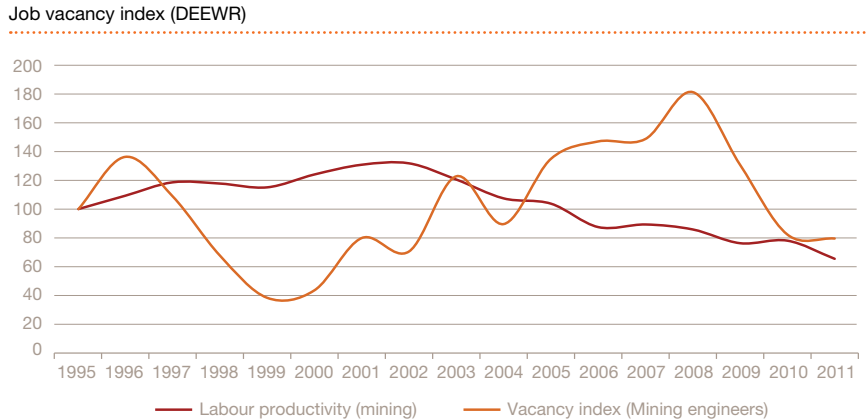
Australia's resources sector produces more than 7% of GDP and generates 85% of Australia's total commodities exports.² The sector employs more than 200,000 people directly and some 600,000 in support industries. Employment in mining alone has grown 54% in the five years to May 2010, creating 62,400 jobs.³ A thriving resources sector – comprising minerals operations, oil and gas operations and mining support activities – is vital to the health of the Australian economy.

Addressing the skills shortages, and the outmoded attitudes that maintain it

As partner and adviser to many energy and resources organisations, PwC is keen to work with the industry to address the skills shortages and the attitudes associated with them. *Mind the gap* is the result of research conducted by PwC between October 2011 and April 2012 with senior executives from more than 20 energy, resources and mining services companies operating in Australia.

Thirty chief executive officers, business unit leaders, vice-presidents and general managers were interviewed and asked to prioritise the root causes of skills shortages in their organisations (Figure 4). In this report we have laid out the findings of our research followed by a number of recommendations for how the industry might resolve this most pressing of issues.

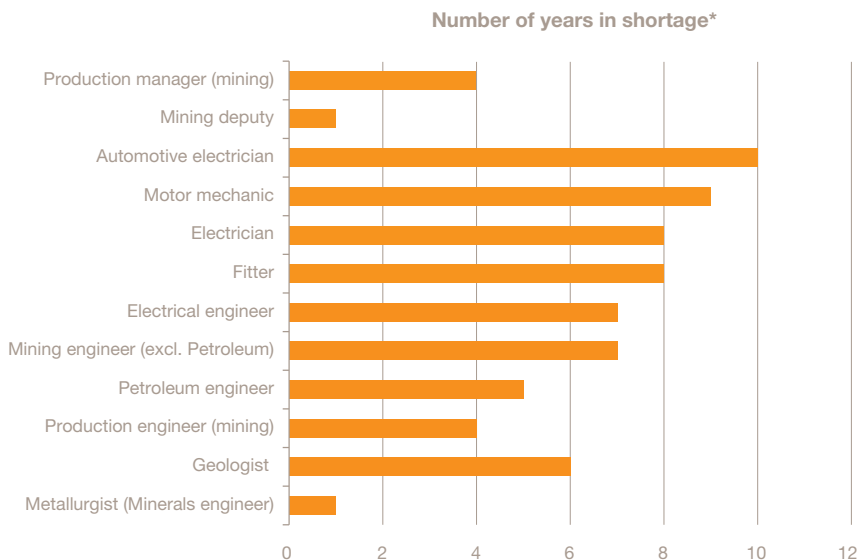
Figure 2: A skills shortage in the mining sector has emerged



Source: Department of Employment, Education and Workplace Relations

Figure 3: Some critical resources sector skills have been in shortage for much of the last decade

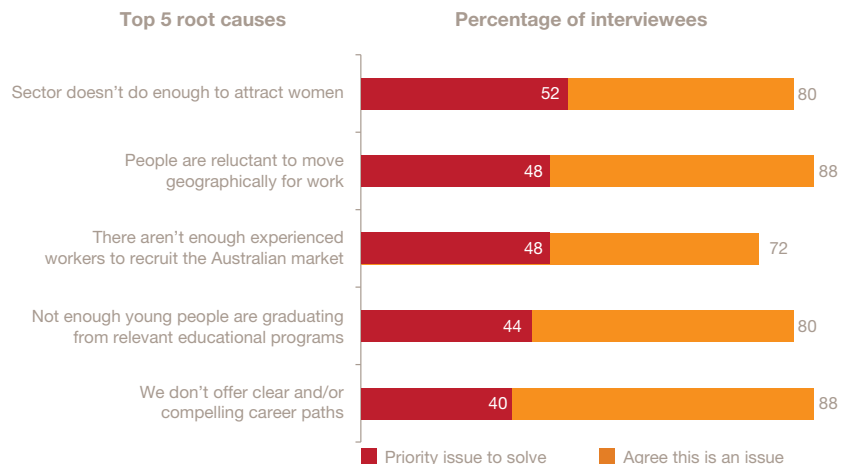
No. of years occupation assessed as being in national shortage* (in the 10 years to 2011)



*Skill shortages exist when employers are unable to fill or have considerable difficulty filling vacancies for an occupation, or significant specialised skill needs within that occupation, at current levels of remuneration and conditions of employment, and in reasonably accessible locations.

Source: Department of Education, Employment and Workplace Relations (DEEWR). Historical list of skill shortages, Australia, 1986-2011.

Figure 4: Energy and resources leaders identified the top 5 root causes of Australia's skills shortages



Source: PwC; Interviews with 30 senior executives in the energy and resources sector

2 Bureau of Resources and Energy Economics (BREE) Resources and Energy Quarterly, March Quarter 2012.
3 Department of Education, Employment and Workplace Relations. Skill Shortages 2010.

1 *The big issues*



The need for diversity

The lack of women joining and being retained by the sector is an important contributor to the skills shortage. There is also lack of talent drawn from Aboriginal and Torres Strait Islander communities, from overseas and from non-resources industries.

80%

Believe the sector doesn't do enough to attract women

Attracting and keeping skilled women

Resources, and mining in particular, lag other industries in employing skilled women.

Today, close to 40,000 women work in resources in Australia.⁴ Research shows that women occupy only 18% of mining roles in contrast to 45% of roles in the overall Australian workforce.⁵

According to the EOWA 2010 Women in Leadership Census, Australia has the lowest percentage of women in executive key management positions.⁶ Additional analysis by PwC of the top 50 ASX-listed mining and minerals companies identified that:

- only 6.3% of key management positions are occupied by women
- there are only 32 female directors
- nearly half of those companies (48%) don't have a woman on the board.

This is in spite of research showing that beyond filling shortfalls in skills, gender diversity increases a company's ability to attract and retain talent, as well as improving overall productivity through improved employee motivation and efficiency.⁷

“There's recognition we don't have women but there's not enough commitment to do something about it.”

– Mining executive

With our educational institutions producing roughly 1,500 female engineers each year (16% of all graduates)⁸, it is clear that a skilled female workforce is available. But our interviews reveal that traditional and outmoded attitudes towards women's roles remain, which may be influencing women's choices to join, and remain in, the industry. As a point of explanation, one interviewee reiterated one of the challenging attitudes women can be exposed to within the sector: “It's a male-dominated industry and not ‘women friendly’ due to hard physical conditions. It's a dirty, hot and smelly industry.” Demographics suggest that those women working in the industry are younger than their male counterparts, with a median age of 34, compared with 39 for men⁹, and are less likely to stay with their employer over the long term than are men. Only 10.6% of the women working full time in the Western Australian mining industry stayed with their employer for 10 years or more, compared with 21.8% of men.¹⁰

Our interviewees noted specific challenges for women returning to work after having children. “You can employ women from school to the age of 30 or so,” explained one HR director. “They're energetic, bright and highly ambitious. Women progress much quicker in this sector. But then women leave and bringing them back is difficult.”

Many of the companies we spoke to were aware of the need to redress the balance and were taking steps to do so. However, they did recognise that more effort was needed. “Last year we phoned every part of our business to ask them to examine their own people and implement a diversity plan,” said one mining executive. “There's recognition we don't have women but there's not enough commitment to do something about it.”

4 Australian Bureau of Statistics. 'Labour force, Australian, Detailed Quarterly', February 2012

5 'Unearthing new resources: Attracting and retaining women in the Australian minerals industry'. Minerals Council of Australia, 2007

6 Equal Opportunity for Women in the Workplace Agency. '2010 EOWA Australian Census of Women in Leadership'. Australian Government, Canberra.

7 Georges Desvaux, Sandrine Devillard-Hoellinger, & Mary Meaney. 'A business case for women'. The McKinsey Quarterly, 2008.

8 Andre Kaspura. 'The Engineering Profession: A statistical overview', Eighth Edition, 2011. Engineers Australia, 2011.

9 Susan Barrera, Jenness Gardner, Bob Horstman. 'Women's Experiences in the Western Australian Mining Industry: a snapshot in 2010', <http://www.ntwmc.com.au/uploads/File/OWOL%20conference%20papers/Barrera,%20Gardner,%20Horstman.pdf>, Accessed [May 2012].

10 Susan Barrera, Jenness Gardner, Bob Horstman. 'Women's Experiences in the Western Australian Mining Industry: a snapshot in 2010', <http://www.ntwmc.com.au/uploads/File/OWOL%20conference%20papers/Barrera,%20Gardner,%20Horstman.pdf>, Accessed [May 2012].

Tapping Indigenous talent ...

“You look a few layers down and you don’t have the diversity.”

