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Ian Woodward
Chair
AEMC Reliability Panel

By email (panel@aemc.gov.au)

Dear Ian

TRUenergy submission to Interim Report: Comprehensive Reliability Review

Thank you for this opportunity to provide the attached comments upon the interim report. We apologise for its lateness. The panel is welcome to publish this submission on its website.

TRUenergy concurs with the majority of findings regarding the historical performance, the measurement and settings of the reliability standard. TRUenergy does not concur that there is a need to propose alternatives to the energy-only design of the NEM, which has delivered good outcomes to date. With respect to the (moderate) risks to reliability in the future, TRUenergy believes the appropriate response is a measured increase in the market price caps.

TRUenergy has also assisted the preparation of the NGF position and supports that submission.

Yours Sincerely,

Ben Skinner
Senior Regulatory Manager, Wholesale Markets

Summary

TRUenergy supports the panel's view that the current outcome based single reliability standard is at least as good as measures used elsewhere and there is no case for change. We also agree that 0.002% unserved energy is a reasonable economic trade off between cost and reliability.

The 2006 implementation of the minimum reserve levels by NEMMCO was a significant improvement, lessening previous conservative biases¹. We therefore have altered our view and agree with the panel's decision to continue to vest this task in NEMMCO. However it requires ongoing improvement and we therefore support the panel's suggestion of demand forecast performance reporting and distinguishing the boundary between short and medium-term reserves.

We interpret the recommendation of expressing the standard as a target "looking forward each year both NEM-wide and within each region" as an endorsement of current practice which we endorse. However, we oppose any potential for jurisdictional variation.

TRUenergy is disappointed that the panel has presumed that VoLL should be raised only to the lowest level that would underwrite the standard. Instead, we take the view that price caps hinder the energy-only market achieving its full potential, particularly in relation to the demand-side and that VoLL should not be placed below that which represents the average value of customer reliability.

The panel's preliminary rejection of a VoLL increase is not sufficiently supported by analysis. Whilst TRUenergy continues to support a more significant increase, the quantitative analysis suggests that an increase to at least \$12,500/MWh indexed provides significant reliability improvement and this should at least be the panel's short-term recommendation.

TRUenergy agrees that NEM reliability performance to date has been more than adequate although the future presents challenges. Whilst this necessitates increases in market price caps, it does not follow that the energy-only market design is inadequate. There appears no clear benefit in any of the non-energy market alternatives.

Finally, our supplementary submission relating to improving the "share the pain" guidelines was not sufficiently clear and misunderstood. We have clarified this submission herein.

Introduction

TRUenergy is a major private investor in the generation and retail sector of the NEM, with over half a million customer accounts and ownership of approximately 2800MW of generation. We are presently constructing a 400MW combined-cycle gas turbine plant at Tallawarra in NSW due for commissioning in 2008. TRUenergy, therefore, is in an excellent position to comment upon the current market incentives to support investment.

TRUenergy provided a detailed submission to the issues paper dated 30 June 2006. We do not intend to repeat those general views, and suggest that this submission be

¹ **Note this occurred after lodgement of the TRUenergy submission to the Issues Paper.**

read in association with that submission. In some areas, developments have caused us to alter our view, and these are articulated.

This submission follows the format described in Chapter 8 of the interim report "Matters for Consultation".

8.1 Reliability Performance to date

TRUenergy concurs with the report's conclusion that the performance of the NEM's reliability and its reliability settings have been satisfactory to date.

With respect to reserve contracting in 2004 and 2005 that never approached being dispatched, we suspect NEMMCO's concern was affected by excessive demand forecasts and agree with the panel that this contracting of itself does not indicate a flaw of the reliability settings. Instead, the flaw is in their application, and the panel's recommendations to improve the quality of demand forecasting are welcome.

