



**DECLARATION OF FREQUENCY CONTROL  
ANCILLARY SERVICES**

**STATEMENT OF REASONS**

**December 2009**

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# GLOSSARY

Term	Meaning
ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AETV Power	The trading name of Aurora Energy (Tamar Valley) Pty Ltd
Aurora Energy	Aurora Energy Pty Ltd
delayed raise contingency FCAS	five minute raise contingency FCAS
ESI Act	<i>Electricity Supply Industry Act 1995</i>
fast raise contingency FCAS	six second raise contingency FCAS
FCAS	frequency control ancillary services
FCSPS	Frequency Control Special Protection Scheme
<i>Gazette</i>	<i>Tasmanian Government Gazette</i>
Hydro Tasmania	The trading name of the Hydro-Electric Corporation
IEA	Infratil Energy Australia Pty Ltd
Issues Paper	Office of the Tasmanian Economic Regulator, <i>Notice of intention to declare the supply of raise contingency frequency control ancillary services by Hydro Tasmania as a declared electrical service, Issues Paper, July 2009</i>
market generator	Generator registered as such under the NER
MW	Megawatt
MWh	Megawatt hour
National Electricity Law	<i>National Electricity (South Australia) Act 1996</i>
NEL	National Electricity Law
NEM	National Electricity Market
NEMDE	National Electricity Market Dispatch Engine
NEMMCO	National Electricity Market Management Company
NER	National Electricity Rules
NGF	National Generators Forum
Price Control Regulations	<i>Electricity Supply Industry (Price Control) Regulations 2003</i>
Regulator	Tasmanian Economic Regulator who is the regulator for the purposes of the ESI Act
slow raise contingency FCAS	sixty second raise contingency FCAS



# 1 OVERVIEW

The Regulator has decided to declare, in accordance with regulation 19(2) of the *Electricity Supply Industry (Price Control Regulations) 2003*, the following services supplied by Hydro Tasmania:

- fast raise contingency frequency control ancillary service;
- slow raise contingency frequency control ancillary service; and
- delayed raise contingency frequency control ancillary service;

to meet the Tasmanian local requirement, as declared electrical services.

This Statement of Reasons provides the reasons for the declaration.

Following declaration of the services, by notice in the *Gazette*, the Regulator must conduct an investigation into the pricing policies of Hydro Tasmania in respect of the declared electrical services and report on the appropriate prices that may be charged by, or the appropriate price control mechanisms to be imposed on, Hydro Tasmania in respect of the services. The Regulator then sets out these prices and price control mechanisms in a determination.

The Regulator's declaration follows written notice<sup>1</sup> on 24 July 2009 of the Regulator's intention to declare the supply of raise contingency frequency control ancillary services (FCAS) by Hydro Tasmania as declared electrical services and the consideration of submissions made pursuant to that notice.

Regulation by price control is a focused attempt to change the behaviour of the supplier of a declared electrical service, according to defined standards, in order to bring about a desired economic outcome. In this case, through price regulation of the declared electrical services, the Regulator seeks to prevent the misuse of substantial market power and promote competition in the markets for those services (and, as a consequence, the energy market and downstream markets) in Tasmania which should lead to more economically efficient prices paid by customers for their electricity.

At times, the Australian Energy Market Operator (AEMO) can only source all three raise contingency FCAS services to meet the local requirement from Hydro Tasmania. In these circumstances, local generators, including Hydro Tasmania, are required by the National Electricity Rules (NER) to meet the costs of the services in proportion to their energy output and Hydro Tasmania receives all the revenue from the provision of the services.

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<sup>1</sup> Office of the Tasmanian Economic Regulator, *Notice of intention to declare the supply of raise contingency frequency control ancillary services by Hydro Tasmania as a declared electrical service – Issues Paper*, July 2009.

The present market design does not necessarily deliver economically efficient prices for end-use customers in Tasmania. The local markets for the raise contingency FCAS are dominated by a single generator in Hydro Tasmania that is always the “marginal cost producer” as it can bid into the market the highest priced megawatt (capped under the NER at \$10 000/MWh) of the services that must be enabled to meet Tasmania’s requirement.

Generators that enter and operate in the National Electricity Market (NEM) must manage their risks in doing so. In an effective competitive market, participants would expect to pay no more than the economically efficient cost of supply for raise contingency FCAS. In observing prices for raise contingency FCAS in Tasmania prior to April 2009, generators would be reasonably knowledgeable of the likely level of their exposure to high FCAS prices and also be aware that there is a shortage of, in particular, fast raise contingency FCAS in Tasmania. This shortage is exacerbated by the tightening of the frequency operating standards; the increasing proportion of low inertia generation in the generation mix encouraged by renewable energy policies; and the closure of the Bell Bay thermal power station which had been a source of the services. In addition, a change by AEMO to the Tasmanian FCAS calculation method from 21 May 2009<sup>2</sup> has increased the fast raise FCAS requirements in Tasmania by excluding, in its FCAS calculations, the contribution of the largest single contributor of inertia to the system.

From 29 May 2005, when Tasmania became a participating jurisdiction in the NEM, to 28 March 2009 (a total of 200 weeks), the average weekly spot price for raise contingency FCAS in Tasmania was less than \$10/MWh for 91.5 per cent of the time and less than \$5/MWh for most of the time. During that period, the average weekly price exceeded \$50/MWh on only two occasions.<sup>3</sup>

However, in the three weeks commencing 29 March 2009, the average weekly spot price in Tasmania for raise contingency FCAS was \$387/MWh, \$305/MWh and \$239/MWh respectively. The significant high pricing of the services in these three weeks commenced on 1 April 2009 when AETV Power, the most significant on-island competitor to Hydro Tasmania in the Tasmanian energy market, commenced commercial operations<sup>4</sup> with the running of its FT8 gas turbine generators. This coincided with the closure of the Bell Bay power station and new financial hedge arrangements for energy between Aurora Energy and AETV Power and between Aurora Energy and Hydro Tasmania.

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<sup>2</sup> NEMMCO, Communication No 3379 – Changes to Tasmanian FCAS requirements including inertia and demand impacts, 18 May 2009.

<sup>3</sup> In the weeks commencing 14 January 2007 and 20 July 2008, the average weekly spot price was \$57/MWh and \$74/MWh respectively. In each of these weeks, significant power incidents occurred in the NEM which resulted in high priced FCAS being enabled in Tasmania.

<sup>4</sup> AETV Power has advised that the FT8s operated for a short period of time prior to April as part of its recommissioning tests.



In the period 1 April to 3 April 2009, the Australian Energy Regulator reported<sup>5</sup>:

On 1 April Hydro Tasmania changed its bidding strategy to price all raise FCAS for periods of the day at \$5 000/MW (prior to that time these services were priced at \$2/MW). This continued into Thursday and Friday and led to prices for all raise contingency services at these times reaching \$5 000/MWh. During the high priced FCAS periods Hydro Tasmania also offered two thirds of its capacity in the energy market at just under \$5 000/MW.

AEMO reported that<sup>6</sup>:

With Basslink importing into Tasmania at its limit and local generators being either ramp rate constrained or fully dispatched, generation offered in the higher priced bands had to be dispatched in Tasmania.

Note that the maximum price under the NER at which Hydro Tasmania could have bid its raise contingency FCAS is \$10 000/MWh. When the spot price for any of these services exceeds \$5 000/MWh, the AER would have been required under the NER to investigate and report<sup>7</sup> on the circumstances giving rise to such high prices.

In the circumstances of Basslink importing at its limit and Hydro Tasmania's high pricing of its energy and FCAS, the Tasmanian spot prices in the energy and FCAS markets were high. The significant FCAS costs for local raise contingency FCAS had to be met by local generators. Note that Hydro Tasmania received all FCAS payments as the only registered provider of the services, but also paid a high proportion of the costs.

This bidding behaviour by Hydro Tasmania continued over a three-week period. One of the effects of Hydro Tasmania's bidding strategy was that AETV Power, which sought to take advantage of the high energy prices at the time, was compelled to cease generating as its liability for raise contingency FCAS exceeded the revenue to be made from generating. Roaring 40s wind farms continued to operate despite being in a similar situation.<sup>8</sup> Another registered participant in the market, Infratil Energy Australia, which has a power purchase agreement with LMS Generation, a small landfill gas fuelled power plant near Launceston, received such a large and unexpected bill for raise contingency FCAS that its agreement with LMS Generation is now in jeopardy. LMS Generation's plans for expansion and even the continuation of its generation operation are also in doubt.<sup>9</sup>

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<sup>5</sup> AER, *Weekly Market Analysis*, 29 March – 4 April 2009.

