



QMDC's Comments on the 30-year electricity strategy Discussion Paper Powering Queensland's future

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Submission to:

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These comments are presented by the Acting Chief Executive Officer, Lisa Yorkston, on behalf of the Queensland Murray-Darling Committee Inc. (QMDC). QMDC is a regional natural resource management (NRM) group that supports communities in the Queensland Murray-Darling Basin (QMDB) to sustainably manage their natural resources.

1.0 Background

QMDC's activities are guided by the Regional Natural Resource Management Plan (the Plan), which sets community and government agreed targets and actions plans for the protection and enhancement of the natural assets across our region. This Plan has an “Energy and Waste” section which focuses on progressing a regional approach to energy efficiency, demand and supply management, and the reduction and mitigation of greenhouse gas emissions.

In order to implement the Plan, QMDC has invested in a full-time Regional Climate Change Project Officer since May 2008 and 2 full time Energy Efficiency Technical Officers since 2012. These roles have successfully established networks with relevant agencies to improve capacity of land managers in the region to understand and manage climate change risks, greenhouse gas emissions, and develop energy efficient practices. The provision of technical advice has helped to improve not only local businesses, it has also endeavoured to facilitate a wider regional resilience - economically, socially and environmentally to climate and carbon market risks and challenges pertinent to energy demand and supply.

QMDC and the communities it represents are therefore keen to see the development of a Regional Renewable Energy Strategy as a key action with regards to the provision of electricity in the Queensland Murray-Darling Basin.



2.0 General comments

2.1 Vision and Objectives

There are 20 retailers operating in Queensland. However, with Ergon Energy holding the monopoly in most of the Queensland Murray-Darling Basin catchment, there are currently few alternatives. Essential Energy, a New South Wales Government owned distributor formerly known as Country Energy, has a supply network that extends into Queensland near Goondiwindi). The objective of the *30-year electricity strategy Discussion Paper Powering Queensland's future* (the Discussion Paper) to increase competition will therefore be a challenge in this area. Currently an account holder or property in most of this catchment cannot choose another electricity retailer other than Ergon Energy because there are no alternatives. Ergon Energy effectively limits retail choices because if an account holder was to choose a different retailer they forfeit the opportunity for all future customers at those premises to change their retailer back to Ergon Energy should they wish to. This impacts on competition and is inequitable, as the decisions of previous owners or managers must be maintained by stakeholders not involved in the original decision making.

The proposed Strategy should allow:

- **All customers to have a real choice of all retailers in the area.**

2.2 Overview of Challenges

QMDC supports the need to address the immediate and future challenges of the electricity sector. While the Queensland Government acknowledges the need to address climate variability, the Discussion Paper fails to address this adequately. The importance of Renewable Energy Sourced electricity (RES) and energy efficiency and conservation, demands that it be listed as a separate immediate challenge. Unfortunately many of the questions posed are set by a pre-determined agenda supporting economic objectives as the prime objective rather than balancing those objectives with environmental and social objectives.

QMDC supports a more active approach for RES, such as that discussed in the Queensland Renewable Energy Plan. Many sovereign states and regions around the world are supporting higher levels of renewables in the electricity and other energy sectors. Queensland has a great economic opportunity. NSW, for example, recently gave funding to community groups to install community owned renewable energy (CORE) projects¹, which have knock-on positive impacts for the local economy. While the NSW scheme duplicated efforts (several groups doing the same thing), Queensland Government funding could streamline this by offering funding to a single or few organisations with the aim of sharing project outcomes (e.g. developing models of corporate structures relevant to this sub-sector). The Sunshine Coast Regional Council is already investigating options to support CORE projects in its region. ([Chris Guthrie, Senior Economic Development Officer, Sunshine Coast Regional Council, personal communication](#))

¹ <http://www.environment.nsw.gov.au/climateChange/comrenenpros.htm> (Retrieved 29/00/13)



Linking with a reduction of end-user prices for electricity, RES on the grid has lower marginal costs, which through the National Electricity Market (NEM), reduces the cost to consumers through its contribution to the Merit Order Impact. Opportunities for energy efficiency and load shifting also need to be encouraged. This will reduce both end-user costs and infrastructure costs.

With regards to energy efficiency and conservation, a much more pro-active stance needs to be taken. The business efficiency opportunities of energy efficiency and conservation should be addressed. QMDC finds the decision to downsize the *Ecobiz program* regrettable. A review of the engagement, communication and behaviour change components of the program would make it more effective.

Network operators should be given an income stream from investing in demand management and energy efficiency, such as the white certificate schemes in Victoria and NSW. http://www.efa.com.au/Library/David/Non-refereed%20Published%20Papers/2009/WhiteCertificatesinAustralia_SpotlightNo32.pdf

This would lead to lower bills and reduced carbon emissions as shown in these schemes. Networks could avoid building new infrastructure if they were rewarded for investing in means to shift demand away from peak periods, and encouraging energy efficiency and local generation. If Networks could keep some of the financial value of their investments, with the rest being passed on to consumers in the form of lower bills, a win-win-win for networks, consumers and the environment would result.

The proposed Strategy should:

- **Reward investment to shift demand away from peak periods, and encourage energy efficiency and local generation.**

3.0 Specific comments

3.1 Immediate challenge 1: Improve competition in retail markets

Do you agree with the proposed preconditions for the move to price monitoring? Are there any other necessary preconditions?

