



Australian Energy Market Commission

Final Rule Determination

**National Electricity Amendment Efficient
Dispatch of Regulation Services Rule 2007**

Rule Proponent
Hydro Tasmania

23 August 2007

Signed: 

John Tamblyn
Chairman
For and on behalf of
Australian Energy Market Commission

Commissioners
Tamblyn
Carver
Woodward

Inquiries

The Australian Energy Market Commission
PO Box H166
Australia Square NSW 1215

E: aemc@aemc.gov.au

T: (02) 8296 7800

F: (02) 8296 7899

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About the AEMC

The Council of Australian Governments, through its Ministerial Council on energy, established the Australian Energy Market Commission (AEMC) in July 2005 to be the Rule maker for national energy markets. The AEMC is currently responsible for Rules and policy advice covering the National Electricity Market. It is a statutory authority. Our key responsibilities are to consider Rule change proposals, conduct energy market reviews and provide policy advice to the Ministerial Council as requested, or on AEMC initiative.

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Summary

On 19 October 2006, the Australian Energy Market Commission (“the Commission”) received a Rule change proposal from Hydro Tasmania. The proposal seeks to achieve more efficient dispatch of frequency control ancillary services¹ (FCAS) by allowing the co-optimisation of regulation and delayed services.

The Rule making timeline for the Hydro Tasmania proposal has been aligned with the Commission’s consideration of the Cost Recovery for Localised Regulation Services Rule change proposal, in order to ensure that the interrelationship between the two proposals is adequately addressed. The Commission published a draft determination and draft Rule on 17 May 2007 which implemented a largely unchanged version of the Hydro Tasmania proposal.

Hydro Tasmania argued that it had identified a perceived inefficiency in the Rule regarding dispatch of FCAS and advocated changes that would result in the allocation of the cost of any marginal regulation services (the amount in excess of the quantity needed for the continuous balancing of supply and demand) to delayed services. Under the current operation of the NEM, *regulation service* can service in place of the corresponding *delayed service*. NEMMCO recognises this situation by reducing the quantity of delayed service by an amount of regulation service, but does not necessarily do this where regulation service is offered at a lower price than delayed service.

Under Hydro Tasmania’s proposal, the interaction of regulation services and delayed services will be recognised in the ancillary service dispatch mechanism. The Rule change proposal seeks to:

- Extend the applicability of a determined ancillary service price to the specific ancillary service or set of ancillary services.
- Whenever NEMMCO has dispatched *regulation raise service* or *regulation lower service* in addition to the quantity determined by NEMMCO as necessary for regulation, the cost of the additional quantity will be included in the cost of *delayed raise service* or *delayed lower service* and excluded from the cost of the regulation services.

This will have the effect of co-optimising the procurement of regulation and delayed FCAS in the NEM by allowing NEMMCO to source the residual requirement for delayed FCAS from whichever combination of the regulation and delayed FCAS markets has the lowest cost at the time.

The Commission sought submissions from market participants on the Hydro Tasmania proposal and the draft Rule through two separate rounds of consultation

¹ Also referred to as market ancillary services, as defined in clause 3.11.2(a)

and has considered the issues raised in conjunction with undertaking its own analysis. In reaching its decision, the Commission was also mindful of the review of the operation and effectiveness of the FCAS market that has been undertaken by NEMMCO.

The Commission's final determination has taken into account the recommendations published by NEMMCO on the operation of the FCAS markets in its draft and final reports, particularly with regard to the co-optimisation of regulation and delayed FCAS and the necessity of retaining the delayed FCAS service given its perceived current level of underutilisation.

The Commission has determined to proceed with a Rule that implements Hydro Tasmania's proposals regarding the pricing of ancillary services and the treatment of regulation service as delayed service where appropriate. The changes will require that NEMMCO modify some of the constraint equations defining market ancillary service requirements, as well as some of the details of the market ancillary service settlements process. The Commission, in making both its draft and final Rule determination, noted NEMMCO's concerns regarding the timing of the proposal and sought additional information from NEMMCO on the timeframe for implementing the changes required by the Rule proposal. This additional information has been taken into account by the Commission in making its final decision, and in particular in determining a commencement date for the Rule. The Rule will commence on 1 January 2009.

The Commission believes that the Rule will promote the NEM Objective and this determination outlines in detail the Commission's reasons for its approach to the Rule.

1 Hydro Tasmania's Rule Proposal

On 19 October 2006, the Australian Energy Market Commission (the Commission) received a Rule change proposal from Hydro Tasmania. The proposal seeks to achieve more efficient dispatch of frequency control ancillary services (FCAS) by recognising the interaction between delayed and regulation FCAS and removing impediments to the co-optimisation of these services.

