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14 November 2008

Australian Energy Market Commission
AEMC Submissions
PO Box A2449
Sydney South NSW 1235

Dear Sir/Madam

Scoping Paper - Review of Energy Market Frameworks in light of Climate Change Policies

Ergon Energy Corporation Limited (Ergon Energy) appreciates the opportunity provided by the Australian Energy Market Commission (AEMC) to comment on the Scoping Paper – Review of Energy Market Frameworks in light of Climate Change Policies.

The attached submission represents Ergon Energy's response to the AEMC's Scoping Paper.

Ergon Energy looks forward to providing continued assistance to the AEMC in its review of the Energy Market Frameworks.

Yours sincerely

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Ergon Energy Corporation Limited
Ergon Energy Queensland Pty Ltd

Review of Energy Market Frameworks in light of Climate Change Policies - Submission

Australian Energy Market Commission

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1 Introduction

Ergon Energy Corporation Limited (Ergon Energy) welcomes the opportunity to provide comment to the Australian Energy Market Commission (AEMC) on its Scoping Paper, Review of Energy Market Frameworks in light of Climate Change Policies.

This submission is provided by:

- Ergon Energy Corporation Ltd (EECL), in its capacity as a distribution network service provider in Queensland; and

- Ergon Energy Queensland Pty Ltd (EEQ), in its capacity as a non-competing area retail entity in Queensland and owner of scheduled and non-scheduled generation assets.

In this submission, EECL and EEQ are collectively referred to as 'Ergon Energy'.

2 Overview

Ergon Energy supports the AEMC's current review of energy market frameworks to determine whether changes are necessary to support the Commonwealth Government's climate change policies.

Changes to the composition and location of generation resulting from the Commonwealth Government's climate change policies will have a significant impact on the National Electricity Market (NEM). In particular, the likely increase in intermittent generation will impact upon system reliability and the potential for a significant increase in embedded generation will alter how networks are planned and operated.

Similarly, changes in the composition of generators (for example energy source and technical capability) participating in the NEM will have a significant impact on the wholesale market dispatch mechanism and the marginal cost of energy. These changes will have a material impact on the wholesale cost of energy, the ability to source energy contracts and the risk profile of energy retailers. Ultimately these changes will impact the price of energy for customers and may also impact current levels of system reliability if not appropriately managed.

Ergon Energy considers that the NEM structure has proven to be workable by delivering the necessary investment signals for additional generation. Caution should be exercised in considering structural changes to the market structure, especially given the legislative framework for the Carbon Pollution Reduction Scheme (CPRS) and expanded Renewable Energy Target (expanded RET) are yet to be finalised.

3 Response to Scoping Paper Questions

3.1 Convergence of gas and electricity markets

1. *How capable are the existing gas markets of handling the consequences of a large increase in the number of gas-fired power stations and their changing fuel requirements?*

There are a number of challenges facing the gas industry over the coming years, particularly with the move towards aligning domestic gas prices with the international export market and the introduction of the CPRS. Each of these events will increase the price of gas and, dependent on the corresponding increase, will impact the position of individual gas fired generation plants in the NEM dispatch process and may result in an increased price of electricity.

Also with the anticipated increase in demand for gas for the planned liquefied natural gas (LNG) plants and the increased reliance on gas fired generation as coal fired generation is displaced in the wholesale market, there will be significant challenges around aligning the supply/demand balance.

Based on these factors, significant investment in gas production and transport infrastructure will be required. Consideration should therefore be given to the long term availability of gas, given the expected quantities of reserves that will need to be available to underwrite base load power stations in a CPRS environment and future LNG facilities. Further, in addition to reviewing whether the current regulatory regime for gas and electricity provides efficient and effective investment signals consideration should also be given to the impact of the current financial crisis on these investment signals becoming committed projects. Any delays in infrastructure investment will impact the cost of energy for retailers and ultimately customers.

2. *What areas of difference between gas and electricity markets might be cause for concern and how material might the impacts of such difference be?*

No comment.

