


QRC

submission

Working together for a shared future

A large, stylized graphic of a leaf or branch, rendered in grey and green outlines, positioned on the left side of the page.

Submission to Senate Select Committee on Fuel and Energy and response to the extended terms of reference (e), (f), (g) and (h)

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1. Introduction

The Queensland Resources Council (QRC) is a non-government organisation representing companies that have an interest in exploration, mining, minerals processing, gas and energy production. It is the resource industry's key policy-making body in Queensland, working with all levels of Government, interest groups and the community.

The Council works on behalf of members to ensure Queensland's resources are developed profitably and competitively, in a socially and environmentally sustainable way.

The QRC has previously responded to the Committee but in relation to items (a) – (d) only. The Committee's expanded terms of reference (e) – (h) that examine matters in relation to Australia's future domestic energy supply are also highly relevant and we offer the below as a supplementary response.

2. Socio-Economic contribution of the Queensland Resources Sector

The growing value of output from the Queensland resources sector is demonstrated at **Table 1** below. In 2008/09, the sector produced \$53.1 billion in output – across a diverse range of commodities.

Table 1

Queensland Resources Sector Production and Value of Production (A\$billion) (nominal)						
	2006/07		2007/08		2008/09 ^f	
	Production	Value (\$b)	Production	Value (\$b)	Production	Value (\$b)
Alumina (kt)	4,419	1.7	4,291	1.7	4,328	1.5
Aluminium (kt)	328	1.1	328	1.0	328	1.0
Bauxite (kt)	16,952	0.5	16,814	0.5	16,249	0.5
Black Coal (Thermal) (Mt)	73	4.5	72	5.2	77	10.3
Black Coal (Coking) (Mt)	110	12.5	108	12.6	115	29.5
Copper content (kt)	338	2.4	392	3.1	338	3.0
Gold (t)	21	0.5	20	0.5	17	0.8
Lead (kt)	415	0.7	469	1.4	417	0.9
Silver (t)	1,347	1.7	1,504	2.3	1,389	0.8
Zinc (kt)	843	3.1	897	2.3	863	1.8
Coal Seam Gas (PJ)	86	0.3	125	0.4	125	0.4
Crude Oil and Condensate (ML)	640	0.2	632	0.2	632	0.2
LPG (ML)	271	0.1	151	0.1	151	0.1
Processed Natural Gas (PJ)	128	0.4	107	0.4	107	0.4
Electricity (MWh)	50,588,962	1.5	52,152,888	1.5	52,854,158	2.0
Total		31.2		33.2		53.1

The vast majority of these commodities were exported to Asian and European markets, whilst a smaller percentage is directed domestically for energy generation (i.e approximately 30 mtpa in thermal coal).

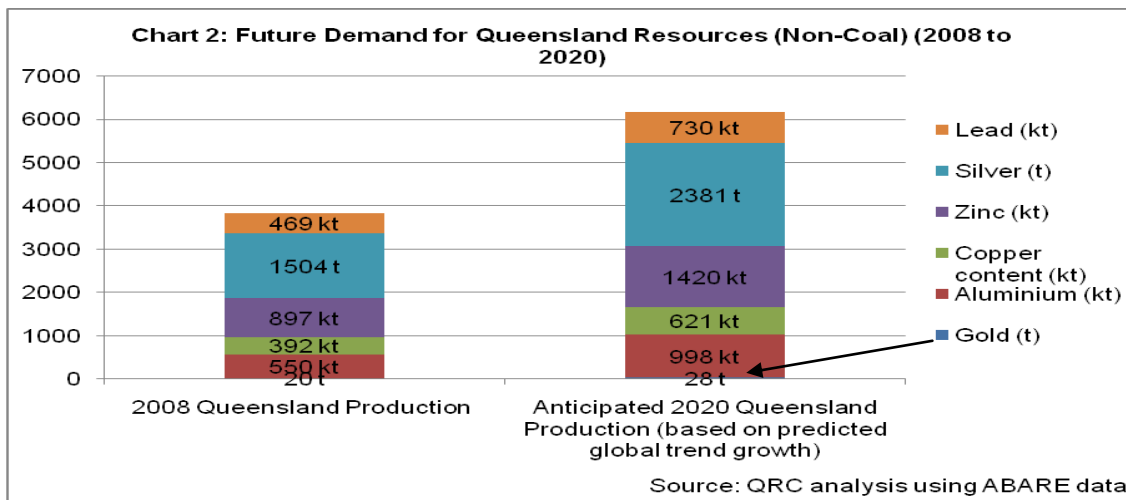
Directly and indirectly the sector employs approximately 12 per cent of Queensland's full time equivalent workforce and accounts for approximately 20 per cent of Queensland's economic activity (Gross Regional Product).