1.1 Summary of the Rule change proposal

The Hydro Tasmania Rule change proposal refers to frequency control ancillary services, or FCAS. The Commission notes that the services that are commonly referred to as FCAS are formally defined in the Rules as market ancillary services (MAS).² NEMMCO has addressed this discrepancy in its FCAS Review Final Report, stating that:

"Strictly speaking, the Rules refer to "market ancillary services". However, frequency control ancillary services are the only ancillary services currently procured through markets. All other ancillary services are currently procured through contracts. Consequently, market ancillary services are synonymous with FCAS."³

In order to maintain consistency between this Rule Determination, the Hydro Tasmania Rule change proposal and the submissions, the Commission will refer to market ancillary services as FCAS, but notes that this only reflects the current definition of market ancillary service in the Rules. The Commission further notes that the introduction of additional market ancillary services in the future (by way of a Rule change) could occur, which could affect the interchangeability of the terms FCAS and MAS.

FCAS enables NEMMCO to control the frequency of the power system and ensure the system meets the frequency standards prescribed by the Reliability Panel. There are eight types of FCAS, which can be grouped into two categories: six types of contingency FCAS and two types of regulation FCAS.

Contingency FCAS (comprising *fast*, *slow* and *delayed*, each having a *raise* and *lower* service) are used to restore the prescribed frequency of the power system after a major disturbance, such as the unplanned outage of a large generator or a random failure in the transmission network. Major disturbances of this kind are rare.

Regulation FCAS (*raise* and *lower*) are used to control minor variations in frequency around the Australian standard of 50Hz. Minor variations occur continually, and are typically the result of forecasting errors or generators not meeting their dispatch

² See clause 3.11.2 of the Rules.

³ NEMMCO, FCAS Review Final Report, July 2007, footnote p. 2

targets. Regulation FCAS are dispatched at five minute intervals to account for these continuous frequency variations.

The eight FCAS in the NEM are not fully independent. NEMMCO has long recognised that *regulation service (raise or lower)* can substitute in place of the corresponding *delayed service*. However, it should be noted that the converse is not true as *delayed service* cannot substitute for *regulation service*. NEMMCO's current practice is to reduce the quantity of delayed service by an amount of regulation service in recognition of this situation.

In Hydro Tasmania's view, this falls short of efficient dispatch in two ways:

- It does not use additional regulation service to reduce the dispatch of delayed service where regulation service happens to be offered at a lower price than delayed service; and
- The amount of regulation service by which the delayed service requirement is reduced is not the amount dispatched in the current dispatch interval, but rather the amount in the previous dispatch interval.

The second of these factors, which Hydro Tasmania terms a "miss-alignment of time"⁴ has generally had little practical effect over much of the life of the FCAS markets within the NEM, as the amount of regulation service dispatched was highly stable. However, the integration of Basslink into the NEM has placed greater significance on this misalignment, as the amount of regulation service enabled on either the mainland or in Tasmania can change significantly from one dispatch interval to another, because of the transmission of the service across Basslink.

Consequently, this "defect in dispatch can lead, at different times, to the enablement of too much or too little of a delayed FCAS service".⁵ In one case it is economically inefficient, in the other it is a reduction in system security.

Hydro Tasmania asserts that these "defects" have persisted because the "Market Rules do not make provision for pricing or for cost recovery in the case where the offer of one service is utilised to economically service the requirement for another".⁶

Hydro Tasmania's Rule change proposal seeks to rectify this perceived anomaly by putting in place price and cost recovery provisions that would enable more economical and conceivably secure dispatch.

In its proposal, Hydro Tasmania has advocated two changes:

- Extension of the applicability of a determined ancillary service price to include the specific ancillary service or the set of ancillary services; and

4 Hydro Tasmania proposal, 19 October 2006, p. 2

5 Ibid, p. 2

6 Ibid, p. 2

- Where NEMMCO has dispatched *regulation raise service* or *regulation lower service* in addition to the quantity determined by NEMMCO as necessary for regulation, the cost of the additional quantity is to be included in the cost of *delayed raise service* or *delayed lower service* and excluded from the cost of the regulation services.

Hydro Tasmania asserts that implementation of these changes would require NEMMCO to:

- Change some constraint equations defining FCAS requirements, but not change the dispatch process itself; and
- Change some details of the FCAS settlement process.

1.2 Request to expedite Rule making process

In its Rule change proposal, Hydro Tasmania requested that the proposal be expedited under section 96 of the National Electricity Law (NEL), on the basis that the change was minor and non-controversial. On 22 February 2007, the Commission published a notice under sections 95 and 96 of the commencing initial consultation on a Rule proposal and advising of its intention to expedite the Rule making process subject to written objections.