Table 1 shows that reliability outcomes have actually been improving over time in the NEM, which contrasts with the view that the NEM benefited from initial oversupply and that reserve margins are now under threat. We suggest that both claims may be correct, and can explain the contradiction as part of the success of the current market design which has seen, since the last increase to VoLL, improvements to plant reliability and incentive to operate at peak times as well as the development of the demand-side. In short, the market can now reliably supply more demand for the same level of supply investment than it once could, but as these efficiencies are exhausted, will there be sufficient investment in completely new supply? This positive reflection on the NEM to date should be discussed in the final report, leading to a conclusion that the NEM is, fundamentally, performing as intended and that the obvious recommendation would be to seek enhancements consistent with current successes.

TRUenergy is concerned at the suggestion that commissioning delays in some new plants should be counteracted with a more conservative approach to reliability setting. Any such conservatism would be arbitrary and unsupported by evidence. Such an approach would be effectively second-guessing the competence of plant developers to plan their own commissioning. Instead, NEMMCO should be expected through its forecasting processes to ensure high confidence and regular re-appraisal of large plant delivery timeframes.

8.2 Reliability Settings

Responding to the questions in turn:

1. TRUenergy supports the 0.002% unserved energy target as commensurate with customer economic value of reliability. It is simple and well understood.
2. TRUenergy welcomes the panel's clarification that the unserved energy target is to exclude matters of a system security or industrial action nature, where the provision of more supply would not necessarily have averted customer interruption. To enhance this finding, we support:
 - a. The panel's proposal to provide 10 year rolling look backs of reliability performance;

- b. Some clear classification guidelines as to what is to be recorded as a reliability (or “adequacy”) related shortfall as opposed to other forms of interruption.
 - c. The correction of Victorian 2000 events that were caused by industrial action and excessive mandatory restriction from the reliability record.
3. TRUenergy’s 2006 submission proposed clarifying that the criterion was to be expressed as a target (endorsed by the interim report) and that it should be applied only NEM-wide (interim report proposed NEM-wide and by region, i.e. current practice). Whilst we understand the political imperatives behind this approach, it should be noted that it neither represents the economic optimum nor the intended national character of the NEM. It also creates the sort of difficulties for NEMMCO in its calculation to maximum reserve levels as raised in our supplementary submission and discussed in 7.2.3 of the interim report and later in this submission. Further, it requires clarification regarding future regional boundary changes.
 4. Whilst customer value of reliability will change over time, it is unlikely that in only 3 years there will be a need to substantially recalculate the 0.002%. Therefore we suggest at least 5 years to elapse before taking on this task back on.
 5. The panel’s work in considering the unserved energy target and its comparisons with other power system’s targets was enlightening. We support the panel’s endorsement of continuing only with the single unserved energy target. We however do not support the proposal to publish USE scenarios that will not add to understanding of the underlying economics but instead confuse and alarm stakeholders with hypothetical case studies. The single unserved energy value over time is all that is required to target the appropriate economic trade off between reliability and cost.
 6. TRUenergy strongly rejects any role for jurisdictionally applied variations to the standard. Such an approach would undermine both the considered economic analysis behind the reliability panel’s recommendation and the fundamental premise of a *national* electricity market. The suggestion of quarantining the cost of such a variation to customers in the relevant region is an inadequate response to the distortions it creates. Such costs will distort trading and retailing in a national sense.

Further, implementation of varying standards would appear difficult if not impossible as NEMMCO’s must optimise reserves nationally. For example, any a particular region’s reserve margin is often best met by drawing reserves from another region. In attempting to resolve a resulting multi-regional shortfall in reserves, multi-regional interventions (such as reserve trading) are used. In that instance, it would become impossible to isolate the cost to one jurisdiction.

8.3 *Outlook for future reliability*

TRUenergy thanks the panel for its work into modelling reliability and thoughtful consideration of the external challenges to assumptions regarding the costs/expected returns on generation investment. We would agree that the most significant investment challenges relate to, respectively, uncertainty over greenhouse policy and subsidies; continuing government ownership and retail pricing controls.

Of course, these matters are best addressed at their cause and we encourage the panel to bring to policy makers' attention the unintentional impact they have on reliability. For example, retail regulation policy very rarely considers its own impact on the wholesale market. In particular, the state based consumer protection barriers that inhibit retailers' ability to estimate their long-term customer volumes, such as the prohibition of early termination fees, create difficulties for retailers in contracting long-term.

