



18 February 2014

20 Queens Road  
Melbourne VIC 3004  
PO Box 7622  
Melbourne VIC 8004  
Australia

ABN 76 369 958 788

Energy White Paper Taskforce  
Department of Industry  
GPO Box 1564  
**CANBERRA ACT 2601**

Tele: +613 9867 0111  
Fax: +613 9867 0199  
[www.aigroup.com.au](http://www.aigroup.com.au)

### **AUSTRALIAN INDUSTRY GROUP SUBMISSION ON THE ENERGY WHITE PAPER ISSUES PAPER**

Ai Group welcomes the opportunity to comment on the Government's newly released White Paper Issues Paper. There are many important issues within the remit of the Energy White Paper, but Ai Group highlights four as needing special attention – all relating to energy costs in the near and longer terms.

The current rise in gas prices across Eastern Australia is perhaps the most urgent energy issue confronting the country, with huge implications for the energy sector and for energy users, particularly trade exposed industry. While gas issues are principally addressed through the Gas 2020 Strategy process, the Energy White Paper should recognise that high gas prices will impact the generation mix, close off some opportunities for emissions reduction, and raise the importance of energy efficiency while altering the options available.

The Paper should also be an opportunity to consider the strategic long term view of electricity generation. Weak demand in the National Electricity Market means major new generation assets are very unlikely to be required until the 2020s. The intervening years are an opportunity to prepare for the future by establishing a durable, flexible, bipartisan framework for energy and climate policy; and by clearing barriers to ensure that all viable energy technologies have an opportunity to compete within that framework. All future electricity generation options look expensive by current standards, and none are simple. Wider recognition of these facts should be a starting point for a mature discussion of how to make the most of our future opportunities.

The expectation of increasing wholesale electricity prices in the medium term should frame discussion of policies to encourage energy efficiency and manage peak demand. When new generation is eventually required it will entail a substantial increase in the prices facing electricity consumers. Further deferring that investment requirement is possible, and would offer significant benefits for the competitiveness of industry and amenity of households. Efficiency policies nonetheless need to pass strong scrutiny, particularly with respect to their effect on net energy costs of trade exposed industry.

Finally, it is vital for the Commonwealth and the States to maintain the momentum of reform efforts in energy markets and regulation. An important agenda was agreed in late 2012 following a number of major reviews and considerable pressure from consumer groups and industry. This agenda needs to be completed and extended. Important processes to progress include the careful expansion of smart meters and time of use pricing; a mechanism to allow demand reductions to be sold into the NEM; refinements to the regulation of network service providers; revising reliability standards on a national and cost-effective probabilistic basis; and privatising state-owned networks where it makes sense to do so. Further work is needed on new reform frontiers, including a broad national consultation on network tariffs. The pricing of network use needs to be equitable, incentivise efficiency, and be sufficiently flexible to accommodate developments in energy use, distributed generation and storage.

### **The Security of Energy Supplies**

*Ways community expectations can be better understood and reflected in reliability standards;*

The Australian Industry Group welcomes the chance to comment on the Energy White Paper. Ai Group has a long standing concern about the pace and scale of price rises in the electricity sector and agrees with the White Paper that much of it has been fuelled by infrastructure investment, in part to enhance reliability. Reliability is extremely important, but not at any price. Public concern at past high-profile blackouts has led some State governments to adopt excessively conservative reliability requirements. These ‘deterministic’ standards require a high degree of system-wide redundancy, regardless of the likelihood or consequences of failure in any given location on the network.

The infrastructure requirements of these standards have proven prohibitively expensive. These costs outweigh the modest additional security provided compared with smarter ‘probabilistic’ standards based on risk data. This situation has been exacerbated by recent forecasting that has dramatically overstated likely future peak and absolute demand. As agreed by the Council of Australian Governments (COAG) the implementation of a nationally consistent reliability framework is a key part of ensuring the long term interests of consumers. This point was echoed by the Productivity Commission who estimated that changes to the reliability framework could “generate large efficiency gains...of \$2.2 billion to \$3.8 billion over 30 years”<sup>1</sup>.

Ai Group strongly supports the national introduction of a probabilistic planning system, such as currently operates in Victoria. Informed by the practical risks and demands on the National Electricity Market’s infrastructure probabilistic analysis will encourage efficiency by identifying areas requiring targeted investment. The performance of Victoria’s energy infrastructure, most recently in January 2014 during a week of extreme temperatures, demonstrates that such an approach can provide infrastructure that meets community expectations of reliability while moderating costs.

*The value of developing reserves to meet Australia’s international oil security obligations, and augment domestic security.*

---

<sup>1</sup> Productivity Commission 2013, *Electricity Network Regulatory Frameworks*, Report No. 62, Canberra

Ai Group fully supports efforts to ensure oil security. However it must be recognised that the estimated cost of \$6.8 billion to fully meet international obligations would ultimately be borne by the community and industry, whether in the form of higher taxes, lower spending or additional costs. For that reason Ai Group would strongly recommend that the Government undertake a full and specific consultation before deciding whether and how to increase reserves, and how to pay the costs.