However, consideration of a number of factors, including:

- Submissions received in the first round of consultation;
- The proposal's interrelationship with the Cost Recovery of Localised Regulation Services Rule change proposal lodged by the National Generators Forum (NGF); and
- The review of FCAS currently being undertaken by NEMMCO;

led the Commission to believe that the proposal should not be expedited under section 96. The Commission took the view that the public interest would be better served by not expediting the Rule making process and undertaking the standard Rule making process, in order to allow for a more thorough consideration of the proposal in light of the NEMMCO review of FCAS.

Submissions received during the first round of consultation on the proposal raised concerns regarding anomalies in cost recovery created by the Hydro Tasmania proposal. The NGF Rule change proposal will address this specific issue, and as such, the Commission maintains the view that examining the two proposals in parallel best supports an open, transparent and responsible Rule making process.

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2 Rule determination

The Commission has determined in accordance with section 102 of the National Electricity Law (NEL) to make the attached Rule. A copy of the Rule to be made (the Rule) is attached to this determination.

The determination sets out the Commission's reasons for making the Rule. In making its draft decision, the Commission has taken into account:

- Its powers under the NEL to make the Rule;
- The proponent's Rule change proposal and proposed Rule;
- Submissions received; and
- The Commission's analysis as to the way(s) in which the Draft Rule will or is likely to contribute to the achievement of the national electricity market objective so that it satisfies the statutory Rule making test.

The Commission has applied the statutory Rule making test and, for reasons set out in section 3 of this Rule determination, is satisfied that the Rule is likely to contribute to the achievement of the NEM objective.

2.1 Commission's Power to make the Rule

The Commission is satisfied that the Rule to be made falls within the subject matters for which the Commission may make Rules as set out in section 34 and Schedule 1 of the NEL. Specifically, clause 34(1)(c) of the NEL states that the Commission may make Rules for or with respect to regulating:

- "the activities of persons (including registered participants) participating in the national electricity market or involved in the operation of the national electricity system".

The proposed Rule does appear to be within the matters set out in NEL s.34(1), as it does relate to:

- (a) the operation of the national electricity market;
- (b) the operation of the national electricity system for the purposes of security and reliability of that system; and
- (c) the activities of persons participating in the national electricity market or involved in the operation of the national electricity system.

The proposed Rule changes also appears to fall under a number of subject matter items under Schedule 1 of the NEL, including item 7 which relates to the setting of prices for electricity and services purchased through the wholesale exchange

operated and administered by NEMMCO, including maximum and minimum prices and item 11, which states that the AEMC may make Rules with respect to the operation of generating systems, transmission systems, distribution systems or other facilities.

2.2 The Rule making test and the National Electricity Market Objective

Under the Rule making test in the NEL, the Commission must be satisfied that the proposed Rule will, or is likely to, contribute to the enhancement of the national electricity market objective. The national electricity market objective contained in section 7 of the NEL states:

“The national electricity market objective is to promote efficient investment in, and efficient use of, electricity services for the long term interests of consumers of electricity with respect to price, quality, reliability and security of supply of electricity and the reliability, safety and security of the national electricity system.”

The Rule making test is contained in section 88 of the NEL, and states:

“(1) The AEMC may only make a Rule if it is satisfied that the Rule will or is likely to contribute to the achievement of the national electricity market objective.

(2) For the purposes of subsection (1), the AEMC may give such weight to any aspect of the national electricity market objective as it considers appropriate in all the circumstances, having regard to any relevant MCE statement of policy principles”.

2.3 Assessment against the NEM Objective

The Rule making test requires the Commission to be satisfied that a proposed Rule will contribute to the NEM objective. The test requires the Commission to consider the implications of the proposed Rule for the efficient investment in, and efficient use of, electricity services, in respect of specified elements which impact on the long term interests of end users of electricity. The Hydro Tasmania proposal is intended to result in more efficient dispatch of FCAS by resolving a situation under the Rules where pricing and cost recovery procedures do not facilitate the offer of one service to meet the requirements of another where that would be the most economic option. The proposed Rule will, on the whole, achieve this in two ways:

1. Facilitating the co-optimising of the procurement of regulation and delayed FCAS in the NEM by sourcing the residual requirement for delayed FCAS from whichever combination of the regulation and delayed FCAS markets has the lowest cost at the time; and
2. Allowing for the allocation of the cost of any marginal regulation services (the amount in excess of the quantity needed for the continuous balancing of supply and demand) to delayed services where appropriate.

