QUEENSLAND resources COUNCIL

Working together for a **shared future**

30 June 2010

Research Director
Environment and Resources Committee
Parliament House
Brisbane QLD 4000

To the Committee

The Queensland Resources Council welcomes the opportunity to make a submission to the Environment and Resources Committee's Inquiry into 'Growing Queensland's Renewable Energy Electricity Sector'.

The QRC is a non-government organisation representing the interests of companies involved in exploration, mining, minerals processing and energy production in Queensland. The QRC works with governments, community groups and non-government organisations to ensure that the state's resources are developed profitably and competitively, in a socially and environmentally responsible way.

As a very large consumer of energy, the Queensland resources sector has a significant interest in energy policy to ensure continued access to reliable and affordable energy which is an important source of competitive advantage.

Figure 1 demonstrates that the Queensland resources sector in 2006/07 produced in excess of $30 billion in output and consumed 16 per cent of Queensland's total energy. Of the energy consumed, electricity accounted for 63 per cent, fuels and petroleum products 29 per cent, and natural gas eight per cent. Of Queensland's electricity consumers, the resources sector consumed approximately 22 per cent in 2006/07.

The sector's largest consumers are the aluminium smelter in Gladstone (Boyne Smelter Limited) and copper and zinc smelting and refining operations in the North-West (e.g. Xstrata). North West operations rely on an isolated electricity network not connected to the national electricity market (NEM) or grid.

The majority of power to the North-West is supplied by CS Energy's Mica Creek Power Station located in Mount Isa. Mines not located on the regional electricity grid take gas for local generation (Cannington) or operate more expensive diesel generation. There is also a 220 kV network is operated by Ergon Energy which supplies electricity to the broader community and six existing mines in the region from Century Mine to Ernest Henry Mine.

Queensland's coal mines rely on affordable and reliable electricity – both NEM and non-NEM sourced – to power the electric drag lines that are used to remove overburden.

The vast majority of resource companies are price takers in increasingly competitive global resource markets and international competitiveness can be easily compromised when costs increase. 'Investment leakage', where industrial activity and the associated socio-economic benefits migrate to jurisdictions with lower cost and reliable supplies of inputs such as energy is a significant but avoidable risk.

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Queensland Resources Sector Production and Value of Production (A$billion) (nominal)	2006/07	
	Production	Value ($b)
Alumina (kt)	4,419	1.7
Aluminium (kt)	328	1.1
Bauxite (kt)	16,952	0.5
Black Coal (Thermal) (Mt)	73	4.5
Black Coal (Coking) (Mt)	110	12.5
Copper content (kt)	338	2.4
Gold (t)	21	0.5
Lead (kt)	415	0.7
Silver (t)	1,347	1.7
Zinc (kt)	843	3.1
Coal Seam Gas (PJ)	86	0.3
Crude Oil and Condensate (ML)	640	0.2
LPG (ML)	271	0.1
Processed Natural Gas (PJ)	128	0.4
Electricity (MWh)	50,588,962	1.5
Total		31.2

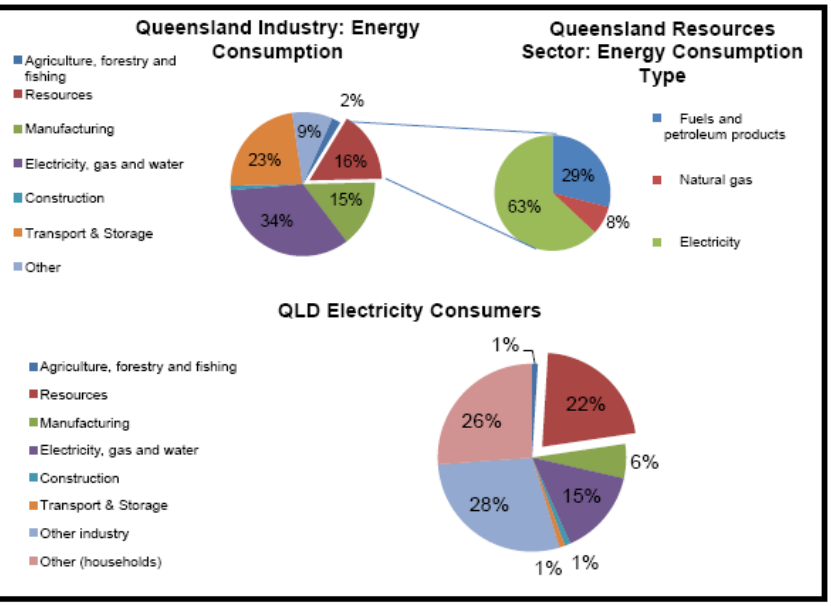

Figure 2 Australian energy consumption, by industry and fuel type, 1973/74 to 2006/07

Discussion Issue 1: Should the Queensland Government aim to expand the use of renewable energy sources to generate electricity?