*Ways to increase new gas sources to meet demand and measures to enhance transparency in market conditions,*

Changes to the price and availability of gas are of deep concern to industry. Ai Group will make input on these issues through the Government's consultation on its *East Coast Gas Strategy to 2020*.

*Issues relating to the regulation of Energy Infrastructure*

Retail electricity prices have risen dramatically in recent years, and as the Productivity Commission has observed, "spiralling network costs in most states are the main contributor to these (price) increases." The Commission acknowledged that network service providers were "responding to regulatory incentives and structures that impede their efficiency". Ai Group strongly endorsed the reform agenda agreed by COAG in December 2012, which highlighted several key areas where regulatory and market reform was needed to increase network efficiency and value to consumers. In particular COAG resolved to strengthen regulation, empower consumers, enhance competition and innovation and ensure network investment was more balanced between infrastructure and demand-side approaches. Although progress has been made, all of these issues require a sustained cooperative effort by state and federal governments, regulatory agencies, industry and consumers. Ai Group is eager that sustaining and accelerating the implementation of those reforms should be a priority for this White Paper.

A major further issue for consideration is how governments, regulators and the energy industry address the situation where already-built electricity infrastructure is not needed. In the recent past network investment has been unprecedentedly high, in part because of forecasts for strong growth in peak and overall demand. But over the same period peak demand growth has moderated and overall demand has fallen. Future demand growth is now expected to be weak, and the combination of high prices, behaviour change, product and building standards, industrial closures and growing distributed generation may see further surprises on the downside. Some network assets may be deeply underutilised. Current regulatory arrangements provide a narrow opportunity to disallow infrastructure spending that is both unnecessary and in excess of regulated spending levels. However if the regulated investment levels themselves are excessive, as they have been, network customers will pay to maintain unneeded assets for their service life.

These issues will become even more severe if current trends of increasing micro-generation and greater energy efficiency continue and withdrawing from the network becomes a practical and affordable option for smaller customers seeking to flee high network costs. A self-reinforcing 'death spiral' could be many years away, depending on the speed with which battery and solar technology costs decline. However the issue of who should bear the costs of unneeded infrastructure is already relevant and needs to be carefully considered.

## **Regulatory Reform and Role of Government**

*The Government seeks comment on priority issues, barriers or gaps within the COAG energy market reform agenda*

Industry and consumers in general were highly supportive of COAG's 2012 energy market reforms when they were initially announced. Our principal interest since then has been to ensure that these initiatives are fully and speedily implemented.

Ai Group is concerned that some of the positive momentum of these proposals has dissipated and that parts of the reform agenda are in danger of stalling. This is always a danger with intergovernmental reform agreements, and particularly with highly technical reforms that are abstruse to the wider public and much of industry, and which have a long development and implementation period. While the COAG Reform Council monitors achievement of process milestones, consumers and government need to retain a focus on the substance of these reforms. It was precisely with COAG's institutional limitations in mind that on behalf of energy consumers Ai Group, the Brotherhood of St Lawrence, CHOICE and the Energy Efficiency Council jointly urged the previous Government in December 2012:

*To ensure that energy market reform is developed and implemented as effectively as possible, and to maintain coherent consideration of the reform package as a whole, we strongly recommend that the [COAG] task an agency with responsibility for monitoring these reforms and consulting with industry and consumer groups in doing so. (Implementing the Plan for Affordable Energy, Dec 2012)*

This role remains important, and it is one that goes beyond the current remit of the COAG Reform Council.

One particularly important issue is demand side participation in the wholesale market. Accepting the recommendations of the AEMC's Power of Choice review, COAG agreed to establish a mechanism to allow demand response in the NEM in 2012. This would provide more flexibility and more attractive prices for energy users than if they are limited, as at present, to striking demand response arrangements with their retailer only. More demand response would support system reliability, benefit direct participants and eventually shave peak electricity prices. Despite a decline in overall demand, the costs of peak demand remain a serious issue for consumers.

Some have raised concerns that allowing demand response in the wholesale market risks encouraging energy users to inflate their baseline power consumption. However these risks should be easily overcome, as they have been in other markets, and if some pledged demand response were illusory, this would soon be evident in energy market outcomes. In any event, deliberately over-paying for unnecessary energy to game a baseline would almost certainly outweigh any windfall an energy user might receive from selling their artificial surplus at peak periods. Nor do we accept that the introduction of such a system need involve prohibitive expense. While general demand is weak for the next few years, establishing an effective demand response mechanism will be important for controlling longer term costs. COAG ministers need to sustain a focus on this issue.