The potential for co-optimisation of delayed and regulation FCAS to contribute to efficiency in the NEM was discussed in NEMMCO's final report on the *Optimisation of Regulation and Delayed FCAS*. While co-optimising the procurement of regulation and delayed FCAS in the NEM would not necessarily guarantee that FCAS costs will be lower overall and in all instances, it would be reasonable to expect overall FCAS costs to be lower in general for any given set of FCAS requirements and offers from service providers.⁷

The same report went on to state that "one of NEMMCO's objectives is to improve market efficiency, and one measure of market efficiency is the value of the objective function in the NEM dispatch algorithm".⁸ Co-optimisation of regulation and delayed FCAS was identified as a means of minimising the objective function within the NEM dispatch algorithm, thereby maximising the value of trade, or economic welfare, for any dispatch interval and increasing the efficiency of the NEM.⁹ The objective function, which represents the costs of resources used in meeting the energy and market ancillary service requirements in the NEM, would be "no higher, and occasionally lower, under co-optimisation, which would generally translate into overall FCAS costs that were no higher, and occasionally lower, as well".¹⁰ However, the NEMMCO also report pointed out that "because the correspondence between the objective function and overall FCAS costs is not strictly linear, this could not be guaranteed to be true in all cases".¹¹

NEMMCO's FCAS Review draft report affirmed this position, stating that "there is potential to save money by procuring regulation FCAS to meet a delayed FCAS requirement whenever the cost of regulation FCAS is less than the cost of delayed FCAS".¹²

Noting that this is now a more material issue with the integration of Basslink into the NEM, the Commission considers that the Rule change proposal will, or is likely, to contribute the achievement of the NEM objective by putting in place pricing and cost recovery provisions that will:

- Allow for the dispatch of offered FCAS services in a more economical combination, in circumstances where the current dispatch process does not allow for this; and
- Improve the security of supply by ensuring that the ability of the market dispatch process to enable the dispatch of FCAS services determined as necessary by NEMMCO is not hampered by inefficient pricing and dispatch processes.

⁷ NEMMCO, *Optimisation of Regulation and Delayed FCAS - Final report*, May 2003, p. 4

⁸ *Ibid*, p6. The objective function represents the costs of resources used in meeting the energy and market ancillary service requirements in the NEM

⁹ *Ibid*, p. 6

¹⁰ *Ibid*, p. 4

¹¹ *Ibid*, p. 4

¹² NEMMCO, *FCAS Review Draft Report*, May 2007, p. 25

2.4 Consultation process

Hydro Tasmania lodged a Rule change proposal with the Commission on 19 October 2006. A notice under section 95 of the NEL was published on 22 February 2007 commencing initial consultation on the Rule proposal and advising of the Commission's intention to expedite the Rule making process subject to written objections.

Submissions were received from NEMMCO (7 March 2007) Aurora Energy (26 March 2007) in response to the Rule proposal. Hydro Tasmania lodged a supplementary submission on 27 March 2007 responding to points made in the NEMMCO submission.

NEMMCO and Aurora Energy were supportive of the overall intent of the proposal, but did raise some concerns about the timing of the proposal and the possibility of inappropriate cost shifting from generators and customers as a result of differences between the way the costs of delayed and regulation FCAS are recovered.

The Commission published its draft Rule determination and draft Rule under section 99 of the NEL on 17 May 2007. NEMMCO lodged a submission in response to the draft Rule, raising concerns about the implementation timeframe for the proposed Rule.

Issues raised in both consultation rounds are discussed in section 3.

2.5 NEMMCO review of FCAS

NEMMCO is required under the National Electricity Rules to undertake a review of the operation and effectiveness of the FCAS market, and recommend any improvements. The Rules require NEMMCO, in conducting the review, to consider

- Simplification of the FCAS markets;
- Better determination of FCAS requirements; and
- The introduction of an FCAS usage market.

NEMMCO released an issues paper in mid December 2006, setting the scope of the review and calling for submissions from interested market participants. Submissions closed on 23 February 2007, and a draft report was published on 3 May 2007. NEMMCO's final report and recommendations were released on 31 July 2007, with Rule changes(if any) arising out of its recommendations due to be submitted to the AEMC by the end of October.

NEMMCO's issues paper flagged that "co-optimisation of regulation and delayed FCAS"¹³ would be one of the specific areas of the FCAS market to be reviewed, building on work done by NEMMCO in 2002 and 2003 which examined this issue.