8.3.1 Demand Side Response

The report's section 5.5 correctly interprets the theoretical benefits of the demand-side, but remains sceptical, "When, and to what extent, will only be learnt from experience."² TRUenergy is far more optimistic. In particular, the technological developments in mass market interval metering and the upcoming mass rollouts in Victoria and parts of Sydney, presumably to be followed elsewhere³. This provides the technical pathway for the customer sector with by far the lowest Value of Customer Reliability, small customers, to participate. A small customer participation revolution may seem far fetched in 2007, but it is quite possible that the period of focus for the panel, i.e. post 2011, could see substantial involvement, presuming retailers and aggregators face the incentives to do so.

But providing the incentive is critical to seeing this revolution take hold. If the panel chooses to instead "learn from experience", presumably delaying any VoLL increase until it sees more demand participation, then it creates a vicious circle. The panel needs to move now so that customers can benefit from the technology. On the positive side the market risks of increasing VoLL discussed in the interim report⁴, will be greatly lessened if there is a new source of supply yet to be harnessed.

8.3.2 Long-term contracting

The qualitative analysis of section 5 has placed weight on the view that there is insufficient long-term contracting occurring with generation and that this itself is undermining the possibility for investment. We have several responses:

- Firstly, the panel may be interested to hear that structured contracts of the order of 6 years do occur⁵. They are not, of course, vanilla-style instruments that can be visibly priced such as an exchange traded instrument, but they are still effective in supporting investment.
- Secondly, that the current trend to vertical integration of generation with mass-market retailing makes the concern largely irrelevant. Retailers who consider their customer base as reasonably predictable are constructing new plant in that part of the merit order that they see as potentially under supplied. For good reason this has been mostly in the peaking sector to date, however our construction in Tallawarra and Origin's announcements regarding Spring Gully imply that mid-merit plants are now being supported as the lower end of the merit order gets closer to supply/demand balance.

² Pg 51

³ **TRUenergy is heavily involved in the Victorian mass rollout, and would be pleased to provide the panel a presentation of the new technology and its possibilities.**

⁴ Pg 59

⁵ **The ultimate example of this is the 20 year arrangements struck between Ecogen and TXU in 1999, although this could also be described as a case of vertical integration as discussed later.**

- Thirdly, that the lack of long-term contracting underpinning investment, if true, is a symptom of market failure rather than a cause. The appropriate response is not to artificially create mechanisms to replace it, but to improve the environment that such contracting may flourish. Apart from the external issues, the panel can:
 - Provide certainty regarding the longevity of the current market design. Consideration of alternatives tends to create doubt in the future and therefore chill the confidence necessary for investors to take long-term positions;
 - Reduce the risk of interference by not demanding unreasonably high levels of reliability;
 - Create financial risk for those who choose to go “short” i.e. underwrite customer load without an equivalent supply position. This is achieved with higher price caps.
 - Clarify the levels of price caps for the longer-term.

It is TRUenergy’s view that the challenges presented to investment due to a given external environment can be best met through the current energy-only market design with adjustments to the price caps.

8.3.3 Retailer role in load interruption

The interim report⁶ includes a confusing paragraph regarding retailers’ responsibility for loss of supply, and suggests they may be intentionally shedding involuntary load for commercial gain. Few retailers remain stapled to a distribution business, and those that do have clear ring-fencing arrangements that prohibit this.

In the energy-only market, retailers are exposed to VoLL if they are insufficiently hedged to it (although TRUenergy believes the risk should be amplified). Prudent retailers presume that the high prices will occur near and at the peak demand of their customers and therefore hedge upon that presumption. The windfalls that are theoretically possible for a fully hedged retailer during some load-shedding events cannot be relied upon and therefore do not affect their hedging and investment decisions. We disagree that the reserve trader levies counteract these potential windfalls, falling equally upon all retailers no matter how they have hedged and being accrued whether or not there is any actual shedding.