Other elements of the agenda that need substantive monitoring or reinforcement are:

- Reliability Standards, as discussed above. The agreement to develop national standards needs to progress and result in adoption of standards that would significantly lower future investment costs without compromising reliability.
- Efficiency incentives, establishing network incentives to encourage cost-efficiency. Capital efficiency will not be maximised unless there is some sharing of the benefits between networks and consumers. There are efficiency incentives in place, which should be enhanced by the new AER guidelines for regulating networks. However the efficacy of these incentives needs close attention. If they underperform, more significant changes could be considered, such as a move to regulating total expenditure (TOTEX) rather than separating capital expenditure and operational expenditure.
- Enhancing consumer advocacy. The Consumer Challenge Panel and the national energy consumer advocacy body are important initiatives. One of the principal barriers for consumer participation in price determinations has been the highly technical nature of the decisions. There is an ongoing need for dedicated bodies that can represent consumer interests with the same degree of technical specialisation as found in the NSPs, and for strong consumer perspectives in the regulatory process.
- Reforming the regulatory appeals process to ensure overall consumer interests are considered. This is already in progress and should be concluded as soon as possible. Monitoring of appeal outcomes in the next set of regulatory determinations will be vital.

*The Government seeks comment on possible approaches and impacts of review of tariff structures including fixed network costs, further time-of-use based electricity tariffs and the use of smart meters.*

Ai Group's chief concern is to encourage policies that will sustainably moderate consumer electricity costs after an unprecedented rise in prices over the last decade. One implication of this is that while pricing structures should be equitable, they should also encourage efficient use of the network. The decline in electricity consumption in recent years has many causes, but clearly consumer response to prices is a significant part of the story. Getting tariff structures right is very important. Consideration of how to charge for the use of network infrastructure is extremely important, and a national consultation is needed.

#### *Fixed network costs*

A move towards a greater reliance on fixed network charges would be concerning. Many Ai Group members have made significant improvements to their energy efficiency in recent years, often through major investments in more efficient equipment or major reorganisation of production. Some have found that the expected savings were significantly eroded because their network charges moved to place a greater emphasis on fixed charges, rather than on maximum demand. Applied more broadly, fixed charging would undermine incentives for efficient use of energy and the network, raising costs for all users over the longer term. While network companies need to recover their costs, responding to changes in usage and distributed generation with blunt fixed pricing would be counterproductive.

### *Time of Use (TOU) pricing*

Ai Group supports greater use of TOU pricing. If well implemented it should help to lower bills for energy users who are flexible enough to shift their usage, and to minimise the wider costs of peak demand through avoided infrastructure investment and a reduced call on more expensive generation. However, governments and some consumer groups have been cautious because of the potential for some energy users to be disadvantaged by a lack of flexibility or of information. These concerns need to be managed through strong customer protections. However, the potential of TOU pricing, in combination with smart meters, is substantial, and governments should seek to expand availability and uptake as quickly as the community will bear.

### *Smart Meters*

Many of the opportunities for innovation and efficiency improvement in the electricity system require modern information infrastructure, with smart meters being a central component. While rapid rollouts have proved unpopular in the wake of the Victorian experience, we agree with the Productivity Commission recommendation that every effort should be made to incentivise the uptake of smart metering technology by consumers.

### *The Government is seeking comment on possible measures to promote greater price transparency in gas markets*

Ai Group's input on gas policy will be through the Government's Gas 2020 Strategy process.

### *The Government is seeking comment on areas where further privatisation of government-owned assets would contribute to more effective regulatory frameworks and better outcomes for consumers*

Ai Group has long argued for the privatisation of energy assets as being to the benefit of both the industry and consumers. Sale of remaining state-owned generation assets would primarily provide benefits to public finances, provided an adequate price can be achieved. Since generators in the National Electricity Market operate in a fully competitive environment, their performance after privatisation may not be significantly different and energy consumer outcomes are unlikely to be affected. However, privatisation of electricity network assets offers substantial potential benefits to energy consumers. These assets are regulated monopolies. The mixed role of state governments as owners of these assets and contributors to the regulatory framework has led to widespread perceptions of conflict. Many energy users also see state ownership as skewing incentives towards over-building of network infrastructure, since the regulatory process assumes network businesses pay a commercial cost of capital. Since the actual cost of capital to the state owners is significantly lower, the argument goes that the return to the state on capital invested by the network is much greater than the regulator must assume. Competitive neutrality charges levied by the states on their networks do not change the calculus for the ultimate owner of the assets – the state. Privately operated networks would have a clearer incentive to invest at efficient levels. The experience of privatised networks in Australia demonstrates that they can offer service and customer outcomes as good as, if not better than, those of publicly owned networks.