In addition to considering the move to a network CSO, what other measures could bring the benefits of competition to regional customers?

QMDC does not support the Queensland Construction Authority (QCA) proposal to charge solar owners \$210/year through forcing owners to change to Tariff 12, thereby doubling the service fee, in order to support the Community Service Obligation (CSO) subsidies. <http://www.businessspectator.com.au/article/2013/5/27/solar-energy/queenslands-disguised-200-hit-solar-owners>

QCA says it is penalising the solar owners, as they consume less and should therefore pay more to contribute to the grid. QMDC does not understand this logic. This would be like penalising consumers who produce less waste for not using waste collection facilities and services, or penalising consumers who undertake peak load management, energy efficiency and conservation measures. Additionally, as the world approaches peak coal, encouraging the transition to renewable energy would seem prudent.

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"The estimates for global peak coal extraction vary wildly. Many coal associations suggest the peak could occur in 200 years or more, while scholarly estimates predict the peak to occur as soon as the immediate future. Research in 2009 by the University of Newcastle in Australia concluded that global coal extraction could peak sometime between the present and 2048. Global coal reserve data is generally of poor quality and is often biased towards the high side.

Collective projections generally predict that global peak coal extraction may occur sometime around 2025 at 30 percent above current extraction." http://en.wikipedia.org/wiki/Peak_coal

Solar owners should not be discriminated against when they are reducing the load on the grid), reducing costs for everyone through the merit order impact and reducing emissions. Options for variable charging for high end users would be a more equitable option. This would also be more effective in both peak load demand management and energy efficiency. Forcing the change in Tariff also reduces customer control, which flies in direct contrast to the stated aims of the proposed Strategy.

The proposed Strategy should:

- **Provide equitable options for variable charging for high end users.**

3.2 Immediate challenge 2: Strengthen customer protections

What issues should the Queensland Government consider when examining ways to improve customer protections?

3.3 Immediate challenge 3: Improve customer engagement

What issues should the Queensland Government consider in developing a customer engagement strategy?

QMDC supports a strong customer engagement strategy. The Electricity Sector requires a well thought out strategy that includes education and awareness-raising to specify on what efficiency and renewable options would be best, and not just how to pick the best tariff for your house. Industry direction is also needed. QMDC supports the use of the collaboration and empowerment models of the International Association for Public Participation (IAP2) public participation spectrum². The Victorian Government has some great examples and tools³ on how to achieve this, as does the Queensland Government⁴.

As such, QMDC would like to see the economic, social and environmental impacts of end-user decisions, such as peak load and climate change, addressed more holistically. For every \$1,500 air-conditioner added to the system, \$7,500 dollars is added to network costs. Refer page XIV of the Energy white paper:

http://www.ret.gov.au/energy/Documents/ewp/2012/Energy_%20White_Paper_2012.pdf

http://www.esaa.com.au/Library/PageContentFiles/37cd5390-c7ee-4693-9ba0-21c958293d85/The_real_cost_of_air_conditioners_17_Dec_2012.pdf

² <http://www.iap2.org.au/resources/iap2s-public-participation-spectrum> (Retrieved 29/11/13)

³ <http://www.dse.vic.gov.au/effective-engagement> (Retrieved 29/11/13)

⁴ <http://www.qld.gov.au/web/community-engagement/guides-factsheets/methods-techniques/> (Retrieved 29/11/13)

The engagement strategy should fully inform consumers of the relative costs of green programs, such as the Renewable Energy Target and Feed in Tariffs, in comparison to that of network charges and current billing regimes, where many users are subsidising customers contributing to peak loads. While there is a premium for green programs, long term costs of climate change will be avoided.

The Queensland Government has previously cited the extra costs of green programs as a reason for rising power costs, which instead has clearly been demonstrated to be due to peak load and unsustainable use of infrastructure. For example, Figure 1 in the supporting material shows that these programs contribute 4% (RET and solar programs) and 7% (carbon tax) to a typical customer. Customers should be engaged in a manner that not only reduces the costs of efficiency and conservation, other tariffs and purchasing government accredited green power, but clarifies their relative contribution. Through poor engagement, many customers don't understand that the (over 140) parallel programs of the Clean Energy Package (funded by the carbon price that is likely to be dismantled) are where the environmental gains occur and are left feeling the carbon price doesn't work. While this is a Federal level issue, it impacts Queenslanders. Furthermore, in Australia, fossil fuels are also subsidised to the tune of A\$3.6B, while for renewables it is A\$1.4B⁵

QMDC also supports the Queensland Government taking a much stronger stance on the impacts our electricity decisions have on Greenhouse Gas emissions and the consequent social, environmental and economic impacts of climate variability. QMDC supports strong links to a strong demand management and energy efficiency strategy.

It has been demonstrated that the Australian economy can become 100% RES. While there is clearly some debate around the costs and how to achieve this, QMDC supports greater engagement in growing the Queensland renewable energy industry, and supporting it through an effective engagement strategy. A strong message from the previous Directions Paper was that renewable energy needs to be more actively targeted. Sincere engagement would be demonstrated by including that in the proposed Strategy.

Price signals alone have been shown to be ineffective at changing behaviours. The engagement strategy should look at other options to reduce the use of air conditioners and other high demand uses. Australia has gone from 20% in 1975 to over 70% of air conditioner ownership⁶. Ergon Energy suggests these contribute 57% to peak load⁷. The engagement strategy should look at passive design options, behaviour change and load shifting.