8.4 Securing reliability into the future: draft alternatives

8.4.1 Alternative 2: Raising VoLL

TRUenergy’s clear preference is retention of the current market design with a significant increase to the market price caps. This is both the appropriate alternative to the theoretical challenges to investment as well as the obvious conclusion from the panel’s own modelling. TRUenergy does not accept the qualitative arguments presented against raising VoLL.

Raising VoLL provides numerous additive benefits to NEM reliability, most of which are recognised in the interim report;

- Classical modelling studies, as performed by CRA and our own business development group, suggest the greater spot market returns available to generation in a market with a higher price cap will see earlier investment and

⁶ Pg 47

thus less unserved energy. And this is notable with even the minor increases modelled by CRA;

- Retailers are more averse to being short at their customer's demand peak, thereby creating more demand for contracts;
- Generators are more risk averse in their contracting strategies, meaning they will require more reliable plant, or simply more plant, to support a given level of hedging-thereby underpinning more physical supply;
- Demand-side aggregators have more value to offer customers in return for their participation.
- A more efficient balance between regulated transmission and generation investment. Transmission providers are already correctly investing on a "Value of Customer Reliability" determined through customer survey to be in the order of \$30,000/MWh. The energy market price cap is thus distorting the playing field where regulated investments are being promoted before unregulated.

TRUenergy rebuts the two key objections in part 6.2.1 to this option.

- The panel believes that investors' discount rates will increase due to the increase in inherent market risk following a raise in VoLL. TRUenergy is one of the NEM's most significant private generation developers and found no support for that proposition in its Business Development group. The NPV of a project is derived from a company's long-term view of spot market returns, subject to an internal risk adjusted discount rate. Fundamentally, an organisation's appetite for market risk is encapsulated in its risk management policy as a "Value at Risk" or "VAR"⁷ and this is held constant, whatever the level of VoLL. If VoLL is increased, to retain the same VAR, other things being equal a lesser volume of hedges will be sold in the operational timeframe. Therefore the overall project risk and discount rate may remain unchanged.

The business case impact of an increase in VoLL is that modelled spot returns simply increase without any change to discount rate and investments achieve a positive NPV earlier. This is consistent with the panel's CRA modelling.

- The panel believes that raising VoLL will not change the appetite for long-term contracting. Raising VoLL should increase the demand for hedging in all timeframes due to the risks of being short to an extreme price.

The panel notes: "raising the level of VoLL would also increase the risk of exposure faced by generators as a result of forced outages and, as such may prompt investors to contract less". TRUenergy agrees but does not follow why the panel describes this as a negative consequence. On the contrary, reducing the amount of contracting safely achievable from a given level of plant will enhance reliability by provoking greater construction. The issue of generator appetite for long-term hedging appears to have been confused with retailer appetite-something that needs to be encouraged.

8.4.3 *Alternative 3A Reliability Ancillary Service*

Contrary to our 2006 submission, TRUenergy does not support further development of this option. It would appear to break the critical settlement match between the energy actually being consumed and produced by artificially creating a greater

⁷ Typically defined as a "one in 20 year worst earnings result"

settlement demand than customer demand. The volume of artificial margin will be an arbitrary construct concocted by a central planner.

That planner also has numerous tasks in attempting to replicate an efficient market outcome upon this artificial market by:

- Defining exactly who is eligible for participation, e.g.
 - what physical response characteristics from the plant are acceptable?;
 - what level of sustainability of the increase in output is acceptable (i.e., can the supply come on at the end of 30 minutes for 1 minute and receive payment?)
 - what auditing/penalty is required for non-performance?;
 - what allowance should be made for network constraints that may impede delivery?;
 - what forms of demand-side response are eligible for payment?, e.g.
 - how reliable;
 - how measurable;
 - how sustainable?
- Defining how it can be optimised across the NEM, how much must be delivered within a region and what can be sourced elsewhere?
- Defining who should pay, e.g.
 - do customers who have a demand-side capability still have an obligation to fund?
 - and if not how will those obligations be overseen and regulated?
 - How is the obligation geographically split with respect to the various regional/inter-regional RAS margins?