## **Growth and Investment**

*Areas where approvals processes could be further streamlined while maintaining proper environmental safeguards;*

&

*Further ways that regulatory burdens could be reduced while maintaining appropriate levels of disclosure and transparency in energy markets*

&

*The impacts of variable land access policy and ways community could be better informed and engaged on development in the energy sector*

One of the biggest boosts to growth and investment in this sector would be policy certainty. Ai Group members involved in the energy sector agree that constantly shifting policy parameters have had a negative effect on investment in a sector that must make multi-decade decisions. Any new initiatives proposed will have to overcome significant caution about the credibility and longevity of energy policy.

All levels of government also need to be scrupulous in the consideration of costs and benefits through a full and consultative regulatory impact assessment before imposing restrictions on energy production. In particular, excessive restrictions on exploration and production of coal seam gas, and on the development of wind farms, should be avoided and rescinded. Ai Group will have more to say on sound regulation of CSG production in our submission to the Gas 2020 Strategy.

With respect to wind farms, Ai Group strongly supports community involvement and consultation around major infrastructure developments. However, blanket exclusion zones, as implemented or proposed in several states, are not based on scientific evidence of harm and will tend to block sensible investment opportunities, while also raising the cost of achieving the Renewable Energy Target. These exclusions set a dire precedent for other energy and industrial development, as the response to CSG has confirmed. Based on extensive experience to date, the forthcoming work of the National Health and Medical Research Council on health impacts of wind turbines would be expected to confirm that there are none. It is to be hoped that such an outcome from a trusted expert body will ease concerns in sections of the community and facilitate a move to less onerous treatment of these facilities by relevant states.

Pending the outcome of the NHMRC work, the Government should suspend implementation of its policy to require real time monitoring and publication of wind turbine noise levels. Assuming a favourable outcome, the proposal need not proceed at all. Although companies have provided such data for a limited time as part of studies into the effects of wind farms on local communities – such as that recently completed in South Australia which found no proven negative impacts – its permanent introduction would be a unique impost on the Australian wind industry not found anywhere else in the world. Any move to implement the scheme, prior to the completion and independent of the report by the expert panel, would sit oddly with the Government's ambition to roll back prohibitive and unnecessary regulations. Ai Group would urge the Government to consider the precedent this policy could set for other industries.

### The nature of any current skills shortages being experienced and how these could be addressed by and with industry

Skill shortages exist when employers are unable to fill or have difficulty in filling vacancies for an occupation. Current skills shortages are limiting the capacity of Australian businesses to grow and be competitive including in the resources sector. Ai Group’s 2009 National CEO’s Survey<sup>2</sup> indicates that skills shortages have been a major inhibitor for industry for many years.

The Ai Group survey on *Employer’s Workforce Development Needs* reported on the prevalence and location of skill shortages within their workforces. Surveyed employers were asked to identify their experience of skill shortages in the past 12 months by occupational grouping. The following chart shows the aggregation of the top three occupations experiencing skill shortages, listed by respondents to the question.<sup>3</sup>

**Chart 1: Business occupation skills shortages experienced in the previous 12 months**



This indicates that ‘technicians and trades workers’ (33%) are the most significant area of skills shortages. Other prominent occupations are professionals (20%) and managers (16%). When these skills shortages are combined they represent 69 per cent of all reported skill shortages. This reflects an on-going and increasing trend of the need for higher order skills in the emerging knowledge economy.

The survey also sought information about skills shortages over the next 12 months.<sup>4</sup>

<sup>2</sup> Ai Group and Deloitte National CEO Survey: Skilling Business in Tough Times, Australian Industry Group, 2009.

<sup>3</sup> *Apprenticeships: Achieving Excellence*, June 2013, Australian Industry Group, page 8.

<sup>4</sup> *Apprenticeships: Achieving Excellence*, June 2013, Australian Industry Group, page 9.

**Chart 2: Business expected occupation skills shortages over the next 12 months**



A similar pattern emerged with technicians and tradespeople at 33%, professionals at 22%, which have increased from the previous 12 months, and managers at 15%.

In addition to this there are over 60 skilled trades on the National Skills Needs List<sup>5</sup> facing a national skill shortage. All of these skilled trades are delivered under an apprenticeship arrangement. Shortages in these occupations have persisted for years and many of them occur in the resources sector. The AWPA report has identified several trade areas in short supply which apply to a wider set of industries apart from mining. These occupations include:

- Metal Fitters and Machinists (ANZSCO 323299)
- Fitters (ANZSCO 323211)
- Metal Machinists (First Class) (ANZSCO 323214)
- Electricians (ANZSCO 341111)
- Metal fabricators (ANZSCO 322311)
- Welders (First Class) (ANZSCO 322313)
- Motor Mechanics (ANZSCO 321211).<sup>6</sup>

<sup>5</sup> <http://www.australianapprenticeships.gov.au/national-skills-needs-list>

<sup>6</sup> *Resource sector skills needs 2013*, Australian Workforce and Productivity Agency, page 127.