– HR director

Two-thirds of our interviewees believed that their organisations were not tapping all the best sources of talent – even though the benefits associated with hiring Indigenous people in the resources sector are receiving more attention. Employers know, for instance, that including local Aboriginal and Torres Strait Islander people within a workforce can help secure local support for an operation and reduce the operation’s reliance on costly fly-in, fly-out (FIFO) workforces. Yet unemployment in Aboriginal communities living near mining operations remains high, and Australian mining workforces are reported to be only 8% Indigenous.¹¹

... and talent from other industries and overseas

Despite widespread skills shortages, few resources companies have looked beyond the sector itself for new recruits. “There’s a myopic view that you had to grow up in resources,” explained one HR director. “There is a real reluctance, despite the money we pay, to look across industries to recruit engineers from academia, manufacturing or other sectors.”

The recruiting practices of many resources organisations also reflect their strong desire to hire locally. PwC’s recent CEO survey highlighted the reticence of Australian business leaders to look overseas for talent, with 88% of CEOs expressing the intent to recruit local talent wherever they have market needs. “We’re too Australia-centric in our hiring,” one mining leader told us.

Traditionally, large-scale recruitment decisions have been influenced by concerns about the suitability of overseas talent to work within Australia – concerns such as language abilities, quality of education, practical skills, communication confidence, and perceived work ethic. A 2005 report from the McKinsey Global Institute (MGI) estimated that only 10% of Chinese graduates were suitable to work in multinational companies, compared to 25% of Indian graduates.¹²

65%

Believe their organisations aren’t tapping all the best sources of talent



¹¹ Tony Tiplady and Maru Anne Barclay ‘Indigenous employment in the Australian Minerals Industry’. Centre for Social Responsibility in Mining; University of Queensland, 2007.

¹² Diana Farrell, Martha Laboussi re, Jaeson Rosenfeld, Sascha St rzer, Fusayo Umezawa. ‘The Emerging Global Labour Market: Part II - The Supply of Offshore Talent in Services’, McKinsey Global Institute, 2005.

The role of academia

Australia does not produce enough graduates with engineering and other relevant degrees to qualify them to work in the resources industry.

80%

Believe that not enough young people are graduating from relevant educational programs

Our interviewees pointed to the small number of relevant Australian degree courses and the relative unpopularity of the sector amongst Australian students.

One HR director asked: “Many mining engineering schools in South Australia have closed – how do we engage government and universities to resurrect or expand their programs?”

The statistics also support the view that many students are opting to study in competing sectors, such as law or financial services. The number of graduating engineers, engineering associates and engineering technologists from Australian universities and TAFE colleges averaged 9,500 over the past four years.¹³ This is in contrast to the number of law graduates, which almost doubled to 12,246 between 2001 and 2009.¹⁴

Recent changes are redressing this imbalance. Reforms introduced by the Federal Government mean that public universities can now offer places in professions to mirror the demand in the economy for these high skilled jobs. Prior to this, public universities were not able to independently decide how many places they would offer, and in which disciplines. The 2012 offers – the first year in which the new rules will operate fully – have revealed growth in the number of students taking engineering (7.8%) and natural and physical sciences (7.0%), and a fall in enrolments in some humanities courses.

However, engineering graduates do not necessarily take up a career in the industry. The resources sector employed only 8,726 engineers at the time of the 2006 census – just

3.6% of engineers in all disciplines (Figure 5).¹⁵ Mining ranks as only the eleventh-largest employer of engineers in this country. In contrast, about 40% of Australia’s professional engineers work in the manufacturing and consulting sectors and 40% of engineering graduates choose not to work in the profession at all. Many investment banks and professional service firms now employ engineers for the strong problem-solving and quantitative skills developed during their professional training. A large number of graduates are also using their engineering degrees to work in the environmental field.

13 Andre Kaspura. ‘The Engineering Profession: A statistical overview’, Eighth Edition, 2011. Engineers Australia, 2011.

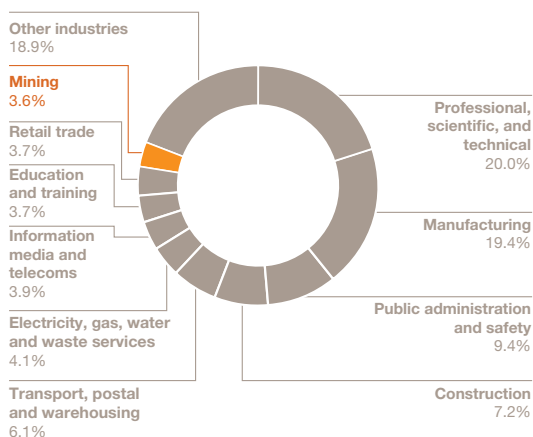
14 Department of Education, Employment and Workplace Relations (DEEWR).

15 Andre Kaspura. ‘The Engineering Profession: A statistical overview’, Eighth Edition, 2011. Engineers Australia, 2011.

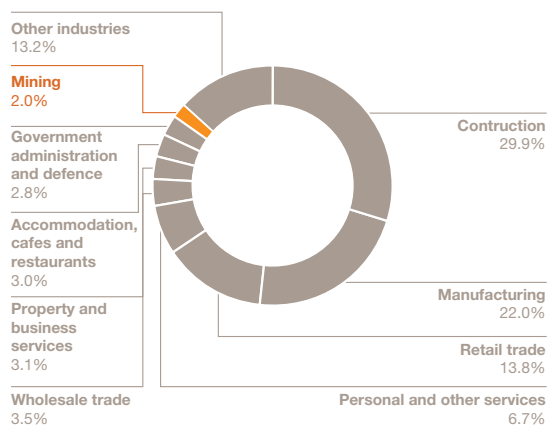
Figure 5: Mining employs a relatively small share of skilled labour in Australia

Comparison of industry share of skill workers

Distribution of engineers by industry (2006)*



Distribution of tradespersons by industry (2006)**



*Total employed persons = 242,426
 **Total employed persons = 1,102,530
 Source: ABS Census of Population and Housing (2006)



Attracting and developing Gen-Y

The energy and resources industry is a leading provider of apprenticeships and training. So why is it so hard to recruit skilled and experienced workers?

72%

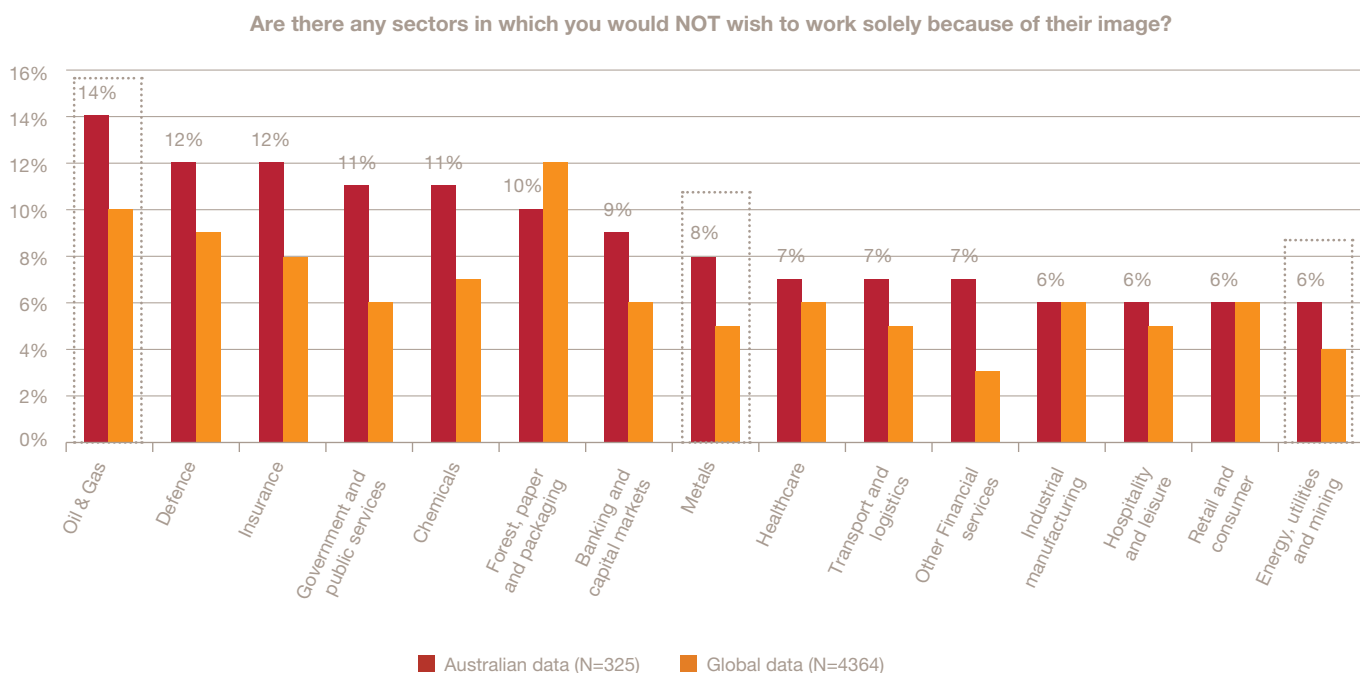
Believe there aren't enough experienced workers available to recruit

The energy and resources industry continues to be a leading provider of apprenticeships and training in Australia. It invests more than three times the amount, on average, invested by all Australian industries.¹⁶ Despite this, nearly three-quarters of our interviews identified challenges recruiting suitably skilled and experienced workers in the Australian labour market.