An effective engagement strategy will allow customers to compare accredited GreenPower providers, potentially on the Energy Made Easy website, a comparison which is currently unavailable to Queensland customers. www.energymadeeasy.gov.au/

⁵ <http://cpd.org.au/2013/04/going-solar/> (Retrieved 29/11/13)

⁶ http://ee.ret.gov.au/sites/default/files/documents/04_2013/energy-use-australian-residential-sector-1986-2020-part2.pdf (Retrieved 29/11/13)

⁷ https://www.ergon.com.au/data/assets/pdf_file/0004/167755/Ergon-Energy-DM-Plan-2013_Final-Web.pdf (Retrieved 29/11/13)



The engagement strategy should:

- **Fully inform consumers of the relative costs of green programs, such as the Renewable Energy Target and Feed in Tariffs**

3.4 Immediate challenge 4: Review electricity rebates and customer assistance

What issues should be taken into account in reviewing the Electricity Rebate so that it targets assistance to those most in need in a financially responsible manner?

QMDC supports expanding eligibility to healthcare card holders and full-time students. An ongoing decline in the standard of living for lower socio-economic community members is a particular challenge for both the individual concerned and governments at all levels. Figures released by the Australian Bureau of Statistics confirm that even the basic necessities are getting more expensive. The Pensioner and Beneficiary Living Cost Index rose faster than the Consumer Price Index in the June 2011 quarter confirming that cost of living pressures are falling more heavily on older and beneficiary consumers, when compared to the general community.

QMDC believes the State Government needs to extend concessional treatment to healthcare card holders and full time students. In this regard we would suggest the Queensland Government may be guided by looking at the range of assistance measures and concession arrangements in other Australian jurisdictions that have been developed to address cost of living pressures for pensioners and seniors. These include, for example, the Victorian Government's extension of energy concessions for concession card holders to provide a year-round 17.5 per cent reduction in their electricity bills.

Rebates should also be based on the amount of power end-users consume, not just their ability to pay. The highest energy users are high-income households, while for those on lower incomes, energy is a greater proportion of their living expenditure. Rebates should be used as incentives to reduce energy consumption. The proposed Strategy has an opportunity to explore consumer options regarding the import of electricity into a household e.g. through metering or ensuring the size of cable importing electricity is proportional to amount of energy used. This could then be reflected in daily service charges and as part of a rebate system. QMDC recognises there are lot of challenges with this concept which would need to be examined more fully e.g. if household demographics change. The supporting material with the Discussion Paper suggests that providing more assistance to those who consume more electricity is a good thing (page 13 of supporting material). QMDC challenges this notion. Excessive users who can control that use should be given incentives to reduce or disincentives to control their energy use (i.e. not rewarded though a rebate).

Rebates should be based on:

- **The amount of power end-users consume, not just their ability to pay.**

3.5 Immediate challenge 5: Reform tariffs to address costs and provide greater customer control

In updating tariff structures, what issues should be taken into account to send accurate price signals to customers in order to reduce cost pressures and provide greater customer control?

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Through Behaviour Change research, price signals alone have been shown to be ineffective at changing behaviours. There are other more powerful influences contributing to decision making. Such barriers and motivations include norms, trust, perceptions, priorities, values, identities and misconceptions.

QMDC nonetheless supports tariffs to reflect appropriate use (e.g. shifting from peak demands and encouraging efficiency and conservation), but to be used in parallel to the above barriers and motivations in the engagement strategy.

Cost pressures and customer control are only part of the issue with tariffs. Increased control without consideration of impacts of energy use can have adverse impacts. Higher users should pay a fairer price, rather than a reduced price. This will encourage efficiency and conservation, and in part address the social issue of high users having their use of infrastructure subsidised by lower users through network charges. Lower prices for high end users encourage energy wastage, especially if it is not a large component of business or household costs. Some options could include higher price blocks for domestic customers over a certain kWh/day, based on household or house sizes, types of appliances, with similar options for industrial customers. Higher end users who have some control over their electricity use (this would allow those with medical or other essential equipment access to cheaper prices) could be prevented from using Tariff 11.

3.6 Immediate challenge 6: Develop a demand management and energy efficiency strategy

What are the key issues that should be taken into account in developing the Queensland demand management and energy efficiency strategy?

Demand projections that are based on ongoing growth are unrealistic, irresponsible and ignore the benefits of declining demand. In such scenarios, the annual peak demand will shift back to winter evenings because of the impact of PV on summer demand, depending on location. Major contributors to winter evening electricity peak include lighting (residential and commercial), heating, cooking, TVs and electric hot water. All of these loads can be dramatically reduced by energy efficiency and demand management measures. Time of use pricing will drive this trend even faster.