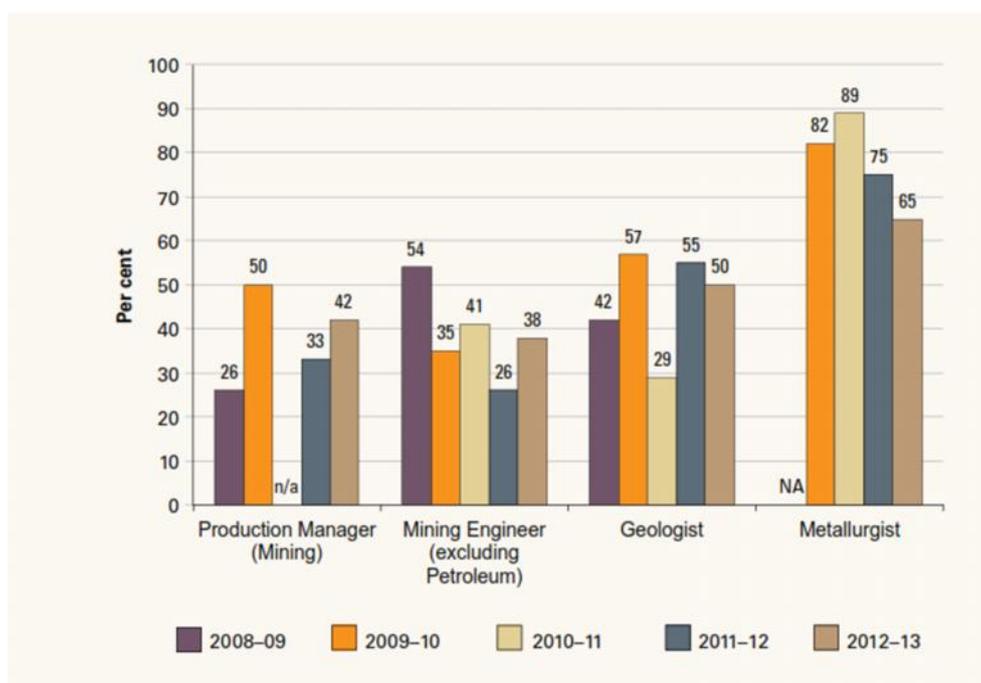
Specifically in relation to the resources sector, the AWPA report further suggests that while there has been some easing of skills shortages there are persistent shortages in key occupations. These include

- Mining Production Managers (ANZSCO 133513)
- Mining Engineers (ANZSCO 233611)
- Petroleum Engineers (ANZSCO 233612)
- Geophysicists (ANZSCO 234412)
- Mine Deputies (ANZSCO 312913)<sup>7</sup>

Most of these occupations are also included on the Skilled Occupation List.<sup>8</sup> The modelling undertaken by Deloitte Access Economics estimates there are critical shortages in the Mining and Oil and Gas sectors and sustained supply-demand shortages for 25 occupations across the 2014 – 2018 period.<sup>9</sup>

One key measure in relation to resource sector skills shortages is the proportion of vacancies filled.

**Figure 1: Proportion of vacancies filled, selected resources-related occupations, 2008-09 to 2012-13<sup>10</sup>**



NA = not assessed, n/a = not available.

Source: Department of Employment, 2013, Survey of employers who have recently advertised, June.

<sup>7</sup> Department of Employment, 2013, Skill shortages in Australia.

<sup>8</sup> <http://www.immi.gov.au/skilled/general-skilled-migration/pdf/sol.pdf>

<sup>9</sup> *Resource sector skills needs 2013*, Australian Workforce and Productivity Agency, page 111.