According to our interviewees, the challenge is to increase the number of people who want to work in resources. "We need to attract more people to the sector," commented one mining CEO. HR directors told us that the industry has an image problem in that many young people ("Gen-Y" – those born after 1980) hold the view that "mining is bad". PwC's recent *Millennials at Work* survey confirmed that the image

of the energy and resources sector significantly affects young Australians' desire to work in it. The largest group of respondents (14%) identified the oil and gas sector as one they did not wish to work in because of its image, and 6% of respondents were reluctant to work in mining (Figure 6).

Figure 6: Image of the oil and gas sector is unappealing to Gen-Y, whereas mining fares slightly better



Base: All graduates – Global and Australian data.
Source: PwC Millennials at Work 2011 survey.

16 National Centre for Vocational Educational Research. Industry & Training 2007: Exploring the relationship between industry and the VET system, 2008.



Added to this is the problem that resources companies have traditionally preferred to recruit skilled and experienced workers rather than invest in developing the skills of younger workers. “We used to have a reputation that we developed apprentices for the rest of the industry,” explained one HR director, “but now we focus on hiring the skilled worker.” Evidence of this can be found in the mix of skilled and unskilled labour in the mining sector, which has not changed to any great extent over the past decade. This suggests that miners have been unable to overcome their difficulties in recruiting skilled workers by substituting less-skilled staff (Figure 7).

“We used to develop apprentices, but now we focus on hiring the skilled worker.”

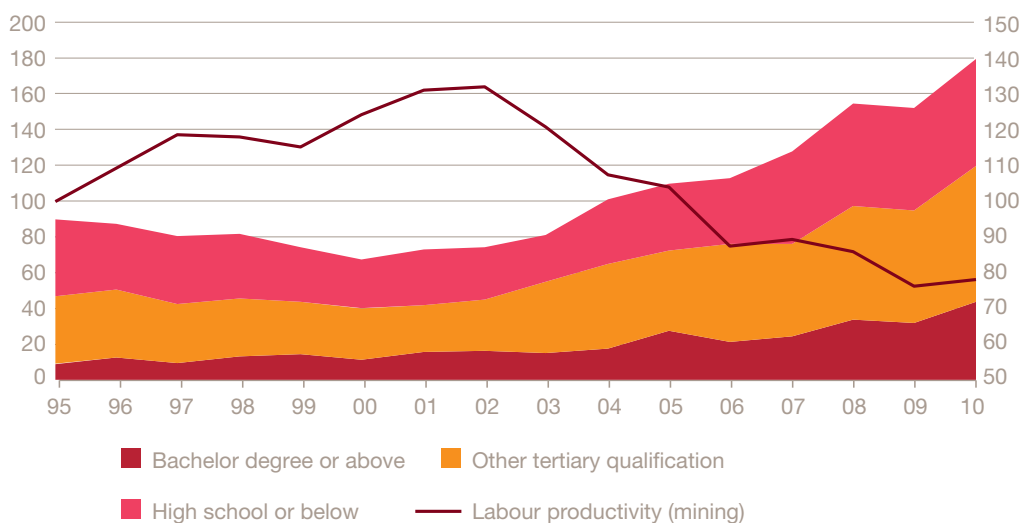
– HR director

A lack of experienced tradespeople, in particular, is hurting many of the organisations we interviewed. In the 2006 census, 22,384 people were employed as tradespeople in Australia’s mining industry, just 2% of all employed tradespeople (Figure 5). In contrast, the construction and manufacturing industries employed more than half the tradespeople in the country.

One mining HR director said: “Trades are the biggest concern for us because it takes time to develop these skills and gain the necessary certifications. There are loads of statutory requirements to go through for the electrical and mechanical trades.”

Figure 7: Growth in employment has not changed the mix of skilled and unskilled labour

Number of employees by qualification (000's) vs labour productivity (\$/hour worked)



Source: Australian Bureau of Statistics

The comforts of home

In contrast to workers in other countries, Australian workers have been unwilling to relocate on the promise of jobs in the resources sector, even to take up attractive and lucrative offers.

88%

Believe people are reluctant to move for work

A vital issue for 88% of our interviewees was the reluctance of Australian workers to relocate for work.

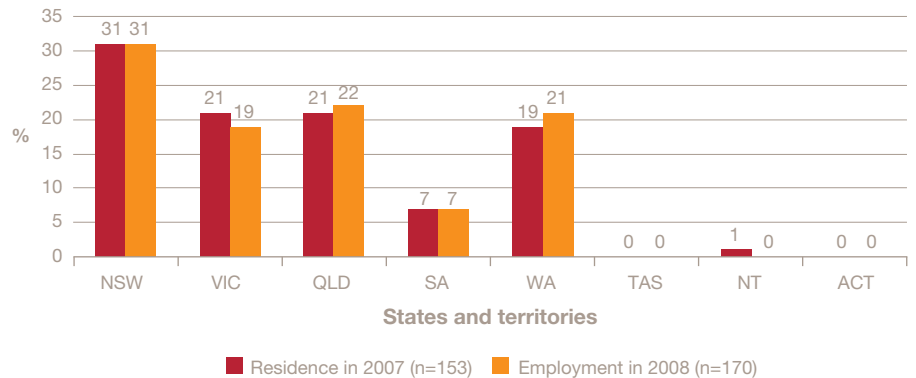
Figures from a DEEWR survey of recent engineering graduates revealed that few of them move interstate to take up employment (Figure 8). While more than half the graduating students indicated they were willing to work in remote or regional areas, only 11% took up employment in those parts of Australia (Figure 9). The rest stayed in the cities.¹⁷

“Mobility of labour is tough. People don’t want to uproot their families.”

– Mining CEO

Figure 8: Few engineering graduates move interstate to take up employment

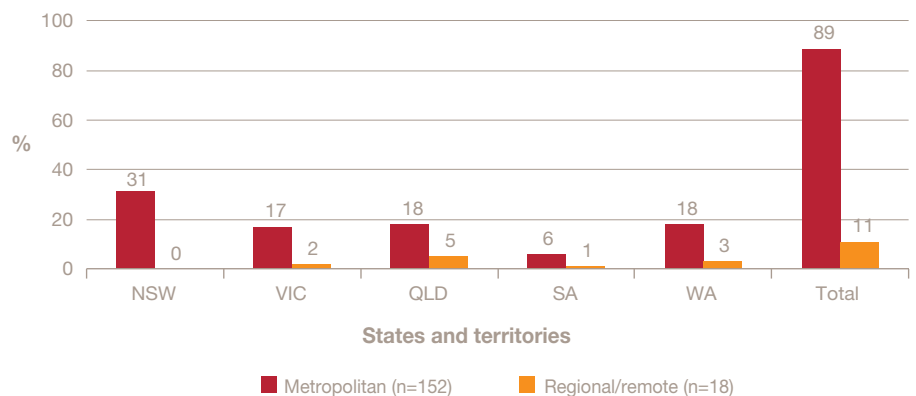
Recent engineering graduates’ state/territory of residence during undergraduate study in 2007 and state/territory of engineering employment in 2008



Source: DEEWR

Figure 9: Only 11% of engineering graduates work in regional or remote locations

Engineering employment for recent engineering graduates by state and geographic location



Source: DEEWR

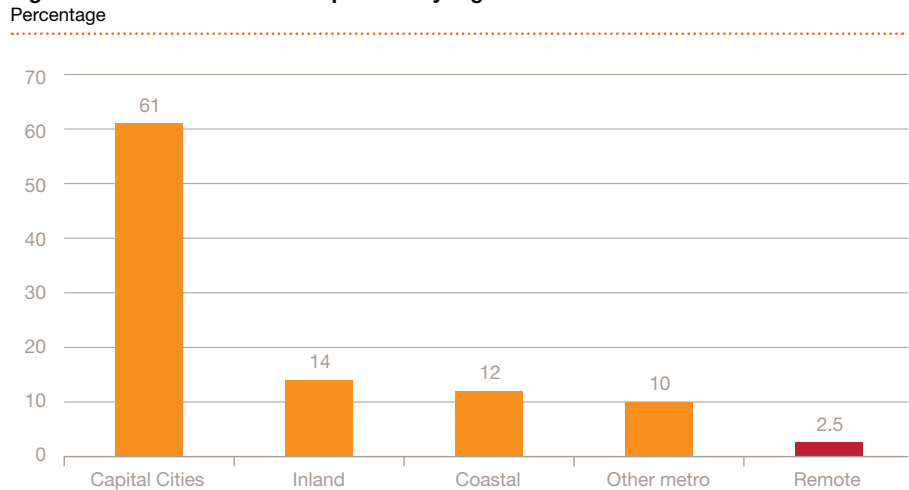
¹⁷ Department of Education, Employment and Workplace Relations. ‘Labour market outcomes and experiences of recent engineering graduates,’ Australian Government, June 2009

The trend is similar for tradespeople despite the higher pay they can receive from working in remote regions.

In 2006 two-thirds of Australia's tradespeople were employed in capital cities and only 2.5% of them worked in remote regions (Figure 10). In fact, there appears to be a shift in mining jobs away from remote areas and towards capital cities. From 1996 to 2006, there was a 10% reduction in the number of tradespeople employed in mining jobs in remote areas, and a 48% increase in the number of mining jobs in capital cities.¹⁸ One interviewee described Australians as too "rich, fat and happy" to relocate for work. An extreme perspective, but one that underlines the reluctance which continues to hamper recruitment in the sector. Another interviewee said: "There's no willingness to work in extreme conditions where mines can't provide an environment that's satisfactory".

With Australians unwilling to take on rapidly expanding roles in the mining states, migrants are filling those roles. Those born overseas have consistently claimed more than half the jobs created in Western Australia, New South Wales and Queensland since the beginning of the global financial crisis. In 2011, an additional 52,000 migrants were employed in Western Australia while 36,400 Australian-born workers lost their jobs.¹⁹

Figure 10: Distribution of tradespersons by region



Source: Census of Population and Housing (2006)



¹⁸ Phil Lewis, & Michael Corliss. 'Where tradies work: A regional analysis of the labour market for tradespeople'. National Centre for Vocational Education Research (NCVER), 2010.