The need for more network demand management is crucial because:

- Electricity prices have more than doubled between 2007 and 2013, and most of this is due infrastructure to satisfy peak load
- Network charges now make up half of the average Australian electricity bill
- Networks are investing more than \$40 billion in electricity distribution and transmission networks in the current five-year regulatory period
- An estimated one-third of the current investment in the networks is to cater for growth, and in particular, growth in peak demand
- The Productivity Commission estimates that peak demand events occur for less than 40 hours a year (or less than one per cent of the time) yet account for approximately 25 per cent of the average residential bill
- Current demand management is equal to less than two per cent of national electricity market-wide peak demand and only about one per cent of the generation capacity in the National Electricity Market

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- It is estimated that \$2.2 billion a year of avoidable network costs are being passed on to consumers Australia-wide
- The economic cost savings of peak demand reduction in the National Electricity Market are estimated to be between \$4.3 billion to \$11.8 billion over the next ten years – a saving of around \$500 a customer each year in Queensland.
<http://www.thefifthestate.com.au/archives/57355/>

Figure 1 in the supporting material shows the cost breakdown for a typical customer, with a consumption of 4,250 Kwh, or 11 kWh/day. Information received from participants of energy efficiency workshops held in Brisbane and Byron Bay in 2012 and 2013, showed some households regularly have ≤ 4 kWh/day, demonstrating the profligate energy use of the typical Queensland house. It is not expected that all households can do this, but a 40% reduction in household energy use is achievable. The same capacity to substantially reduce energy use could be said for industry and commercial end users.

Figure 1 in the supporting material also demonstrates the contribution of network charges, yet many consumers believe the increase price of electricity is due to higher cost per kWh and green schemes. This demonstrates the strong need to educate both the public and politicians about the true drivers for increased end user prices – i.e. high demand uses such as air conditioners and pool filters. As climate variability increases we can expect more days of extreme heat, and thus increased peak load through the use of air conditioners can only be expected to increase. Within this, the program should include the positive impacts of energy efficiency and conservation on peak load reduction. Customers also need to be made aware of the difference between efficiency (the same output with less energy) and conservation (not using energy unnecessarily in the first place) and the relative subsidies and incentives received by RES and fossil fuel powered electricity.

A demand management and energy efficiency strategy should:

- **Recognise regional interests and needs**
- **Include education of public and politicians**
- **Provide funding for energy efficiency NRM programs**
- **Support community energy projects**
- **Decrease the need for more linear infrastructure**

3.7 Immediate challenge 7: Enable improvements in metering services

What issues does the Queensland Government need to consider in relation to introducing advanced metering?

3.8 Immediate challenge 8: Support customer-focused reliability standards

What issues should the Queensland Government take into account in moving away from prescriptive reliability standards?

3.9 Immediate challenge 9: Improve consultation practices for network extensions

What should the Queensland Government take into account in developing new consultation arrangements for network extensions?

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3.10 Immediate challenge 10: Improve the operation of the gas market

What issues should the Queensland Government take into account when examining the operation of the gas market?

QMDC's internal policy, *Mining and energy industry impacts on natural resources in the Queensland Murray-Darling Basin Policy Revised Final Draft* (the QMDC Mining and Energy policy) provides a framework for QMDC's comments on the Discussion Paper and proposed Strategy. This policy document has been prepared by the QMDC in consultation with those communities, organisations and stakeholders QMDC is working with in the region. The policy's purpose is twofold:

- to address the impacts of the mining and energy industry (the industry) on the Queensland Murray-Darling Basin's natural resources; and
- to provide a framework for best practice and policy decision-making, risk management and responses to the specific and cumulative impacts of the industry on the Queensland Murray-Darling Basin's natural resources.

QMDC has also identified the key risks posed by coal seam gas projects in the Queensland Murray-Darling Basin against the Regional NRM Plan targets.

The below named natural resource assets are identified as being at risk to the impacts caused by activities and infrastructure proposed by all coal seam gas projects:

- Water (surface and groundwater)
- Vegetation and Biodiversity
- Land and soils
- Air.

Why is Queensland exporting the gas overseas and charging world parity prices for domestic gas when it should be using the gas etc for local and regional benefit – cheaper electricity for Queenslanders and industry would result in industries being more competitive.

QMDC asserts the proposed Strategy needs to address and consider more fully the impact that relying heavily on the influence of "energy market demand", commercial sales contracts and exploration information for coal seam gas projects rates of development and project phasing. Does this mean for example gas reinjection will become a normal practice because the market demand does not align with the production yield?

QMDC is concerned that a number of issues e.g. energy demand management, climate change impacts, environmental impacts have not been considered fully to give credibility to the industry's claim that Australia's gas resources are sufficient to sustain both a domestic and export industry. QMDC argues that without a full analysis of other associated issues, the industry is providing a picture that promotes information in a silo, ignoring the principles and values associated with ecological sustainable development.

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The industry's statements that "a number of communities in the region" are benefiting from the development of energy resources needs to be supported by real data and research which compares both positive and negative impacts of the mining and energy industry on local communities. www.qrc.org.au

These statements show a lack of appreciation of the huge impacts local communities are suffering from in terms of housing, social service provision, road and transport, waste management, labour shortages etc.

QMDC asserts all coal seam gas companies must plan for sustainable production of coal seam gas and the proposed Strategy must reflect a commitment to sustainable electricity production, so excess gas production and gas reinjection is not necessary in the first instance. It would seem the practice of gas reinjection is due to excessive or accelerated production beyond a company's capacity to manage the gas. This lack of gas management capacity puts at risk a State owned asset. In QMDC's opinion, any trials or operations to reinject gas, poses an unacceptable threat to the extracted gas, which is a public resource.

The disposal or storage of coal seam gas resulting from interruptions or ramp up management, whether creating or risking the creation of more contaminated sites, also poses a high risk. QMDC asserts sourcing electricity from gas should not support gas reinjection as a means of safeguarding the domestic gas supply.