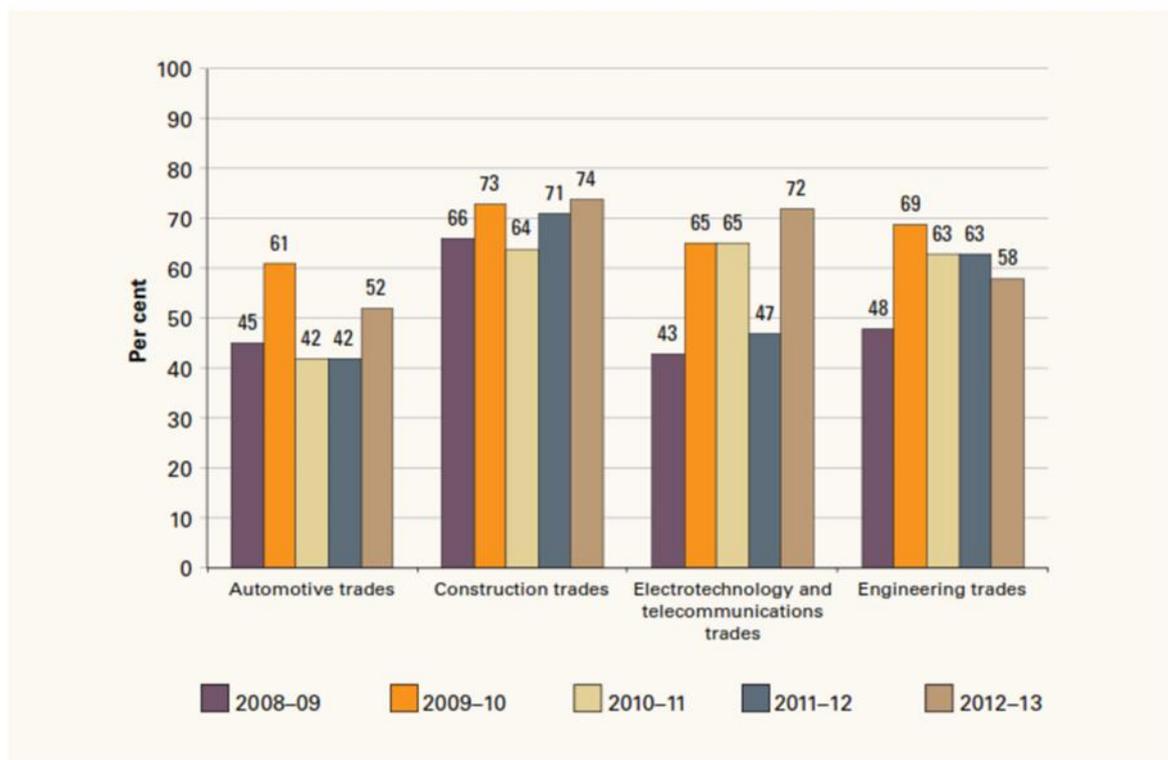
<sup>10</sup> Department of Employment, 2013, Survey of employers who have recently advertised, June 2013.

Shortages of Mining Production Managers have been persistent throughout the period. These roles are often highly specialised and applicants require more than 10 years industry experience and knowledge of specific mining techniques.<sup>11</sup> The last available data indicates that in 2012-2013 only 42% of the vacancies were filled. The situation is similar for Mining Engineers where only 38% of the vacancies were filled and Geologists where half of the vacancies were filled in the 2012-2013 year.

As indicated there are a number of trade occupations that are important to the resources sector even though the proportion directly employed is low. From the automotive trades area the skills of Automotive Electricians and Motor Mechanics are significant. There are national skills shortages across all automotive trades and a slightly higher proportion (52%) of vacancies were filled in 2012-2013 compared to 2011-2012 (42%).

In regard to the engineering trades, shortages of Fitters have re-emerged in some regional areas. Fitters are in demand in non-resource states which has made the market very tight in Western Australia and the Northern Territory. In the construction trades there has been some easing of shortages as many resource projects move out of the construction phase. Electricians are the largest trade within the electro-technology and telecommunication trades group engaged in the resources sector with 8,800 workers (6% of all Electricians). The labour market for this trade eased in 2012-2013 although the Australian Petroleum Production and Exploration Association has forecast a shortage for 2014 – 2015.<sup>12</sup>

**Figure 2: Proportion of vacancies filled, selected trade occupational groups, 2008-09 to 2012-13<sup>13</sup>**



<sup>11</sup> *Resource sector skills needs 2013*, Australian Workforce and Productivity Agency, page 116.

<sup>12</sup> Australian Petroleum Production and Exploration Association, 2012, *State of the industry 2012*.

<sup>13</sup> Department of Employment, 2013, *Survey of employers who have recently advertised*, June 2013.

These skills shortages affect the capacity of the industry to compete in global markets. There are challenges in attracting and retaining skilled workers in the face of competition from other domestic industries as well as with international resource projects.

Modelling undertaken by Deloitte Access Economics for AWWPA reveals differences in the supply – demand outlook across the individual sectors. Of significance is a projected shortfall in the Mining Operations and the Oil and Gas Operations sectors for the 2014 – 2018 period. In Mining Operations the projected shortfalls are for Metal Fitters and Machinists, other Building and Engineering Technicians and Earthmoving Plant Operators.

For Oil and Gas Operations the shortages are more spread across professional, managerial and trades and technical occupations. These shortages affect the competitiveness of liquefied natural gas prospects through delays and increased costs.<sup>14</sup>

The industry needs to develop longer-term skills formation strategies to increase the pool of domestic workers.

### **The capacity of industry and education sector-led programs to meet long-term training and skills development needs of the energy and resources sectors**

A long lead time is required to develop the critical skills for the future of the sector, especially in relation to oil and gas.

