Australian Energy Market Commission

Draft Rule Determination

Dispatch of Scheduled Network Services

Rule Proponent
Hydro Tasmania

7 June 2007

Signed: .....

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

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Citation

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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.

Contents

Summary

On 10 January 2007 the Commission received a Rule change proposal from Hydro Tasmania (the proponent) relating to the dispatch of scheduled network services. Since that time the Commission has undertaken analysis of the Rule proposal and also received submissions from National Electricity Market (NEM) stakeholders including a supplementary submission from the Rule proponent.

Hydro Tasmania's Rule change proposal sought to ensure that the dispatch of Market Network Service Providers (MNSPs) is on the basis of the MNSP's offers in the energy market subject to two exceptions. The exceptions listed in the Rule change proposal were:

- "Such dispatch cannot be achieved because of a limited rate of change applying to that scheduled network service, or

- Dispatch contrary to the current network service offer is necessary to allow NEMMCO to dispatch in accordance with requirements for reliability of supply to customers or power system security."[a]

Hydro Tasmania used Basslink as the focus of its proposal. As an MNSP, Basslink offers the price at which it is willing to transfer energy into the National Electricity Market Management Company (NEMMCO) dispatch process. A counter price flow could occur if Basslink were offered in at a negative price. However, Hydro Tasmania asserts that counter price flows are occurring when Basslink is offered in at a non-negative price. During a counter price flow Basslink must effectively pay NEMMCO (in other words, receives a negative revenue from the settlement process for the affected trading intervals) while providing an energy transport service to the market. These costs are then passed on to Hydro Tasmania under the "Basslink Services Agreement".

Hydro Tasmania argued that there is a high incidence of counter price flows across Basslink due to the interaction between Basslink's ability to transfer Frequency Control Ancillary Services (FCAS), Basslink's "no go zone", and the dispatch of Basslink in the co-optimised energy and FCAS markets. The proponent also argued that the consequence of the Rule change would be to reduce the instances where the Basslink interconnector is dispatched for flow contrary to the energy price difference (counter price flow).

Notwithstanding the importance of the issues raised by Hydro Tasmania, and their Rule proposal, the Commission considers that the Rule change proposal's suggested solution would have a fundamental impact on the Rules relating to co-optimisation and that the proposed solution would have the effect of making one of the eleven factors taken into consideration in dispatch predominant.

[a] Rule Change Proposal, Hydro Tasmania, 10 January 2007, p9

The Commission considers that the Rule change proposal's proposed solution deviates from the most optimal dispatch solution available through the co-optimisation of energy and FCAS in the NEM, as the co-optimisation process seeks to maximise the value of trade. The Commission is of the view that a solution that only takes into account an MNSP's offer in the energy market to be a less optimal dispatch outcome in terms of the market as a whole. The Commission is aware that should it decide not to make this Rule then the current dispatch process will continue.

Furthermore, the Commission considers that moving away from the most optimal dispatch solution to the market as a whole in favour of a solution that honours an MNSP's offers in the energy market (subject to the exceptions listed in the Rule change proposal) does not promote the NEM objective. The Commission is of the view that the Rule change proposal does not promote the NEM objective over the status quo, and has determined in accordance with section 99 of the national Electricity Law (NEL) not to make a draft Rule. Submissions to the Commission during the first stage of consultation also supported this position.[b]

The Commission is of the view that while total costs to customers may or may not be raised in the short term by the co-optimisation of energy and FCAS across Basslink, the total production costs of supplying energy and FCAS over the entire market is minimised in a dispatch period. This is expected to lead to long term benefits to electricity consumers through competition and efficient price signals. The Commission therefore is of the view that co-optimisation in light of this Rule proposal remains consistent with the promotion of the NEM objective.

In assessing this Rule change proposal, submissions have raised the issue that the FCAS market lacks a mechanism for MNSPs to capture the value of FCAS transfer. The Commission has examined the development of the MNSP rules and the rules governing the FCAS markets and is of the view that there appears to be no clear reason for the lack of alignment between the FCAS and energy markets in terms of the ability of MNSPs to capture the value of energy transfer but not that of FCAS transfer. The Commission notes that this lack of alignment might be addressed through amendments to the MNSP rules; however this matter is outside the scope of this Rule change proposal.