<sup>6</sup> AEMO, *Pricing Event Reports - April 2009*.

<sup>7</sup> Clause 3.13.7(e) of the NER.

<sup>8</sup> It has since been noted that at times of high FCAS prices, Roaring 40s has withdrawn energy supply from the market.

<sup>9</sup> Submissions from Infratil Energy Australia and LMS Generation to the Regulator's Issues Paper.

Hydro Tasmania continued its bidding strategy until 17 April 2009 when AETV Power entered a hedge arrangement with Hydro Tasmania to protect itself from a repeat of Hydro Tasmania's bidding behaviour. Prices for the services then returned to pre-April levels.

These high priced outcomes rarely occur in the NEM and only on the occurrence of unusual network constraints. The FCAS markets attract little attention as there are many sources of the services and prices are low. However, in Tasmania, at least 70 MW of fast raise contingency FCAS must be sourced locally in the Tasmanian region from Hydro Tasmania for a large proportion of the time.

In the NEM, the energy and eight FCAS spot markets are co-optimised in real time to ensure that demand across all regions of the NEM is met by the least cost solution. Hence the outcomes in the FCAS and energy markets are not independently determined and also will impact on the direction of the energy flow across Basslink.

Were the local market for raise contingency FCAS a competitive one and, therefore, reflective of the economically efficient cost of supply, sustained high prices would be sufficient incentive for more efficient suppliers to enter the local markets for the services and make a profit. However, the markets for the services are not competitive, being dominated by a single supplier in Hydro Tasmania, and at \$5 000/MWh, the price for the services does not, in the Regulator's view, reflect the economically efficient cost of supply. The Regulator considers that Hydro Tasmania is misusing its market power, extracting "monopoly rents" and is anti-competitive in bidding the services at such high prices.

Hydro Tasmania has argued that fast raise contingency FCAS is in short supply in Tasmania, but this does not justify \$5 000/MWh prices particularly when the power system is not under duress. Slow and delayed raise contingency FCAS were similarly priced at \$5 000/MWh yet are not comparatively scarce. The circumstances in the Tasmanian market that changed on 1 April 2009, were the closure of the Bell Bay Power station thermal units, the commencement of significant on-island competition in the form of AETV Power, and new financial hedge arrangements between Aurora and AETV Power and Aurora and Hydro Tasmania for energy. Note that prior to 1 April 2009, at times when Bell Bay Power station was not operating, the spot prices for the raise contingency FCAS appear to have been unaffected. Furthermore, the new Tasmanian frequency operating standards were not in place which were expected to increase the Tasmanian FCAS requirement.

The financial hedge arrangement negotiated between AETV Power and Hydro Tasmania for FCAS is considered by AETV Power to be an interim measure for managing its financial risks arising from Hydro Tasmania's bidding behaviour. The hedge arrangement may or may not reflect the efficient costs of supply but, given Hydro Tasmania's market power in the local market, AETV Power must continue in this hedge arrangement to protect itself from a repeat of Hydro's April behaviour, or supply its own FCAS which would not fully limit its exposure.

Given the circumstances described above, the Regulator considers that Hydro Tasmania has substantial market power in the provision of raised contingency FCAS services in the Tasmanian local market and that, to promote competition in the generation market in Tasmania, promote efficiency in the provision of those services and protect the interests of customers who ultimately pay for these inefficient price outcomes, these services should be declared.

The declaration takes effect on the day that the notice making the declaration is published in the *Tasmanian Government Gazette* or on a later day specified in the notice.



## 2 DECLARATION CONTEXT

The Regulator has decided to declare the three raise contingency frequency control ancillary services supplied by Hydro Tasmania, to meet the Tasmanian local requirement, as declared electrical services. These declared electrical services are referred to in the ensuing chapters of this Paper as “defined services”.

This section describes the context in which the Regulator has made his decision including national and Tasmanian energy policy objectives, the supply situation in Tasmania of the defined services, and the circumstances that have warranted regulatory intervention by way of a declaration.

### 2.1 National energy policy objectives

In 2001, the Council of Australian Governments agreed to a set of core national energy policy objectives and principles to guide future energy policy decision making by jurisdictions and to provide increased certainty for energy users.

Those core objectives included:

Encouraging efficient provision of reliable, competitively priced energy services to Australians, underpinning wealth and job creation and improved quality of life, taking into account the needs of regional, rural and remote areas.

This objective was further recognised in the following objective contained in the Australian Energy Markets Agreement:

The promotion of the long-term interest of consumers with regard to the price, quality and reliability of electricity and gas services.

and reflected in the National Electricity Objective, as stated in the National Electricity Law<sup>10</sup>

... to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to –

- (a) price, quality, safety, reliability, and security of supply of electricity; and
- (b) the reliability, safety and security of the national electricity system.

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<sup>10</sup> Section 7 NEL.

## 2.2 Tasmanian energy policy objectives

The Tasmanian Government's policy objectives are reflected in the *Electricity Supply Industry Act 1995* and include the promotion of efficiency and competition in the electricity supply industry and protection of the interests of electricity consumers. These objectives are consistent with national energy policy objectives.

The *Electricity Supply Industry (Price Control) Regulations 2003* provide for regulatory intervention where there is substantial market power in the supply of a good or service by an electricity entity and where the promotion of competition, efficiency or the public interest warrants that intervention. That intervention is in the form of

- (a) a declaration of the relevant services as "declared electrical services";
- (b) an investigation of the pricing policies by that entity of the declared electrical services; and
- (c) a determination of the prices that may be charged for, or the price controls that may be imposed on, the entity for the supply of those services.

## 2.3 Frequency control ancillary services in the NEM

Frequency control ancillary services are required to maintain the frequency of the power system within frequency operating standards determined by the AEMC Reliability Panel. To maintain frequency, AEMO procures FCAS from participants registered with it for one or more of the eight distinct FCAS spot markets in which they wish to provide their services.

The subject of this declaration is the three raise contingency FCAS (that is, fast, slow and delayed services) which are required to be available to correct the frequency excursions that have arisen from a contingent event that results in a decrease in frequency, such as the loss of a generating unit or a transmission line. The three raise contingency FCAS are:

- fast services provide a fast acting response to arrest frequency deviations within the first six seconds of a contingent event;
- slow services provide a slower acting response to stabilise frequency deviations within 60 seconds of the event; and
- delayed services provide further stability to the system by returning the frequency to the normal operating band within five minutes.

Generators are paid for being enabled to provide these services whether or not a contingent event occurs.

Generally, AEMO will source the necessary FCAS from all interconnected regions in the NEM in a co-optimised manner using its NEM Dispatch Engine (NEMDE) which runs every five minutes to balance supply and demand. That is, NEMDE determines the optimal dispatch of energy and FCAS, based on the energy and FCAS bids and

offers in the energy and eight FCAS spot markets, to minimise the total cost of energy and FCAS across the NEM.

AEMO recovers the costs of raise contingency FCAS services in the NEM from generators, as raise contingency FCAS requirements are mostly set to manage the loss of a generator on the system. All payments for these three services (fast, slow and delayed) are recovered from generators in proportion to the energy they generate in the relevant five-minute dispatch interval. A generator, therefore, is liable to pay the market price for the three raise contingency services whenever it generates.

Costs for raise contingency FCAS are allocated to the region, rather than globally, where local regional requirements determine the costs of the local FCAS.

## 2.4 Frequency control ancillary services in Tasmania

Contingent events which may influence the requirements for raise contingency FCAS in Tasmania include tripping of the largest generating unit, a single transmission line circuit and/or Basslink. The amounts of each of the services required are usually determined by the type and size of the generators that are connected, the load on the power system, the inertia of the power system and Basslink flows.

As Tasmania is a region of the NEM, AEMO is responsible for controlling the frequency of the Tasmanian power system within the Tasmanian frequency operating standards, which differ in several respects from those that apply on the mainland.

Raise contingency FCAS are supplied in the Tasmanian region of the NEM by registered service providers which comprise Hydro Tasmania (the only registered provider of these services in Tasmania) and mainland suppliers through the frequency control facility provided by Basslink.

A bid submitted for raise contingency FCAS represents the amount of additional MWs that a registered provider can contribute to the system in the given timeframe in order to raise the frequency. Basslink is able to transfer raise contingency FCAS to cater for contingency events in Tasmania at certain operational levels through its interconnection with the rest of the NEM by increasing power transfers into the Tasmanian grid.