¹⁹ George Megalogenis. 'Migrants thrive on mine boom as Aussies lose jobs', *The Australian*, 12 January 2012.

A 'local' mindset

The reluctance to relocate may be due to the Australian mindset; a large part of Australia's population lives in cities that hug the coast. In America and the UK, young people going to university and college will relocate without a qualm. As one mining leader told us, "Our American colleagues don't understand this at all because they leave home at 16 years old." Someone from Boston will go to California to attend UCLA, a young person in London might go to Edinburgh University. It's a rite of passage. But in Australia, young people tend to go to universities in their home town unless they are from the country or regional Australia. Sticking to the safety of their local community, and what they know, is later reflected in their employment choices and reluctance to relocate.

The FIFO dilemma

"There's complexity in managing and leading FIFOs."

– Mining executive

The lack of mobility in the Australian labour markets has contributed to the increased use of FIFO and DIDO (drive-in, drive-out) workers to ensure operations have the right access to skills. A recent AMMA (Australian Mines and Metals Association) survey reported that 82% of respondents had trouble sourcing all the skilled labour they needed from the local community, leading 87% of respondents to employ FIFO work practices.²⁰

Western Australia's Chamber of Minerals and Energy recently estimated that the state employs about 46,800 FIFO workers, including miners and those involved in construction and other support industries.²¹ Around 80% of these workers choose to be based in the Perth/Peel region, and 10% are interstate FIFOs. The 2011 census, to

In 2011, BlueScope Steel cut about 1000 jobs nationally, with most from its Port Kembla operation in Wollongong. Several mining companies ran full page advertisements in local newspapers calling for retrenched steelworkers to apply for mining jobs.

One potential employer said, "When BlueScope shut down, we approached the workforce. But Australians are very 'sticky' within their communities. You'd need to bring across the whole community". Another said, "In Wollongong we put on a career fair but we didn't see many applications here in Western Australia. Australians don't like to move between the states. And long-haul commutes involve safety and fatigue issues, plus inherent costs".

be released later in 2012, is expected to show similar high levels of non-resident workers in the other mining states.

With the industry in growth mode, the focus is on bringing in the workers – rather than on managing and retaining them. FIFO brings with it many challenges in people management and labour productivity. For example, it does not always allow for optimal rosters due to the limitations of flight schedules, and this can create shift handover challenges.

As one respondent said, "Connectivity with FIFOs is a struggle. What engagement levers are left to pull? There's complexity in managing and leading FIFOs – from designing rostering to supervising work – and turnover costs money due to backfilling and overtime". FIFO has a churn rate of as much as 40% (in an industry where managers see anything over 20% as detrimental to productivity). "At these levels of turnover, safety, productivity, costs and induction programs are affected," one mining leader said.



²⁰ Australian Mines & Metals Association. 'Submission to the House of Representatives' standing committee on regional Australia inquiry: The use of FIFO and DIDO work practices in Australia', 14 October 2011.

²¹ Chamber of Minerals and Energy Western Australia. 'Submission to the standing committee on regional Australia's inquiry into the use of FIFO and DIDO workforce practices in regional Australia', October 2011.

A large, dark silhouette of an offshore oil rig is set against a vibrant sunset sky. The rig's complex structure, including a tall derrick and various platforms, is visible. The sky transitions from a deep blue at the top to a warm orange and yellow near the horizon. The rig's legs are visible in the foreground, extending into the water.

2 *A blueprint to solve the skills shortages*

The industry, the community, academia and the government need to take determined and collaborative action to reduce shortages in critical skills and help secure the sustainability of the Australian resources industry. This means tackling and overcoming the traditional attitudes and fixed images held by both the resources sector and the community, and finding new ways to reach untapped skills.

PwC's research suggests some steps that can be taken to help solve Australia's skills shortages.

Be disciplined about workforce planning

Workforce planning should be done with the same level of rigour and discipline that is applied to financial and operational planning. Yet energy and resources companies too often undertake significant recruitment drives without a full understanding of the different skills their company needs, or without knowing the best external sources of those skills.

56%

Don't have workforce plans that accurately forecast demand for skills

The first step in improving workforce planning is to obtain accurate, up-to-date information on specific skills required and the available people to supply them.

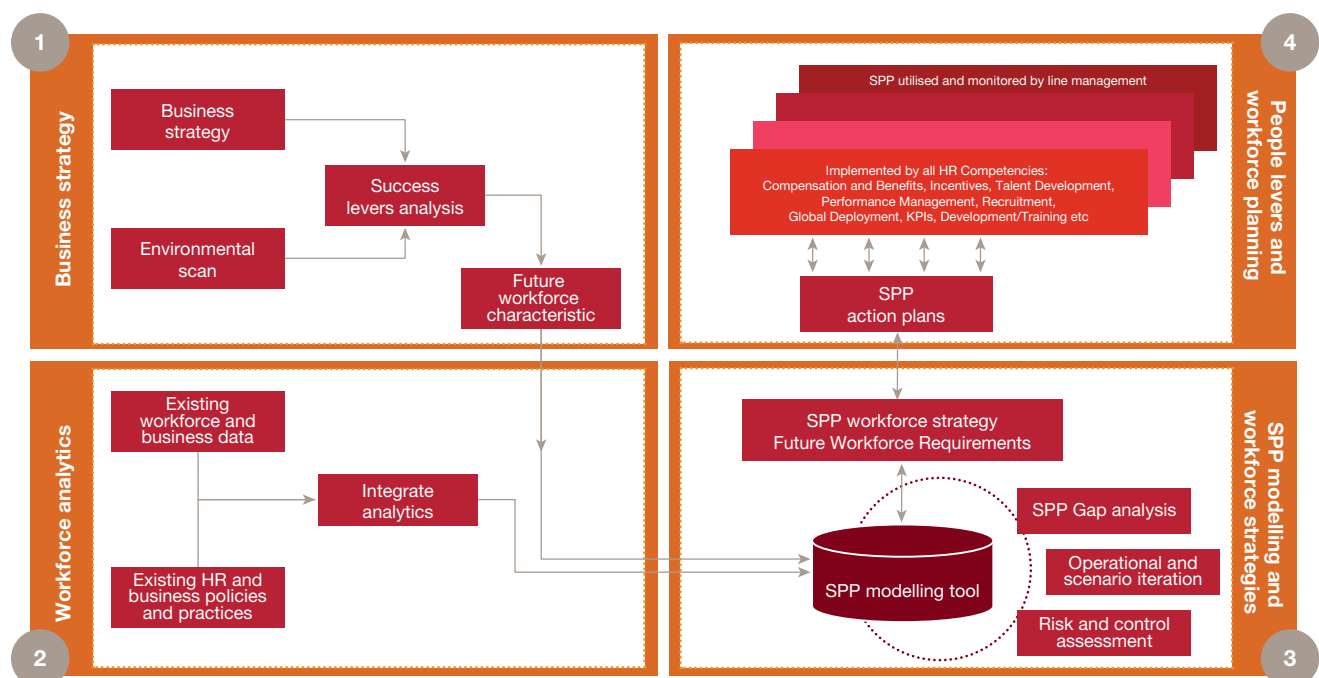
One way of doing this is through 'cloud technology' – that is, applications hosted in data centres and accessed through the internet. This can facilitate the rapid gathering and sharing of workforce information over smart phones and laptops by managers at the operational frontline. They can then generate and maintain accurate workforce information to plan and forecast the skills needed.

To be relevant over the longer term, plans to close gaps must:

- deal with unexpected events such as delays in project commencement or turnover of critical talent
- anticipate significant events that affect the demand for and supply of skills, for example commodity price changes
- describe how to find, recruit, develop and keep the required skills.

As a rule of thumb, 80% of the effort supporting workforce planning should be devoted to implementation into HR and line management processes, with only 20% of effort dedicated to building a plan. Figure 11 provides an overview of the four components of effective Strategic People Planning (SPP).

Figure 11: Strategic People Planning to understand demand for critical skills



Source: PwC

Tap skills from a diversity of sources

Many more women, migrant workers, and Aboriginal and Torres Strait Islanders are needed in resources. Attracting these groups requires concerted efforts.

Recruit more women

To meet current demand and create a pipeline of skilled, female workers, the industry needs to focus on four important areas.

Highlight opportunities for women

This should start in high schools, when young women are making choices about their future careers. They should be encouraged to consider entering trades, or study maths and science. Recent research by Curtin University's Women in Social & Economic Research (WiSER) unit revealed that the prospect of doing interesting, exciting work and enjoying good career opportunities encouraged female students to enrol in minerals-

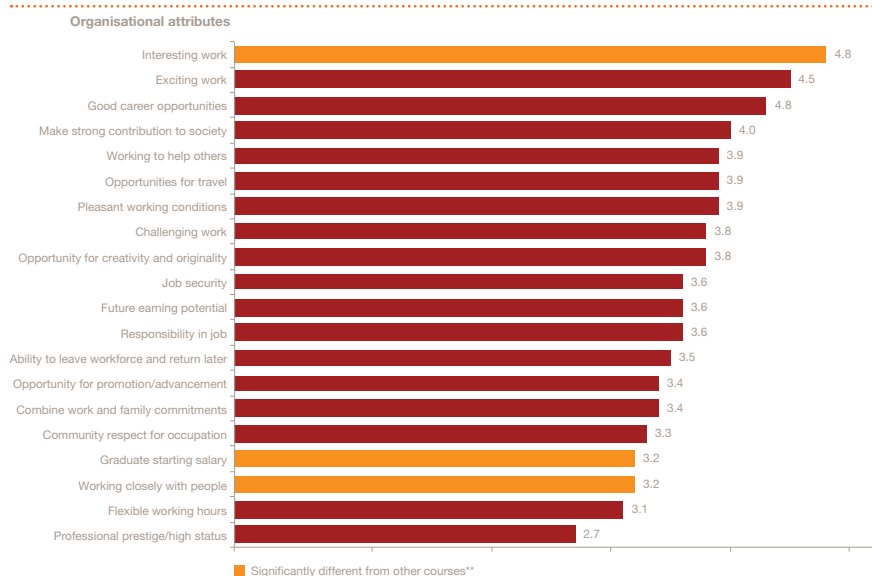
related university courses (Figure 12). Interestingly, it was the students' mothers and best friends who played the strongest role in shaping their career choices, rather than their fathers and siblings.²² This suggests that the industry should raise awareness among parents, friends, teachers and career counsellors so they can provide more informed advice to students about career opportunities in energy and resources.

