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12 November 1999

Mr. Michael Rawstron
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Dear Mr. Rawstron,

NATIONAL ELECTRICITY CODE CHANGES
CAPACITY MECHANISMS, VoLL AND PRICE FLOOR

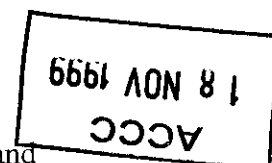
We refer to your letter dated 11 October 1999 advising that the Australian Competition & Consumer Commission ("ACCC") has received an application from the National Electricity Code Administrator Limited ("NECA") requesting authorisation of amendments to the National Electricity Code ("NEC").

Please accept this letter as Ergon Energy's submission on the application. We do not comment upon the specific changes proposed but rather focus upon the overall effect of the changes. The effect of the changes proposed is to remove the existing physical electricity price "collar" by substituting a \$0 floor for a variable floor which mirrors the level of VoLL, and providing for VoLL to increase rapidly over time by a pre-determined glide path. On the surface these changes appear reasonable in a market where electricity, as a commodity, is settled on a free and open exchange.

This view however requires the National Electricity Market ("NEM") to operate efficiently and effectively without barriers to entry or exit and with a reasonable degree of demand elasticity. Unfortunately the NEM does not reflect these attributes. Ergon Energy believes that as the NEM matures/develops the necessity for a collar will reduce. We are not however convinced that sufficient maturity presently exists within the NEM for this process of relaxation to commence.

In this submission we examine the:

- public interest test criteria;
- capacity issue driving the belief that VoLL should be increased; and
- the NEM and ancillary markets such as the contract market (and its effect upon NEM efficiency).



Please note that Ergon Energy will, of course, give consideration to making further comments during the subsequent consultation process.

1.0 ACCC Decision Criteria for Granting Authorisations

We note that Authorisation (including Interim Authorisation) is intended to be granted only when identifiable benefits to the public result from the activity, and that any detriment resulting from the prohibited conduct, including the lessening of competition, is outweighed by the benefits derived. Further, in determining whether the granting of the Authorisation (or Interim Authorisation) is in the public interest regard is required of the effect of the Authorisation upon the level of competition and the markets that will be affected by the conduct.

In previous instances where organisations have sought Authorisation of anti-competitive behavior under the TPA we note that the ACCC has advised that it recognizes the following “public benefits”:

- fostering business efficiency, especially when this results in improved international competitiveness;
- industry rationalization resulting in more efficient allocation of resources and in lower or contained unit production costs;
- expansion of employment or prevention of unemployment in efficient industries or employment growth in particular regions;
- promotion of industry cost savings resulting in contained or lower prices at all levels in the supply chain;
- promotion of competition in industry;
- promotion of equitable dealings in the market;
- growth of export markets;
- development of import replacements;
- economic development;
- assistance to efficient small business;
- industrial harmony;
- improvement in the quality and safety of goods and services and expansion of consumer choice; or
- supply of better information to consumers and business to permit informed choices in their dealings.

The ACCC must also examine the ways in which any benefit identified as arising from the conduct will be distributed and the effect of this distribution.

2.0 The Capacity Issue

Changes to the NEC proposed in the application were developed from the Capacity Mechanisms and VoLL Reviews undertaken by NECA. The Capacity Mechanisms Review was primarily undertaken because some sections of the NEM believe that a supply/demand imbalance presently exists within the NEM and that this imbalance will grow in the medium term (ie 3-5 years out). This section of the NEM appears to also believe that this imbalance can be largely rectified by the removal of (or significant increase in) VoLL. This belief rests upon the presumption that, at present, VoLL stifles the efficiency of the NEM by muting price signals for new generation and demand side response. The effect of removing (or increasing significantly) VoLL would be, according to this group, the removal of a market inefficiency and improvement in the NEM's operation.

Ergon Energy recognizes the complex interrelationships between available capacity in the NEM, reliability standards, VoLL, generator pricing strategies, average spot prices, futures/contract market average prices and use (including convergence at t_0 with spot prices), the reserve trader function and the conflict between whether some services are part of the energy market or ancillary services.