3. Strong opportunities for future growth

Whilst levels of economic demonstrated resources for base and precious metals (in particular) are lower than is comfortable at present, Queensland remains highly prospective and, with the appropriate policy settings, is in a position to capitalise on steady demand in the developed world, as well as the current and anticipated levels of growth as a result of ongoing industrialisation and urbanisation in the developing world.

The extent of these opportunities is presented at **Chart 2** below – with demand for most commodities set to increase by 50-100 per cent by 2020.



An increasingly greater proportion of Queensland's export earnings will be generated from commodities not depicted on this chart – namely thermal and metallurgical coal, coal seam methane as LNG, and potentially uranium (assuming the current prohibition on mining is overturned).

Notwithstanding the inevitability of a global carbon price that in theory will curb demand for coal, export growth is still anticipated. It is difficult however to estimate the rate of this growth as substitution away from coal for less carbon intensive energy will be a function of the success of carbon capture and storage (CCS) technologies being deployed both prospectively and through retro-fitting existing plant, as well the scope and nature of a Global Protocol.

There are currently eight separate proposals to develop LNG facilities in Queensland. If six of these proposals are developed at their minimum scale then over 750 PJ per annum of coal seam methane would be produced. To put that in context, Australia's total energy consumption in 2006/07 was 5,770 PJ.



Queensland has a number of significant uranium prospects, with GeoScience Australia estimating that known deposits could be as high as 73,000 tonnes, with a potential to add several billion dollars to Australia's economic output¹.

4. Reliable and inexpensive energy is critical to the ongoing viability of the sector

The sector is a significant consumer of energy due to the high level of smelting and refining activity (predominantly aluminium, copper and zinc) and coal operations consume significant energy through both the use of draglines to remove overburden, as well as operating coal wash plants. As per **Table 2** below, the resources sector (excluding electricity, gas and water production) in 2006/07 accounted for:

- Approximately 16 per cent of Queensland industry's total energy requirements. Of this:
 - 63 per cent is electricity, and predominantly reliable, inexpensive coal fired power
 - 29 per cent of fuel, predominantly diesel
 - 8 per cent is natural gas
- Approximately 22 per cent of Queensland's entire electricity consumption.

Given the considerable growth in the industry since 2006/07, one would expect these percentages to be higher today.