One campus is showing the way. At Taminmin College in Humpty Doo, Northern Territory, seven Year 9 girls are studying construction, mining and trades. The college believes strong links between industry and schools would break down traditional barriers.²³

Make companies accountable for diversity

Influential business groups are pressing the government to play an active role by mandating quotas for women managers and fining companies that fail to meet them.²⁴ Some organisations have already imposed such measures to raise the gender balance internally. For instance, BHP Billiton now holds the presidents of its 10 business divisions accountable for diversity targets in the same way they do for safety and cost performance.²⁵ They have also committed to increasing female participation in their Accelerated Leadership Development Program to 40% by the end of 2012.²⁶

Figure 12: Attributes female students look for in an employer
Mean ratings of females enrolled in minerals-related courses*



* The question posed was 'What are you looking for in an occupation? Please indicate the importance, if any, you attach to each of the following job characteristics.'
Scale: 1=no importance at all; 2=minor; 3=some; 4=important; 5=very important.
** Indicates a significant difference in the mean response of women enrolled in MRCs and women enrolled in other courses.

Source: 2003 FYUSS, 'Women in Social and Economic Research', Curtin Business School, Curtin University of Technology

22 'Unearthing new resources: attracting and retaining women in the Australian minerals industry', The Minerals Council of Australia, 2007.

23 'Taking on Trades', ABC News, <http://www.abc.net.au/news/2011-12-12/taking-on-trades/3727184>, 12 December 2012.

24 Emily Parkinson, 'Tough incentives on gender targets', Australian Financial Review, 21 February 2012.

25 Mathew Dunckley, 'Diversity: BHP bonuses depend on it', Australian Financial Review, 3 March 2012.

26 BHP Billiton Annual Report 2011, pg. 46.

Provide flexibility in culture and roles

Central to reducing the sector's skills shortage is the creation of a culture and conditions that will make female workers want to join and stay with resources companies. One HR director told us: "We need to start thinking about non-traditional ways that we can make our industry more attractive for women."

Flexibility was the biggest concern for female respondents in a recent survey from the Australian Institute of Mining and Metallurgy.²⁷ 28.6% of female respondents cared for children or elderly relatives yet only 2% stated that their employer provided a childcare facility. To attract and retain talented women, the industry will need to provide facilities such as childcare and early education. It will have to foster the work/life balance that is so crucial to modern families, in which both partners often work full-time.

Goldminer St Barbara's has taken positive steps to create a more attractive environment by introducing flexible work, special roster arrangements for employees and paid parental leave of 18 weeks. The company's exploration division now has 51% female employees out of a team of 21 people working in geology roles. This has led to St Barbara's leadership recently being recognised at the business achievement awards by the Equal Opportunity for Women in the Workplace Agency.²⁸

Address unconscious biases

One of the biggest challenges remains changing the way managers think about and behave towards women who work in the sector. As part of a broader push to address gender diversity, one company we spoke to recently instigated 'unconscious bias' training for its most senior levels of management. "This training helps us recognise and avoid the unconscious, biased perceptions we have in regard to the differences between men and

women," said the HR director. The approach has already been adopted successfully by companies outside the resources sector, for example law firm Herbert Smith, to boost gender diversity within their senior ranks.²⁹

Support Indigenous people through training

More Indigenous people should be trained to work in the industry to provide long-term, stable regional workforces.

Some organisations are already taking steps to redress the balance in their workforces. Rio Tinto, the largest private sector employer of Indigenous workers, has about 1000 workers in its Pilbara iron ore mines alone. Providing employment and training opportunities for Aboriginal and Torres Strait Islander people was a condition of the land-use agreements under which Rio Tinto expanded its Pilbara iron ore operations in 2011.³⁰ Fortescue Mining Group has also put 1000 Indigenous trainees through its programs, with 600 working for the company or its contractors.

Collaboration between industry bodies and educational institutions can provide innovative solutions to address the skills shortage. For instance, the Batchelor Institute of Indigenous Tertiary Education in the Northern Territory has partnered with the Minerals Council of Australia to provide a brokerage model of workforce supply between mining companies, Job Service Agencies and the Institute's training arm.³¹ This has been done to help Indigenous people receive mentoring so that they can transition smoothly from training to work-readiness, then into sustained employment. This model of one-on-one mentoring makes inroads into some of the more entrenched social barriers Indigenous people face in becoming both training- and work-ready.



27 Jessica Darnbrough. 'Addressing the skills shortage', Australian Mining, 2008.

28 Catherine Fox. 'Mother Lode: Miners are shifting their culture as they try to find and keep staff', AFR Boss, March 12, 2012.

29 Suzi Ring. 'Herbert Smith trials unconscious bias training in gender diversity push', Legal Week, April 2012.

30 Kevin Chinnery. 'No shortage of openings for blacks'. Australian Financial Review, 30 January 2012.

31 Peter Stewart. 'MCA Indigenous Pre-Employment Program', Minerals Council of Australia, June 30 2011.

Look overseas for available talent

The industry would be wise to look beyond Australia for skills as well as maximising the number of Australian workers. Other countries, especially China and India, can provide qualified and capable professionals and tradespeople for Australian resources operations.

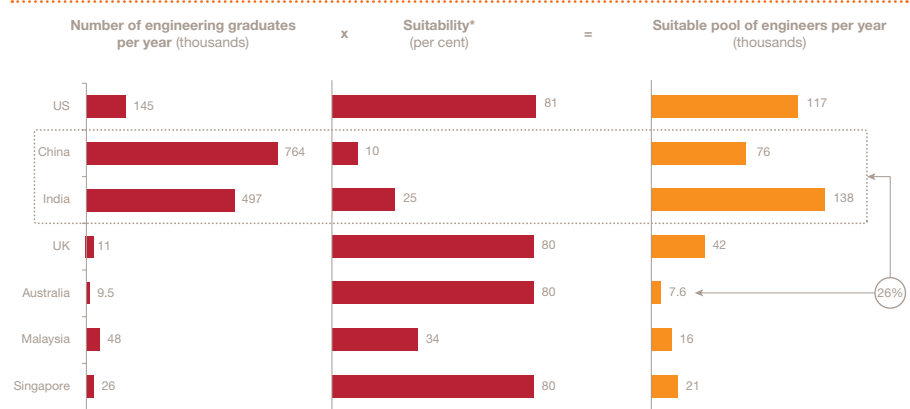
According to recent reports, China produced 763,635 engineers in 2009 and India 497,475 in 2010.³² Even after taking into account lower levels of suitability (Figure 13), our figures suggest that China and India combined will produce more than 20 times the number of suitable engineers that Australia's educational institutions will this year. As one mining leader told us: "We just started doing searches internationally. I was pleased to find that Asian markets had many of the skills we needed." Moreover, energy and resources companies are viewed as highly attractive destinations for Asian engineering graduates, especially in China (Figure 14).

Schlumberger, the world's largest oilfield services company, is a good example of an organisation that has increasingly looked to overseas talent pools in the fierce war for engineering talent. Schlumberger executives serve as 'ambassadors' to 44 of the best engineering programs in the world, developing relationships with both the faculty and the students. Through this relationship, a Schlumberger ambassador organised for the Nigerian University of Ibadan to receive the investment it needed for a new petroleum learning centre.

Schlumberger now has more Nigerian-trained engineers working around the world than it does employees in Nigeria itself.³³

Figure 13: China and India develop significant pools of engineering skills despite lower suitability

Country comparison of total number of suitable engineers



*Number of graduating engineers each year across all disciplines

**Suitable pool estimated based on assumptions on number of engineers and suitability derived from comparable countries

Source: National Science Foundation/National Center for Science and Engineering Statistics; Chinese Statistical Yearbook (2010); Ministry of Human Resource Development, Government of India; Engineers Australia; UNESCO (2010). Engineering: issues, challenges and opportunities for development; Department of Statistics, Singapore; McKinsey Global Institute; Team analysis

Figure 14: Energy and resources companies are popular with engineering graduates, especially in China and Singapore

Rankings of most attractive employers to engineering students

	Australia*	India**	China**	Singapore**
1	Deloitte	1 Google	1 SGCC	1 Singapore Airlines
2	Google	2 Microsoft	2 China Mobile	2 ExxonMobil
3	BHP Billiton	3 IBM	3 General Electric	3 Shell
4	PwC	4 Infosys	4 Google	4 Google
5	Ernst & Young	5 Intel	5 PetroChina Company	5 GSK
...
...
...
10	Rio Tinto	12 Oil and Natural Gas Corporation	10 CGNPC	19 Singapore Petroleum Company
21	Xstrata	13 Indian Oil	11 Sinopec	36 Schlumberger
		24 Reliance Industries	17 CNOOC	52 BP
		28 Bharat Petroleum	20 Baosteel	
			80 ExxonMobil	
			90 Schlumberger	

* 2011 AGGE and High Fliers research Aspirational Employer of Choice survey (all graduate disciplines).