After consideration of these issues, TRUenergy remains firmly convinced of the simplicity of the energy only market in ensuring that customers pay for exactly what they are consuming and generators pay for exactly what they produce and there is no need for an artificially constructed “dummy load” to increase generator returns.

Interestingly, generators such as TRUenergy’s Torrens Island are already providing the sort of “fast reserve” 30 minute timeframe response in the energy-only market, apparently gratis. In fact, this is a sensible risk mitigation measure. Most of the time, intermediate and peaking generators are generating less than their total volume of hedges. They know that whilst they remain idle during low prices, their profitability is critically dependent upon their ability to rapidly increase output when conditions change. Typically generators will attempt to carry spinning reserve capable of replacing the largest credible contingency in their region thus effectively delivering the central planner’s desire.

Again, the incentive to provide this type of reserve in the energy-only market is sharpened by raising VoLL.

8.4.4 Alternative 3B Continuous Reserve Contracting

In its 2006 submission, TRUenergy was critical of the reserve trader. TRUenergy only sees virtue in this option as a removal of the sporadic nature of the reserve trader and therefore could only contemplate it in that context. Our preference is to have neither.

The volumes described in the paper by way of example are quite modest, and possibly therefore could be an appropriate replacement to the reserve trader, but, unsurprisingly, the reliability enhancement outcomes are also modest.

It is troubling that the paper also discusses potentially large volumes in return for a lowering of VoLL, with all the negative consequences that would have on efficient energy market investment and operation, particularly the demand-side.

The challenges presented by this option are:

- How could the panel ensure such plant was guaranteed not to re-enter the energy market and undermine returns? If this was not “iron-clad”, say through a statutory authority, market investors would perceive its very presence as a price suppression threat.
- How could the cost be fairly recovered? Why should customers who would be prepared to self-curtail at, say, \$15,000/MWh fund reserves aimed primarily at customers with a much higher value of reliability?
- The process invites state jurisdictional involvement in specifying the amount of reserve. This could then become an example of the sort of external difficulties that the paper describes as an on-going challenge to investment.

8.5 Other matters

8.5.1 Regional Reserve levels

TRUenergy strongly disagrees with the suggestion of having jurisdictions specify higher capacity reserves beyond that set nationally by the panel. The challenges that this suggestion presents include:

- It undermines the concept of a national market and the role of the NEM’s single reliability panel in setting the economic optimum;
- By providing a lever for state governments to intervene in such matters, it obligates their consideration of its use, i.e. it causes them to be held directly accountable for NEM reliability which is unreasonable given their actual role;
- Local customer cost variations affect retailers’ ability to operate in a national manner, indeed this would be an example of the sorts of exogenous distortion that has concerned the panel with respect to investment certainty.
- It would be impossible to isolate both the reliability effect and cost to one jurisdiction. It is not possible to avoid the sharing of reserves in the NEM and through MTPASA.

8.5.2 Reserve Trader

See 2006 TRUenergy submission.

8.5.3 Review Period

Forming a clear and certain path in raising VoLL to the approximate average Value of Customer Reliability would permanently conclude this matter and remove an item of uncertainty for investors. The fundamental energy-only market design and reliability settings of 0.002% have now been in place 8 years and if re-endorsed through this process, can be fixed for at least 5 years.

8.5.4 Demand Forecasting

We welcome the panel's recognition of this issue as discussed in our 2006 submission. Historical performance of MTPASA and Statement of Opportunity demand forecasting should be a key performance indicator for NEMMCO. As discussed in our 2006 submission, NEMMCO produces 30 critical POE demand forecasts each year⁸. This provides a reasonable data survey to demonstrate any bias without requiring any "weather corrections", i.e. the KPI would be met if the actuals fell within and outside the POE forecasts in the correct expectation within statistical confidence intervals.

NEMMCO has previously avoided accountability as they have been using unaltered forecasts provided by jurisdictional planning bodies. The rules do not appear to obligate this⁹ upon NEMMCO, and therefore should current practices continue, it should be made clear that the responsibility for the delegation of this task and therefore the accuracy of the result, rests squarely upon NEMMCO.