In its supplementary submission Hydro Tasmania expressed the view that because the settlement volumes summated over all FCAS provisions are much smaller than the settlement volume for energy, a trade off based purely on price where energy benefits are sacrificed for FCAS gains will generally raise the total cost to customers.[c] Hydro Tasmania also stated that:

- "The effect of the current practice is commonly to 'trap' the dispatch outcome in the wrong flow direction relative to energy prices…

[b] TRUenergy Submission, 30 March 2007, p2, NEMMCO Submission, 30 March 2007, p2
[c] Hydro Tasmania Supplementary Submission, 15 May 2007, p4

- "If the dispatch process were able to examine the forward consequences of this, the optimum solution would usually be to reverse the Basslink flow direction, and following a brief elevation in FCAS prices during the reversal, enjoy benefits in both energy and FCAS markets following the reversal."[d]

Hydro Tasmania considered that:

- "For both of these reasons, the proposition that the principle of respecting the market offer be abandoned for scheduled network services does not even achieve the short-term customer benefits claimed for it".[e]

In regards to Hydro Tasmania's argument that the current dispatch arrangements lead to Basslink being "trapped" into counter price flows for "significant periods", the Commission is of the view that this is a valid argument for reversing the flow of Basslink. The Commission, however, remains of the view that the Rule change proposal does not bring about a reversal of Basslink flow in a way that satisfies the Rule making test that promotes the NEM objective as it deviates from the co-optimisation process.

In its analysis of the draft Rule proposal and submissions the Commission has also considered a number of issues including:

- The interpretation of particular clauses relevant to this matter;
- Effects of the Rule change proposal on the co-optimisation process; and
- Other alternative solutions to the problem.

A complete analysis of the Commission's reasons for its decision are contained in section 4 of this draft Rule determination.

[d] Ibid
[e] Ibid

The Commission invites submissions from interested parties on this draft Rule determination by **20 July 2007**. Submissions may be sent electronically to submissions@aemc.gov.au or by mail to:

Australian energy Market Commission
PO Box H166
AUSTRALIA SQUARE NSW 1215
Fax: 02 8296 7899

All submissions should be prepared and lodged in accordance with the Commission's "Guidelines for making written submissions on Rule change proposals", which is available at the Commission's website at www.aemc.gov.au.

In accordance with section 101 of the NEL, any interested person or body may request that the Commission hold a pre-determination hearing in relation to the draft Rule Determination. Any request must be made in writing and must be received by the Commission by no later than **14 June 2007**

John Tamblyn

Chairman

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1 Hydro Tasmania's Rule proposal

On 10 January 2007 the Commission received a Rule change proposal from Hydro Tasmania relating to the dispatch of scheduled network services. On 1 February 2007 the Commission commenced consultation under section 95 of the National Electricity Law (NEL) on the proposal.

Hydro Tasmania's Rule change proposal sought to ensure that the dispatch of an MNSP was on the basis of the MNSP's offers. The consequence of the Rule change was that it would reduce the instances where the Basslink interconnector is dispatched for flow contrary to the energy price difference (counter price flow). Hydro Tasmania considered that these dispatch outcomes are contrary to clause 3.8.1(a) of the Rules as it does not meet the requirement that central dispatch must "maximise the value of *spot market* trading on the basis of *dispatch offers* and *dispatch bids*".[1]

Hydro Tasmania's Rule change proposal stated that NEMMCO does not agree with Hydro Tasmania's view that the Rules as currently drafted require Basslink to be dispatched in accordance with its market offer.[2]

During a counter price flow Basslink must effectively pay NEMMCO while providing an energy transport service to the market. These costs are then passed on to Hydro Tasmania under the "Basslink Services Agreement".[3]

As an MNSP, Basslink offers its capacity at the price at which it is willing to transfer energy into the NEMMCO dispatch process. A counter price flow could occur if Basslink were to offer in at a negative price. However, Hydro Tasmania asserted that counter price flows are occurring when Basslink is bid in at a non-negative price.

Hydro Tasmania stated that over the three and half month period from mid May to mid August 2006, Basslink was dispatched 39% of the time so that Basslink was liable to pay NEMMCO while providing an energy transport service to the market.[4]

Hydro Tasmania considered that the counter price flow situation has arisen from complex interactions between the energy transport service that Basslink offers to the market and the ability to transfer FCAS which is provided by Basslink without reward.[5]

Hydro Tasmania proposed a new clause (3.8.6A(k)) to be inserted into the Rules to clarify the requirements of clause 3.8.1(a) of the Rules.[6] Hydro Tasmania's proposed new clause is as follows:

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[1] Rule Change Proposal, Hydro Tasmania, 10 January 2007, p1

[2] Ibid, p5

[3] Ibid, p1

[4] Ibid, p4

[5] Ibid

[6] Ibid, p9

"NEMMCO must dispatch each scheduled network service in accordance with its current network dispatch offer, interpreted under 3.8.6A(f) and (g), unless-

(i) such dispatch cannot be achieved because of a limited rate of change applying to that scheduled network service, or