The QRC notes that the Federal Government and state and territory governments alike have a number of policies in place to encourage greater renewable generation. The genesis of this intervention goes back to the creation of the Australian Greenhouse Office in 1996. The Federal Government Renewable Energy Target (RET) 20 per cent by 2020 (45,000 GWh) is now the predominant policy measure.

The RET has the dual policy objectives of renewable industry development as well as greenhouse gas abatement abatement. However, these objectives may not favour Queensland. The Access Economics report for the Clean Energy Council[1], suggests that even under the most favourable policy[2] settings, Queensland would experience net negative employment impacts (Figure 3).

As a greenhouse gas abatement measure the RET performs poorly. There is no denying that reconciling economic growth and the need for affordable and reliable energy, with the need to reduce greenhouse emissions represents a tremendous global challenge. The QRC recently agreed to an 'Energy and climate change policy position' which recognises this challenge[3]. From this policy, the QRC supports three main policy pillars to drive a comprehensive and measured transition to a low emissions global economy:

(1) **a global agreement** for greenhouse gas emission abatement that includes emissions reduction commitments from all major emitting nations;
(2) **market-based policy measures** that promote the abatement of greenhouse gas emissions at the lowest cost, while minimising adverse social and economic impacts, including on the competitiveness of the traded sector; and
(3) **substantial additional government and industry investment** in a broad range of low carbon technologies and adaptation measures.

[1] The net employment impacts of climate change policies, Report by Access economics for the, 3 June 2009
[2] A strong carbon price under a CPRS -5 setting
[3] http://www.qrc.org.au/_dbase_upl/MCA%20statement%20climate%20change.pdf

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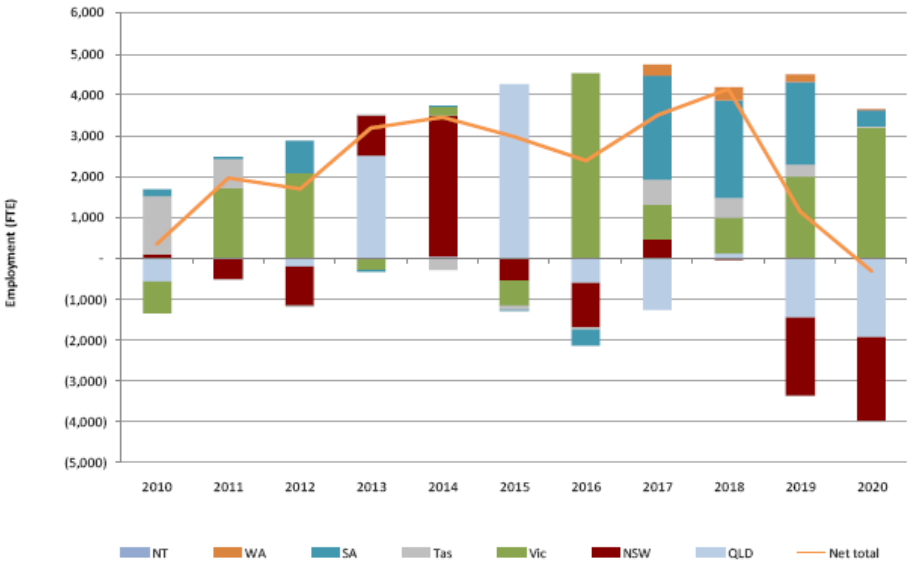

Source: Access Economics research

Figure 3 Net employment impacts associated with the RET by region[4]

The resources industry believes that there will need to be a suite of renewable and non-renewable energy sources to meet our significant future domestic and global energy requirements and to lower greenhouse emissions. The significant distinction though is that unlike current RET policy settings, a broad market mechanism via a carbon price would drive an efficient allocation of resources and the necessary energy profile to achieve broadly agreed and reasonable climate targets **at least cost**.

As Treasury modelling conducted for the Carbon Pollution Reduction Scheme (CPRS) shows[5], the RET achieves potential emission savings at around three times the cost of the proposed CPRS (-5). Contrary to the assertions made by the Council of Australian Governments (COAG) that 'the RET is a complementary measure'[6], the RET and all additional state based renewable energy schemes would fail the COAG Principles for complementary measures. Independent assessments of the RET, including those undertaken by the Productivity Commission, Professor Garnaut, Federal Treasury and the Wilkins Review, have come to the same conclusion: that the Federal RET is very costly public policy.