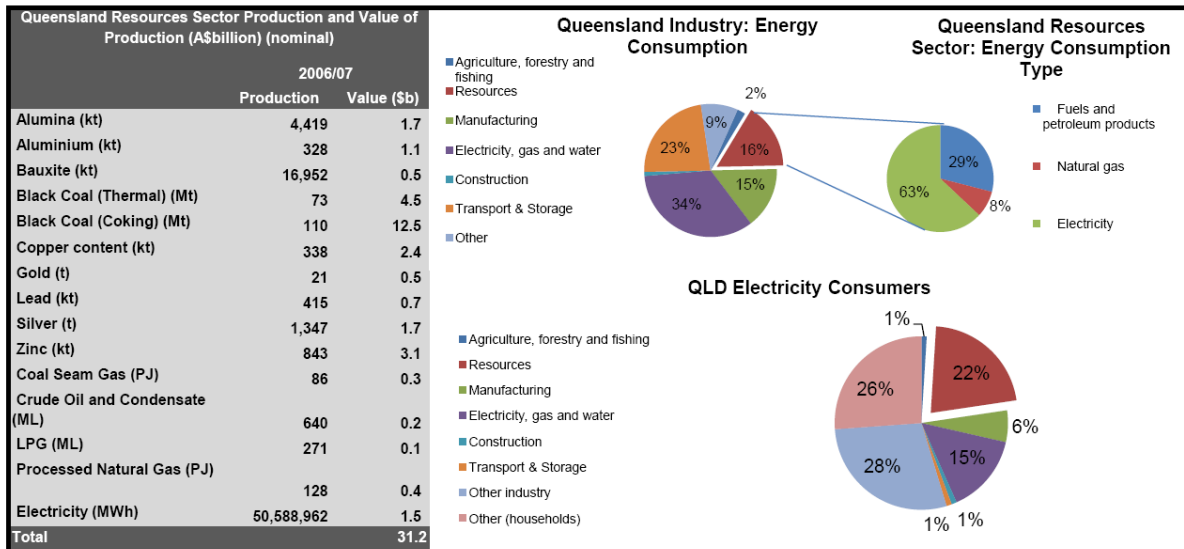
Energy, with labour and transport, represent the vast majority of the sector's input costs. Access to reliable and low cost energy, coupled with continued improvements in energy efficiency and general productivity improvements, has helped the sector maintain its comparative advantage in global markets. This comparative advantage has delivered enormous prosperity to Australia – to a point where the industry has become the bedrock of both state and federal budgets and a key driver of economic growth – especially in times of downturn.

The resource sector is however a price taker in global markets with no real capacity to pass on higher costs. Increases in energy costs that aren't borne by competitors will therefore directly impact upon competitiveness and the industry's ongoing viability. Given expected levels of future global demand, the cost to Australia of ill-conceived policy settings is potentially profound.

¹ Outlook for the Uranium Industry, Deloitte Economics, April 2008



Table 2: Production and Energy Overview of the Queensland Resources Sector



Source: QRC analysis using ABARE data

5. Queensland will need additional baseload before long

Queensland and Western Australia are expected to have the strongest average annual growth in electricity consumption with ABARE forecasting growth of 2.4 and 2.8 per cent per annum respectively. It is estimated that Queensland by 2029-2030 will account for over 30 per cent of total Australian electricity generation². To meet the anticipated growth in electricity demand by 2020, new base load electricity generation will be required. NEMMCO's 2008 Statement of Opportunities (SOO) projects that low reserve conditions (LRC) will occur as early as 2013/14 in Queensland. It is noted that these projections do not take into account the significant energy requirements of the proposed LNG plants and their associated pipeline compression needs.

6. Issues that will substantially influence the reliability and cost of Australia's future domestic energy supply

The challenge confronting Australian policy makers is achieving the appropriate mix of energy policies that promote cleaner energy solutions for improved environmental outcomes whilst ensuring an adequate (supply meets growing demand) and reliable (minimal disruptions) supply that is affordable. Affordable means that energy prices must not reduce the competitiveness of the energy intensive trade exposed sectors, but be sufficient to promote continued investment in the energy supply sector.

The QRC believes that in achieving this mix and the desired outcomes Governments should address the following policy issues.

² ABARE, (2007), Australian Energy: National and State Projections to 2029-30, Research Report 07.24, December



6.1 Industry and Government collaboration to accelerate the deployment of Carbon Capture & Storage (CCS) technology

Due to a past reliance on inexpensive coal fired electricity, the establishment of a market for carbon emissions via the proposed Carbon Pollution Reduction Scheme (CPRS) and the acceleration of renewable technologies via the Renewable Energy Target (RET) will induce a significant structural reform of the Australian economy.