(ii) dispatch contrary to the current network service offer is necessary to allow NEMMCO to dispatch in accordance with requirements for reliability of supply to customers or power system security."[7]

Hydro Tasmania sought to clarify the Rules to ensure that the dispatch of scheduled network services is made consistent with the dispatch of other market participants in that it will be on the basis of offers and bids.[8]

Hydro Tasmania noted:

"That market participants are subject to settlement at prices different from those applying to their dispatch, but this is currently a requirement of the Rules and is different from the case that we are seeking to correct by this clarification, where the inconsistency lies within the dispatch process[9]"

Hydro Tasmania stated that the Rule change would be specific to the dispatch process and would not impact on market settlement. The effect of the change on MNSPs such as Basslink would be that:

- "Like other market participants it would be dispatched on the basis of its offer price for a service compared with the value in dispatch of that service; and

- Again like other participants, scheduled network service providers would be exposed to the risk of settlement at regional reference node prices that differ from the value of the service inherent in dispatch."[10]

In proposing that MNSPs such as Basslink be dispatched in accordance with their market offer, Hydro Tasmania recognised that there should be two exceptions on grounds of both public policy and practicality.[11]

Hydro Tasmania outlined that the practical consideration was that flow through an MNSP may be subject to specific rate of change limits.[12] Dispatch purely based on

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[7] Rule Change Proposal, Hydro Tasmania, 10 January , p9
[8] Ibid, p1
[9] Ibid
[10] Ibid, p2
[11] Ibid, p5
[12] Ibid, p9

the market offer could result in a rate of change beyond this limit and hence an exception should be allowed so that this limit be respected.[13]

The second exception was that NEMMCO should be entitled to dispatch an MNSP contrary to its offer if this dispatch were necessary to enable NEMMCO to satisfy its requirements for the reliability or security of supply to customers, but not otherwise.[14]

Hydro Tasmania considered that the proposed clause would direct NEMMCO to dispatch flow in accordance with network dispatch offers, subject to the above conditions thereby reducing the instances of counter price flows.[15]

1.1 Effect of the Rule change proposal

The consequences to the current dispatch process are listed in the Rule change proposal. Hydro Tasmania considered that the current dispatch process results in adverse system security outcomes (an example being the events that occurred on 23 May 2006, where due to a counter price flow on Basslink, required FCAS was not dispatched over a period of approximately half an hour) which would be rectified by the Rule change proposal.[16]

Secondly, Hydro Tasmania considered that the current dispatch arrangements (which lead to higher than anticipated instances of counter price flows) resulted in Tasmanian generation being denied the opportunity to compete in the supply of electricity to Victoria.[17] Again, Hydro Tasmania was of the view that the Rule change proposal would assist in resolving this issue.[18]

Thirdly, the Rule change proposal outlined that the risk resulting from MNSPs having their offer of service accepted but not having their offer price accepted (and therefore possibly being placed in the situation where its service may be used and it incurs a net charge) is a disincentive for the construction of MNSPs.[19] Hydro Tasmania argued that the Rules did not contemplate such a risk and that the removal of the disincentive would enhance the NEM objective.[20]

1.2 Request to expedite the Rule change

The Rule change proposal contained a request that it be handled as a matter to be expedited under section 96 of the NEL on the basis that:

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[13] Rule Change Proposal, Hydro Tasmania, 10 January 2007, p9
[14] Ibid, p5
[15] Ibid, p7, 8
[16] Ibid, p6
[17] Ibid
[18] Ibid
[19] Ibid, p8
[20] Ibid

- The proposal was non-controversial as it was a clarification of the Rules which only directly affected Basslink; and

- That the proposal was urgent due to the magnitude of the financial and other adverse impacts (including a disincentive to construct MNSPs, system reliability issues, and denial of Tasmanian generators to compete in the mainland energy market) described in the proposal.[21]

The Commission considered that this issue was not non-controversial as it affected other parties including the electricity system controller (NEMMCO), and possibly other market participants such as electricity generators and electricity retailers as the Rule change proposal could affect prices in FCAS markets.

The Commission also considered that this issue was not urgent for the purposes of section 96 as counter price flows did not represent an imminent threat to the wholesale exchange or the safety, security or reliability of the national electricity system.

1.3 Fundamental Problem the Rule Proposal Sought to Address

The fundamental problem the Rule change proposal sought to address is the high incidence of counter price flows across Basslink. The Rule change proposal sought to reduce these instances by ensuring MNSPs are dispatched in accordance with their offers in the energy market.

To properly understand the key problem, an examination into the transfer of FCAS across Basslink and NEMMCO's co-optimisation process is required. It should be noted that Basslink has some technical properties that are unique within the NEM.