We are however concerned that NECA's reviews (which led to the proposed NEC changes) permeate the belief, contrasting with evidence from the NEM, that the NEM should be a "perfect" market. That is, the NEM should function without significant or recurring intervention (ie in a pure economic fashion). We endorse this as a long-term goal but note the following practical/physical impediments to achieving this outcome at present:

- **Immaturity** : The NEM is an immature market. Maturity develops over time and therefore it will probably take several years of relatively stable market operation before the level of maturity present in more established markets and associated Market Participant confidence and understanding will be evident in the NEM.
- **Externalities** : Very few "markets" operate in the absence of externalities. As an immature market the NEM can be expected to function with a greater overall level of distortion. Some Market Participants have a tendency to view each and every variance from their expectation of how the NEM should operate as evidence of market failure. Clearly this is not appropriate. It is to be expected that externalities will be present in an immature market in a reasonable quantum.
- **The Exchange Mechanism** : Markets are exchange equilibrium mechanisms and therefore, by their nature, find the level at which they will "clear". In reaching this equilibrium position it is normal for fluctuations around the point of equilibrium (for both short and long term equilibrium) to occur. Many Market Participants see this "gyration" as evidence of market failure rather than evidence that the market is simply finding the point of equilibrium¹. In this context we note and support

¹ The gyrations in the long term will be of greater value/volume than those in the short term. Because in the short term one is unable to differentiate between whether a gyration is of a short or long term nature

Putnam, Hayes & Bartlett's ("PHB") observation in the Issues Paper on Capacity Mechanisms that price volatility is required in a properly functioning market.

- Short term focus : Many Market Participants seem to equate equilibrium as being only a short term² requirement in competitive markets. Clearly, an inability to clear in the short term leads to action by either/both the demand and supply sides of the market, restoring equilibrium in the long term. The NEM price is a short term price. Some Market Participants do not appear to recognize the positive effect short term disequilibrium has upon encouraging behavior that leads to long term equilibrium, which is the goal in any market. All established markets, such as currencies and interest rates, experience both short and long term disequilibrium which are corrected in the presence of volatility but without a view that the market has "failed".
- Forecasting immaturity : The ability of the market to re-equilibrate over the long run is a function not only of spot prices but also of price expectations ("forecasts"). Since the market has not operated for a sufficient period of time for standard statistical methodologies to be applied (ie a lack of data), simulations or monte-carlo based methodologies are generally utilized by Market Participants to form price expectations. These however do not appear to adequately capture the extreme volatility and right-hand kurtosis of the price distribution which would normally attract additional capacity. We would expect this situation to change as more "real" data becomes available and, as a result, forecasting methodologies become more scientific as opposed to behavioral.

We are strongly of the opinion that the current short term market focus, combined with market/participant immaturity and the search for the "perfect" market is driving some in the NEM to doubt the ability of the market to achieve long term equilibrium and in particular, sufficient capacity. As mentioned, the lack of capacity at a point in time particularly shortly after market start, is not evidence of the market failing (ie an inability to clear) so long as disequilibrium is only short term and is rectified in the long term³.

The result is that this lobby has been successful in convincing NECA that the solution is to increase VoLL to encourage a market response (whether new generation or demand side). This solution is ill-considered as it ignores the vital public interest role VoLL plays in assisting the NEM to reach a reasonable level of maturity prior to its increase or removal.

3.0 Other Issues

3.1 Pricing Behavior

The apparent driver behind the desire of some Market Participants and NECA to increase VoLL is that existing spot prices are constrained artificially by the present

it is possible, where one only has a short term focus, to view wide swings in the market as evidence of an inability for the market to find equilibrium, when in fact this is not the case in the long term.

² In the short term price inelasticity of supply and demand tends to occur in electricity (due to the need to service franchise markets) however in the long run elasticity returns to a large degree.

³ This requires faith in market mechanisms to be held.

collar and that widening the trading range will result in increased efficiency in the NEM. This conclusion has been drawn, apparently, as a direct result of the capacity issue as discussed under Item 2.0 above. It is Ergon Energy's opinion, that the perceptions driving the "capacity issue" ignore the fact that:

- Average spot prices and peak spot prices (ie the current market clearing price under normal and high demand conditions) do not reflect average long run total industry cost where this cost comprises the average long run variable cost and the average long run fixed cost. Importantly these cost components include both normal profit and the recovery of plant (ie capacity) costs by definition. Where the market clearing price is based upon this long run average cost the electricity (ie energy-only) price will include capacity payment amounts; and
- Some Market Participants believe that an energy price together with the existing pricing behavior of generators bidding at or near short run marginal cost (ie approx fuel costs) the \$5,000/MWh price cap of VoLL may be insufficient to enable the fixed costs of low capacity factor (peaking) generators to be recovered.

To the extent that the pricing basis used by Generators (ie short run marginal cost) does not reflect any capacity constraints, an appropriate price signal may not be being sent to potential investors in new generation nor may the correct price signal be sent to retailers and customers and therefore benefits of demand side management are incorrectly priced. This is primarily because some Generators are choosing, in the competitive electricity market, to sustain market share by pricing electricity at the short run marginal cost (and therefore may not recover their long run average costs)⁴ and not as a result of the existing level of VoLL or the trading range.

