



**Hydro Tasmania**  
*the renewable energy business*

17 July 2009

Dr John Tamblyn,  
Chairman, Australian Energy Market Commission,  
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Sent via email to [Submissions@AEMC.gov.au](mailto:Submissions@AEMC.gov.au)

**Causer Pays for Ancillary Services to Control the Tasmanian Frequency  
(ERC0082)**

Dear Dr Tamblyn,

Please find attached a further supplementary submission on the above rule change proposal. My apologies for the lateness of this submission but we felt that the other submissions have raised some issues which required a response on our part.

If you have enquiries on the attached submission, please call the undersigned on 03-62305775.

Yours sincerely,

David Bowker

Manager Regulatory Affairs

## **Further Supplementary Submission by Hydro Tasmania – 17 July 2009**

### **Executive Summary**

Submissions lodged by owners and proponents of new higher efficiency thermal plant have asserted that the Proposed Rule put forward by Hydro Tasmania is not about achieving efficient market outcomes but rather creating a barrier to entry for new thermal generators seeking to compete with Hydro Tasmania.

These assertions are inconsistent with the basis on which the Tasmanian frequency operating standards were changed last year so as to facilitate the entry of new higher efficiency thermal plants and the arguments made by owners and proponents of new higher efficiency thermal plants during that review process.

These assertions should not be allowed to cloud the efficiency rationale for Hydro Tasmania's Proposed Rule. Indeed they reinforce the need for new higher efficiency thermal plants to be exposed to appropriate incentives to provide or procure increased supply of fast raise contingency FCAS.

### **Background**

The Proposed Rule put forward by Hydro Tasmania seeks to address issues acknowledged in the AEMC Reliability Panel's Final Report dated 18 December 2008 regarding recovery of the cost of additional local fast raise contingency FCAS required as a consequence of changing the Tasmanian frequency operating standards. Addressing these issues will promote dynamic efficiency by placing an appropriate incentive on new higher efficiency thermal plant to provide or procure additional fast raise contingency FCAS required as a consequence of the changed frequency standards.

Submissions lodged by owners and proponents of new higher efficiency thermal plant have made serious assertions about Hydro Tasmania's motivation for putting forward the Proposed Rule and the adverse impact of the Proposed Rule on competition between generators within Tasmania. These assertions are described in more detail below. However, first it is appropriate to summarise how and why this rule change arose.

### **How and why the rule change arose**

During the AEMC Reliability Panel's review of the Tasmanian frequency operating standards last year, it was common ground that Tasmania needs more on-island generation. Whilst the hydro system is the most efficient on-island source of energy supply, it is energy constrained and long term changes to rainfall patterns are likely to mean lower inflows than in the past, resulting in less energy produced from the hydro system (without further

investment, the future average is expected to be around 8,700GWh as against a historical annual production of around 10,000GWh) and creating the need for more Tasmanian generation.

The issue is what is the most efficient combination of hydro, thermal and wind for Tasmania – not what is most efficient for individual owners and proponents of new generation plants.

The arguments put forward by owners and proponents of new thermal plants for changing the frequency standards focused on increasing the efficiency of thermal plants in Tasmania – measured as the cost differential between producing energy from higher efficiency thermal plants (that did not meet the existing standard) and lower efficiency thermal plants (that could meet the existing standard). However an important part of the overall cost benefit analysis was whether FCAS implications would mean that increasing the efficiency of thermal plant as one source of on-island energy supply would actually decrease the efficiency of the supply side overall leading to higher energy prices.

Generators typically provide fast contingency FCAS by increasing or reducing their energy output. (In relation to fast raise contingency FCAS, in practical terms this means a part of their energy production is effectively “reserved” for fast raise contingency FCAS). The problem in Tasmania arises because hydro plant is an inefficient source of fast contingency FCAS - using the hydro system to provide fast contingency FCAS (at the cost of energy) results in a less efficient energy supply side. Historically this was unavoidable given Tasmania’s reliance on hydro power – but, in part, this could be managed by operating the hydro system so as to minimise the requirement for fast contingency FCAS.