3.2 Generation capacity in the short term

3. *What are the practical constraints limiting investment responses by the market?*

Mechanisms such as the Maximum Price Limit (MPL) (previously the Value of Lost Load – VoLL) have proved to be effective tools for signalling the need and location for new generation investment. However as noted by the Reliability Panel, due to factors such as continued strong growth in demand, changes in input costs and the availability of equipment and resources, there is a projected shortfall in reserve generation for the period 2011 to 2014.

In recent years, industry participants have also faced increased uncertainty around the policy treatment of climate change. That is, the form of the CPRS, the future of the Mandatory Renewable Energy Target (MRET) and legacy State based renewable

energy schemes (for example the Queensland 13% Gas Scheme). Due to the recent financial crisis, industry participants will also face increased pressure to demonstrate the financial viability of future projects. Increased congestion, due to delayed investment and/or changes in generation mix, may also prove to be a barrier to investment, given congestion risk cannot be fully mitigated by market participants.

4. *How material are these constraints, and are they transitional or enduring?*

Each of the risks identified in question three will have a material impact on the timeliness and nature of generation investment made over the short to medium term.

5. *How material is the likelihood of a need for large scale intervention by system operators? How likely is it that this will be ineffective or inefficient?*

As noted above, there are a number of factors which may constrain the delivery of timely investment to address forecast shortfalls in reserve generation. In addition a change in the overall generation portfolio, such as a significant increase in intermittent generation, may result in increased congestion and/or system instability. Due to the potential for these events to occur, there is a material likelihood that system operators will need to undertake large scale intervention.

Current market intervention mechanisms such as the reserve trader mechanism and system operator directions are by definition a back up plan, and as such, should not be viewed as primary triggers for long term NEM investment. As noted above, the MPL and the wholesale contract market are the key stimuli for NEM investment as they allow proponents to forecast future revenue streams and/or to lock in sufficient future revenues to underwrite their investment.

These market intervention mechanisms result in unhedgeable costs for retailers. The costs are solely borne by retailers operating under regulated retail prices. However, in markets were prices are unregulated, these costs would also be borne by customers.

Ergon Energy believes these mechanisms should not be used as the primary tool to manage the impacts of the CPRS and expanded RET. Rather the market reliability settings should be set at levels that incentivise sufficient investment to ensure reliability. These issues have been recently investigated by the Reliability Panel, albeit without taking into account the impacts of climate change.

This should be considered a priority issue for this review. Therefore, a similar process should be conducted by the Reliability Panel to ascertain the materiality of climate change and whether a further increase to the MPL should be considered to ensure the market continues to operate effectively without recourse to either the reserve trader or system direction.

3.3 Investing to meet reliability standards with increased use of renewables

6. How material is the risk of a reduction in reliability if there is a major increase in the level and proportion of intermittent generation?

The materiality of the risk of a reduction in system reliability is highly dependant upon the amount of non-intermittent generation that is displaced and the diversity of intermittent generation that is connected to the national grid.

Ergon Energy considers that it will be difficult to predict the loss of intermittent generation sources and therefore it is unlikely that the power system will be able to respond to the loss of generation in an appropriate timeframe. This is particularly the case where non-intermittent generation has been displaced and is not available to compensate for the loss.

In summary, Ergon Energy considers that if the system is unable to respond to the loss of intermittent generation or there is insufficient non-intermittent generation available to cover the loss then reliability will be reduced. Therefore to ensure that system reliability is maintained, it will be important that sufficient returns are available to non-intermittent plant so they remain in service and/or continued investment is made in non-intermittent plant to guarantee energy is available when intermittent plant is not available and to maintain system security.

7. What responses are likely to be most efficient in maintaining reliability?

Ergon Energy considers that the speed of response from other generation or load reduction measures to the loss of intermittent generation, is likely to be the key to maintaining system reliability.