The Australian Energy Market Commission (AEMC) state that electricity demand in the National Electricity Market (NEM) is expected to increase by approximately 70 TWh in 2020 compared with current demand³. This increase is likely to require new generation investment in the order of 8 GW. In the absence of climate change policies, the demand for new generation would most likely have been met through additional coal-fired generation on account of Australia's vast coal reserves and its low marginal cost.

The introduction of the CPRS and national RET as proposed are expected to change the type and location of new generation investments, and in certain circumstances, accelerate the shutting down of generation from higher emission fuels such as coal. As such, the CPRS will create incentives to meet generation from lower emission sources (ie gas), thereby leading to the likely partial redundancy of some existing coal fired generators. These incentives for gas investments will be partly lowered by the national RET creating incentives for renewable generation.

The expansion of renewable generation, in addition to the likely early redundancy of high emission coal generators means that future generation will likely be connected in locations that are significantly different to current generation. Under proposed policy settings, the AEMC⁴ believe that that by 2020, generation capacity could include:

- a large proportion from wind generation, located mainly in South Australia and Victoria;
- increased gas generation, dispersed within the network; and
- increased embedded generation, located in major urban centres.

As well as the greater generation costs of these alternative energy sources, average costs will be pushed up further as new transmission and distribution network investment is commissioned to support the transfer of electricity from these new generation locations to major urban centres. Further, the anticipated expansion in the amount of wind generation for example⁵ providing electricity to the market has implications for its operation, particularly if it is concentrated in one or two NEM regions. For example, having a large proportion of intermittent generation in one region can lead to reliability problems in circumstances where demand is high, wind generation is unavailable, and inter-connectors are constrained. This means that there may need to be some reserve capacity available for these circumstances to satisfy reliability requirements – further pushing up costs.

³ The State of the Australian Energy Market 2008, Dr John Tamblyn address to the National Association of Regulatory Utility Commissioners at its 120th Annual Convention, 16-19 November 2008, New Orleans, Louisiana, USA

⁴ Ibid

⁵ Most commentators and economic reports (Garnaut, Access economics for CAF etc) suggest that the vast majority of the 20 per cent renewable target will be sourced from wind



Whilst there will be a role for various energy solutions going forward including renewables and coal to gas, looking long term, an imperative for industry and governments to promote the commercial deployment of CCS technologies to facilitate a new generation of low emissions coal-fired power plants exists to deliver necessary abatement and cost savings.

6.2 *An improved level of assistance to Queensland's black coal-fired electricity generation fleet under the proposed Electricity Sector Adjustment Scheme (ESAS)*

The power generation sector is the single largest contributor to greenhouse gases, with 50 per cent of all CPRS carbon liabilities expected to fall on this sector. For most generators, these carbon liabilities will be exorbitant and the cost of carbon permits will constitute approximately 50 per cent of existing total revenues. This in turn will result in significant cash flow issues that may compromise the capacity of some firms to fulfil debt covenants.

Compounding these pressures is the decision to provide the black coal generators with a disproportionately low level of compensation. Despite estimates that the CPRS will impose a \$3 billion direct asset loss on the fleet over its remaining life, the ESAS will allow for only \$100 million in assistance out of a total \$3.5 billion. This compares with \$2.45 billion of assistance likely to be provided to Victoria's brown coal generators, which are considerably more carbon emissions-intensive than Queensland's black coal generators.

By contrast, and despite having very high emissions intensities, Victorian brown coal-fired generation assets are expected to receive \$3.4 billion in direct assistance, representing approximately 75 per cent of asset losses associated with the introduction of CPRS.

The consequences of not aligning compensation to asset value loss or remaining asset life will be significant with the following outcomes possible and/or likely:

- Premature shutdowns of existing plant as financial returns fail to meet risk adjusted thresholds leading to price spikes and power outages;
- Marked deterioration of the comparative advantage between cleaner coal fired technologies and less efficient coal plants will lead to adverse investment signals – resulting in Australia becoming a less desirable destination for inbound investment; and
- The implementation of yet another substantive and competing policy reform will lead to greater uncertainty that will discourage investors from investing in Australia.