** 2011 Universum Ideal Employer survey (engineering students).

³² Louisa Kiwana, Anil Kumar & Neil Randerson. 'The skills 'threat' from China and India - Fact or fiction: Report of key findings'. EngineeringUK. March 2012.

³³ Susan Jackson, Randall Schuler, & Steve Werner. Managing Human Resources Mason, OH: Cengage, Southwestern Publishers, 10th edition, 2008.

Migrants are another important source of skills for the Australian resources sector. Many are highly skilled in areas relevant to mining, with more than 24% holding a recognised bachelor's or higher degree in engineering or related technologies. However, a 2010 ABS report revealed that 35% of recent migrants had difficulty finding their first job, and two-thirds of the migrants who received help to find their first job relied on the advice of family and friends.³⁴ Resources companies and professional bodies must find ways to communicate with, and influence, migrant communities if they are to tap into this valuable talent pool within Australia.

With the Australian government's introduction of the new visa scheme known as Enterprise Migration Agreements (EMAs), resources companies now have a temporary migration initiative to help address their short-term skill gaps. Roy Hill, a Western Australian \$9.5 billion iron ore project, was awarded Australia's first EMA.³⁵ Under its EMA, Roy Hill can import up to 1715 temporary workers - expected to include scaffolders, riggers and concreters - for the three-year construction phase, where they cannot find Australians to fill the positions. Roy Hill has also committed to a \$20 million training initiative, including apprenticeships, as it looks to fill 2000 permanent staff positions once the mine is fully operational.

65%

Believe restrictive immigration policies prevent companies importing the skills they need



³⁴ Australian Bureau of Statistics, 'Characteristics of Recent Migrants', Australian Bureau of Statistics, November 2010.
³⁵ Stephen Bell. "Roy Hill can bring 1715 workers from overseas over next three years". The Australian, May 25, 2012.

Indigenous employment

Changing the focus, changing the results

For some time the resources sector has recognised it has much to gain from employing local Aboriginal people. Although legislation and various agreements often bind companies to deliver Indigenous employment outcomes, by employing a competent, local Indigenous workforce you can also alleviate costs associated with labour force competition and managing social impacts.

The Australian mining and oil & gas sectors make serious investments in Indigenous employment programs. Some of those better known programs regularly grab media headlines. But what has not come under the microscope is the level of return for that investment. For instance, resources companies should be asking:

- How many Indigenous employees is my company really employing for the money we spend on these programs?
- What outcomes are we getting proportionate to each dollar we spend

- Once we have spent years training local people up to work for us, how long do they really stay with our company (and/or our contractors)?

Our research suggests that return for investment dollar in Indigenous employment and training programs, across mining and oil & gas sector companies is generally quite poor. The questions that need to be asked are:

- What can be done better or differently to deliver stronger outcomes for my company and the communities we operate in?
- If outcomes were guaranteed, how much would this actually save on our genuine human capital costs?
- Where else could it significantly reduce costs?

Many Australian resource companies face the irony that unemployment in Aboriginal communities near mining operations is high, and despite

the fact that labour demand by those same companies remains high, one struggles to meet the needs of the other. As a result, mining companies have been investing heavily in Indigenous employment initiatives but struggle to achieve sizeable gains in recruitment and retention.

Research now shows it is not the quantum of public or private sector investment that precludes unrealised employment and education benefits, but its direction into education and training, which may be peripheral, as opposed to causative of the problem. If successfully addressed this could be a genuine instance of win-win: a return for the company equals genuine return for the Aboriginal community.

For further information on this important topic, please see pwc.com.au/industry/energy-resources

Natalie Siegel
Director



Strengthen the sector's 'brand'

To attract a higher share of talent, many resources sector clients have invested heavily in building their employer brands in the marketplace. The efforts are valuable, but negative attitudes to the sector appear stubbornly hard to shift. During our research we encountered strong attitudes from both the community and resources sector leaders suggesting that the industry appeals only to a narrow range of people, professions and trades.

These attitudes need to be addressed, as they profoundly influence the attractiveness of the resources sector to present and future generations of Australian workers.

The resources sector and the government must act now to dispel the myths and improve the image of the industry among a wider range of occupations and populations. As well as women, Indigenous people and migrant workers, this must include young people, especially those who hold or plan to develop valuable professional skills such as engineering and the resources-related trades.

Focus on Gen-Y

Recent research by the Queensland Resources Council³⁶ concluded that Gen-Y sees the industry as less attractive, partly due to its image. In contrast to that of law and medicine, the resources industry has no television shows or 'edgy' advertising campaigns to interest, excite and inspire Gen-Y. The sector needs to appeal more to young people through stories of real people. The Mining Australia campaign 'thisisourstory.com.au' is a good start, but more needs to be done, including the effective use of social media in recruitment and brand development.

Fresh action must accompany an improved image. In 2004, Boeing Australia took on a leading role in reshaping the brand of the aviation and aerospace industry in Queensland.³⁷ In partnership with Education Queensland and Aviation Australia, Boeing Australia sponsored the nation's first dedicated aviation high school at Hendra in Brisbane. Students in years 8 to 12 study the same or similar subjects offered at traditional high schools, but with an aviation focus.

For example:

- technology students learn about hi-tech developments in aircraft construction
- students of society and the environment explore the history of flight and its social impact
- the high school works with Aviation Australia, universities, training providers and industry to offer students direct paths to careers in the aviation and aerospace industry in Queensland and beyond.

The aviation sector now contributes \$6 billion to the state's economy and employs an estimated 16,500 people. With the right support from resources sector and government leaders, it's not difficult to imagine the potential of a 'school of mines' concept or an 'oil and gas high school'.



36 Queensland Resources Council. 'Attraction and retention in Queensland's Mineral Resources sector', August 2004.
37 Dan Franks. 'A flying start for careers in aviation', Education Views, October 26 2011.

Focus on women

We have already seen that the prospect of doing interesting, exciting work and enjoying good career opportunities encourages female students to enrol in minerals-related university courses (Figure 12). These characteristics, of interesting exciting work and good career opportunities, should be emphasised in marketing communications designed to attract young women to the sector.

And because the research showed that it was the students' mothers and best friends who played the strongest role in shaping their career choices, efforts to attract women to the resources sector should start in years 9-10 in high school when subject selections are made, and should target mothers and young women to enable them to provide informed advice about career opportunities to their daughters and friends.

Safeguard the sector's image and reputation

Once improvements to the sector's brand are achieved, care must be taken to protect the image and reputation of the industry as an employer of choice. Severe job losses in resources companies at the end of the last resources boom are entrenched in public memory. One mining executive

recalled "The industry has partly itself to blame – it's incredibly cyclical and we cut discretionary spend that led to cuts in exploration and then the geologists end up driving cabs". Attitudes like this have tarnished the brand for the past two decades and foster a view that the industry cannot be trusted to provide stable, long-term careers.

In reality, the long-term employment prospects for skilled professionals and trades people in the resources sector are tremendous. A review of the employment statistics from 1984 to the present³⁸ revealed that 93.3% of mining engineering graduates were employed full-time over the period despite variations in the overall resources headcount (Figure 15). Based on this data, mining engineers were more employable than mechanical (85.9%), electrical (87.1%) and civil (89.7%) engineering graduates. On average, the employability of mining engineering graduates was comparable to that of law graduates, who averaged 92.3% over a similar period.

Protecting the brand also means carefully managing the scale and impact of retrenchments. The sector can help shed its 'boom or bust' image by investing in long-term workforce planning and by helping employees to find other jobs when retrenchments are unavoidable.

Some companies, such as Newcrest Mining, have successfully mobilised their own workforces in response to changes in demand. In 2010 the company transferred 17 local mining industry employees from the impending closure of the Cadia Hill open pit mine in Orange to the company's remote operations at Telfer in Western Australia.³⁹ The move helped to plug gaps in the workforce and provided a visible demonstration of the organisation's loyalty to its people.

Offering roles to distressed industries or organisations will help to build positive perceptions of the resources sector. For example, Rio Tinto's actions helped strengthen the sector's brand in Western Australia when the miner offered new careers as FIFO miners to axed timber workers from Gunns' Manjimup project.⁴⁰

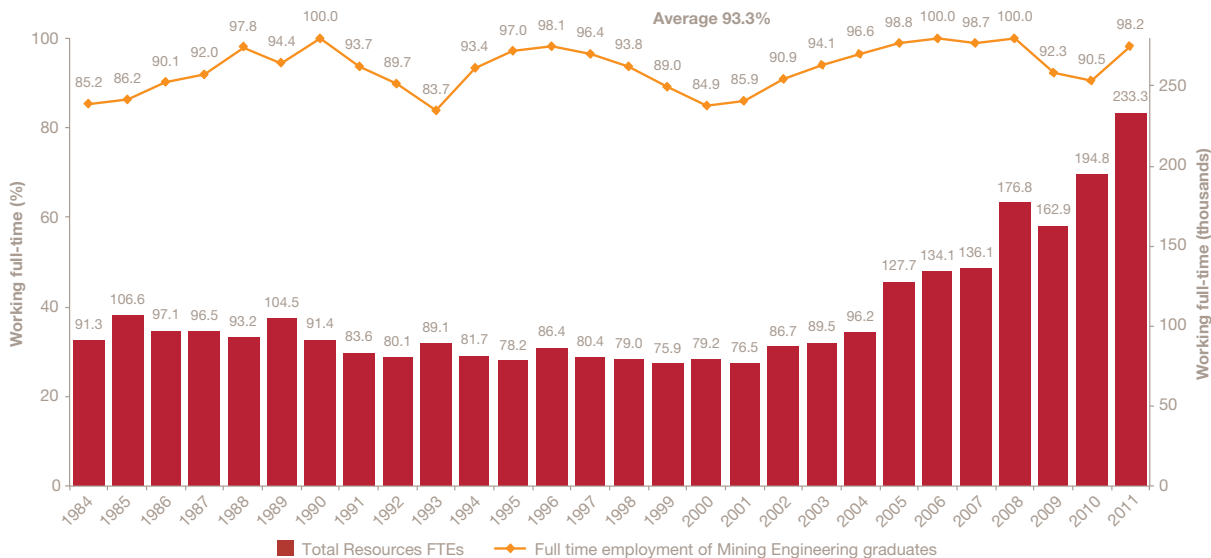
With the vast majority of Australia's engineers and tradespeople currently employed in the threatened manufacturing industry, there would appear to be many opportunities for the resources sector to strengthen its brand while attracting much needed skills.