New entry by higher efficiency thermal plants changes this. It increases the requirement for fast contingency FCAS in an environment where existing supply is already stretched<sup>1</sup>, but on the other hand thermal plants are technically much better suited to providing fast contingency FCAS. Whilst the

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<sup>1</sup> See NEMMCO’s 26 August advice to the Reliability Panel which stated that:

“Hydroelectric plant has difficulty in providing fast response in the 6 second time frame and so provision of fast lower and raise services will always be an issue for systems such as Tasmania which have predominance of hydroelectric plant.”

“..A review of the actual availability of these [R6] services from Hydro Tasmania when Basslink is out of service has shown that the actual availability rarely exceeds 100MW (refer figure 1).

“In the case of some plants the reductions in output in order to provide additional R6 service would be disproportionate. Such suboptimal operation would likely lead to significant increases in energy prices and may also affect reliability. This is because inefficient operation would reduce the amount of electricity energy that could be generated from a given amount of stored water.”

In relation to fast lower contingency FCAS, NEMMCO recommended a condition that: “at least the first two higher efficiency thermal generating plants to be installed offer fast lower services (of the order of 70MW each)”.

AEMC Reliability Panel's decision acknowledged that there would be an increased requirement for fast contingency FCAS, the underlying analysis throughout the review process assumed that thermal plants would be providing more fast contingency FCAS. Indeed, "*potentially increased FCAS capability from modern thermal plant*" was one of the benefits taken into account for all options considered in the benefit cost analysis on which the change to the frequency standards was based<sup>2</sup> and the AEMC Reliability Panel's final report noted that:

"The revised CRA assessment also showed that if a second more efficient thermal gas turbine was constructed the benefits would increase in proportion to the capacity, while the costs of tightening the standard would stay the same or reduce as the availability of R6 services increased."<sup>3</sup>

In addition, it was recognised that there are also other potential sources of fast raise contingency FCAS<sup>4</sup> that do not require the use of generation plant but there is no incentive to invest in these. The underlying issue, acknowledged in the CRA Final Report<sup>5</sup>, is that under current market structure and rules, it is very difficult to make an adequate return from providing local fast raise contingency FCAS (because mainland providers set the price for so much of the time).

Accordingly, the position that clearly emerged from the review of the Tasmanian frequency operating standards, was that unless there is some mechanism that creates an appropriate incentive for additional local fast contingency FCAS to be provided or procured and also ensures that those who do provide this service can make an adequate return, the benefits assumed to flow from the decision to change the frequency standards may not eventuate; rather the entry of new thermal plant may create a serious shortage of local fast contingency FCAS and, for all the reasons canvassed during the review, may result in very high priced local FCAS and / or higher energy prices.

The AEMC Reliability Panel, in its final report of 18 December 2008, acknowledged that addressing the issue of recovering the cost of additional local fast contingency FCAS was outside the scope of the frequency operating standards review and suggested that a possible regulatory process for proposals as to how to address this would be via a rule change proposal:

"While limiting the contingency size has the effect of significantly lowering the FCAS requirements and its associated costs, the changes to the Tasmanian frequency operating standards will themselves result in a small increase in the

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<sup>2</sup> See CRA Final Report for Reliability Panel Appendix B

<sup>3</sup> At page 21

<sup>4</sup> For example, those summarised in Hydro Tasmania's 29 October 2008 submission

<sup>5</sup> See page 48

FCAS requirements, particularly for fast (six second) raise. For example, at a Tasmanian demand of 900 MW, an additional 31 MW of fast raise FCAS is typically required of the lower limit of the single contingency operational frequency tolerance band is raised from the current 47.5 Hz to the revised value of 48 Hz.”

“Under the existing mechanisms many of the benefits of changing the standards would be captured by new higher efficiency thermal generating units while the costs of the additional FCAS would be recovered from all generators. The Panel notes that there is a potential for possible Rules changes from stakeholders who consider that a different cost allocation arrangement should apply.”<sup>6</sup>

Hydro Tasmania’s Proposed Rule is in response to, and is consistent with, this suggestion.

### **Current assertions by owners and proponents of new thermal plant**

The following assertions have been made in connection with Hydro Tasmania’s Proposed Rule.