This is because the risks associated with subterranean gas leaking, uncontrolled gas flow to the surface, aquifer contamination, unwanted faulting, are too high and may result in serious injury or fatality. QMDC do not support hydraulic fracturing as a practice including for mitigation of gas reinjection.

QMDC fails to see how the international energy market demand safeguards Australia's domestic gas supply when the drive for coal seam gas companies is profit not sustainable yields. Additionally what is meant by safeguarding domestic gas supplies for "many years"? How is that many being measured and what safeguards are being referred to – are they costs, are they natural resource management outcomes?

QMDC therefore assert, that any risk assessment, and preventative measures offered by the industry to safeguard domestic gas supply or electricity sources, are an accurate consideration of all risks minor and major to the environment and human health and well-being including the region's economic sustainable development.

QMDC believes the Discussion Paper should have engaged in a more robust discussion on "international demand" and "market failure", and provided research data that analyses the manner that market forces influence decisions, both in a negative and positive way, on coal seam gas production to source electricity for Queensland. QMDC argues the term 'market failure' should include economists' failure to value environmental and ecosystem services in their measurement of GDP and business profits? What impact on the region's communities and natural resource assets does placing more importance on the economy and energy demand than the natural or social capital have?



The resource industry claims that coal seam gas is a less carbon-intensive energy technology than conventional coal. QMDC asserts that this claim ignores current intelligence on the relative emissions of coal seam gas versus conventional coal when whole of life cycle analyses are conducted. QMDC is concerned that the industry fails to provide relevant and current research that reports that total emissions for coal seam gas are very similar to coal if whole of life cycle emissions including fugitive emissions are accounted for.

The proposed Strategy must address carbon emissions and carbon offsets based on CSG mining life-cycle emissions (including direct, fugitive and downstream) when considering energy production and environmental sustainability.

An assessment of carbon emissions and the carbon offsets required should ensure that interactions between terrestrial carbon disturbance and coal seam gas production can be managed or mitigated for example by:

- reduction in the rate of deforestation and land degradation;
- development of carbon sequestration projects in forestry and agriculture;
- promoting energy efficiency;
- development of alternative and renewable energy sources;
- reduction in solid and liquid waste;
- shifting to low emission transportation modes;
- adopting optimal mining surface disturbance practices;
- soil and biomass storage, and
- advancing reclamation best practices.

Fugitive emissions are recognised as resulting from the following sources:

- Point Sources
- Equipment Leaks
- Open Vats and Mixing
- Storage Tanks
- Wastewater Treatment
- Emissions from Cooling Towers
- Maintenance Operations
- Vehicle Movement and Exhaust
- Liquid Spills
- Storage Piles
- Bulk Materials Handling and Unit Operations
- Loading and Unloading of Vehicles
- Painting
- Equipment Cleaning and Solvent Degreasing
- Surface Coating
- Abrasive Blasting
- Asphalt Paving
- Construction and Demolition
- Welding
- Open Area Wind Erosion.

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QMDC asserts that by examining gas resources and reserves growth without examining the other natural resources associated with that gas is “navel gazing”. It fails to provide a full scientific picture, ignoring the principles and values associated with ecologically and economically sustainable development.

It is imperative the proposed Strategy's identification of energy demand drivers addresses issues associated with coal seam gas companies social licence to operate.

QMDC is concerned that a full assessment has not been carried out to evaluate the impacts associated with the industry's demand on electricity and other energy sources. Coal seam gas projects' electricity demands will impact on the current electricity infrastructure and by association, current users of this infrastructure in Queensland.

The proposed Strategy must therefore consider:

- **All relevant information related to the influence of “energy market demand”, commercial sales contracts and exploration information for coal seam gas projects rates of development and project phasing.**
- **That all proposed gas reinjection pilot trials or operational activities require a full and accurate assessment of all minor and major risks to environment and human health and well-being including sustainable economic development of the region.**
- **A fully explained business case which includes a full cost analysis around the gas management practices that cause the need for storing excess gas in the first instance.**
- **Independently peer reviewed research data that analyses international demand and the manner that market forces influence decisions, both in a negative and positive way, on coal seam gas production for electricity in Queensland.**
- **Independently peer reviewed research data that analyses what the impact on the region's communities and natural resource assets are when more importance is placed on the economy and energy demand than on the natural or social capital of the region.**
- **Independently peer reviewed scientific data to accurately compare whole of life cycle comparisons and the relative merits of coal seam gas and coal with regard to greenhouse gas emissions.**
- **Fully assess how coal seam gas projects' demand for electricity and other energy sources will impact on these resources, associated infrastructure and other users of the resources.**

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3.11 Future challenge 1: Facilitating the deployment of cost-effective new generation alternatives

What role should the Queensland Government play to support the role of new and emerging generation technologies in Queensland?

QMDC supports the Queensland Government facilitating the deployment of cost effective new generation technologies. A focus, however, should be on renewable energy sources, with a distinction from low emission technologies. For example, there is still debate regarding how low the emissions from Coal Seam Gas are, when fugitive emissions are taken into account. www.abc.net.au/environment/articles/2012/11/27/3639625.htm Preference should also be given to renewables over carbon capture technologies and more efficient fossil fuel power stations.