38 Bryan Guthrie. 'Graduate Destinations 2010', Graduate Careers Australia.

39 Bevan Shields. 'Destination Telfer for high-flying miners', Central West Daily, October 2010, <http://www.centralwesterdaily.com.au/news/local/news/general/destination-telfer-for-highflying-miners/1974991.aspx#>, Accessed [May 2012].

40 Ricky Roxas. 'Rio Tinto flies former Gunns workers to its Pilbara mine sites', International Business Times, 18 March 2011.

Figure 15: Employability of mining engineers remained strong despite variations in resources sector headcount
Employed full time headcount 1984 to Feb. 2012 (thousands)



Source: Australian Bureau of Statistics, Graduate Careers Australia

Make it easier for people to move

With severe skills shortages and low levels of labour mobility in the Australian economy, FIFO practices are here to stay. And in the future, it is highly possible that entire mining and energy workforces will be flown in and out of sites.

As the use of FIFO arrangements expands, employers will need to adopt a more innovative and sustainable approach to the practice.

Invest to make commuting more attractive

With Australian's reluctance to relocate for work, resources companies are making it more attractive for skilled workers to commute long distances to their place of work. An example is Oz Minerals, which is providing direct flights from Melbourne to Prominent Hill in South Australia, where workers live in a village with dining, medical and recreational facilities. Through FIFO, workers are offered the best of both worlds: "mining career, Melbourne life".⁴¹

More investment in regional infrastructure will be needed to extend FIFO operations and make FIFO more attractive to Australian workers. Large regional cities such as Wollongong, Geelong and Ballarat are well supported by universities and TAFE colleges offering courses related to the industry. These cities have relatively large populations of working age people and some, such as Ballarat, have a culture that closely associates itself with the resources sector. In these centres, airports could be extended, providing greater capacity to fly more people over longer distances

to critical destinations. This also underlines the need for greater public-private partnerships to invest in the development of regional hubs.

Provide incentives, remove obstacles

Government incentives and educational scholarships for people willing to relocate to remote areas to work and study in the resources industry should also be considered. The Australian Mines and Metals Association wants "enhanced incentives" to localise workforces in regional towns hit by high housing rent levels.⁴² The Association said there needed to be stronger policy decisions to support and co-ordinate regional development.

Governments could help by abolishing stamp duty or by introducing concessions for people relocating to take on new job opportunities in regional mining communities – benefitting the industry and strengthening the community. Unfortunately, changes announced in the recent Federal Budget mean that fringe benefit tax breaks on Living Away from Home allowances will be wound back for both locals and

foreigners unless they are legitimately keeping a second home.⁴³ These changes create significant challenges for resources companies that rely on interstate moves for work purposes, as they may face additional employment costs, including payroll tax and additional superannuation costs.

Take advantage of new technologies

Innovative ideas have been developed and will expand in response to Australia's low labour mobility. For example, Rio Tinto's Mine of the Future™ program, launched in 2008, has introduced driverless trains and trucks at remote Western Australian mine sites, controlled by people in an operations centre in Perth. With these technological innovations, jobs that were previously located in remote locations can be located in regional hubs or eliminated altogether. These next-generation technologies are also expected to reduce production costs, create more attractive working conditions and improve health, safety and environmental performance.

41 Where we work; Careers with life at OZ Minerals, OZ Minerals, <http://www.ozminerals.com/Careers/where-we-work/prominent-hill> , Accessed [May 2012]

42 John McCarthy. 'Mining companies want tax breaks to lure workers to remote communities', The Courier Mail, 5 September, 2011.

43 Katie Walsh. 'Taxing blow to workforce mobility', Australian Financial Review, 10 May 2012.

Living Away from Home reforms

The 2012 Living-Away-from-Home reforms present the biggest challenge to labour mobility in Australia in recent decades. Attracting people to Australia and encouraging Australians to be mobile are important factors in addressing the skills shortage in the resources sector. The reforms make mobility more costly for business and provide no incentive for people to be mobile.

The reality of the Living Away from Home (LAFH) reforms is now being felt by business. Employees are returning home, both voluntarily and at the direction of employers. Recruitment strategies, remuneration strategies and assignment policies are being changed. A broad range of support measures are being implemented to help affected employees adjust to the change in their financial position.

PwC recently conducted a survey of 121 employers to gauge their response to reforms of the LAFH rules by the government.

The results of this survey showed that the LAFH reforms are generating significant concerns about the additional cost to business, with 77% of employers indicating that this will be an issue. Difficulty attracting new talent (55%) and retaining current talent (44%) as well as competitiveness in comparison to other countries (41%) are also key concerns. The difficulties in attracting and retaining talent are expected to further contribute to the skills shortages in the resources sector.

Of the employers who responded to the relevant questions in the survey:

- 14% have had an employee go home, sent an employee home or changed recruitment and assignment plans as a result of the changes to LAFH rules
- 43% of respondents indicated they will provide some form of transitional support to some or all employees who currently receive LAFH benefits but will lose them. 19% are undecided on whether they will provide some form of support to employees who are impacted
- 77% plan to review their international and domestic assignment and relocation policies prior to or soon after 30 June 2012
- 32% plan to replace LAFH benefits with some other benefit in their relocation policies, with many yet to determine what that will be.

The personal impact for foreign and Australian employees living away from home in Australia is always significant for both the employee and their family. The removal of the LAFH benefits for many employees from 1 July 2012 will merely add to the reasons for the employee not to be mobile unless the cost is met by the employer. Where this is the case, this in turn increases the cost to and complexity for business. The LAFH reforms remove an incentive for people to be mobile and will make mobility more costly for business.

For further information:

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Re-skill the workforce

With productivity in mind, resources companies have focused on recruiting skilled and experienced workers rather than developing new industry entrants. Yet resources companies have little choice but to increase their investment in learning and development to secure their future skill needs. Some companies are now looking to address skill development needs with solutions in three areas: developing people from other industries; outsourcing large-scale skill development; and influencing the courses offered by Australian universities.

Develop people from other industries

The re-skilling of workers from other industries, such as manufacturing, represents a significant opportunity to close the skill gaps in the resources sector. For instance, Brisbane-based mining contractor Mastermyne is seeking to attract industrial electricians from Brisbane to the mining sector.⁴⁴ As part of this strategy, the company is building a dedicated training facility for underground miners near the Brisbane CBD. Electricians trained at the company's new centre are likely to earn about \$150,000 a year in the mining industry.

Likewise, Origin Energy has developed an innovative pilot program that recruits Queensland farmers to monitor gas wells located on their properties and perform maintenance.⁴⁵ The program provides the farmers with certified gas operator training, creating a new pool of skilled labour and a constant on-site presence.

At an industry level, the Queensland Government has announced a new 'Resources 101' program that will help the unemployed or under-employed in the resources sector to find work.⁴⁶ The \$1.2 million initiative will fund 500 training places at TAFE institutes in Queensland. The five-week course will cover safety induction, base-level engineering skills and general industry training.

Outsource large-scale skill development

Few energy and resources companies have the capacity to deliver the large-scale technical skill development required to meet the expanding needs of the sector.

Recognising this opportunity, GE Australia has built a dedicated, \$80 million technology and learning complex to develop highly skilled workforces for booming industries such as energy and resources. Located on a 100,000 square metre site at Jandakot Airport in Perth, the complex is the largest of its kind in Australia,⁴⁷ with plans to service GE customers as well as provide training and education for GE and non-GE staff with high-skilled apprentice opportunities. Chevron Australia, which operates the multi-billion dollar Gorgon and Wheatstone LNG projects in Western Australia's North West, is one of the energy companies set to train hundreds of its Perth engineering and technical staff at the facility. GE has also partnered with Chevron, Woodside, ConocoPhillips, Manufacturing Skills Australia, Navitas, ACEPT and Apprenticeships Australia to create a Community of Technical Best Practice.

Through this commitment to long-term skill development, Western Australia has the opportunity to maximise the value of its projects and become a breeding ground for oil and gas expertise throughout the country.



⁴⁴ Dan Hall. 'Brisbane leads mining technology charge', Australian Financial Review, 16 March 2012.

⁴⁵ Dan Hall. 'Resources step up to fight skills shortage', Australian Financial Review, 7 March 2012.

⁴⁶ 'Resources 101' to fast-track mining careers', Queensland Business Review, September 9, 2011.

⁴⁷ 'Jandakot Announcement', GE, http://www.ge.com/au/jandakot_update.html, Accessed [May 2012].