Investment in communications and systems to facilitate demand response would assist in maintaining reliability and allow the amount of intermittent generation to be increased significantly. This could include short term interruptions to, or a reduction in energy use from, water heating, air-conditioning, refrigeration and pumping.

An additional way to provide higher value to the network from intermittent sources is through the use of energy storage technology. Energy storage would provide the ability to even out the peaks and troughs of intermittent generation and provide a much more predictable energy source. Ergon Energy considers that if a modest percentage of intermittent generation made use of energy storage, there would be a significant increase in the ability to maintain reliability.

From a retailer perspective, whatever adjustments are made to the reliability settings or market structure to maintain reliability, mechanisms should be available for the resulting cost increases and risks to be effectively managed.

Within the current market design, a key response would be to conduct a review of the adequacy of the current MPL threshold. Given the MPL is proposed to increase to $12,500 from July 2010, this review would be to ascertain whether the climate change policies represent a material change necessitating a further future adjustment. Whilst the MPL represents a manageable risk for retailers and provides a transparent market signal to generators, caution must be exercised when determining whether an additional adjustment is required. This is largely due to the wide range of factors noted in Question 3, such as the current level of uncertainty surrounding the climate change policies,

which are yet to be fully realised/quantified to allow a true assessment of the need for change.

Furthermore, mechanisms such as uplifts or other unpredictable costs should also be avoided as retailers are unable to effectively manage the resulting cost increases and risks.

3.4 Operating the system with increased intermittent generation

8. *How material are the challenges to system operations following a major increase in intermittent generation?*

Ergon Energy considers that the following challenges may arise from a significant increase in intermittent generation:

- *Information on embedded generation*: Currently generation units supplying less than 5MW at a network connection point are not required to be registered with NEMMCO. Consideration should be given to what information NEMMCO requires regarding embedded generation.
- *Generation dispatch*: The above also means it is possible for significant amounts of generation to be connected to the interconnected grid without NEMMCO being aware of the volume, location or generation profile of these units. Ergon Energy notes that this has the potential to increase the risk of forecast inaccuracy and inefficient dispatch.

9. *Are the existing tools available to system operators sufficient, and if not, why?*

Ergon Energy refers to and supports ENA's comments in respect of the safety risks posed by increased operation of embedded generation and the need for network protection requirements.

10. *How material is the risk of large scale intervention by system operators and why might such actions be ineffective or inefficient?*

No comment.

11. *How material are the risks associated with the behaviour of existing generators, and why?*

A key issue for retailers is the impact these risks have on the availability of generator energy contracts. In Queensland during the recent drought, when there are high levels of uncertainty around production rates and ability to be dispatched, generators are less likely to offer energy contracts. This is due to the risks associated with the inability to honour these agreements and the possibility to recover higher returns through an increased reliance on spot prices.

This can have a significant impact on retailers as there is a limited availability of measures to effectively mitigate the resultant risks and costs. These increased costs are ultimately borne by consumers through increased energy costs.

3.5 Connecting new generators to energy networks

12. *How material are the risks of decision-making being "skewed" because of differences in connection regimes between gas and electricity, and why?*

No comment.

13. *How large is the coordination problem for new connections? How material are the inefficiencies from continuing with an approach based on bilateral negotiation?*

Ergon Energy supports the continuation of a bilateral negotiation approach to new connections. Ergon Energy does not consider that there are material inefficiencies associated with a bilateral approach and notes that any alternative approach that involves a greater deal of prescription or an element of 'central planning' would not be workable.

Network development planning is driven by the need to provide adequate capacity to supply future loads (and generation) at an appropriate level of security. Distribution planning by its nature involves a statistical approach incorporating load and generation patterns that allow leveraging of the different times of individual customers' peak demand, whether generating into or taking supply from the network, and ensuring that the network plant and equipment ratings and security levels meet the forecast load patterns.

As such, distribution network planning takes into account future loads and generation in planning and building its network.