If we assume generators are economically rational they will, in the long run, price at marginal revenue equaling marginal cost⁵. It is at this point that allocative and productive efficiency are achieved and long run average cost will also equal marginal cost, thus ensuring that the market clearing price incorporates normal profits together with an amount for "capacity". Further, anecdotal evidence from the NEM shows that VoLL is infrequently reached and that present levels of VoLL have not stifled either new generation investment or demand-side response.

It is also interesting to note that the solution to capacity issues is seen as an increase in VoLL while no investigation of the impact of capacity being constrained due to the transmission network (and the effective increase in capacity that could be achieved by network augmentation) has occurred.

⁴ Strategic management theory, predatory pricing theory and game theory each indicate that this is an acceptable short-run strategy, however in the long run producers of goods must price them to recover total costs (otherwise they will, even ignoring the issue of capacity payments, not recover their fixed operating costs and therefore enter into insolvency).

⁵ This does not mean that a decision by generators (at present) to price at short run marginal cost (as opposed to long run marginal cost) is not simply evidence of profit-maximizing or other strategic behavior in the short term. What appears to be irrational short run pricing behavior can be sound long run pricing behavior depending upon the strategy of the individual generator.

3.2 Load profiles and elasticity

Equilibrium (both long and short run) will be more readily achieved if both the demand and supply sides of the market are able to react to the price signals that are produced. In this context it is important to consider the characteristics of the demand side that prohibit large-scale responses to market signals (ie demand side elasticity, or rather inelasticity) irrespective of the value of VoLL.

Currently the franchise load in most regions (with the exception of controlled load such as water heating) is unable to be shed in response to high spot prices and is therefore inelastic. The reason for this is that State Governments require retailers to supply domestic and small consumers (ie franchise customers) as part of the social contract, irrespective of price. The effect of this is that those retailers with franchise customers will each have a significant proportion of their load, at any point in time, that is unable to respond to price signals. Thus supply elasticity is not matched by demand elasticity which provides a greater degree of market power to the supply side relative to the demand side.

Therefore while demand side management will be able to be used by retailers and end-customers to respond to high prices, much of this capability will need to come from the contestable segment of the market, restricting the maximum potential pool of energy that can be used for demand side management. This is not to say innovative new products aren't being developed to respond to high price periods, just that the quantity of energy able to participate in such activities is artificially reduced (due to government policy).

Further the ability of the demand side to respond in each region may be artificially restrained in different ways depending upon the underlying load profile of the retailer and State jurisdictional policies. It is important to note simply that disequilibrium exists in the NEM to the extent demand side measures cannot be used to counter capacity issues. The concept that demand side responses can be encouraged by a higher level of VoLL ignores constraints that reduce significantly the ability of the demand side to respond, irrespective of the level of VoLL.

3.3 The interaction of the spot and futures markets

In theory the actual price that a generator receives (from the retailer) is the spot price determined at the bid entered for the marginal unit dispatched during any trading interval. In reality, the actual price received by the generator is the spot price (ie from the physical market operated by NEMMCO and overseen by NECA) adjusted for the extent to which the generator has hedged that production via the contract market (whether that be the over-the-counter derivative market or via the futures market).

The capacity debate, which has led to the call for an increase in VoLL, has ignored the contract market's impact upon the actual price received by the generator for electricity produced (ie the NEM spot price is not the price received by generators for output save for marginal output). For example, the actual price received could be written as:

$$P_{ave}^{tl} = \{ [P_s^{tl} * (ML^{tl} * \%ML^p_h)] + (P_k^{tl} * [(ML^{tl} * (1 - \%ML^p_h))]) \} / ML^{tl}$$

where :

P_{ave}^{tl} is the average price received per MWh by the generator (sent out) in time period one;

P_s^{tl} is the spot price in time period one;

$\%ML^p_h$ is the percentage of the total sent out energy for time period one that is sent out but not hedged by the generator;

P_k^{tl} is the weighted average price per MWh received by the generator in time period one on the OTC/Futures contracts (including the effect of any option fees); and

ML^{tl} is the total generator load sent out in time period one.

Therefore the real question is the relationship between P_{ave}^{tl} and the long run marginal cost (“LRMC”) of the generator. Should the relationship be that P_{ave}^{tl} is equal to LRMC then the generator is receiving in their total revenue sufficient payment for capacity (irrespective of the value of VoLL). Clearly determination of this depends upon the individual bidding and contracting strategies of generators and the success of these strategies.

By focusing only upon the spot market prices achieved and the physical market as opposed to the effective price it is clear that the real clearing price of the market is not being examined or the role of VoLL relative to this price. The implication of this is that the true relationship between the total revenue received and the capacity payment portion of this revenue stream (as paid to generators) is also not being examined. Rather than focus upon the relativity between the spot price, short run marginal cost and LRMC when considering whether capacity payments are already incorporated into the revenue streams of generators it is also necessary to take into account the total price at which the market clears (ie P_{ave}^{tl}). This is because this price (or cost for a retailer) is what will be used by the individual Market Participant to examine capacity (or demand side) investment decisions irrespective of the value of VoLL or the width of the trading range.