1. AETVPower, the owner of the Tamar Valley CCGT plant, has stated that:

“In AETV’s view, the proposed Rule Change would operate as a substitute barrier to entry for new thermal generators.”

(13 March 2009 Submission)

“Hydro Tasmania has significant market power in setting the price for local FCAS requirements in Tasmania (as demonstrated by their FCAS bidding behaviour during April 2009) and;

Hydro Tasmania is proposing this Rule change to recover additional costs from its competitor as a result of the introduction of the new frequency operating standards that was determined on its own merit.”

(15 June 2009 Submission)

2. Aurora, the owner of AETVPower, has stated that:

“..the revised Rule change proposal, although now targeted at one specific generator, will inevitably be seen as an ongoing disincentive for other prospective wholesale energy competitors (not affiliated with Hydro Tasmania) who may otherwise consider entering the Tasmanian region.”

“The acceptance of the proposed derogation by regulatory bodies would display acceptance of the controlling influence of a dominant generator and create a further disincentive to entry into the already challenging

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<sup>6</sup> See page 7-8 and also page 26-27 where the Panel commented that two alternative cost recovery mechanisms could be explored, both of which involve a form of “runway pricing” that recovers the cost of additional FCAS from the party who caused the additional need.

Tasmanian energy generation market, thereby further reducing the chance of lower wholesale energy prices driven by competition.”

(15 June 2009 Submission)

3. Gunns, the proponent of a co-generation plant at its proposed pulp mill, has stated that:

“Hydro Tasmania states in its first Supplementary Submission that “Any generator is able to manage their FCAS costs.” This may apply in an effective market situation, but it is obviously not the case where there is only one supplier.

Hydro Tasmania, being the only registered supplier of FCAS in Tasmania, has demonstrated its ability to manipulate the FCAS market to its benefit.

Hydro Tasmania is also the only recipient of FCAS revenue in Tasmania, so the FCAS price would have had little effect (other than to Roaring Forties, which is partly owned by them), but it may not have been a coincidence that the period of high FCAS charges coincided with the time that the new Tamar Valley Power Station was attempting to commence commercial operation – a process that was stopped as the FCAS costs they had to pay were greater than the revenue they received from the spot market.”

“Gunns is concerned that, as a future competitor of Hydro Tasmania, it will be presented with similar conditions to those that Tamar Valley Power Station is now facing, especially if it could be faced with unknown and possibly extreme costs even, if this rule change were approved, when its generator is not connected to the Tasmanian grid.”

(18 June 2009 Submission)

These comments stand in contrast to the position taken by owners and proponents of new thermal plants last year during the review of the Tasmanian frequency operating standards. Both AETVPower and Gunns provided data into the modelling as to the fast contingency FCAS that would be provided by their respective plants – indeed this was put forward as being part of the benefit high efficiency thermal plants would bring to Tasmania.

### **What owners and proponents of new thermal plant asserted last year**

The benefit cost analysis undertaken by CRA for the Reliability Panel was informed by quantitative material provided by relevant stakeholders, including the modelling results presented by Alinta (then owner of AETVPower) to the Reliability Panel on 30 July 2008<sup>7</sup>. The AETV Presentation Slides to the Reliability Panel record the assertion that changing the frequency operating standards to allow industrial thermal units such as AETV’s 210MW CCGT will result in:

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<sup>7</sup> See reference on page 24 of CRA’s Final Report for the Reliability Panel

“More competition in energy and Frequency Controlled Ancillary Services (FCAS) market”

and that:

“The modelling indicates:

1. FCAS local requirement is higher due to FOS change; however
2. Local FCAS supplies will increase substantially following subsequent new entry of thermal plant in Tasmania”

Further, the ROAM Consulting and Hill Michael modelling for Alinta sets out the following assumptions about key generators used in the modelling<sup>8</sup>:

- for the Gunns Pulp Mill (represented as a 60MW baseload generator in the modelling):