NEMMCO's draft view on this issue, as contained in the draft report, is that:

"Regulation and delayed FCAS should be co-optimised subject to final decisions on the future of delayed FCAS and the regional recovery of local regulation FCAS costs. Resolution of this issue would be best managed through the AEMC Rule change process already underway."¹⁴

The report also presents a conclusion on the future of delayed FCAS, stating:

"NEMMCO should continue to enable delayed FCAS to restore the system frequency to the normal operating band following a contingency. However, NEMMCO should also investigate ways to improve the performance of delayed FCAS so that it fulfils the role for which it is intended."¹⁵

NEMMCO's final decision on both of these issues remain unchanged from the draft report.¹⁶

The impact of these decisions on the Commission's analysis of the Hydro Tasmania proposal is discussed in greater detail in section 3 of this determination.

13 NEMMCO, FCAS Review Issues Paper, 14 December 2006, p. 2

14 NEMMCO, FCAS Review Draft report, May 2007, p. 26

15 Ibid, p21

16 NEMMCO, FCAS Review Final Report, July 2007, pp 14 – 17 and pp. 21 - 22

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3 Commission's analysis of the Proposed Rule

The Rule proposed by Hydro Tasmania seeks to improve efficiency and security of FCAS dispatch by putting in place pricing and cost recovery provisions that would allow NEMMCO to achieve more economical dispatch by dynamically co-optimising regulation and delayed services.

The remainder of this section presents the Commission's analysis of the issues relevant to the Hydro Tasmania proposal, and the Commission's conclusions in the context of the NEM objective.

In making decisions on each of these issues, the Commission has considered issues identified by the proponent and by respondents in submissions.

3.1 Inefficiencies in Dispatch

Hydro Tasmania's proposal is predicated on what it considers to be an inefficiency in the dispatch of frequency control services. As a result of the design and operation of the NEM, and specifically the FCAS markets, regulation service can serve in place of delayed dispatch. NEMMCO procedures recognise this fact by reducing the quantity of delayed service by an equivalent amount of regulation service. The Hydro Tasmania proposal points to what it perceives as two failures of efficient dispatch arising out of this situation:

- It does not use additional regulation service to reduce the dispatch of delayed service where regulation service happens to be offered at a lower price than delayed service.
- The amount of regulation service by which the delayed service requirement is reduced is NOT the amount dispatched in the current dispatch interval, but rather the amount in the previous dispatch interval.

NEMMCO has indicated support for the objectives of the Hydro Tasmania proposal, though did raise concerns regarding the timing of the proposal and possible resulting anomalies in cost recovery (these issues are discussed in further detail under sections 4.3 and 4.4).

Aurora Energy also supported the underlying principles of the proposal, if it "leads to a net reduction in the cost of [FCAS] to consumers, whilst achieving the overall NEM objective".¹⁷

¹⁷ Aurora Energy submission, 26 March 2007, p. 1

3.1.1 Commission's analysis

Hydro Tasmania's proposal seeks the dynamic co-optimisation of the procurement of regulation and delayed FCAS in the NEM by allowing NEMMCO to source the residual requirement for delayed FCAS from whichever combination of the regulation and delayed FCAS markets has the lowest cost at the time. The changes proposed by Hydro Tasmania attempt to achieve two outcomes:

- Where a price is determined for an ancillary service, this price can be applied to a set of ancillary service. Specifically, a single price from the regulation bid stack can be applied to both the delayed and regulation services.
- Flowing on from this, where appropriate a quantity that is selected from an offer stack of regulation service can be treated as a delayed service or a regulation service for the purposes of the settlements process. That is, where a quantity of regulation raise or lower service is dispatched in excess of the quantity determined to be necessary for regulation, this excess regulation service can be included in the cost of a delayed service and excluded from the cost of regulation services.

The benefits of co-optimisation have been recognised by both NEMMCO and NECA (the precursor to the AEMC) in earlier reviews. NEMMCO has acknowledged the potential of co-optimisation to "save money by procuring regulation FCAS to meet the requirement for delayed FCAS whenever the price of regulation FCAS is less than the price for delayed FCAS"¹⁸, a position which was earlier stated in NEMMCO's final report on the co-optimisation of regulation and frequency FCAS in 2003. At the time of the 2003 report, NECA did not advance NEMMCO's proposals because it was "conducting its own FCAS market review at the time and did not want to promulgate FCAS Rules changes in isolation." While NECA did not report on its FCAS review before being disbanded in June 2005, the unpublished draft report from NECA's review recommended that NEMMCO's proposal to co-optimize regulation and delayed FCAS should proceed.¹⁹

NEMMCO's draft FCAS Review report clarified its position on the issue of optimisation:

- "To make things clear for the AEMC consultation, this report favours co-optimising regulation and delayed FCAS, on the understanding that any regulation FCAS that was enabled to meet the delayed FCAS requirement should be subject to the delayed FCAS cost recovery arrangements" and subject to the prior resolution of:
- The future of the delayed FCAS service; and