While a statistical approach is taken to the planning of the general supply network, it is necessary to undertake bilateral negotiations with individual customers (load or generation) to establish the appropriate connection assets and level of supply security required at the connection point. These factors can only be determined in negotiation with the customer whether they are a load or generator.

Ergon Energy supports standard connection agreements for micro and mini embedded generation and currently has a standard Network Agreement for connection of AS4777 compliant inverter energy systems up to 10kW single phase and 30kW three phase. However Ergon Energy considers that for small and large embedded generators, individually negotiated connection agreements are required to ensure system security, network safety and meet specific connection requirements.

14. Are the rules for allocating costs and risks for new connections a barrier to entry, and why?

Ergon Energy notes that this is a matter for proponents of generator developments. That said, Ergon Energy supports charges for connection of embedded generation to follow the same principle as those that apply to the connection of similar sized loads. That is, all embedded generation should be required to pay the full cost of connection to a distribution network, in the same way as a similar sized load must pay. Ergon Energy considers connection assets to include anything that needs to be built to connect a new network user, and is dedicated to the particular connection point. Ergon Energy considers that this represents an efficient allocation of costs and provides the appropriate signal to network users of the costs of connection.

Ergon Energy also supports a cost-sharing scheme, where, in the event that a subsequent network user is connected and the amount of the initial customer's connection assets is reduced, and the initial network user may be entitled to a reduced price. It is considered that such a scheme would mitigate any 'first mover' concerns.

3.6 Augmenting networks and managing congestion

15. How material are the potential increases in the costs of managing congestion, and why?

The cost of managing congestion may potentially be very material.

Distribution Network

To date, most distribution networks have been developed to supply loads. The existing capacity of the distribution network generally depends on the size and location of those loads. For example, in circumstances where significant amounts of generation seek to connect to the distribution network, especially in areas where historically, loads have not required a large network, (e.g. in remote areas) significant augmentation will be required to support those connections.

Transmission Network

With increased investment in renewable and gas fired generation in non-traditional generation areas and the increased potential for high emission generators to cease or significantly reduce production it is likely that congestion will substantially increase. This trend will place significant pressure on the ability of the new transmission planning arrangements and incentives, to deliver the right mix of transmission capacity in the NEM. Failure to do so will result in an economically inefficient mix of generation and congestion which is potentially enduring.

Ergon Energy does not believe increased locational price signals (nodal pricing) will improve long term dispatch efficiency. By getting the signals for efficient and timely transmission investment right the NEM should be largely unconstrained. This position is well established both in theory and in practice. That is, locational pricing cannot facilitate investment in optimally sized AC transmission investments due to economics of scale and the difficulties in protecting property rights. Furthermore, locational price

(fully nodal pricing) is considered to complicate market trading as there are more locations to trade at with fewer participants trading at those locations. With participants buying and selling at a wide variety of locations it becomes important to be able to hedge against uncertainty in these price differences. In practice, it is very difficult to fully hedge such risks.

16. How material are the risks associated with continuing with an 'open access' regime in the NEM?

Ergon Energy notes that this is a risk that has to be considered by the proponents of generator developments.

Ergon Energy considers that an 'open access' regime is the only appropriate regime to apply to distribution networks given their physical characteristics and dependence on diversity of demand peaks in load and generation between connected customers.

Distribution network service providers do not have the capacity to apply a demand constraint on their networks to ensure that certain network users are provided with firm access. The alternative, of planning and building a distribution network which offers 'firm access' to all network users, would be cost prohibitive.

17. How material are the risks of 'contractual congestion' in gas networks – and how might they be managed?

No comment.

18. How material is the risk of inefficient investment in the shared network and why?

Ergon Energy considers that the current regulatory regime minimises the risk of inefficient investment in the shared distribution network.