“The facility is assumed to trip the pulp mill load on loss of the cogeneration facility to limit the net FCAS enablement required to levels well below the current largest unit. It is noted that the Gunns cogeneration facility can provide FCAS and/or FCSPS services, although the commercial implications of providing these services are unclear. Information provided by Gunns [footnote reference to Gunns presentation to the Stakeholder Forum, Friday 6<sup>th</sup> June 2008] suggests that the facility may provide 170MW of FCAS Lower services, as this will be readily achievable through controlled generation reduction. FCAS Raise services may also be provided through reduction in internal load of up to 65MW. (Note that 130MW Lower and 50MW Raise service offers have been included in the modelling following consultation with Gunns Limited)”

- for the AETV CCGT plant (modelled as a 210MW single generation unit, assumed for the modelling to be 140MWGT and 70MWST):

“As the Alinta plant is a CCGT, FCAS enablement and offer prices have been constructed such that technical requirements are adhered to, such as minimum load for steam generator operation. The Alinta CCGT FCAS provision has been modelled based on information from the developer and calibrated against the Swanbank E generator which is of similar technology. The Alinta CCGT has been configured to provide around 30MW of raise and lower services into all but the five minute FCAS market.”

These comments are inconsistent with current assertions that Hydro Tasmania has market power in relation to the provision of fast contingency FCAS.

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<sup>8</sup> See 29 July 2008 report

## **Why have the current assertions been made?**

The only reason that Hydro Tasmania is currently the only local provider of fast contingency FCAS (and therefore a target for the current assertions) is that other potential suppliers have chosen not to provide or procure these services (possibly because, as recognised during the frequency operating standards review, there is no incentive to provide or procure these services). Hydro Tasmania does not want to be in this position and indeed a crucial issue considered during the frequency operating standards review last year (being the point of the Proposed Rule) was how to create appropriate incentives to bring forward more fast contingency FCAS.

As noted by CRA in its final report to the Reliability Panel:

“For example runway pricing for FCAS is likely to prove to be an effective means of dealing with a potential shortage of FCAS. If there is runway pricing for FCAS and FCAS R6 turns out to be in short supply, the FCAS R6 price will head towards the market price cap (currently \$10,000/MWh). With FCAS R6 priced at 10,000/MWh it becomes a simple decision for the largest generator to either contract for an inter-trip service to reduce its apparent size or, alternatively, limit its operation to prevent itself from being exposed to FCAS R6 prices at \$10,000/MWh.”<sup>9</sup>

However, if new thermal plants are able to be built without providing or procuring additional fast contingency FCAS – and able to manipulate perceptions of anti-competitive behaviour to avoid exposure to the type of price signals referred to by CRA which would otherwise prompt them to provide or procure additional raise contingency FCAS – then the basis for having changed the Tasmanian frequency operating standards will have been undermined and there will be inefficient market outcomes.

## **Conclusion**

Submissions lodged by owners and proponents of new higher efficiency thermal plant have asserted that the Proposed Rule put forward by Hydro Tasmania is not about achieving efficient market outcomes but rather creating a barrier to entry for new thermal generators seeking to compete with Hydro Tasmania.

These assertions are based on the premise that these new higher efficiency thermal plants will not be providing local fast raise contingency FCAS (leaving Hydro Tasmania as the only local provider of fast raise contingency FCAS). That premise is completely inconsistent with the basis on which the Tasmanian frequency operating standards were changed so as to facilitate the entry of new higher efficiency thermal plants.

The benefit cost analysis on which the change to the frequency operating standards was based assumed that these new higher efficiency thermal

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<sup>9</sup> See page 45

plants would provide fast contingency FCAS (both raise and lower) – because the owners and proponents asserted that this would be the case and argued that one of the benefits of entry by new higher efficiency thermal plants would be increased supply of fast contingency FCAS (both raise and lower) from competitors to Hydro Tasmania.

These assertions should not be allowed to cloud the efficiency rationale for Hydro Tasmania's Proposed Rule. Indeed they reinforce the need for new higher efficiency thermal plants to be exposed to appropriate incentives to provide or procure increased supply of fast raise contingency FCAS or the basis for having changed the Tasmanian frequency operating standards will have been undermined and there will be inefficient market outcomes.