18 NEMMCO FCAS Review Issues Paper, December 2006, p. 24

19 Ibid, p. 42. NECA's draft report is reproduced as an appendix to the NEMMCO issues paper.

- The treatment of local regulation FCAS costs.”²⁰

NEMMCO acknowledged that the issue was being addressed through the Hydro Tasmania proposal, but signalled in the draft report that while it intended to maintain an ongoing “placemaker” on the subject in the review, “the issue can be adequately resolved through the AEMC Rule change process already underway.”²¹

NEMMCO has maintained this position in its final report, which recommends that:

“Regulation and delayed FCAS should be co-optimised subject to final decisions on the future of delayed FCAS and the regional recovery of local regulation FCAS costs. Resolution of this issue would be best managed through the AEMC Rule change process already underway.”²²

NEMMCO’s current practice is to dispatch the regulation service with the delayed service under the overall ambit of the maximised value objective for centralised dispatch, as per clause 3.8.1(a) and (b).

Clause 3.8.1(a) of the Rules, dealing with central dispatch, states that:

“NEMMCO must operate a central dispatch process to dispatch scheduled generating units, scheduled loads, scheduled network services and market ancillary services in order to balance power system supply and demand, using its reasonable endeavours to maintain power system security in accordance with Chapter 4 and to maximise the value of spot market trading on the basis of dispatch offers and dispatch bids.”

Clause 3.8.1 (b) of the rules refers to maximising the value of the spot market subject to dispatch offers, dispatch bids and market ancillary service offers.

The Commission notes that the Hydro Tasmania proposal does not impose any overt requirement on NEMMCO to co-optimize the delayed and regulation services. Having considered this, the Commission has taken the view that it is not appropriate to make changes to the Rules that would compel NEMMCO to implement a specific process of “co-optimisation”. Instead, the Commission believes that NEMMCO’s obligations to maximise the value of spot market trade under clauses 3.1.8(a) and (b) provide sufficient impetus for NEMMCO to undertake the steps necessary to implement co-optimisation of delayed and regulation FCAS.

The current clause 3.9.1(a)(6A) specifies that an ancillary service price that is determined for an ancillary service is the price that applies to the purchase of that service. The Commission has accepted Hydro Tasmania’s proposal which would extend the applicability of a determined ancillary service price to a set of regulation and delayed services. This change would allow for a single price to apply to both

20 NEMMCO, FCAS Review Draft Report, May 2007, p. 26

21 NEMMCO, FCAS Review Draft Report, May 2007, p. 26

22 NEMMCO, FCAS Review Final Report, July 2007, p. 22

regulation and delayed services, therefore allowing for the most economically efficient price to be applied to the purchase of the delayed services and facilitating the selection of quantities from one or both of these stacks in order to maximise value. The Commission is aware that the degree of substitution between delayed and regulation FCAS required by this process may require changes to NEMMCO's ancillary services specifications, in part because an offer for regulation has associated with it an obligation on Market Participants to perform to certain standards as specified by NEMMCO, whereas an offer for delayed service has an obligation on Market Participants to perform to different standards. The Rule to be made incorporates a new term, "delayed service", defined as "a delayed raise service or a delayed lower service", to be incorporated into Chapter 10 of the Rules.

The Commission's Rule reflects the intent of Hydro Tasmania's proposed Rule in this regard, but the wording varies from that proposed by Hydro Tasmania. Instead of varying the wording in clause 3.9.1(6A), the Commission has created a new clause 3.9.1(6b) to cover the specific situation where a price determined for an ancillary service that is a regulation service will be applied to purchases of regulation services and also to purchases of a delayed service. The Commission considers that although Hydro Tasmania's proposed Rule would have achieved this purpose with virtually no scope for any other ancillary service being capable of being applied, the wording in the Rule prevents confusion and provides clarity as to the intent behind in the principle.

3.2 Future of Delayed FCAS

NEMMCO drew attention to the fact that the future of delayed FCAS is currently under review as part of its broader review of the operation of the FCAS markets. In NEMMCO's view, implementing the Rule proposal while this review is underway could lead to inefficiencies, in the event that the review concludes that the delayed service should be abolished. NEMMCO's FCAS review has questioned the necessity of maintaining the delayed FCAS service, given that the NEM's frequency standards have generally been met, despite the fact that "delayed FCAS seldom contributes to the frequency management of the power system".²³