However, there are restrictions on the amount of raise contingency FCAS that can be provided via Basslink. The amount is dependent on the margins between Basslink flows and Basslink limits (Basslink provides a continuous rated export

capacity of 600 MW from Tasmania and an import capacity up to a maximum of 480 MW<sup>11</sup>), and a no-go zone ( $\pm 50$  MW) in which Basslink is unable to transfer FCAS.

When Basslink is at or close to its rated import capacity or its no-go zones, or in the event that Basslink is out of service, the local requirement for raise contingency FCAS to cater for a local contingency event (ie generator or transmission line trip) must be supplied from local generators, or customers (through the shedding of load), who are registered with AEMO to provide these services. Hydro Tasmania is the only registered provider of the local raise contingency FCAS requirement. As Basslink is also not able to transfer FCAS to cater for its own tripping, around 70 MW<sup>12</sup> of fast raise FCAS must be enabled locally to cater for its loss while importing.

As mentioned earlier in this paper, costs for raise contingency FCAS are allocated to the region, rather than globally, where local regional requirements determine the costs of the local raise contingency FCAS. Under this arrangement, market generators in Tasmania are exposed to higher charges for raise contingency FCAS services than generators in the rest of the NEM when the price offered for the local services exceeds the price in the remainder of the market.

The impact of a trip of Basslink itself is minimised by the Basslink Frequency Control Special Protection Scheme (FCSPS). The FCSPS operates automatically in response to a Basslink trip and initiates load or generator shedding, depending on the Tasmanian load demand and Basslink import or export. It has the effect of reducing the contingency FCAS requirement in the event of a Basslink trip to one that can be managed locally by the enablement of (local) FCAS.

In the event of a trip of Basslink when importing to Tasmania, the FCSPS automatically and dynamically sheds the required amounts of load. Certain large customers are paid by Hydro Tasmania for making their load available for interruption. The more load that Hydro Tasmania can contract for the FCSPS, the larger the Basslink import that can be accommodated, up to its physical import limit of 480 MW.

However, the raise contingency FCAS requirement to cater for a Basslink trip on import must be sourced locally and cannot be transferred over Basslink. Only Hydro Tasmania can supply the local requirement, being the only registered participant in the Tasmanian FCAS market. Load contracted for the FCSPS cannot be bid as raise contingency FCAS.

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<sup>11</sup> Basslink does not operate at its maximum physical import of 480 MW. In practice, Basslink's import is limited by the amount of interruptible load in the Frequency Control Special Protection Scheme (FCSPS).

<sup>12</sup> In the Regulator's Issues Paper, the residual local requirement was stated to be around 30MW. However, with the change to AEMO's approach to the calculation of the Tasmanian FCAS requirement, Hydro Tasmania has advised that the requirement has increased to around 70MW.



If the FCSPS is unavailable or if some of the contracted load is not available for shedding by the FCSPS, the raise contingency FCAS requirement, which must be sourced locally, is increased significantly and/or the import capability of Basslink is constrained.

## 2.5 Sources of raise contingency FCAS in Tasmania

Raise contingency services are provided by technologies that can locally detect the drop in frequency following a contingent event and respond in a manner that corrects the frequency. In Tasmania, the sources of FCAS are via Basslink where an increase in imports will effect an increase in frequency, and Hydro Tasmania generators, registered with AEMO to provide particular FCAS service(s). For the Hydro Tasmania generators, the generator's governor reacts to the frequency decrease by increasing the MW output. However, the reserving of a MW output for FCAS services is at the expense of producing energy. The NEM dispatch engine (NEMDE) co-optimises energy production and FCAS 'enablement' to achieve the least cost solution to meet demand.

The other options for the provision of raise contingency FCAS in Tasmania can be summarised as follows.

- Other Tasmanian generators can register with AEMO to provide the particular FCAS service(s).
- Customers can register with AEMO to make their loads available for quick disconnection in response to a decline in frequency. No loads are presently registered.
- Investment in 'stand alone' technologies such as energy storage systems again registered with AEMO, which can provide a "burst of power" when a frequency decrease is detected and thus contribute to FCAS raise services. No such systems presently exist in the NEM.

## 2.6 Availability of fast raise FCAS in Tasmania

It is widely known in the electricity supply industry that fast raise contingency FCAS in Tasmania is in short supply because of the slow response of hydro generators (the dominant generation type in Tasmania) to frequency disturbances.

Following a review of the Tasmanian frequency operating standards by the AEMC Reliability Panel, a tightening of the standards took effect on 28 October 2009. The new standards allow a greater diversity of generating technologies to connect to the Tasmanian power system to mitigate material risks<sup>13</sup> to the security of the electricity supply in Tasmania. Thus, AETV Power's 203 MW closed cycle gas turbine and

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<sup>13</sup> Material risks cited by the AEMC Reliability Panel included higher than expected load growth, continued low hydro inflows, a prolonged outage of Basslink, or loss of the ageing Bell Bay generating units, which have now been decommissioned.

potentially other higher efficiency thermal generating units, including co-generation steam turbines, are now able to connect to the Tasmanian network.

However, the tighter frequency operating standards were introduced with the proviso that there be a limit on the size of the largest generator contingency of 144 MW<sup>14</sup>, in order to avoid a significant increase in FCAS costs that a larger contingency would incur. In other words, where a generator's capacity is greater than 144 MW (as in the case of AETV Power's 203 MW CCGT), then to operate up to its full capacity it must implement an arrangement similar to the Basslink FCSPS such that contracted load will automatically trip to limit the size of the resulting contingency to no more than 144 MW. A load can be contracted to operate on multiple schemes as long as the need to initiate both schemes simultaneously is not deemed to be a credible contingency.

Irrespective of this curb on the largest generator contingency size, the tighter standards themselves resulted in a small increase in the FCAS requirements, particularly for fast raise contingency FCAS. In addition, the change in AEMO's approach to the calculation of the Tasmanian FCAS requirement, which excludes the contribution of the largest single contributor of inertia to the system, also increases the FCAS requirement in Tasmania.

## 2.7 Cost of supply of raise contingency FCAS by Hydro Tasmania

Fast raise FCAS is in short supply in Tasmania. As Hydro Tasmania is the only provider of local raise contingency FCAS, the energy output of Hydro Tasmania plant may be constrained by NEMDE in order to obtain additional FCAS. This trade-off comes at an increased cost to Hydro Tasmania through inefficient operation of its plant, that is, less energy is produced from a given amount of water. This suboptimal operation will inevitably lead to higher energy prices.

Hydro stated in its submission to the Regulator's Issues Paper:

For all generators providing raise contingency FCAS out of their production, the cost of supply comprises:

- The direct cost of enablement (which is relatively small); and
- The economic cost (opportunity cost of energy effectively lost by being reserved for raise contingency FCAS and costs associated with inefficient operation).

and

Hydro Tasmania quite often operates some plant at output of 10 to 20% to supply FCAS. Current experience indicates that such low load operation

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<sup>14</sup> Prior to the application of the new Tasmanian frequency operating standards, the largest generator contingency was 144 MW, which represented the largest generating unit in Tasmania. With connection of the AETV closed cycle gas turbine to the network, the largest generating unit became 203 MW.

significantly deteriorates the turbine (through cavitation), increases significantly maintenance requirements, advances timing of major overhaul and contributes to loss of life of the plant. The efficiency of water use at low output is very poor and at Gordon power station low load operation uses more than double the water to produce each 1MW output compared to operation at the most efficient output.

In the AEMC Reliability Panel's assessment of the costs of ancillary services (as part of a proposal to implement a causer pays scheme for ancillary services in Tasmania), it used figures provided by Hydro Tasmania to quantify the FCAS costs associated with a change to the Tasmanian frequency operating standards: namely a \$3.5 million allowance for inefficient operation to provide ancillary services (water losses); a further \$0.8 million allowance for inefficient dispatch; and \$0.4 million for increased maintenance to provide ancillary services. However, since that time, in making a submission to the AEMC on a proposed change to the NER to implement causer pays for ancillary services in Tasmania,<sup>15</sup> Hydro Tasmania indicated that these costs will double subsequent to AEMO's revised approach to the treatment of inertia in the calculation of the Tasmanian FCAS requirement.<sup>16</sup>

Hydro Tasmania states in its submission to the Regulator that its economic cost has not been reflected in the historical spot prices for raise contingency FCAS:

At historical levels, the raise contingency FCAS spot price essentially covers just the (small) direct cost of enablement for generators, not the economic cost.

and

Even if the economic cost of providing FCAS is high, Hydro Tasmania has had no choice but to ensure that there is sufficient local supply to meet the local requirement. It has also had an incentive at various times to meet the maximum Tasmanian generator contingency (at significant cost to transition Basslink through the no-go zone) so that Basslink can respond promptly and not become trapped.