8.5.5 Distinguishing between short-term and medium-term reserves

TRUenergy supports this recommendation as it is not mathematically correct to use the same inferred reserve margin in all time frames to achieve the unserved energy target.

However, the conversion of a probabilistic target into a deterministic reserve margin will always be challenging from an accuracy and visualisation perspective. TRUenergy support the NGF's proposals to move longer-term reserve forecasting into an entirely probabilistic environment. Statements of Opportunities and MTPASA would still be produced with plant and demand forecasts, but would not include reserve margins. Instead, Monte Carlo simulations would be run in parallel that would directly calculate the expected unserved energies from those demand and plant forecasts.

8.5.7 Aligning the CPT with the overall market design

See TRUenergy's 2006 submission.

The interim report has some inaccuracies in relation to the CPT:

"The CPT was originally set at \$75,000 per MW which allowed an OCGT to recover 3 years of capital costs from an extreme event before the CPT was triggered. Since then, however, the cost of OCGTs has increased (from approximately \$50,000 to \$75,000/MW) and the value of VoLL has increased (from \$5,000 to \$10,000/MWh). However the CPT level remains unchanged..."¹⁰

In fact, the CPT did not exist prior to the increase in VoLL to \$10,000/MWh in 2002. The original proposal by NECA was to create a VoLL of \$20,000 and CPT of \$300,000 (i.e. \$150,000 per MW). During TPA authorisation in 2001, the ACCC arbitrarily halved each recommendation.

The original \$300,000 was intended to provide 3 years capital return to an OCGT with a capital cost of \$50,000 per MW per annum. The current CPT, against current OCGT costs, can provide slightly less than one years' return.

⁸ 3POE's*5 regions*2 seasons

⁹ 3.7.2(f) and 3.13.3(o)

¹⁰ Pg 72

We disagree that the CPT is not hindering investment. Indeed, the CPT (7.5 hours of VoLL) sets the extreme exposure in Value at Risk estimates by retailers. Were CPT increased, retailers would have to purchase more contracts to remain within their VAR limits.

We believe that market preferences to retain a low CPT trigger relates to the fear of transmission disruption causing unavoidable market losses. This is far better addressed through augmentation with a physical trigger. It is feasible to create such triggers that are not arbitrary.

8.5.8 Share the pain guidelines

TRUenergy thanks the panel for the consideration of its supplementary submission on this matter but fears its recommendation may have confused the panel and was misunderstood.

“TRUenergy argues that under the ‘share the pain’ rule it is not possible to achieve an optimal reserve allocation.”¹¹

This is not correct. Our argument is that the present interpretation of ‘share the pain’, where the ‘pain’ must be shared in an instantaneous manner makes optimal reserve allocation over time impossible. Instead, if the ‘pain’ were to be shared in a cumulative manner then reserves could be allocated optimally between regions.

The interim report then states:

“It is the role of NEMMCO to determine the quantity of load to be shed during a given system incident”¹²

No, the relevant guideline that NEMMCO follows in implementing ‘share the pain’ is published by the reliability panel. Its current wording implies instantaneous, not cumulative, sharing is required.

“It is the role of each jurisdiction to determine which loads within its region should be disconnected when loads are reduced for security or reliability reasons.”¹³

This matter is irrelevant to the question at hand which relates to NEMMCO’s sharing of load shedding between different regions not within regions.

In its rejection of change, the panel appears to have accepted that the current ‘share the pain’ guideline is presently inhibiting optimal reserve allocation, but has presented only two arguments against, one incorrect and the other irrelevant.

Thus, the panel needs to reconsider its response to this matter. The areas that the panel would need to confirm before accepting our suggestion are:

- Clarification as to whether the original ‘share the pain’ concept, as promoted by the panel at market start, was intended to require instantaneous sharing, and if so, why?;

¹¹ Pg 76

¹² Pg 76

¹³ Pg 76

- That cumulative sharing is practically feasible by NEMMCO.