Hydro Tasmania has disputed NEMMCO's contention that the delayed service may be abolished as a result of the FCAS review, noting that "the concept of abolition is based on observed under-utilisation of the service", which arises out of the present situation where frequency control services are provide by participants "who are not enabled and hence not paid for the service".²⁴ Hydro Tasmania has suggested that abolition of the delayed service on this basis would not be consistent with good regulatory practice, as it relies on an assumption that the service will continue to be provided by unpaid suppliers. In Hydro Tasmania's view, this would precipitate a market response "in the form of suppression of these unpaid services", thereby necessitating the restoration of the paid service.²⁵ Hydro Tasmania has concluded

23 NEMMCO submission, 7 March 2007, p. 1

24 Hydro Tasmania submission, 27 March 2007, p. 1

25 Ibid, p. 1

that NEMMCO is unlikely to recommend the abolition of the delayed service, and as such the Commission should not consider the delay of the Rule change proposal.

3.2.1 Commission's analysis

NEMMCO's FCAS Review Issues Paper canvassed the possibility of abolishing delayed FCAS²⁶, on the basis that delayed FCAS is "always enabled but seldom delivered"²⁷ without any detriment to system reliability.

Due to a combination of factors, including the rarity of extreme contingencies that would raise or drop system frequency above or below predefined thresholds, and regular over delivery of fast and slow FCAS (in excess of the amounts enabled), there is seldom any call for delayed FCAS response in the five minutes following a contingency and the power system frequency is usually restored by regulation FCAS alone.²⁸ Given the costs of delayed FCAS (cost \$9.6 million in 2005/06), and the present capacity of the power system to meet the frequency standards set by the Reliability Panel despite the non-delivery of delayed FCAS, NEMMCO's review has questioned the necessity of delayed FCAS, or, alternatively, whether the FCAS specifications could be improved.²⁹

The Commission does not have a position on the future of delayed FCAS in the NEM, other than to note its current role in ensuring system security, reliability and stability, and at this point in time does not consider it a factor in assessing whether Hydro Tasmania's proposal will address the issue identified and contribute to the NEM objective.

The Commission has also noted NEMMCO's comment in its draft FCAS Review report that there "are unlikely to be any net benefits from abolishing FCAS at this stage", and the final decision to continue to enable delayed FCAS to restore system frequency, with a focus instead improving the performance of delayed FCAS and ensuring that the industry is kept informed of investigations into this issue.³⁰

3.3 Anomalies in cost recovery resulting from Proposal

NEMMCO raised a concern regarding the potential for the Rule change to increase anomalies in FCAS cost recovery. In NEMMCO's view, the Rule change would "lead to an increased tendency for the costs of local requirements to be shared across the market"³¹, contrary to the direction in which FCAS markets have evolved.

26 NEMMCO FCAS Review Issues Paper, December 2006, p. 17

27 Ibid, p. 17

28 Ibid, p. 17

29 Ibid, p. 18

30 NEMMCO FCAS Review Final Report, July 2007, p. 16

31 NEMMCO submission, 7 March 2007, p. 2

The Rule change proposal would require regulation services to be procured as a substitute whenever it was cheaper to do so. This means that local regulation FCAS could be used to meet local delayed FCAS requirements. However, local delayed FCAS costs are recovered locally, whereas local regulation FCAS costs (with the exception of Tasmania) are shared across the market. In other words, regulation FCAS that was enabled to meet a local delayed FCAS requirement could be paid for by other regions, even though those other regions would gain no benefit from the local requirement and participants in those other regions would be unable to influence the costs. NEMMCO refers to a Rule change proposal being consulted on by the Commission, submitted by the National Generators Forum (NGF), entitled “Cost Recovery of Localised Regulation Services” which will address this particular issue if it is implemented.

Hydro Tasmania referred to the NGF proposal and agreed that it would resolve the anomaly raised by NEMMCO. Furthermore, Hydro Tasmania stated that, given the relationship between the two proposals, the Commission was justified in considering them in parallel. Aurora Energy similarly drew attention to the issue of cost recovery, stating that, while it supported the proposal, it “would like to be assured that these proposed changes will not result in significant cost shifting from generators to customers”.³²

3.3.1 Commission’s analysis

NEMMCO’s FCAS Review issues paper acknowledges the complications in cost recovery created by the co-optimisation of regulation and delayed FCAS, stating that, because regulation and contingency FCAS costs are currently recovered under different schemes, whenever “some of the residual delayed FCAS requirement was sourced from the regulation FCAS market, then some of the regulation FCAS costs should be recovered from the parties responsible for paying for delayed FCAS”.³³

However, as pointed out by NEMMCO, the Commission is currently undertaking an assessment of a Rule Proposal submitted by the NGF addressing cost recovery of localised regulation services. The Commission’s decision to conduct its assessment of this proposal and the Cost recovery proposal in parallel has allowed it to consider the interaction between both proposals.