However, the drive to produce an optimal co-optimised dispatch outcome in terms of both energy and FCAS has meant Hydro Tasmania has been unable to recover the true economic cost of providing FCAS without creating an adverse revenue outcome in energy. This provides an opportunity for freeriding by new Tasmanian gas fired generation and traps Hydro Tasmania into having to provide even more FCAS on an uneconomic basis.

The problem that is looming is that Hydro Tasmania does not have sufficient capability to address future needs when global sourcing is not possible, which is

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<sup>15</sup> Letter from Hydro Tasmania to the AEMC, *Supplementary submission to proposal to implement causer pays for ancillary services to Tasmania*, 13 May 2009.

<sup>16</sup> NEMMCO, *Communication No 3379 – Changes to Tasmanian FCAS requirements including inertia and demand impacts*, 18 May 2009.

likely to increase the risk of co-optimisation producing uneconomic outcomes (such as counter-priced flows) and higher energy prices for consumers.

## 2.8 Raise contingency FCAS prices

As discussed in the Regulator's Issues Paper, prices for raise contingency FCAS are generally low under typical operating conditions with average prices generally higher than those on mainland Australia; this likely reflects a higher cost of provision of these services locally (although the economic cost has not necessarily been reflected in these prices – refer to section 2.7 above).

FCAS prices can dramatically increase as a consequence of events that require the sourcing of significantly increased quantities of FCAS from a limited number of providers. For example, on 23 July 2008 an unplanned outage of two major transmission lines on the mainland resulted in Tasmanian generators being dispatched for more than 200 MW of each raise contingency service to meet the needs on the mainland (over and above that required locally).<sup>17</sup> On that occasion, raise contingency FCAS prices exceeded \$5 000/MWh.

Since NEM entry and prior to 1 April 2009, the average weekly prices for each of the fast, slow and delayed raise FCAS were less than \$5/MWh, \$1/MWh and \$2/MWh respectively for most of the time. The average daily price for fast raise FCAS, the service that is considered to be in short supply in Tasmania, exceeded \$100/MWh on 17 days over a period of 1 398 days since NEM entry and the maximum average daily price reached in that time was \$611/MWh on 23 July 2008 (refer the incident above).

Over the period 1 April to 17 April 2009 (ie 17 days), the average daily price for fast raise FCAS exceeded \$100/MWh on 15 days, and on five of those days, exceeded \$600/MWh. The AER reported the prices for the three raise contingency FCAS reaching \$5 000/MWh for a period totalling 12.5 hours in the first three days of April 2009 alone.<sup>18</sup>

This increase reflected a change in Hydro Tasmania's bidding strategy, whereby Hydro Tasmania priced all of its raise contingency services (ie fast, slow and delayed services) at \$5 000/MWh and offered two thirds of its capacity in the energy market at just under \$5 000/MWh at the same time.<sup>19</sup>

Under such circumstances, that is, with high energy and FCAS offers, the most cost effective solution to meet Tasmania's demand, determined through NEMDE's co-optimisation process, was to import lower priced energy to Tasmania at Basslink's maximum.<sup>20</sup> Arising from this, all raise contingency FCAS requirements had to be

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<sup>17</sup> AER, *Prices above \$5 000/MWh report – 23 July 2008*.

<sup>18</sup> AER, *Weekly Market Analysis, 29 March – 4 April 2009*.

<sup>19</sup> *Ibid.*

<sup>20</sup> A maximum that is a function of the loads available for shedding under the FCSPS.

sourced in the Tasmanian region and paid by Tasmanian generators to Hydro Tasmania (noting that Hydro Tasmania paid a large proportion of these costs).

The impact of Hydro Tasmania's bidding strategy was that those generators that were generating at the time paid more for FCAS than they could receive for the sale of their energy. One of Hydro Tasmania's competitors, AETV Power which was generating to capture the benefits of high priced energy, was compelled to withdraw from the market so as not to incur "ruinous FCAS charges"<sup>21</sup>; those generators that continued to operate, or third parties in power purchase agreements with Tasmanian generators, found themselves liable for significant and unexpected FCAS costs.

Hydro Tasmania's bidding strategy continued until 17 April 2009, when AETV Power entered a hedge arrangement with Hydro Tasmania for raise contingency FCAS to protect itself from the financial risks arising from Hydro Tasmania's high raise contingency FCAS bids.

There has been no suggestion in any report issued by the AER or AEMO, or Hydro Tasmania itself, that the supply of raise contingency FCAS and energy was under pressure at that time such that only high priced raise contingency FCAS was available for enablement. Hydro Tasmania stated there to be:<sup>22</sup>

No real significance to the events of April 2009 – these would not have been viewed by market participants as anything other than the market at work but for Aurora's decision not to have any FCAS capability and clearly not to have any risk management strategy in place other than to turn this into a regulatory debate.

From 17 April 2009, raise contingency FCAS prices returned to pre-April levels. However, since 28 October 2009, when the new Tasmanian frequency operating standards and a change to AEMO's approach to the calculation of FCAS requirements (refer section 2.6) took effect, the average daily spot prices for fast raise contingency FCAS have been of the order of \$22/MWh. Hydro Tasmania advised the Regulator in November 2009 that:

the impact of the changes to the TFOS and AEMO calculation of the Basslink import constraint, have resulted in material costs to Hydro in meeting a higher fast raise FCAS requirement. The costs are incurred from a combination of providing FCAS and inertia to satisfy the various FCAS constraints.

The impact of these changes has resulted in material costs to Hydro Tasmania in meeting a higher local fast raise FCAS requirement. The costs incurred are from a combination of providing FCAS and inertia to satisfy the various FCAS constraints.

Notwithstanding the above, it is the bidding behaviour of Hydro Tasmania during the early April period when FCAS was bid at \$5000/MWh that has attracted the

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<sup>21</sup> AETV Power submission to the Regulator's Issues Paper

<sup>22</sup> Hydro Tasmania, *OTTER Presentation speaking points*, 10 September 2009.

Regulator's attention and triggered the Regulator's consideration of declaration of raise contingency FCAS to meet the requirement in the Tasmanian region.

## 3 DECLARATION PROCESS

### 3.1 Declaration of services

The Regulator's objectives in exercising his powers and functions under the *Electricity Supply Industry Act 1995*, the regulations and Tasmanian Electricity Code, include to:

- promote efficiency and competition in the electricity supply industry; and
- protect the interests of consumers of electricity.<sup>23</sup>

Regulation 19 of the *Electricity Supply Industry (Price Control) Regulations 2003* (Price Control Regulations) provides the Regulator with the power to declare a good or service provided by an electricity entity to be a declared electrical service if the Regulator is of the opinion that –

- (a) the electricity entity has substantial market power in respect of that good or service; and
- (b) the promotion of competition, efficiency or the public interest requires the making of that declaration.

When a good or service is 'declared' by the Regulator then the Regulator must conduct an investigation into the pricing policies of the entity in respect of the declared electrical service.

Before making a declaration, regulation 19(3) requires the Regulator to:

- (a) give written notice of his or her intention to make the declaration, and the reasons for making the declaration, to each electricity entity providing the good or service; and
- (b) publish that notice in such daily newspapers as the Regulator considers appropriate; and
- (c) allow the electricity entity and any other person to make written submissions to the Regulator with respect to the matter within such reasonable time as is specified in that notices.

The Regulator gave notice to Hydro Tasmania of his intention to declare raise contingency FCAS as declared electrical services on 24 July 2009. That notice was accompanied by an Issues Paper<sup>24</sup> that described the background that triggered the

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<sup>23</sup> Section 6(2) of the *Electricity Supply Industry Act 1995*.

<sup>24</sup> Office of the Tasmanian Economic Regulator, *Notice of intention to declare the supply of raise contingency frequency control ancillary services by Hydro Tasmania as a declared electrical service, Issues Paper, July 2009*, OTTER, Hobart, 2009.

Regulator's consideration of a declaration and provided reasons for declaring the services. A notice was published in the three Tasmanian newspapers on 24 July 2009 and simultaneously published on the Regulator's website. The Issues Paper was also provided to electricity entities licensed in Tasmania and other interested parties inviting submissions on the matter. Eleven submissions were received. All submissions have been published on the OTTER website<sup>25</sup> and a list of those who made submissions is included in Appendix A.