There is a need for collaboration between industry, government and education and training providers to achieve this. A workforce development strategy is needed to address this issue. Given the timeframe it will necessary to support the domestic workforce development plan with experience personnel from overseas.

In the longer term it is necessary to address the shortage of senior secondary students, and subsequently university graduates, undertaking study in Science Technology Engineering and Mathematics (STEM) related disciplines to provide a skills pipeline for the future. There have been several reports detailing the deteriorating situation in secondary schools.<sup>15</sup> In addition, key international research such as the Trends in Mathematics and Science Study (TIMSS) indicate that Australia's performance is stagnating.<sup>16</sup>

The OECD has reported that Australia is lagging in the number of STEM graduates from our tertiary institutions.<sup>17</sup> The number of students enrolled in a mathematics major in Australian universities declined by 15% between 2001 and 2007<sup>18</sup> and Australian engineering graduates account for only 40% of those employed in Australia.<sup>19</sup>

---

<sup>14</sup> *Resource sector skills needs 2013*, Australian Workforce and Productivity Agency, pages 122 – 123.

<sup>15</sup> *Making Sense: A business perspective on school reform*, June 2013, Australian Industry Group, page 14.

<sup>16</sup> Sue Thompson et al., *Highlights from TIMSS and PIRLS 2011 from Australia's perspective*, Australian Council for Educational Research, 2012.

<sup>17</sup> *Over-Qualified or Under-Skilled: A review of existing literature*, OECD Social, Employment and Migration Working Papers, No 121, Paris, 2011.

<sup>18</sup> <http://www.theaustralian.com.au/news/nation/mathematics-students-in-serious-decline>, March 10, 2010.

<sup>19</sup> Beanland, D.; *How Engineers Australia can support the transformation of engineering education in Australian universities*, 30.10.2012.

Employers report difficulties recruiting people with STEM skills in a number of occupation groups especially technicians and trade workers (41%), professionals (26.6%) and manager (26.3%).<sup>20</sup>

The development of the National Resources Sector Workforce Strategy is a major step in addressing the longer term training needs of the sector.<sup>21</sup> This centralised and co-ordinated strategy is a partnership approach involving governments, industry and the tertiary education sector. Several regional workforce development plans have been prepared within this context. The outcomes from this strategy will be crucial to the future of the sector.

A further key initiative is to access funding to support skills development through the national Workforce Development Fund. Industry works with the relevant Industry Skills Council, SkillsDMC, to develop and support funding proposals to upskill the existing workforce. About 15% of all national Workforce Development Fund learners were supported through projects facilitated by SkillsDMC.<sup>22</sup>

The increasing incidence of skills mapping by industry is also assisting in this industry area. The identification of the knowledge, skills, abilities and behaviours for particular occupations contribute to the level of workforce planning in the sector. This has also been assisted by the development of a “Skills Maximiser” by SkillsDMC to help organisations in this mapping process.

### **Driving Energy Productivity**

*The current suite of energy efficiency measures, ways these could be enhanced to provide greater energy efficiency or possible new measures that would enhance energy productivity*

There are several ways of framing energy efficiency policies. Productivity is a useful one; as for labour and capital, improving energy productivity is an imperative to support future prosperity – particularly in the context of high energy costs. There are many dimensions to the pursuit of higher productivity, many of them led by industry, and others facilitated by sound public policy in support of flexibility, education, provision of infrastructure and more. If productivity is to be a meaningful frame for efficiency policy, however, the proposed contribution to productivity needs to be rigorously defined and assessed.

Energy efficiency can also be conceived as a tool of climate policy, whether to abate emissions or to limit the cost impacts of climate policies that increase energy prices. However, there is another frame for efficiency policy that needs greater attention: the potential to further defer the need for major new investment in energy generation infrastructure. Although the AER projects that generation capacity will remain adequate until at least 2020 in light of weak demand and strong supply, when new capacity is eventually required it will entail substantial price increases. Current wholesale electricity prices are well below the long run marginal costs of any new generation technology, including coal without emissions constraints. To support new investment, wholesale prices would have to increase dramatically. That will place further strains on energy users, and on trade exposed businesses in particular. If policy can defer the requirement for new investment, whether through energy efficiency, demand response, or other means, it can make a significant contribution to the future competitiveness of Australia’s energy-intensive industries. Furthermore, most forms of generation capacity that might be commissioned in the 2020s would be expected to

---

<sup>20</sup> *Lifting our Science, Technology, Engineering and Maths (STEM) Skills*, March 2013, Australian Industry Group, page 3.

<sup>21</sup> Department of Industry, 2013, *National Resources Sector Workforce Strategy: implementation plan*.