Influence universities to deliver skills aligned to industry needs

With the Federal Government's decision to remove the cap on university student places in response to the Bradley Review of Higher Education in 2008, we expect to see a dramatic shift in student numbers – and more opportunities for people choosing to re-skill through university education. Following the removal of the cap, engineering offers from universities this year have already leapt 8% in New South Wales and 13% in Victoria.⁴⁸

Yet more must be done to increase the number of university students who choose to work in the energy and resources sector. Universities can play a critical role in shaping the employment preferences and destinations of graduates, and more accurate information about future employment opportunities for engineers and geoscientists is sorely needed.

Resources leaders we spoke to emphasised the need for more resources-related programs in universities that allow graduates to forge clear career paths towards the sector, developing relevant exposure, relationships and experiences along the way. The introduction of more sector-relevant programs, such as mining engineering and geological science, by Australia's leading universities would send a powerful signal to students about their future employment prospects in the sector.

Above all, resources leaders are looking for closer collaboration and improved dialogue with university leaders to create better alignment between industry demand and formal skill development. This relationship has existed with some universities but not others. As one HR director said, “[In the past a] particular engineering program was not interested in mining because it was perceived as ‘too boom and bust’. So they missed the whole opportunity.”

⁴⁸ Misha Schubert. 'Uni reforms fuel leap in engineering'. The Age, 8 April 2012.



Look beyond the money

Historically, energy and resources companies have retained their skilled employees through cash payments or increasingly attractive benefits packages. This has been most pronounced in operations that rely heavily on non-resident workers: it is now common for camps to provide premium sporting facilities, high-quality food and recreations such as yoga and Pilates classes.

While the battle to attract and retain critical skills may have significantly raised wages across the industry and increased accommodation costs, it has not necessarily achieved higher levels of retention and productivity. It is now time to focus on the less tangible aspects of an organisation's employee value proposition (EVP) – the reasons why a smart, energetic and ambitious person might want to work for one company as opposed to another. As one mining executive explained, “We think it's non-cash as well ... it's about workforce engagement, relationships with supervisors, team dynamics and how people are treated as individuals”.

Provide compelling career paths and multiple EVPs

Providing career opportunities is central to the delivery of a compelling EVP. Yet many mining companies are yet to make substantial investments in career development – an area where

they could learn a lot from the energy sector. Schlumberger is respected in the industry for developing the careers of its 113,000 employees and offering attractive career paths for both managers and technical workers. The company has implemented obligatory job rotations every two years to promote on-the-job training across divisions, functions and businesses. As a result, Schlumberger consistently attracts the best talent in the industry and its alumni are keenly sought.⁴⁹

While the EVP concept is now widely employed by organisations, most still promote just a single, ‘one-size-fits-all’ EVP. Such an approach is increasingly outmoded. Energy and resources organisations comprise multiple segments of employees with different jobs, skills, motivations and experiences (Figure 16). For employers, the key is to understand what appeals to different workforce segments and then offer more of it than their competitors do. For FIFO and

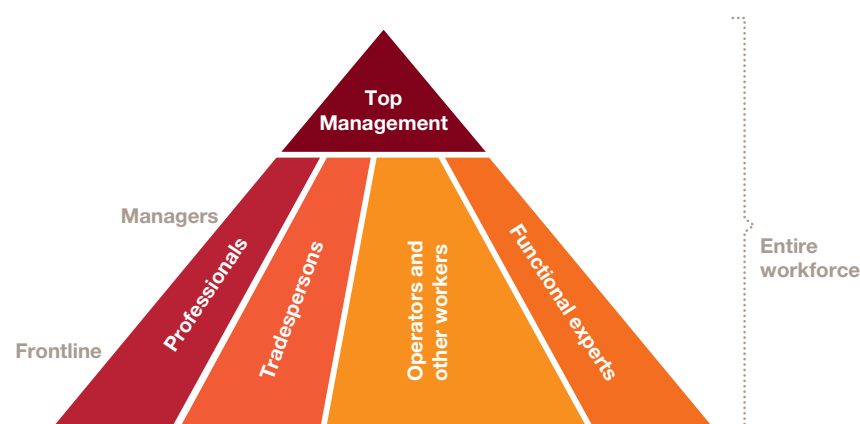
88%

Believe their organisation does not offer compelling career paths

DIDO workers, for example, rostering provides an important opportunity for resources companies to differentiate themselves. One mining veteran of 21 years whose FIFO roster changed to eight-days-on, six-days-off was happy to receive an additional 26 days off a year and remain on the same salary. He said, “It shows how competitive the industry is at the moment to attract and retain people”.⁵⁰

The increased emphasis on EVPs and career development will challenge some of the smaller organisations in the sector to become more creative. As one mining executive said, “We're a relatively new [operation] and we only have one mine so we can't offer the career development paths that others can”. However, the use of multiple career paths, as with Schlumberger, provides a practical means for smaller organisations to create tailored EVPs for employees with a variety of values, ambitions and expectations.

Figure 16: Workforce segmentation in energy and resources sector



49 Susan Jackson, Randall Schuler, & Steve Werner. *Managing Human Resources* Mason, OH: Cengage, Southwestern Publishers, 10th edition, 2008.

50 Penny McLeod. 'Out of site until they take the next flight', *The Australian*, 21 January, 2012.



Focus on your frontline leaders

In our experience, frontline leaders are crucial to changing attitudes, building engagement and increasing productivity. So organisations need to find ways to free them up to spend more time with their teams. This means a change in the focus of the frontline role from a primarily operational one to one of coaching and leadership.

Unfortunately, frontline leaders are often promoted for their technical rather than their leadership skills. We recently worked with 14 frontline leaders from an ASX Top 20 company to build their team leadership ability. Following our 'coach the coach' approach, engagement levels for the 14 teams increased by an average of 15%, unscheduled absences reduced by 50%, and two-thirds of the teams achieved significant improvements in productivity or work quality over a 12-month period.

Conclusion

The energy and resources industry is crucial to the productivity, prosperity and competitiveness of our nation. It provides employment for around 800,000 Australians and produces more than 7% of Australia's GDP.

However, skills shortages remain in place, with few initiatives having long-term impact.

Radical action is needed if the industry is to continue to be a driver of Australia's economic growth. Industry leaders, governments and universities need to work together to overcome entrenched and outmoded attitudes and implement concerted plans to deliver a skilled, diverse workforce committed to the industry's sustained success.



Mining Excellence@PwC

While issues faced by miners across the industry may be similar, we understand that ‘value’ means different things to different people. That’s why at PwC it’s not just about providing the ‘right’ answers. Our team of mining specialists remain focused on relationships to help our clients navigate the complex mining world and deliver on objectives.

We are passionate about mining and have a team of highly skilled professionals exclusively focused on improving efficiency and adding value across the industry.

Mining Excellence@PwC delivers a team of industry experts exclusively focused on the mining sector

In Australia, Mining Excellence@PwC provides our clients:

Leading edge **knowledge** and insight

We have made considerable investments to ensure our people are not only technically strong, but also have strong industry experience and expertise. Also, our industry publications are focused on providing in depth commentary on the key issues being faced by miners in today’s complex operating arena.

Mining Excellence@PwC includes

- a comprehensive industry insight program:
 - flagship publications such as Aussie Mine, Mine and Mining Deals
 - web casts available at pwc.com.au
 - the Insight Series delves into the issues most important to miners.



- an extensive industry development program for our people and clients. This features our university-style course called *Hard Hat: The Mining Experience*.



Connections to our vast network of mining experts and global client portfolio

We have the widest network of mining experts who work out of strategic hubs across the globe to help better connect you to vital mining markets.

Our connections provide:

- collaborative cross-border account management, which ensures seamless client service
- a global community of mining leaders, allowing our clients to connect with key players in all markets to maximise deal potential
- a well-connected and mobile workforce.

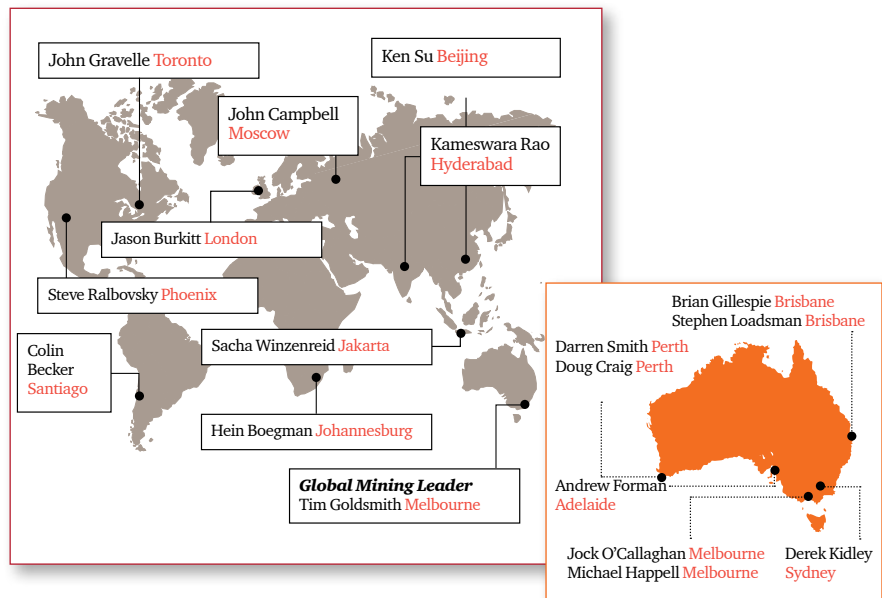
The **delivery** of an experience that meets our clients’ definition of ‘value’

With mining experts working in each key Australian state, our award winning teams are helping clients deliver on specific projects and organisational growth aspirations.

We offer advisory, tax and audit services to global corporations and locally listed companies.

Mining Excellence@PwC complements this with:

- a suite of niche mining consulting capabilities focused on optimising value across mining operations and effectively managing risk
- a comprehensive client feedback program to ensure we are consistently delivering on individual client needs.



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