Therefore changes to the level of VoLL and the collar range also require consideration of its effect upon the total cost of electricity and the contract market. A major failing of the NECA proposal is that it does not consider the true impact of these changes upon the market in its entirety and the full extent of all interrelationships.

4.0 Assessment of the Public Interest Criteria

The effect of the changes proposed is to remove the physical electricity price “collar” over time by substituting a \$0 floor for a variable floor which mirrors the level of VoLL, and providing for VoLL to increase rapidly over time by a pre-determined glide path. On the surface these changes appear reasonable and necessary in a market

where electricity as a commodity is settled on a free and open exchange where prices are established by available demand and supply.

This view however requires the NEM to operate efficiently and effectively without barriers to entry or exit and with a reasonable degree of demand elasticity. As revealed above the NEM has many imperfections, mainly as a result of market immaturity and the existence of distortions such as reliability standards and restrictions upon demand-side response. Merely increasing range of the collar will not remove these market distortions or increase the efficiency of the NEM per se. We examine the impact of the proposal in the context of the public interest:

- *fostering business efficiency, especially when this results in improved international competitiveness;*

The proposal will not foster business efficiency unless the result is an overall reduction in electricity prices or better allocation of resources. As discussed above demand-side response is fettered in all Jurisdictions and anecdotal evidence is that average electricity prices are increasing in all regions of the NEM.

- *industry rationalization resulting in more efficient allocation of resources and in lower or contained unit production costs;*

Not applicable.

- *expansion of employment or prevention of unemployment in efficient industries or employment growth in particular regions;*

Not applicable.

- *promotion of industry cost savings resulting in contained or lower prices at all levels in the supply chain;*

We find it difficult to reconcile that a change which increases the risk of operating in the NEM (by retailers being unable to obtain adequate contract cover given the immaturity of the contract market and, in some regions, the market power of generators by not offering contract cover) could result in either industry cost savings or lower price levels in the supply chain.

- *promotion of competition in industry;*

Increasing the spot price range will not, in our opinion, have the effect of increasing the actual number of participants in the market (either demand or supply side) leading to greater competition. Further, it will not assist the market in reaching equilibrium (long or short run) as it will not have the effect of changing the bidding and pricing behavior of generators which is a major cause of the perceived capacity issue (and to which this change proposal is aimed at relieving).

- *promotion of equitable dealings in the market;*

Greater equity in dealings in the NEM (and related contract markets) would require not a change in the spot price range but rather a concerted effort to reduce the market power evident in the generation sector in both the physical and contract markets.

- *growth of export markets;*

Not applicable.

- *development of import replacements;*

Not applicable.

- *economic development;*

Not applicable.

- *assistance to efficient small business;*

Experience in the NEM has been that small businesses, whether they are efficient or not, are unwilling to accept exposure to spot electricity prices for their consumption. The proposal will increase spot and contract price volatility thus further reducing the potential for small business to accept variable prices.

- *industrial harmony;*

Not applicable.

- *improvement in the quality and safety of goods and services and expansion of consumer choice; or*

The proposal will not affect the quality or safety of electricity and will no impact upon the level of consumer choice.

- *supply of better information to consumers and business to permit informed choices in their dealings.*

Increasing the range of the collar will provide new, but not better information to:

- consumers (as they will not be exposed to delivered cost of energy prices until full retail competition is introduced and these customers are removed from fixed price tariffs); or
- business (in contestable markets businesses have been unwilling to take variable prices due to the inherent volatility and subsequent risk of the electricity market – this proposal will increase this risk leading to a lower probability of variable pricing by businesses).

Our brief analysis of the overall effect of the proposed changes on the public interest criteria indicates they offer little public benefit and have the impact of reducing competition and participation in the NEM, rather than increasing market efficiency.

5.0 Conclusion

Ergon Energy believes that as the NEM matures/develops the necessity for a collar will reduce and that a suitable glide path will then be required. We are not however convinced that sufficient maturity exists within the NEM for this process to commence at this point in time.

We suggest that the proposal be rejected as the public interest is not served by it at this point in time. We support the annual review of VoLL as required by clause 3.9.4(c) of the NEC to ensure VoLL and the trading range is changed as the NEM matures.

Ergon Energy thanks the ACCC for the opportunity to provide comment on the NECA's application. Should you wish to discuss this submission in more detail, please feel free to contact me on (07) 3228 8116.

Yours faithfully,



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