A declaration of a declared electrical service takes effect on the day the notice making the declaration is published in the *Gazette* or on a later day specified in the notice.

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<sup>25</sup> [www.economicregulator.tas.gov.au](http://www.economicregulator.tas.gov.au)



## 4 INVESTIGATION

Regulation 23(1) of the Price Control Regulations requires the Regulator to conduct an investigation into the price policies of an electricity entity in respect of a declared electrical service.

Before conducting the investigation, the Regulation must give notice of the investigation to the Minister (in this case the Treasurer) and each electricity entity which is the subject of the investigation (in this case Hydro Tasmania) and publish the notice in daily Tasmanian newspapers as appropriate.

There is no timeframe specified in the Regulations for the commencement or conclusion of the investigation after a declaration is made.<sup>26</sup> However, the Regulator expects to commence the investigation in early 2010.

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<sup>26</sup> However, regulation 23(6) of the Price Control Regulations (which deals with the retention of an existing declaration) implies that an investigation should be conducted within a reasonable time of the Regulator's decision in respect of a declaration.



## 5 ASSESSMENT AGAINST CRITERIA

Competitive markets are considered in Australia to be the primary and preferred mechanism for the provision of goods and services. The Tasmanian Price Control Regulations provide for the Regulator to limit the economic behaviour of an electricity supply entity in the Tasmanian market where the entity has substantial market power and the promotion of competition, efficiency and the public interest warrants that limitation.

This section contains an assessment of the supply of the defined services by Hydro Tasmania against each of these criteria.

### 5.1 Substantial market power

A business possessing market power has the ability to charge higher prices and/or provide a lower level of service quality than would be provided through a competitive market. Without the discipline of competition, a misallocation of resources may result in market failure if prices no longer reflect the underlying efficient economic costs. In cases of market failure, government regulation can provide a corrective mechanism. Usually, the presence of competition will be the driver that encourages new investment in the market that will drive prices down.

In assessing the extent of Hydro Tasmania's market power, the market must firstly be defined.

Raise contingency frequency control ancillary services are supplied in the Tasmanian region of the NEM by registered service providers which comprise Hydro Tasmania, the sole registered provider in the Tasmanian region, and suppliers from mainland Australia through the frequency control facility provided by Basslink. The amount of FCAS required at any point in time is dependent on the power system inertia, the contingency size and the system load. However, the total FCAS requirement cannot be met via Basslink. At least 70 MW<sup>27</sup> must be supplied in the Tasmanian region to cater for a Basslink trip during import or zero flow across the link. When Basslink is importing at or close to its limit, the services must also be wholly supplied locally. This local FCAS requirement can only be satisfied by Tasmania's sole registered provider, Hydro Tasmania.

The price of raise contingency FCAS in Tasmania for any five-minute dispatch interval is the cost to enable the last MW of FCAS to meet Tasmania's FCAS requirement. As Hydro Tasmania is always required to supply FCAS in the Tasmanian region, it is always the marginal cost producer; it can offer its FCAS in Tasmania at as high a price as it chooses.

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<sup>27</sup> Refer section 2.8.

The “defined market” is therefore the market for the supply of raise contingency FCAS from within the Tasmanian region to meet the Tasmanian local requirement.

In determining whether a firm has a substantial degree of power in a market, the courts have looked at various factors.

In *Queensland Wire Industries Pty Ltd v Broken Hill Pty Co Ltd (1989)*<sup>28</sup>, market power has been defined as:

the ability of a firm to raise prices above the supply cost without rivals taking away customers in due time, supply cost being the minimum cost an efficient firm would incur in producing the product... In determining the degree of market power a court should consider the extent to which the conduct of (the defendant) in that market is constrained by the conduct of ... competitors, or potential competitors ...

Hydro Tasmania is not presently constrained by the actions of other generators in the defined market as it has no competitors and can, therefore, raise prices above the supply cost without any constraint on its conduct by competitors or potential competitors. Hydro Tasmania demonstrated this market power from 1 April 2009 where as part of its bidding strategy it bid all of its raise FCAS services at \$5 000/MWh at various times over a three-week period.

In assessing the degree to which Hydro Tasmania is constrained by the conduct of *potential* competitors in the defined market, the Regulator must consider whether it is possible, and rational, for other parties to enter the defined market and provide the services.

As noted in section 2.5, the three possible sources of raise contingency FCAS in Tasmania are generators, customers and/or stand alone technologies.

Existing Tasmanian wind generators are unable to supply raise contingency FCAS although Roaring 40s, in its submission, advised that “technology that allows wind generation to provide both raise and lower frequency control services is now readily available in the Australian Market.”

AETV Power has indicated that its CCGT is capable of providing some ancillary services to the market but not enough to fully mitigate against its exposure to Hydro Tasmania’s high pricing of FCAS.

To fully cover its risk to high prices, an existing or potential generator would need to provide all of its own FCAS through installing additional plant or contracting for interruptible load, or entering a hedge arrangement with Hydro Tasmania. Aurora Energy, in its submission, commented that it would be “highly inefficient and most likely non-commercial” for a new entrant generator to install additional plant to meet its own FCAS requirements. It would “be required to incur significant additional capital expenditure to build FCAS capability when this may be sourced from an

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<sup>28</sup> *Queensland Wire Industries Pty Ltd v BHP (1989) ATPR 40-925.*

alternative and more cost effective source". That cost effective source is Hydro Tasmania, based on historical prices.

Significant capital investment incurred in setting up to provide FCAS or to modify generators to produce it in sufficient quantities to limit or reduce their exposure may result in either potential owners not being willing to enter the market, or only being willing to enter at a significant discount against construction costs.

A generator will enter the FCAS market if there is a net profit to be made. However, generators primarily enter the market to make a profit from their energy production. Hydro Tasmania is in the position of having historically provided Tasmania's FCAS requirements and continues to do so with what seems to be little prospect of other parties contributing to the local supply. Hydro has indicated in its submission that it

has been unable to recover the true economic cost of providing FCAS without creating an adverse revenue outcome in energy

and also notes that

in the absence of Basslink co-optimisation would not be available and Hydro Tasmania would be able to reflect the economic costs of providing the services continually.

The existence of actual or potentially high priced raise contingency FCAS may be a deterrent to any new entrant generator, particularly at prices of \$ 5000/MWh. On the other hand, the existence of sustained high prices in the defined market that reflect the cost of supply would provide incentive for the providers of FCAS to enter the market.

Hydro Tasmania has argued in its submission that generators in the NEM must manage their risks. "Those firms who can manage these risks and trade offs in the most efficient (least cost) manner can be expected to out perform, in the long run, those firms who do so in a less efficient manner." The Regulator does not disagree. However, since 1 April 2009<sup>29</sup>, new entrant generators in the Tasmanian region appear to have an additional risk to manage over and above that of mainland generators in the NEM, that is, the risk of high FCAS prices set by a dominant generator that are not always subject to the competitive tensions of the market. In the other regions of the NEM, these risks can be reasonably assessed.

The National Electricity Objective includes the promotion of efficient investment in electricity services for the long-term interests of consumers. Investment that is driven by a need for protection from monopoly pricing is not necessarily efficient investment.

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<sup>29</sup> Until 1 April 2009, Hydro Tasmania had no significant on-island competition in the energy market besides Roaring 40s (jointly owned by Hydro Tasmania and China Light and Power) and Bell Bay Power (a wholly owned subsidiary of Hydro Tasmania).

## Conclusion

The Regulator considers that Hydro Tasmania has substantial market power in the supply of the defined services.

## 5.2 Promotion of competition

The Australian Competition Tribunal has defined competition in terms of “rivalrous market behaviour”.

... effective competition requires both that prices should be flexible, reflecting the forces of demand and supply, and there should be independent rivalry in all dimensions of the price-product-service packages offered to consumers and customers.<sup>30</sup>

For competition to be effective in a market, the ability of market participants to exercise market power to the detriment of competition and consumers is constrained by the actions of other market participants. When supplying the local requirement for raise contingency FCAS, Hydro Tasmania is not constrained by the behaviour of other market participants in the setting of its prices.

As has been demonstrated in the first three weeks of April 2009, Hydro Tasmania can ensure that Basslink is importing cheaper electricity from Victoria to Tasmania through high pricing of blocks of energy. In this circumstance, when Basslink is importing at or close to its limit, Hydro Tasmania, as the only source of raise contingency FCAS in the Tasmanian region, can (and has) bid its FCAS at such high levels that competing Tasmanian generators can be liable for FCAS costs that exceed the revenue they receive from generating electricity.