The QRC believes the proposed policy settings send a perverse message about the environmental outcomes the CPRS is designed to achieve and we encourage Government to make public the findings of the current Morgan Stanley review into the effect of the CPRS on the Australia's electricity generation sector.

6.3 *An improved level of assistance to the coal industry under the Climate Change Action Fund*

Under the CPRS, and until such time global competitors face comparable carbon costs, firms whose emissions intensity threshold is greater than 1,000 tonnes of CO₂-e per million of revenue will receive transitional assistance from government via an allocation of 66 per cent free permits in



the first year, or if emissions are greater than 2,000 tonnes of CO₂-e per million of revenue, 94.5 per cent free permits.

In place for 10 years, and subject to review after five, the transitional assistance will not stay at 66 per cent after year one, but will be reduced at 1.3 per cent per annum. Further, the carbon price and cost of permits will increase over time as tighter abatement targets are set by governments.

In comparison to the existing EU scheme, and the proposed US scheme (Waxman-Markey), this proposed level of assistance is very low.

The coal industry has been excluded from this assistance despite being eligible. It is estimated that the 'trade exposed' Australian coal industry will incur approximately \$14 billion in carbon costs over the first 10 years of the CPRS despite having an emissions intensity threshold of 1,330 tonnes of CO₂-e per million of revenue – making it eligible for approximately \$8 billion in (free permit) transitional assistance over 10 years. Government will instead return to the industry a mere \$750 million over five years as assistance.

As companies receiving transitional assistance will still need to purchase a significant and increasing quantum of more expensive carbon permits over time, receiving this assistance will not remove the incentive to offset these costs and to abate.

As proposed, the \$14 billion liability will necessitate operational cut backs to stay viable, cause premature shutdowns of existing operations, deter investment in expansions and new projects (especially as the assistance won't be applied to new projects), cause an erosion of Queensland's comparative advantage, cause carbon leakage (production moves offshore to countries with limited incentives to abate), push up electricity costs; and restrict the availability of funds to implement abatement initiatives.

Whilst some cost increases are needed to drive changes in business and consumer behaviour, ETS costs should not be so high that emissions reductions are caused primarily by lowered levels of economic activity (for example, shutdowns due to limited earnings). Instead, the ETS should be designed so that emitting firms are incentivised to introduce new technologies and more efficient production methods for example, whilst providing a necessary level of assistance to ensure emissions and energy intensive firms remain viable until the rest of the world comes on board.

Whilst Government has acknowledged the vulnerability of trade exposed firms and has proposed a number of transitional assistance measures, detailed and separate economic analysis⁶ by government and industry demonstrate that the level of emissions intensive trade exposed assistance proposed will be largely ineffective in ensuring a smooth and measured transition.

Queensland is particularly susceptible, with separate reports by Federal Treasury and Access Economics for the Council for the Australian Federation Secretariat (May 2009) concluding that Queensland is the most vulnerable to the impacts of rising energy and emission costs of all Australian

⁶ See reports by ACIL Tasman for the QRC and ACA, Concept Economics for the MCA, and Access economics for the Council for the Australian Federation Secretariat at http://www.qrc.org.au/01_cms/details.asp?ID=1271



jurisdictions with the state set to lose 28,000 jobs (net of 'green jobs' created) by 2020 assuming a BAU versus CPRS -5 scenario comparison.

6.4 Allow cost pass through for full and partially captured coal mines

A number of coal mines supply electricity generation companies under long term supply contracts, and usually at prices well below market value. The legal terms of these contracts do not allow cost pass through of carbon related costs. The impact of this is that a number of coal mines will be placed under severe economic distress as they may have limited opportunities to divert supply – economically – to transport facilities for export consumption. The QRC is seeking legislated cost pass through or suitable compensation via an allocation of equivalent free permits. Another approach would be to withhold ESAS compensation to the generators until higher contracted prices are accepted.