The proposed Strategy must also address the potential cumulative impacts coal and coal seam gas development and associated electricity network and retailer operations will have on a region and specific sites as a whole. These could be, for example, the impacts on the ephemeral nature of relevant watercourses, the quality and quantity of groundwater, the ongoing fragmentation caused by the development on the terrestrial ecosystems, residual risks from gas and water treatment by-products, accelerated consumption of a finite non-renewable resource etc and the social, economic and environmental stresses caused by the construction and operation of associated infrastructure. It must also address the impacts caused by the whole of the energy industry on the Great Artesian Basin, on the total air quality of the region, on the soils of the region and so forth.

What regulatory barriers or constraints need to be addressed to encourage an optimal generation mix in Queensland?

QMDC disagrees with the statement that no readily deployable cost effective large scale new generation alternatives exist. Commercial grid-connected large scale solar thermal is operating in other countries. Electricity is a rapidly changing sector in which 30 years is a long time - without supporting developments such as solar thermal, Queenslanders will be paying for locking in more fossil fuels into the future.

CSIRO suggests that the cost of solar thermal will halve, reaching 12c/kWh by 2020, while the costs of solar and other RES technologies are coming down.

<https://theconversation.com/solar-thermal-energy-cost-expected-to-halve-csiro-11956>
This was one of the reasons cited for removing the feed in tariff.

Technologies such as solar thermal (e.g. towers) also have the ability to provide base load power (which may not be needed in 2030 with some technological advances).

<http://share.pdfonline.com/18925704eff04d599a395afc1d9dc2f4/Advances%20in%20solar%20thermal%20power%20plants.htm>

http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp0809/09rp09

In linking with Future Challenge 2, economies of scale from a Queensland Government led approach would reduce costs further.

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While a rapid transition may leave assets impaired or stranded, a 30 year plan obviously provides scope to plan both immediate and longer term changes. Smart planning demands a rapid transition. Taking into consideration global needs for new sources of energy, it is imperative that Queensland invest more in developing and optimizing new types of energy.

One of top priorities for the Strategy should be to explore the most efficient ways of ensuring smooth transitions from fossil fuels to renewable and sustainable energy. Lessons can be learnt and inspirations generated by sharing how major urban centres are transitioning from being huge consumers of energy to becoming eco-friendly and energy-efficient cities by making behavioural changes and adopting new economic models.

The proposed Strategy needs to design the framework for new economic models that will make way for smooth energy transition; it should aim to bring together the energy-exporting and importing economies, energy producers or distributors as well as energy-related policy-makers. It needs to put into perspective new initiatives and strategies designed to facilitate energy transition that will be critical to achieving sustainable living conditions. It should also address progress made in areas of advanced technology and innovative policies that contribute towards more integrated rural and regional services and "smart cities."

In terms of disruption, Beyond Zero Emissions and the University of Melbourne's Energy Research Institute have provided one potential development pathway to get to 100% renewables, with other pathways being possible. With stronger facilitation from state and federal governments, disruption can be minimised. bze.org.au/blog/feed/zero-carbon-australia-2020

There should be no further investment in fossil fuel technologies, except to ensure that what technologies are being used are done so as efficiently and cleanly as possible. Having coal and gas reserves does not mean we have to use them. Additionally, there is the risk that by developing those industries, they will be stranded through lack of development and export opportunities (this is already starting to happen⁸) and as communities are starting to see the impacts of climate variability, the political risk prevents the use of those assets. Gas prices are also expected to be volatile as they are linked to volatile international fuel prices. Climate change outweighs the potential short term economic gains.

Many of those industries also fluctuate with the Australian dollar, adversely affecting more sustainable industries, such as tourism. QMDC also only support a coal seam gas industry insofar as it does not adversely affect the agricultural sector.

QMDC recognises that agriculture has led to significant modification of the environment. While this is true it seems the resources industry relies on this to justify further modification by the industry. QMDC believes because of the historical impact agriculture has had on the region's physical and natural environment, precaution should be encouraged with regards to further modification and impact by new developments and industry to ensure the cumulative impacts do not push ecosystems and natural resources over their threshold limits.

⁸ <http://reneweconomy.com.au/2013/galilee-basin-coal-struggles-against-high-debt-and-falling-markets-11763>
(Retrieved 29/11/13)



Do you support the idea of the Electricity Outlook Expert Panel? Who should be involved and what should its role and responsibility be?

QMDC supports the idea of the Electricity Outlook Expert Panel. However, this support is conditional on the inclusion of organisations that represent social interests, environmental considerations and RES electricity, such as the Queensland Council for Social Services and the Clean Energy Council. We do not support a panel consisting entirely of fossil fuel generators and interests. Any academic representation should be independent, and not belonging to industry funded and controlled research groups. The panel should actively look at emerging models, including mini grids and storage options that support renewable energy. The panel could research models, such as that from Vector NZ⁹ and the Global Energy Network Institute (GENI). www.geni.org

Mini grids and the use of solar and storage for carbon reduction, peak demand management and energy efficiency is a rapidly advancing area. As mentioned in the discussion paper, local grids already exist in Australia. This concept (known as Virtual Network metering (VNM)) is being trialled by Newcastle Council and CSIRO¹⁰. The Queensland Government and the Expert Panel should immediately look at options, especially in regional areas of Queensland where Single Wire Earth Return (SWER) lines cannot keep up with demand. Ergon Energy already see the opportunity here. In terms of using these technologies, the International Energy Agency has started looking at options¹¹. The Queensland University of Technology is also investigating options.