The impact on other Tasmanian generators included:

- the curtailment of energy production as the FCAS costs exceeded the revenue made through energy sales;
- a liability for significant unexpected FCAS costs that could, if this bidding behaviour is repeated, mean plant closure; and
- a generator being forced to protect itself from such high prices through a financial hedge arrangement with the sole provider.

In compelling other generators to cease generating, competition in the energy market is accordingly reduced.

Notably, Hydro Tasmania’s bidding behaviour ceased when AETV Power, Hydro Tasmania’s only significant competitor in the Tasmanian energy market, entered a

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<sup>30</sup> *Queensland Cooperative Milling Association Ltd and Defence Holdings Ltd (1976)*, ATPR 40-112

hedge arrangement with Hydro Tasmania to protect itself from the high FCAS prices.<sup>31</sup> AETV in its submission has stated that the result of these events is that:

AETV's costs have increased and in the medium term the outcome is likely to be an increase in energy prices, unless some external control is imposed on FCAS prices.

Despite prices promptly reverting to pre-April levels from 17 April 2009, Infratil Energy Australia (IEA) expressed concern in its submission to the Regulator's Issues Paper namely, that it "cannot continue to operate in a market which presents such risk, especially where it cannot be managed – other than through buying protection from the monopoly provider that is causing the risk". LMS Generation expressed similar concerns.

Hydro Tasmania's ability to set the price for these services in the defined market through a bidding strategy such as that exercised in April 2009 can make it uneconomic for competitors to generate electricity. The prospect of future bidding behaviour like this is likely to deter new generators from entering into the Tasmanian energy market, deter the expansion plans of existing generators, and even result in the closure of plant.<sup>32</sup> The Regulator considers that Hydro Tasmania's bidding behaviour poses a risk to present and future competition.

On the other hand, Hydro Tasmania, the National Generators Forum and Roaring 40s contend that the regulation of FCAS would diminish competition, as it would remove any incentive for other suppliers of FCAS to enter the market. This contention would appear to be based on the assumption that regulation would be by means of capping the price at a level that provides no incentive for others to enter the market. The price control mechanisms available to the Regulator under the Price Control Regulations are not limited to price capping. Options for price regulation may be by reference to the maximum revenue that Hydro Tasmania may receive from its supply of FCAS that avoids monopoly rents (ie excessive profits), the setting of pricing policies or principles or other means.

Hydro stated in its submission that:

... regulation which seeks to insulate market participants from having to manage these normal market risks does not promote competition and is not in the public interest

and that the pressure to assume similar risk management strategies as used in the NEM

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<sup>31</sup> Until 1 April 2009, Hydro Tasmania had no significant on-island competition in the energy market besides Roaring 40s (jointly owned by Hydro Tasmania and China Light and Power) and Bell Bay Power (a wholly owned subsidiary of Hydro Tasmania).

<sup>32</sup> LMS Generation submission

... will produce more economic outcomes than regulation which removes the incentive of individual firms to find the lowest cost, more efficient risk management outcome and suppresses the development of new risk management products.

The Regulator does not consider Hydro Tasmania's behaviour of April 2009 to be a 'normal market risk' if looking at the wider NEM where there is strong competition and no monopoly provider of these services (except perhaps in pockets of the NEM when a part of a region becomes isolated). The Regulator does not propose to insulate market participants from paying prices that reflect the efficient costs of supply; rather it seeks to protect market participants from a monopoly supplier that is charging excessive prices which is likely to deliver inefficient market outcomes and higher prices paid by consumers.

The NEO includes the promotion of efficient investment in electricity services. If the defined services were priced at or near their efficient costs of supply then the entry of a competitor that can provide the services at a lower, but still profitable price, will have an incentive to enter the market. This is consistent with the NEO.

Hydro Tasmania states in its submission in relation to the average weekly price of \$311 MWh in the period 29 March to 17 April 2009:

The simple reality is that a persistent spot price of this magnitude (or the genuine expectation that spot prices of this magnitude would persist) would result in immediate investment in additional supplies or raise contingency FCAS and Hydro Tasmania would no longer be the only registered provider...

Sustained prices at this level would indeed be an incentive for new entrant investment, but not necessarily an efficient one, when the spot prices do not themselves reflect efficient costs for their provision, and not before the monopoly supplier has extracted the benefits of the lack of competition through excessive prices for the services.

The Tasmanian Government did not make a submission to the Regulator's Issues Paper. However, in a submission to the AEMC Reliability Panel's review of the Tasmanian frequency operating standards, the Tasmanian Minister for Energy stated that:

Tasmania needs new sources of generation to replace the aged Bell Bay thermal plant, help rebuild the hydro energy in storage position and to help meeting growing demand. Hence a review of frequency standards needs to consider the need to bring on the most economic and efficient sources of new generation as well as the need to facilitate efficient market operations.

It is implicit in this statement that actions that run counter to bringing new generation into the State would not be desirable from the State's perspective.

In its submission, the AER expressed its support of the Regulator's proposal to declare the defined services by



... protecting other market participants from the high-priced environment experienced in early April that could create a barrier to entry and restrict competition.

Infratil Energy Australia (IEA) has a power purchase agreement with LMS Generation<sup>33</sup>, a licensed generator in Tasmania. IEA stated in its submission that it cannot continue to operate in a market in which there is a risk of high FCAS prices, when the system is not under genuine stress, “especially where it cannot be managed – other than through buying protection from the monopoly provider which is causing the risk”. IEA indicated that the forced closure of LMS’ landfill gas operation “would result in a substantial loss to IEA over the 10 year term of its contract with LMS”.

Further to these comments, LMS Generation indicated that if it cannot sell its output it will be forced to abandon its immediate expansion plans with a significant carbon pollution abatement opportunity. In the longer term it may be forced to close its facility entirely.

Energy Response, a demand side response (DSR) aggregation company, submitted that:

... increased competition for FCAS services (as well as for other services across the NEM) is the only way for the market to operate efficiently and the only way to align costs and benefits with the best outcomes for consumers.

Energy Response considers that a change to the National Electricity Rules to allow aggregation of customer loads to allow greater demand side participation in the FCAS markets is a technical solution to the FCAS issue in Tasmania. The Regulator notes that the AEMC is presently conducting a review of demand side participation in the NEM and “has identified some minor modifications that can be made to the market rules to enable loads to be aggregated more easily to provide ancillary services”. However, in Tasmania, there are limited blocks of sizeable load that would be available for a DSR scheme before loads would need to be aggregated at the residential/small business customer feeder level. Those blocks of load (which make up 60 per cent of the Tasmanian load) are already participating in one or more of the load shedding schemes operating in Tasmania, including the FCSPS, and AETV’s load shedding arrangement that limits its contingency size. Most importantly, those loads contracted for the FCSPS cannot be bid as raise contingency FCAS.

Energy Response further submitted that “making declarations masks the issues and effectively moves the market back to a more regulated environment”. The Regulator disagrees. If the price of the defined services reflects their efficient costs, then there remains incentive for more efficient/competitive means of providing the defined services to enter the defined market, including aggregated DSR (if and when barriers to doing so are reduced).

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<sup>33</sup> A 1.1 MW landfill gas fuelled power plant.

## Conclusion

The Regulator considers that declaration of the defined services is warranted in order to promote competition in the defined market.

### 5.3 Promotion of efficiency

Without the tension of a competitive market, the prices charged by a monopoly provider need not represent the efficient cost of supply.

The \$5 000/MWh prices bid by Hydro Tasmania in April 2009 for its FCAS clearly do not represent the economically efficient cost of supply despite Hydro Tasmania's assertion that it has not reflected its economic costs in historical spot prices for the defined services.<sup>34</sup> Hence, during April, Hydro Tasmania was clearly extracting monopoly rents. The duration of Hydro Tasmania's actions may be relatively small but there is no guarantee that this behaviour will not be repeated. For AETV Power, a hedge arrangement with Hydro Tasmania to protect itself from Hydro Tasmania's bidding strategy will not necessarily give comfort to other Tasmanian generators and potential new entrants.

Consumers need to be assured that they are paying economically efficient prices (which is consistent with the National Electricity Objective) for energy services such that they can maintain economically efficient prices themselves in the global market. This was the view expressed by Rio Tinto in its submission to the Regulator's Issues Paper

... the long term availability of secure electricity supply at a competitive price and quality is therefore fundamental to the viability of our business and indeed to our future in Tasmania.

Through the Regulator's application of price control mechanisms that recognise the efficient cost of supply of these services, competition will not necessarily be guaranteed, but it will send a signal for more efficient suppliers of the defined services to enter the market. Hedge contracts, entered into to protect generators from high pricing of the defined services will not necessarily promote competition in the market for the defined services.