6.5 Provide transitional arrangements once the NSW Greenhouse Gas Abatement Scheme (GGAS) is abolished

Owner/operators of Coal Seam Methane ('boutique') power stations rely on revenue from the NSW Greenhouse Gas Abatement Scheme (GGAS) to stay commercially viable. The Federal Government has proposed however that GGAS should cease upon introduction of the CPRS. At this stage, no transitional arrangements have been proposed in the CPRS Bill, meaning:

The operating cash flow of operators will be reduced which may force closure of the power stations. If the power stations close, the impact on the company supplying the methane would be significant - lost revenue from gas sales and additional CPRS permit costs.

Closure of the power stations would also be worse for the environment as methane would be released (flared) into the atmosphere and will no longer displace coal for electricity generation. Existing projects are currently abating over 7 million tonnes CO₂ equivalent greenhouse gas emissions each year in Australia. This abatement could be expanded significantly with appropriate policy settings that encourage the sector's growth.

As proposed, gas would be wasted by being released to the atmosphere rather than put to the beneficial use of electricity generation, and jobs will be lost in a green industry.

The Federal Government is encouraging the New South Wales Government to terminate GGAS upon commencement of the CPRS to avoid a multiplicity of schemes. The White Paper states that although the NSW Government is responsible for transitional arrangements, if an agreement on assistance cannot be made, the Federal Government will consider providing some limited assistance for the benefit of GGAS participants.

It is incongruous that Government should choose to penalise early movers. Penalising early movers in carbon abatement will send the wrong signal to potential debt and equity investors in the green energy and carbon abatement technology sectors - decreasing the likelihood of funds being made available for the essential future development of abatement technologies. The CPRS should be designed to encourage and support the expansion of commercially successful carbon abatement technologies critical to lowering emissions.



A solution to this issue would be to support the inclusion of waste coal mine gas (methane) under the RET – that is, include waste coal mine gas as an eligible renewable energy source in Section 17(1) and delete the reference in Section 17(2) to waste products from fossil fuels not being an eligible renewable energy source. These amendments would allow these projects to generate tradeable certificates and hence income to stay economically viable.

There is international precedent for developed countries including waste coal mine gas generation in renewable energy incentive schemes. Germany, France and the US have recognised the important environmental benefits of using waste coal mine gas generation in their renewable incentive schemes. The Kyoto Protocol also recognises the carbon abatement of waste coal mine gas generation projects.

6.6 *Greater reliance on emissions trading needed to achieve least cost abatement*

At least at a theoretical level, a suitably designed ETS is the most appropriate means of using the discovery powers of markets to identify and implement least cost opportunities to reduce greenhouse gas emissions.

This position is supported by the recent findings of the Productivity Commission and the Wilkins Review that conclude that renewable electricity subsidies should only be contemplated if it can be conclusively demonstrated that broad-based market measures – such as an ETS – will fail to achieve their objectives.

With the ETS yet to start, it is of concern that Australian Government's wish to accelerate renewable energy technologies and their adoption (COAG's Energy Communiqué of 30 April 2009) via an expanded MRET before the market in response to price signals has had an opportunity to determine the scheduling of the emission abatement options based on their cost effectiveness and quantum potential.

The RET will become another substantive and competing policy reform will lead to greater uncertainty and distort long term decision making in the energy sector.

6.7 *Mitigate further distortions as state jurisdictions seek to capture a commensurate share of the 'renewable pie'*

Through its recently released renewable energy plan, the Queensland State Government will attempt to achieve a commensurate share of the expanded renewable energy pie by 2020. Specifically, the Queensland Government will seek the generation of 9,000 gigawatt hours of Queensland based renewable energy by 2020 (or 20 per cent of the total nation-wide target) by a variety of measures. The QRC is concerned if further regulations were introduced at the state level that further distorts the ability of the market to find least cost renewable options.