It would therefore be of concern to the QRC if Queensland were to bring an additional distortion into the energy market by imposing an explicit state renewable target.

Discussion Issue 2: What are the barriers to increased use of renewable energy for generating electricity and associated investment in Queensland?

QRC is concerned that the RET is unlikely to encourage the deployment of a range of next generation renewable energy technologies – but more 'of the same' which remain very costly. For example, on current estimates, wind offers the most significant potential for Queensland with the 'Queensland Renewable Energy Plan' estimating that if Queensland were to obtain a pro-rated share of the RET, wind capacity could grow from 12 MW to 750 MW by 2020. Wind will however be 2.54 times more expensive than open cycle gas turbine generation (Table 1, Figure 4).

[4] The net employment impacts of climate change policies, Report by Access economics for the, 3 June 2009

[5] Commonwealth of Australia, Australia's Low Pollution Future, October 2008

[6] COAG Working Group on Climate Change and Water Discussion Paper on Treatment of electricity-intensive, trade-exposed industries under the expanded national Renewable Energy Target Scheme, p 7.

Technology	Capacity (MW)	$/Kw	Source
Gas			
CCGT -large	500	1,181	Average cost of projects build 2000-2011
OCGT	400	877	Average cost of projects build 2000-2012
Cogeneration		1,409	AGL Energy Coopers project
Black coal			
Supercritical (PCC)	1000	1,842	Average cost of projects build 2006-2009
IGCC	750	2,720	Intergovernmental Panel on Climate Change (IPCC)
Brown coal			
Supercritical	1000	2,526	MIT, as reported in EPRI
Brown coal IGCC	1000	2,900	Graham et al
Renewables			
Large hydro	120	3,010	Graham et al
Solar thermal parabolic	100	4,163	MIT, as reported in EPRI
Solar photovoltaic - small	0.01	9,500	BP Solar
Solar photovoltaic - large	0.5	7,500	IEA
Wind - onshore	25	2,228	Average cost of projects over the period 2009-2011
Wind - offshore	25	3,600	IEA
Biomass (gasification)	100	2,609	MIT, as reported in EPRI
Bagasse (direct combustion)	100	2,698	Average cost of projects over the period 2009-2011
Geothermal aquifer	50	2,769	MIT
Geothermal hot dry rock	50	3,050	MIT, as reported in EPRI
Wave	40	5,000	PB Power, as reported in EPRI
Tidal	100	3,500	PB Power

Source: Access Economics, sources as listed

Table 1 Capital cost assumptions for new entrant plan at 2008 ($2008)