The three key determinants of the total raise contingency FCAS requirement in Tasmania are the size of the largest generator contingency event, system load and power system inertia. Hence, the requirement in any dispatch interval will vary with changes in these variables.

Hydro Tasmania has consistently argued that there is a shortage of local supplies of fast raise FCAS in Tasmania and this is exacerbated by the tightening of the Tasmanian frequency operating standards. The recent change to the Tasmanian FCAS calculation method that excludes the contribution of the largest single contributor of inertia to the system in calculating the FCAS requirement also

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<sup>34</sup> Hydro Tasmania submission to Regulator's Issues Paper.

increases the FCAS requirement in Tasmania<sup>35</sup> as does the increasing proportion of wind generators in the Tasmanian generation portfolio with their low or zero inertia which displaces other forms of generation in meeting Tasmania's electricity demand.

The co-optimisation of the energy and FCAS spot markets can also lead to inefficient outcomes for Hydro Tasmania when the production of energy is "sacrificed" in the provision of FCAS. This translates into greater costs to the market and consumers through higher energy prices.

The Regulator does not dispute that the local sourcing of raise contingency FCAS is becoming more difficult and hence more expensive to supply. It is expected that this would be reflected in Hydro Tasmania's FCAS bids into the market. When Basslink is importing, some low priced FCAS can be sourced from the global pool via Basslink. However, at least 70 MW of FCAS must be supplied locally at all times, in which case, the price bid by Hydro Tasmania as the only registered local supplier, where it is higher than the spot price when the services are globally sourced, is the price that is paid by local generators.

Generators in having a liability to meet their share of the costs of FCAS will manage their "normal" market risks in the NEM in the most cost effective way.

Hydro Tasmania has asserted that the thermal Bell Bay power station units, which would have limited AETV Power's exposure to high FCAS prices, would have been transferred to AETV Power on 31 March 2009, providing "its share of FCAS during April 2009 had Aurora not decided to take it".<sup>36</sup> The Regulator has found no evidence that either Aurora Energy or AETV Power made the decision not to take on the ageing power station.

If the sustained price of FCAS is sufficiently high, there may be sufficient incentive for the generator to invest in the provision of its own FCAS capability; sufficient incentive for a customer to make its load available for shedding; or for other parties to provide FCAS at a cheaper price using alternative technologies. Proponents would consider the prevailing prices which, in a truly competitive market, would represent the efficient costs of supply, and make their decisions accordingly.

Sustained prices of \$5000/MWh would be expected to provide an incentive for others to enter the FCAS market. However, these prices are not typical in the Tasmanian FCAS market; a generator is unlikely to invest significantly in supplying FCAS to protect itself from volatile prices when the prices ordinarily sit at around \$2/MWh. These prices of \$5000/MWh do not represent the efficient costs of providing FCAS; at no time has Hydro Tasmania argued that its pricing of FCAS in April 2009 represented the cost of supplying very high priced FCAS due to operational constraints or other factors.

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<sup>35</sup> NEMMCO, *Communication No 3379 – Changes to Tasmanian FCAS requirements including inertia and demand impacts*, 18 May 2009.

<sup>36</sup> Hydro Tasmania, *OTTER presentation speaking points*, 10 September 2009.

As the demand for FCAS rises, then prices will increase as more expensive sources of FCAS are enabled. The Regulator notes that since 28 October 2009, when the new method for calculating Tasmanian FCAS took effect<sup>37</sup>, the spot price for fast raise contingency FCAS in the Tasmanian region has increased to around \$22/MWh. Sustained prices at this level should attract suppliers of cheaper FCAS to enter the Tasmanian market. Until now, there has been little incentive other than for generators to protect themselves from Hydro Tasmania's behaviour.

AETV Power states that if there were a number of generators providing FCAS in the Tasmanian region, then there would be competition between generators that would ensure that AEMO could purchase FCAS on an efficient and cost effective basis. AETV Power considers that price control on the supply of FCAS by Hydro Tasmania would enable prospective generators to make commercial decisions around the supply of FCAS services "rather than build economically inefficient plant as a mitigation measure".

Roaring 40s commented in its submission to the Regulator's Issues Paper that the regulation of raise FCAS prices:

... will present potential new entrants with a price calculated by the regulator rather than determined by market forces. As such these potential new entrants (including wind generation) will have difficulty in determining the value of participating in the FCAS markets. They will also have difficulty in forecasting the FCAS liabilities of a new power station.

In response, the Regulator in declaring a service to be a declared electrical service is not bound to set a price. This is but one pricing mechanism that is available to the Regulator. Secondly, a price 'calculated by the regulator' that represents the efficient cost of supply of the services is likely to provide more certainty to a potential new entrant than the prices that can be effectively set by Hydro Tasmania through the application of a bidding strategy, such as that used in April 2009, with bids limited at \$10 000/MWh.

## Conclusion

The Regulator considers that the declaration of the defined services is warranted to promote efficiency.

## 5.4 Promotion of the public interest

The public interest in this matter includes both promoting efficiency through appropriate price control mechanisms and the redressing of the inequality of bargaining power arising when some classes of customers face a monopoly supplier.

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<sup>37</sup> NEMMCO, *Communication No 3379 – Changes to Tasmanian FCAS requirements including inertia and demand impacts*, 18 May 2009.

The ACCC in its assessment of Applications for Authorisations is only able to grant an authorisation if it is satisfied in all possible circumstances that there is likely to be a 'benefit to the public'. The Regulator is of the view that if something is to the 'public benefit' then it is likely to also be 'in the public interest'. In this regard the ACCC<sup>38</sup> notes that public benefits that have been recognised include:

- fostering business efficiency;
- industry rationalisation;
- promotion of industry cost savings;
- promotion of competition in the industry;
- promotion of equitable dealings in the market;
- expansion of employment;
- development of import replacements;
- growth in export markets; and
- arrangements that facilitate the smooth transition to deregulation.

The Regulator should also consider whether it is in the public interest to regulate prices by means of the Price Control Regulations. Thus relevant factors include whether an alternative regulatory regime is adequate or more appropriate taking account of cost and effectiveness.

As noted in sections 5.2 and 5.3, the Regulator considers that declaration and regulation of these services would promote competition and efficiency. That is, regulated prices are likely to reflect the economic costs of providing raise contingency FCAS and energy prices in the longer term. Thus, it should also lead to cost efficiency in both the FCAS and energy markets.

Further, the Regulator considers that the declaration and regulation of contingency FCAS would also promote equitable dealings in the market for these services, the energy market, and potentially other FCAS services as other generators capable of providing FCAS enter the market.

The AEMC Reliability Panel in its review of the Tasmanian frequency operating standards<sup>39</sup> stated that there was a "need for new and diverse generation for the future security and reliability of the electricity supply in Tasmania." It indicated in its determination of new frequency operating standards for Tasmania that the benefits

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<sup>38</sup> See for example, the ACCC Determination in relation to *Applications for Authorisation – Amendments to the National Electricity Code Network and Distributed Resources*, February 2002.

<sup>39</sup> AEMC Reliability Panel, *Tasmanian Frequency Operating Standard Review, Final Report*, 18 December 2008.

of allowing higher efficiency, lower capital cost generators to connect in Tasmania exceeded the increased FCAS costs that would result.<sup>40</sup> Hydro Tasmania's bidding behaviour has been shown not only to inhibit the operation of the new AETV Power plant and other existing generators exposed to such pricing, but it is likely to limit future investment in new generation, through the use of its market power and creating uncertainty for new generators to enter the State in relation to the pricing of the FCAS services.

If Hydro Tasmania's pricing of FCAS deters new generators from entering the market, then the future security of supply in Tasmania may also be affected which is not in the public interest.

Advice provided to the AEMC Reliability Panel in 2008 indicated that on the basis of high level analysis there is a case for additional base load capacity. The risks to supply were identified as the uncertain future of the Bell Bay power station, low inflows, and prolonged Basslink outage in the presence of ongoing drought.

AETV Power submitted that "it is likely to be in the public interest for the public of Tasmania to have some assurance that their electricity prices are being set in an economically efficient way." The events of April 2009 aside, AETV Power asserts that Tasmanian generators

are still paying approximately 44% more than Victorian generators and where based on system load, costs are greater than 5 times in Tasmania.

The Regulator's own analysis confirms this to be the case.