<sup>22</sup> *Resource sector skills needs 2013*, Australian Workforce and Productivity Agency, page 168.

remain in operation until at least 2050. Evolving energy technology options and uncertainty around global responses to climate change thus also imply significant value in deferring investment. These systemic benefits are not part of the calculus of individual energy users, and there can be a role for well-considered policy in pursuing them – whether through general energy efficiency, peak-oriented demand management, or facilitation of distributed generation.

There are risks to be avoided with energy efficiency policies. One is that policies such as the white certificate schemes operated in some states can add to net energy costs for some users, whether through an uneven distribution of costs and benefits or through poor targeting that subsidises illusory efficiencies. Schemes such as the Victorian Energy Efficiency Target face a constant imperative to scrutinise and update their assumptions about the savings association with particular efficiency activities, as the over-estimation of energy reductions associated with standby power controllers demonstrates. To be acceptable, efficiency policies need to avoid negative spillovers to consumers who share costs but have limited capacity or opportunity to benefit. This can be achieved by keeping savings assumptions up to date; encouraging widespread participation; and exempting some categories of consumer – principally those with limited opportunity to benefit - from policy costs. Energy intensive trade exposed businesses are particularly likely to require exemption.

Another risk is of efficiency policies that add to administrative and compliance costs without substantially altering behaviour. This is the case for many companies subject to the Energy Efficiency Opportunities (EEO) program. While some EEO businesses report benefits from the program, including improved internal processes for energy management, many others report that they were already strongly focussed on energy due to its prominence in their cost structures. For those who have benefitted, once improved processes are in place further gains from an external reporting obligation are unlikely. Therefore Ai Group continues to argue that at a minimum the EEO should include a simple mechanism for companies to ‘graduate’ from the program and mandatory reporting requirements.

### **Alternative and Emerging Energy Sources and Technology**

Ai Group’s principal input on these issues will be made through the forthcoming RET Review and the current ERF consultation. However we would make some high-level points. Firstly, current estimates suggest that all future energy generation options have high costs by current standards, including coal- and gas-fired generation without carbon constraints. While technological improvements, movements in fuel prices and deferral of investment have the potential to delay or moderate price rises, energy price increases are extremely likely in the medium and long term regardless of whether policy encourages a lower emissions energy supply. Price increases associated with lower-emissions energy should be considered in this context, and in the light of externalities.

In addition, most options for new generation, including fossil fuel options, face additional challenges to their deployment, including community resistance, regulatory frameworks, safety, skills, fuel price volatility or supply security, supporting infrastructure and technological maturity. A great deal of work will be required on many fronts if these technologies to be genuine options when new investment in generation is required. For instance:

- Gas-fired generation and cogeneration, other than for peaking purposes, looks almost certain to exit the market over the next several years in light of the dramatic rise in gas prices and tight supply in the near term. Future gas generation prospects will depend on state and federal energy and emissions policies, the trajectory of long-term emissions goals, and price relativities with other technologies.

- Enhanced geothermal energy remains technologically immature and once ready to wider deployment it would compete with the oil and gas sector for specific skills and equipment. The use of hydraulic fracturing, though in a very different geological and geographic context to its use in unconventional gas extraction, could also arouse community concern and associated regulation.
- Putting in place the legal and physical infrastructure and human capital to enable entry of nuclear generators would take years of work before construction could commence.

While energy policy should focus on outcomes rather than picking technological winners *a priori*, proactive policy is appropriate to lower barriers and ensure the fullest suite of technologies has an opportunity to compete to provide affordable and low emissions energy. The substantial work already done by many governments to put in place frameworks for potential carbon capture and storage activity, though still incomplete, is a positive model of forward planning and coordination.

One of Ai Group's core principles for climate policy is that research and development of new and improved abatement options should be a central element. There are substantial opportunities to bring a variety of low emissions technologies down the cost curve. Government support for energy innovation is appropriate, whether through initiatives like ARENA and Carbon Capture and Storage Flagships, or through further measures. Innovation policy is an essential long-term complement to other energy policies.

With respect to the distribution of network costs in light of the increase in distributed generation, we reiterate the need to have a fundamental and national consultation on the overall basis for recovery of network costs and provision of incentives for efficient use and development of the network. Distributed generation is an increasingly important factor in networks, but it is vital to achieve equity and efficiency in the treatment of all network users, including distributed generators, owners of other equipment affecting network loads such as air conditioning, and energy users who improve their efficiency.

With respect to advanced biofuels, Ai Group understands that availability of feedstock – particularly feedstock that does not use or compete with food crops – is a key limiting factor for potential uptake. Further work should be done on feedstock potential and options to unlock it, together with the implications for land use, agricultural markets and emissions.

Ai Group looks forward to continuing to work with the Government throughout the White Paper Process,

Yours sincerely,

A handwritten signature in blue ink that reads "Innes Willox". The signature is written in a cursive style and is underlined with a single blue horizontal line.

**Innes Willox**  
Chief Executive