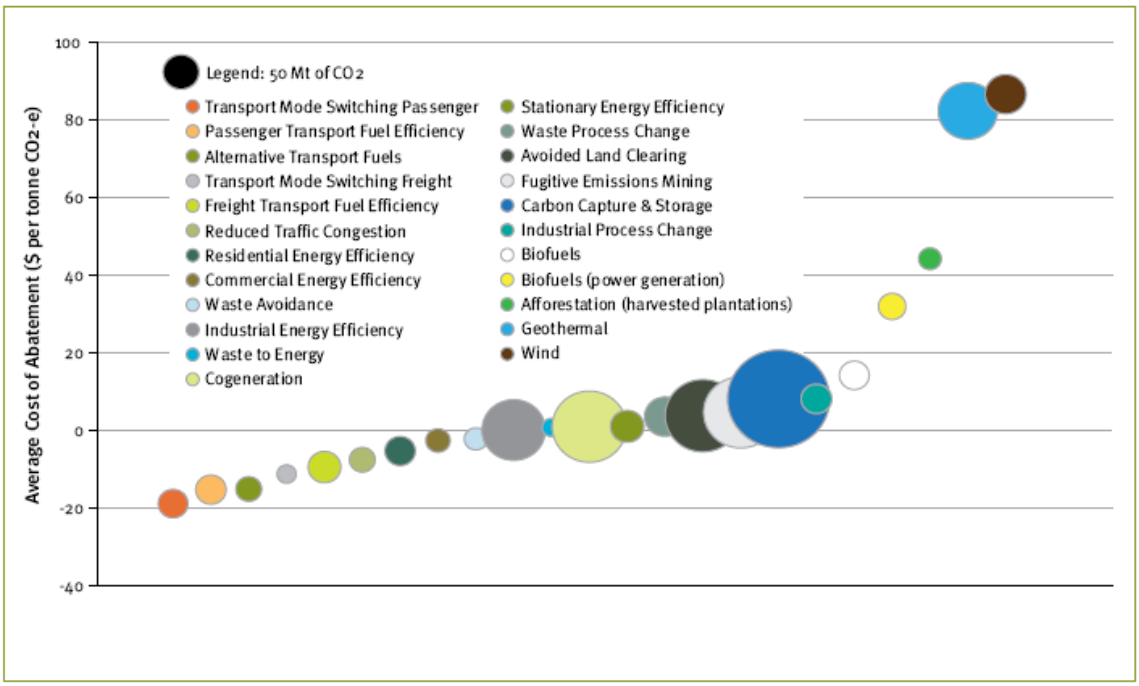

Figure 4. Average cost of abatement ($ per tonne CO_2-e)[7]

The QRC believes that a clear, predictable and long-term carbon price signal will provide clear, predictable and long-term incentives to invest in low emissions technologies and abatement measures. It is however, recognised that in both the global and domestic contexts, a carbon price alone (delivered via a tax or some form of market based trading), at least in its early implementation, is unlikely to be a sufficient policy response to tackle the array of national, sectoral and technology circumstances and challenges. In particular, there will be the need to stimulate Research, Development and Deployment (RD&D) beyond that which would be delivered by the private sector alone. There is evidence that even with a carbon price, proponents will not be able to capture all the economic rent from their investments and this would inhibit a socially optimal level of investment in RD&D (see for example Montgomery and Smith[8]).

Discussion Issue 3: What have the Queensland Government's own investments in renewable energy projects for the generation of electricity achieved to date, and at what cost?

The QRC suggests that whilst initiatives such as solar flagships, the Renewable Energy Fund, Renewable Australia and the geothermal drilling fund are all worthwhile, a significantly expanded, public funded RD&D effort will be required, rather than a RET scheme that will provide a very large quantity of mainly non-peak and non-baseload power at very high costs and with very little incentive for suppliers to push down costs.

Discussion Issue 4: What are the priority issues the Queensland Government should address to encourage investment in renewable energy for the generation of electricity?

A BIS Shrapnel report [9]commissioned by the Mount Isa to Townsville Economic Development Zone (MITEZ), Townsville Enterprise, QRC and local governments in the North highlighted that the development of an AC transmission line between Mount Isa and Townsville would enable Queensland to rapidly develop a major renewable energy generation corridor. It was noted by QRC, however, that it needs to be built to a scale in order to enable a whole new renewable energy generation industry to become viable. QRC also

[7] Queensland Office of Climate Change (DERM) using the Nous Group & SKM, 2008 data

[8] Montgomery, David W. and Smith, Anne E. 2005, "Price, Quantity and Technology Strategies for Climate Change Policy", CRA International. Available from: www.crai.com.

[9] Future Development of Queensland's Carpentaria Minerals Province March 2010 Developing a Resources Corridor – Clean Energy and Minerals

identified that securing the transmission line may need a small investment from government to ensure that it provides the least-cost solution to existing resource customers.

The QRC wants to draw to the attention of this Inquiry to the CopperString Project - a potential for a renewable share in the North-West energy mix. A partnership between CuString and Leighton Contractors, this project proposes to develop a power line from Townsville to Mount Isa regions in North Queensland. The proposed transmission line will provide major energy users in the North West Mineral Province with access to the national electricity grid, significantly improving the supply and reliability of electricity to the region. This will also provide opportunities for renewable energy projects along the proposed transmission line route to supply clean energy through the national electricity grid. The Coordinator-General declared this as a project of state significance and committed the Government to join the project partners to conduct feasibility study into the project.

Discussion Issue 5: Should the Queensland Government set a state target, or targets, for the proportion of electricity generated from renewable energy sources?

The benefits of greater renewable energy supply in terms of achieving least cost greenhouse gas abatement and industry development/employment creation are largely unproven. If the market supports expansion as it may in the North-West, a role for government may exist in terms of assisting the private sector provide the necessary infrastructure such as transmission lines.

Experience with the RET is that highly interventionist policies that mandate supply will in all likelihood be more costly than market based solutions. Industry's preference is for a clear, predictable and long-term carbon price signal to drive investment in low emissions technologies and abatement measures. An explicit state target may create additional distortions in resource allocation that may drive costs up even further. All governments should tread with extreme caution in mandating for additional renewable energy supply due to the costs impact on the trade exposed resource sector.

If there are any questions in relation to this submission please don't hesitate to contact David Rynne, QRC Chief Economist, on (07) 3316 2522 or via davidr@qrc.org.au.

Yours sincerely

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