Every member of the public would purchase at some time Tasmanian-produced goods where the cost of electricity is an input cost. FCAS costs are a component of the energy price passed through to retailers and then on to end-users. There being no form of price control or competitive tension in the supply of FCAS, there is a risk that the Tasmanian public will pay a more than cost effective price for the FCAS component of its electricity prices.

## Conclusion

The Regulator considers that the declaration and regulation of these services is in the public interest.

## 5.5 Summary

The Regulator considers that the declaration of the defined services is warranted as:

- Hydro Tasmania has substantial market in the supply of the defined services;
- and

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<sup>40</sup> The AEMC's final report states that the assessment of the benefits was based on cost impacts as an analysis based on price impacts "depends greatly on how often its is assumed the generating unit sets the price; and does not easily accommodate the price impacts in Victoria and the remainder of the NEM mainland."

- the promotion of competition, efficiency and the public interest warrants the declaration of the defined services.

The Regulator considers that a declaration of the defined services will provide a transitional environment in which a competitive market for the supply of these can develop.





## 6 THE REGULATOR'S POWER TO DECLARE THE SERVICES

The National Generators Forum (NGF)<sup>41</sup> has asserted that the regulation of FCAS is “outside the purview of OTTER and the Tasmanian regulatory framework”.

The Price Control Regulations clearly provide the Regulator with the power to control the prices of goods and services provided by an electricity entity; these regulations were not repealed after NEM entry. However, the Regulator notes that on NEM entry, the declaration of certain goods and services were revoked, including “the procurement and use of ancillary services, within the meaning of the National Electricity Rules”. The procurement and utilisation of ancillary services for Tasmania transferred from being a function of the then System Controller to a function of NEMMCO (now AEMO) from the date of NEM entry. This contrasts with the supply of ancillary services to NEMMCO, for which the power to regulate the price or impose price control mechanisms on an electricity entity in respect of declared electrical services, continued to remain within the purview of the Regulator.

Section 6(4) of the ESI Act requires that the Regulator “have regard to the provisions of the National Electricity Rules and the desirability of avoiding duplication of, or inconsistency with, regulatory arrangements under the National Electricity Rules”. Hence, the Tasmanian Parliament did not advocate blind application of the NER. The Regulator has taken the NER into account in exercising his power to make this declaration.

The regulation of the price (and terms) of the supply of FCAS by generators is contained in clause 3.8.7A of the NER where the price offered by a generator must be greater than or equal to \$0 per MWh and not exceed the market price cap which is presently set at \$10 000/MWh. In making a declaration, the Regulator has noted this NER requirement and does not consider there to be any barrier in the NER to imposing any additional price control mechanism on Hydro Tasmania that applies constraints to the price of supply within these limits.

The NGF also contended that jurisdictional intervention in the ancillary services markets is inconsistent with the Australian Energy Market Agreement (AEMA), to which the State of Tasmania is a party.

The Regulator does not share this view. Clause 1.5 of the AEMA shows that the AEMA is not intended to be legally binding on the parties:

For the avoidance of doubt, this Agreement is not intended to give rise to legal obligations among the Parties.

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<sup>41</sup> Submission by the National Generators Forum to the Regulator's Issues Paper.

Furthermore, clause 6.3(a) of the AEMA further shows that the intention of the AEMA is that legislation rather than the AEMA itself will give effect to the National Energy Market and associated reforms.

The Commonwealth of Australia and each of the States of New South Wales, Victoria, Queensland, Tasmania and the Australian Capital Territory will submit to its Parliament Implementing Legislation with the effect of conferring functions and powers in respect of electricity and natural gas on the AEMC and on the AER in accordance with the terms of this agreement, and enabling the AEMC and the AER to exercise those functions and powers within their respective jurisdictions.

Roaring 40s in its submission to the Regulator's Issues Paper expressed concern that "a state regulator that demonstrates a propensity to intervene in the operation of the National Energy Market will inevitably raise perceptions of sovereign risk in the given jurisdiction and increase costs to energy consumers". In response, the Regulator reiterates that the Tasmanian Parliament retained the ability for the Regulator to declare electrical services presumably to address market failures or any other barriers to efficient and effective outcomes. A variety of arrangements have been put in place in various jurisdictions to facilitate the early development of the national electricity market and the Regulator considers that the price regulation of the supply of raise contingency FCAS, when it must be sourced only from the Tasmanian region, is an appropriate response until the market for these services develops.

Hydro Tasmania and the NGF consider that price regulation will "distort" or "degrade" the market and reduce the efficiency of the NEM. "For a regulator to step in following a short period of volatility is an entirely inappropriate response and will delay the development of the market by suppressing price signals".<sup>42</sup> Given that the form of price regulation or pricing control mechanism to be applied in the regulation of these services has yet to be determined, it is unknown how this conclusion can be drawn.

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<sup>42</sup> National Generator Forum's submission to the Regulator's Issues Paper

## 7 DURATION OF A PRICE DETERMINATION

The Regulator's Issues Paper suggested a declaration period of three years. However, it is in fact the Final Report of the price investigation (which is given effect in the subsequent determination) that specifies the period of time over which price control is to be exercised.<sup>43</sup>

The underlying purpose of a declaration is to provide a trigger for a price investigation and subsequent determination. The Price Control Regulations do not specify a minimum or maximum time period for a price determination.

There is generally a benefit in making a determination period longer rather than shorter as a longer period ensures a greater degree of price stability and predictability for customers. Longer price paths also reduce the level of regulatory uncertainty. This point was made in several submissions, in particular, that power generation plants are long-term investments and the prospect of a revocation of the declaration would not provide sufficient confidence for an investment of large amounts of capital.

Another factor to consider is the actual cost associated with regulation for both the entity and consumers. The shorter the regulatory period, the higher will be the cost of regulation through frequent investigations which will ultimately be borne by consumers.

The Regulator has considered the comments made on the duration of a price determination, in particular, that a declaration period of three years is insufficient for providing price signals to prospective new entrant generators which are long-term and significant capital investments. However, it should be noted that the imminent expiry of a determination is a trigger for the review of the prevailing circumstances, that is, whether the declaration is still required.<sup>44</sup> It does not necessarily mean that the declaration will be revoked but will mean that if the declaration is not revoked, then a declared service pricing investigation must be undertaken which is not an inexpensive exercise.

Notwithstanding this, regulation 21(2) of the Price Control Regulations provides for the Regulator to revoke this declaration at any time if of the opinion that:

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<sup>43</sup> Regulation 30(2)(b) of the Price Control Regulations.

<sup>44</sup> Regulation 23 provides for the Regulator to invite submissions no later than six months before the determination expires on whether the declaration of a declared electrical service should be revoked.

- Hydro Tasmania no longer has substantial market power in respect of the declared electrical services (for example, there is prospective or actual effective competition in the market); or
- that the declaration is no longer required for the promotion of competition, efficiency or the public interest.<sup>45</sup>

The Regulator must consult on any such proposal to revoke a declaration.

Furthermore, under sub-regulation 34(3), when a declaration is revoked, then a declared electrical price determination, in respect of those services to which the determination applies, ceases to have effect.

There are also other grounds for revocation. The Regulator may revoke a determination in circumstances described in regulation 36, which essentially relates to the determination having been made on the basis of false or misleading information; that there is a material error in the determination; or the determination has a materially adverse impact on the entity due to an event outside the entity's control.

The Regulator has concluded that a period need not be determined as part of this declaration paper, noting that the regulatory period for the three declared electrical services must be specified in the Final Report of the price investigation and given effect in the subsequent determination. Accordingly, comments made in submissions on the regulatory period for the three declared electrical services will be considered in the investigation of Hydro Tasmania's pricing policies for these services and will be specified in the Final Report and subsequent determination.

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<sup>45</sup> These criteria also apply to the consideration of a revocation on the imminent expiry of a price determination.

## APPENDIX A – SUBMISSIONS

The following bodies made submissions to the Regulator's *Notice of intention to declare the supply of raise contingency frequency control ancillary services by Hydro Tasmania as declared electrical services – Issues Paper*, July 2009.

- Infratil Energy Australia Pty Ltd
- LMS Generation Pty Ltd
- Australian Energy Regulator
- Gunns Limited
- Energy Response Pty Ltd
- National Generators Forum
- AETV Power Pty Ltd
- Aurora Energy Pty Ltd
- Rio Tinto Alcan
- Roaring 40s Renewable Energy Pty Ltd
- Hydro Tasmania

All submissions have been published on the website of the Office of the Tasmanian Economic Regulator: [www.economicregulator.tas.gov.au](http://www.economicregulator.tas.gov.au).