The objective of the NGF’s proposed Rule is to align the process for recovering the costs of regulation FCAS with other ancillary market services by providing for regional cost recovery in circumstances where the region is islanded. The Commission has made a decision to accept the NGF proposal, which would place cost recovery of regulated services on the same settlement basis as the delayed settlement service, thereby resulting in both services being recovered on a local regional basis and ensuring that costs associated with meeting a localised delayed FCAS requirement by enabling regulation FCAS are not inappropriately recovered from all NEM users.

³² Aurora Energy submission, 26 March 2007, p. 1

³³ NEMMCO, FCAS Review Issues Paper, December 2006, p. 25

3.4 Implementation and timing of the Proposal

NEMMCO's submission raised concerns regarding the lead time required to implement the changes inherent in the Hydro Tasmania proposal, if the proposed abolition of the Snowy region proceeds. While NEMMCO's development cycle typically takes about 9 months (including 3 months to develop functional requirements and 6 months to develop, test and implement software), NEMMCO is of the view that the development cycle may be under additional pressure if the Snowy region changes proceed. NEMMCO has stated that under these circumstances, it may be "impractical to advance the Hydro Tasmania proposal in parallel with the Snowy region changes due to resource constraints".³⁴

NEMMCO has also raised the possibility of inefficiencies created by progressing the Hydro Tasmania proposal in parallel with the Snowy region changes and prior to the completion of the FCAS review. NEMMCO believes that the Hydro Tasmania proposal will require modifications to some 340 FCAS constraint equations used in the dispatch algorithm. However, the outcome of the NEMMCO FCAS review with regard to delayed FCAS may require these 340 constraints to be modified again, while it will be necessary to create two versions of 230 of these equations if the Hydro Tasmania proposal is approved prior to the implementation of the Snowy region boundary change, if the proposed changes to the Snowy region boundaries go ahead.³⁵

Hydro Tasmania has acknowledged that changes to constraint equations will be necessary, but has disputed the scale of these modifications as portrayed by NEMMCO, on the basis that the "principle behind the change will be the same in each case, and hence the task will be less onerous than might first appear".³⁶

NEMMCO's second round submission further addressed the issue of the timeframe required for implementation of the proposed Rule, and requested additional time in which to conduct analysis of the changes required by the draft Rule.

3.4.1 Commission's analysis

While the Commission recognises that the possible changes to the Snowy region boundary could result in increased pressure upon NEMMCO's development cycle and additional assessment of, and potentially modifications to, constraint equations, the Commission does not consider it appropriate to delay the making of a draft decision on the Hydro Tasmania proposal until the final outcomes of Snowy region boundary change are known.

The Commission is of the view that the scale, or number, of the modifications that will be required by the proposal under the conditions outlined by NEMMCO should not influence the decision to implement the proposal. However, the Commission has

³⁴ NEMMCO submission, 7 March 2007, p. 2

³⁵ The Commission has to date released a draft determination on the Snowy region boundary change.

³⁶ Hydro Tasmania submission, 27 March 2007, p. 2

remained conscious of NEMMCO's development cycle and the pressures placed upon it when making its final decision, and has taken into consideration advice from NEMMCO regarding the possible implementation date for the Rule.. The Commission has also taken into consideration NEMMCO's view, as expressed in the FCAS Review reports, that the issue of co-optimisation is best addressed through the Rule change proposal put forward by Hydro Tasmania.

3.5 Commencement date for the Rule

The Commission's draft Determination sought feedback from NEMMCO regarding the commencement date of the proposed Rule, given the modifications to constraint equations and dispatch and settlement processes that will be required.

NEMMCO's second round submission requested additional time to engage external advice in order to resolve implantation issues associated with the proposed Rule changes. In reviewing the requirements for the detailed implementation of the Rule in the dispatch and settlement systems, NEMMCO advised that it had, thus far, been unable to develop a procedure for determining the amount of dispatched regulation service in excess of that necessary to meet the regulation requirement in each region. Without a specified requirement for each region, "there appears to be no basis upon which to apportion any requirement pertaining to more than one region back to the individual regions". NEMMCO was of the view that there is a "material risk that no equitable procedure can be identified", and until the *feasibility* of implementation was established, NEMMCO would not be in a position to provide an indication of the amount of time required for implementation. The Commission concurred with NEMMCO's position and extended the publication date for its final Rule under section 107 of the NEL.

NEMMCO subsequently advised the Commission in July that determining the approximate cost allocation factors in the dispatch time frame was feasible, and that implementation of the Rule would be possible by late 2008.

Consequently, the Commission has decided that the Rule will commence on 1 January 2009.