6.8 *Remove legislative and regulatory provisions that prevent due process in the assessment of new projects*

In the last 18-24 months, Queensland has seen billions of dollars in potential investment dismissed by Government rather than allowing an objective evaluation process to run its course. In Queensland, three separate projects in 2008 were dismissed prior to the application of expected and due government process.



Of particular note in this context is the implementation by the Queensland government of a public interest test to the MacFarlane oil shale project of QER Pty Ltd before the project had even reached the Environmental Impact Statement (EIS) stage. Further, the state government has introduced a three year moratorium statewide on oil shale.

QER's resources base of almost 16 billion barrels of oil in situ occurs in shales found in a series of basins (Grabens) extending from south of Gladstone to north of Mackay in Central Queensland. Given estimates of declining oil supply and high prices, it is important for Australia to have a long-term secure supply of oil. Shale to liquids, as part of Australia's overall energy mix, can play an important role in achieving this.

6.9 Mismatches in investment time horizons

Queensland's most acute energy problems are currently being experienced in the North-West minerals province.

Continued growth in energy demand in North-West Queensland has reached the point of exceeding the capacity of existing supply facilities. This is particularly the case for new mines seeking to execute energy contracts in order to structure production operations. Presently, some proposed projects have found it difficult or impossible to secure long term, firm energy supply contracts at current price levels. This is in the context of a region where electricity costs are on average two to three times the prevailing national electricity market price. Accordingly, there is increasing interest in the development of additional capacity in the region to provide competitively-priced and reliable energy to the community and to industry.

There are clear market failures in the provision of energy infrastructure in the North West Minerals Province. These failures have been identified in the Government's Northern Economic Triangle Infrastructure Plan:

"Access to competitively priced power is considered to be the dominant issue to optimal mining development within the minerals province. Essentially there is a mismatch between the period allowed for amortising reticulated power infrastructure to mine sites and the productive life of those mines."

Northern Economic Triangle Infrastructure Plan 2007 – 2012, August 2007 (page 17).

Industry has a strong view that when mining operations connected to the regional transmission grid are forced into investing in significant on-site generation capacity; that this is prima facie evidence of the Government's failure to plan and act on energy supply. Power generation benefits from economies of scale and from pooling of loads and capacities, so by definition, a fragmented mine-by-mine solution is always going to be inefficient and more expensive for the region as a whole. It also risks being anti-competitive if small mineral operations can't afford the up-front capital investment of on-site generation.

Not only is there a long standing market failure in the energy markets for the North West, but the region faces a very particular and additional energy constraint at the moment. The region requires a major investment in capacity, a step change in supply, in order to service current demand. The difficulty in securing this step change is that in a purely laissez faire market the marginal costs of



energy will be well above the average energy cost. This price jump is a significant deterrent to investing and these delays generate real impacts on mineral production.

Further, because of the size of the step, the next increment of capacity is likely to be much larger than the current demand that triggers the expansion. Again, this will drive up the price. As a result, a significant step change in capacity is recipe for markets to delay and wait until the entire capacity increment is largely subscribed. Unless Government's are willing to act to pre-empt and anticipate demand the failure of the market to bring on timely energy supply will result in lost economic activity, jobs, and income to Australia.

There are very real opportunity costs linked to this investment delay. The costs are simple static costs – in terms of the missed revenue from the production which didn't occur, and also dynamic costs – the encouragement provided to Queensland's mining and mineral processing competitors that expansions are not happening and the missed opportunities which are not realised because the energy system is at full capacity.

These issues have been examined in detail by the Sims Review – a joint initiative of the QRC and Queensland State Government. The findings of this report will be made public on 26 August 2009. The QRC calls on the state and federal governments to carefully consider the report's findings and make this an issue a joint priority.