The proposed Strategy must commit to:

- **A renewable energy strategy.**
- **A cumulative impact assessment to illustrate the totality of impact caused by the total footprint of the energy industry in Queensland and Australia.**
- **The establishment of an independent Electricity Outlook Expert Panel that represents social interests, environmental considerations and RES electricity**

3.12 Future challenge 2: Attracting investment in generation

Do you support the Queensland Government's proposed approach of non-investment in the market in the absence of clear market failure? In what circumstances, if any, should the government be required to provide market support? What form should this take?

⁹ <http://vector.co.nz/> (Retrieved 19/11/13)

¹⁰ <http://solar.org.au/papers/12papers/PV13Ward.pdf> and <http://www.csiro.au/Outcomes/Energy/Smart-grid-smart-city.aspx> (Retrieved 19/11/13)

¹¹ <http://www.iea.org/publications/freepublications/publication/name,3871,en.html> (Retrieved 29/11/13)



What issues should the government consider in relation to its future ownership versus sale of generation assets?

At the moment, Queensland and Australia are losing out due to a variable policy climate. State and federal funding and subsidies currently greatly distort the market in favour of fossil fuel electricity. In Australia, fossil fuels are also subsidised to the tune of A\$3.6B, while for renewables it is A\$1.4B¹² and decreasing, creating an uneven playing field. Furthermore the total climate change expenditure is \$1,078.8 million for the 2010-2011 year, while total fossil fuel incentives are more than ten times greater at \$12.173 billion¹³. By creating a strong renewables industry, we will be setting a secure investment framework for business decisions. Climate variability impacts also greatly outweigh some of the price and cost issues of the short term, when long term societal costs will be far greater.

QMDC does not support the selling of state government assets. Selling unsustainable generation assets only transfers risks and future costs to the new owners, who are likely to seek recompense through customers or compensation. Any economic gain will be short lived and exacerbate the adverse impacts in years to come.

3.13. Future challenge 3: Supporting structural change to the linear supply system

What issues should be taken into account when considering how structural change should be managed throughout the NEM?

As noted in the discussion paper, long lived and costly assets contribute to our electricity network. QMDC therefore encourages strong consideration to the relevance of the current network model. Changes such as storage and minigrids need to be supported. These options may include operations outside of the National Electricity Market.

Are there any other roles for government in relation to the development/uptake of new electricity products or service models?

Given their commercial imperative, what role should the Queensland distribution businesses play in supporting research and development that supports their core business?

3.14 Future challenge 4: Engaging and protecting residential customers of the future

Will new types of support be needed for different customer groups or locations to respond to changes in the future? If so, what will they be?

Changes are needed to how retailers disclose information on how much renewable energy is in the mix, and how much has been spent and achieved on energy efficiency. It should be mandatory to disclose fuel mix and energy efficiency information to consumers.

This would allow customers information with bills on:

- How much energy retailers have spent in the past year on energy efficiency and what they have achieved
- The percentage of electricity retailer's investments that come from fossil fuel or renewable energy sources, including coal seam gas

¹² <http://cpd.org.au/2013/04/going-solar/> (Retrieved 29/11/13)

¹³ https://www.acfonline.org.au/sites/default/files/resources/climate_expenditure_and_subsidies.pdf (Retrieved 29/11/13)



- The percentage of gas supplies coming from particular geographic sources and gas types (conventional/natural and unconventional/coal seam and shale)
- How much has been spent on maintaining and improving infrastructure

Such information will also create a culture around supporting energy efficiency and RES electricity as being the norm.

An Essential Media poll released on Thursday [28 November 2013] found that 87 per cent of the 1000 Australians surveyed wanted their retailers to do more to help customers save energy, and to report on how much they spent and what savings were achieved each year.

“Nearly four out of five Australians also want their retailers to supply information once a year about the percentage of their supply that comes from different fuel sources – that is, coal, gas and renewable energy.” www.thefifthestate.com.au/archives/57355/

If the retailers have sourced government accredited Green Power, it will be at the percentage the customer has specified. If not, it will be at the same percentage of the retailers contribution to the RET. While this information is available and defined by Government accredited Green Power rules and the Renewable Energy target, having this information as mandatory on all bills would demonstrate great engagement from the Queensland Government. QMDC would like to see the state government promoting this change through the Council of Australian Governments (COAG).

The Total Environment Centre (TEC) recently stated that they have been contacted by large community groups with over a million members “to help their members switch to retailers that don't invest their money in CSG in particular, or fossil fuels in general.” TEC note that this type of information is readily available in some other countries such as the UK, but in Australia it is almost impossible to get. <http://www.thefifthestate.com.au/archives/57355/>

What new obligations, rights or protections will need to be put in place for customers as the market evolves?

Over a million Australian households are now private electricity generators – more than 10 per cent. This requires prompt and competent service and billing from retailers and network operators. It means either being paid a much higher feed-in tariff (the same as the retail power price at the time of export) or being allowed to sell excess PV power to neighbours via existing power lines for a very small charge or by running their own low-capacity cables to neighbours. This concept (known as Virtual Network metering (VNM)) is being trialled by Newcastle council and CSIRO - <http://solar.org.au/papers/12papers/PV13Ward.pdf> <http://www.csiro.au/Outcomes/Energy/Smart-grid-smart-city.aspx>.

Government regulators could limit the size of quarterly fixed charges. As a matter of interest, the Victorian regulator, the Essential Services Commission, has a specific objective in its legislation to ensure the financial viability of the industries it regulates – that is, the electricity supply industry. So, by law it must oppose competition from energy efficiency and other measures that threaten the incumbent businesses. Clearly this must be changed.