Ergon Energy notes that the new Chapter 6 of the National Electricity Rules (the Rules) was recently developed under a fully consultative approach and has only just commenced. A key guiding principle in the development of Chapter 6 of the Rules was meeting the national electricity objective of promoting efficient investment in electricity services[1]. The National Electricity Law further provides that the Australian Energy Regulator, in performing its economic regulatory function must do so in a manner that will, or is likely to contribute to the achievement of the national electricity objective[2].

[1] Section 7, National Electricity Law.

[2] Section 16.

19. How material is the risk of changing loss factors year-on-year?

Ergon Energy notes that this is an area that needs to be considered by generator owners prior to establishing a connection and determining the size of generation installed.

Establishing a generator can have a large impact on loss factors and the loss factor may change from year to year along with the nature of the pattern of generation (and loads).

The use of forward calculations of loss factors could assist the generator owner in being informed about the risk associated with change following the addition of generation to any section of the network or with a significant change to the pattern of operation of a generator. Network service providers would generally be able to calculate loss factors or changes to loss factors under various generation scenarios on a fee for service basis. This can assist in understanding and hence managing the risk.

3.7 Retailing

20. How material is the risk of an efficient retailer not being able to recover its costs, and why?

Retail price caps exist in most NEM jurisdictions for small customers, with the exception of Victoria from January 2009. One of the key economic efficiencies of the CPRS is that energy users will be exposed to a transparent price for carbon. However, unless retail price caps are fully adjusted to reflect the cost of carbon, this transparent signal will not be passed on to customers.

With the introduction of the expanded RET and retention (at least in the short to medium term) of legacy jurisdictional renewable energy schemes there will be increased pressure placed on retail prices. If these increases are not captured in retail prices, the shortfall will be absorbed by retailers. This ultimately impacts a retailer's ability to offer competitive market contracts to customers.

21. What factors will influence the availability and pricing of contracts in the short and medium term?

Despite legislative uncertainty surrounding the actual cost of carbon, energy contracts for calendar year 2010 and onwards either contain a carbon cost pass through clause or an implicit price for carbon. Due to the level of uncertainty associated with the actual cost of these contracts, it is difficult for retailers to effectively manage their exposure to wholesale energy costs.

Whilst contracts are available for 2010 and onwards, liquidity for this period is low. The lack of liquidity in the post 2010 contract market is expected to continue in the short to medium term given the legislative requirements of the CPRS and expanded RET will not be known with any certainty until mid to late 2009.

Ergon Energy does not see a role for this review in influencing this situation.

22. How material are the risks of unnecessarily disruptive market exit – and why?

The introduction of the CPRS and expanded RET will present a significant challenge for retailers due to:

- Higher pool prices as carbon is factored into dispatch bids. This will result in increased NEM prudential and other working capital requirements;
- The potential risk of generators exiting the market due to financial collapse, may result in retailers losing hedge cover and facing unsustainable energy costs;
- Delays in new generation investment may create opportunities for generators to maximise returns in the short term by reducing the availability of energy contracts and an increased reliance on energy sales at pool prices;
- Increased potential for residential customers to experience financial hardship. Albeit financial assistance will be provided through the introduction of household assistance measures it is yet to be demonstrated whether this assistance will be an adequate subsidy to offset the full price impacts of the CPRS; and
- Due to the likelihood of many everyday goods and services increasing due to the CPRS there will be an increased requirement for debt management functions. As noticed over the last year, as the costs of living have increased, the need to prioritise everyday expenditures is increasing which in some cases has resulted in the delay in payment of electricity bills.

These challenges on their own or in conjunction with other external factors may result in retailers defaulting on their obligations to NEMMCO, thereby triggering a Retailer of Last Resort (ROLR) event. Ergon Energy believes there is a material risk of ROLR events occurring in the post 2010 period.

Any consideration of ROLR mechanisms, in the context of this review, should be mindful of the MCE/SCO's work program this area.

3.8 Financing new energy investment

23. What factors will affect the level of private investment required in response to climate change policies?

No comment.

24. What adjustments to market frameworks, if any, would be desirable to ensure this investment is forthcoming at least cost?

No comment.