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The first paragraph on page 25 of the Discussion Paper alludes to the idea that solar subsidies only benefit those who can already afford solar (the idea of “middle class welfare”). These members of the community should be lauded for their initiative. Evidence is that most end users with solar are in low to mid income areas¹⁴.

The proposed Strategy should:

- **create a culture around supporting energy efficiency and RES electricity as being the norm.**

3.15 Future challenge 5: Maximising economic growth as we transition to a better energy future

What role does electricity play in relation to the varying sectors of the state's economy and how can government best support the broader economic development of the state?

Presenting the cost of the renewable scenario relative to prices now, rather than relative to where prices would head under the more costly business as usual scenario is misleading. This perpetuates the false debate about the cost of renewable energy. As mentioned earlier, the cost of renewables are decreasing, while that of fossil fuelled electricity is increasing. By creating a strong renewables industry, we will be setting a secure investment framework for business decisions. Furthermore, both the Stern and the Garnaut reviews have demonstrated through economic modelling that action on climate change now will reduce costs at a later date.

What issues should the Queensland Government specifically consider as part of its examination of the impact of electricity costs and supply reliability on economic growth and competitiveness?

The Strategy should be based on economic modelling that demonstrates real action to address climate change issues.

3.16 Responding to unforeseen shifts

Will these measures be sufficiently resilient and adaptable regardless of any unforeseen challenges or shifts that may emerge over the next 30 years?

Queensland has been identified as the fastest growing and most energy intensive state in Australia. Additionally more harmful greenhouse gases (GHG) are produced per person in Queensland than any other state with approximately 43 tonnes of greenhouse gas emissions per capita (2010). If the activities required to fully support the proposed Strategy require a large consumption of energy this will result in increased GHG emissions. <http://www.cabinet.qld.gov.au/documents/2009/jun/qld%20renewable%20energy%20plan/Attachments/Qld%20Renewable%20Energy%20Plan.pdf>

The Strategy's objectives must be to reduce GHG emissions from the generation of electricity. QMDC asserts that an appropriate assessment of the significance of the emissions, should be by way of assessing, the contribution they would make towards exceeding the internationally agreed target of remaining below 2°C warming. Meinshausen et al. posit that the remaining 'budget' of global emissions to have reasonable chance (80%) of remaining below 2°C warming is approximately 529 GtCO₂ between 2011

¹⁴ <http://reneweconomy.com.au/2012/debunking-middle-class-welfare-and-other-rooftop-solar-myths-62917>
(Retrieved 29/11/13)



and 2050¹⁵. This would therefore indicate, for example that the emissions from the Arrow Surat Gas Project alone will devour approximately 0.16% of the world's remaining budget to stay below a 2°C warming. The Intergovernmental Panel on Climate Change Working Group I report (2007) noted that in order to achieve keeping global warming below 2°C requires global CO₂-e concentrations to remain below 450ppm (See Table 10.8 of that Report).

QMDC asserts that the proposed Strategy must address its responsibility for any proportional contribution to the global impacts of 2°C warming, namely, 0.16% of all of the impacts of climate change at that level. This includes measuring Scope 3 emissions.

Issues relevant to the potential irreversible and significant level of harm, particularly on areas of high conservation value, in QMDC's opinion require greenhouse gas emissions and climate variability impacts to be assessed as being able to cause "serious environmental harm".

QMDC believe that the energy sector should be required to better summarise global and varied impacts by dividing the total economic costs of climate change by the quantity of emissions required to cause those costs to ascertain a social analysis of the costs of carbon.

QMDC notes that a comprehensive review by Richard Tol found social costs of carbon through climate change to be \$30/tonne rising 2% each year.¹⁶ If, that level, is applied to the total cumulative emissions from the Arrow Surat Gas Project, (843 million tonnes of CO₂-e) this would produce an economic impact of approximately \$35billion. This amount clearly outweighs the \$1.66billion Arrow's Project is estimated to benefit to the Queensland economy.¹⁷

[QMDC Submission: Arrow Surat Gas Project EIS, 23 August 2013 www.qmdc.rg.au](http://www.qmdc.rg.au)

The proposed Strategy should provide all relevant information on greenhouse gas emissions, namely:

- **provide calculations of cumulative Scope 1, 2 and 3 emissions for the life of the Project;**
- **assess the resilience of the environment to receive further emissions**
- **describe the significance of the impact of cumulative emissions by reference to 350ppm and 450ppm resilience thresholds**
- **describe the cumulative impacts caused by energy projects**
- **assess the proportional contribution of these projects' cumulative emissions to the impacts of climate change, including an assessment of the social cost of carbon**
- **ensure that 100% of the emissions from energy projects can be safely and permanently sequestered.**

¹⁵ Meinshausen, M., N. Meinshausen, W. Hare, S. C. B. Raper, K. Frieler, R. Knutti, D. J. Frame and M. R. Allen (2009). "Greenhouse-gas emission targets for limiting global warming to 2°C." *Nature* 458(7242): 1158 as updated for an expert report to the Queensland Land Court available at www.envlaw.com.au/wandoan.

¹⁶ Richard Tol, 'On the Uncertainty About the Total Economic Impact of Climate Change' (2012) *Environmental Resource Economics*

¹⁷ Table 5.8 of the Report.