1.4 Extension of time to publish draft Rule determination

On 15 May 2007 the Commission received a supplementary submission from Hydro Tasmania that commented on key issues pertaining to this matter including issues raised in other submissions.

The Commission issued a notice under section 107 of the NEL on 24 May 2007, extending the time for it to publish the draft Rule determination by two weeks because it considered that it was in the public interest to adequately consider the complex issues raised in the supplementary submission prior to publishing its draft Rule determination.

[21] Rule Change Proposal, Hydro Tasmania, 10 January 2007, p5

2 Background

The aim of the following sections of this draft Rule determination is to provide an explanation as to how counter price flows arise to give context to the analysis of the Rule change proposal.

2.1 Frequency Control Ancillary Service (FCAS)

Generators in the NEM are designed to generate electricity at 50Hz. This means that the waveform of the electricity that is generated in the power system alternates positive to negative and back 50 times per second.[22] Just as the generators in the NEM are all designed to make electricity at 50Hz, most motorised equipment, both large and small scale, is designed to operate using 50Hz, including electric clocks and timing devices that depend on the frequency being maintained within a tight tolerance.[23]

All generators are electromagnetically coupled and are operated in a synchronous speed that generates electricity at 50Hz.[24] When supply of electricity matches demand, the frequency on the system is relatively constant.[25] That is, there is no rate of change to the frequency, however, as soon as there is an imbalance between supply and demand the frequency starts to change.[26] If demand is higher than supply, frequency will fall. This is because demand takes energy away from the generators causing the machine shafts to spin at a slower rate. Conversely, if supply is higher than demand, then frequency increases.[27]

FCAS is designed to manage the effects of the unpredictable changes in frequency influenced by the balance of supply and demand. Most of the influences on the frequency of the power system are predictable, such as generator output targets and forecast demand.[28] However, some of the influences are unpredictable, such as unplanned generator outages and forecast demand errors.[29]

The reference level that the system is designed to operate at is 50Hz, so that if the frequency falls, to say 49.5Hz, it is possible to stabilise the frequency at that level. However, NEMMCO is then required to return to a level that is within the relevant frequency standards, as published by the Reliability Panel, within 5 minutes of the

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[22] Network and FCAS Constraints in the NEM, NEMMCO, December 2006, p5-2
[23] Ibid
[24] Ibid, p5-3
[25] Ibid
[26] Ibid
[27] Ibid
[28] Ibid, p6
[29] Ibid

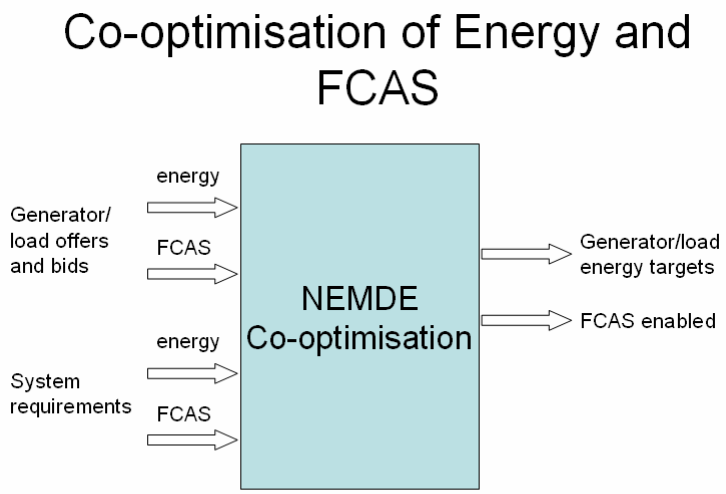
event. It also repositions the system such that it is back in the centre of its frequency tolerance and therefore prepared in case a further contingency should occur.[30]

2.2 Co-optimisation of Energy and FCAS

During periods of high or low demand, it may be necessary for the National Electricity Market Dispatch Engine (NEMDE) to move the energy target of a scheduled generator or load in order to minimise the total cost, of energy plus FCAS, to the market. This process is the co-optimisation of energy and FCAS in the NEM and is inherent in the dispatch algorithm. The function of the NEMDE is to source an optimal solution to maximise the value of spot trading to find the most economically favourable solution.

The diagram below illustrates the interaction between generator and load bids and offers in the energy and FCAS markets, and system requirements. The co-optimisation process takes all these factors into account to source an optimal solution to maximise the value of spot trading.

Figure 2.1 Co-optimisation of Energy and FCAS



In meeting the total requirements for energy and FCAS at the lowest available cost, the dispatch algorithm co-optimises the eight FCAS markets and the single energy market.

[30] Network and FCAS Constraints in the NEM, NEMMCO, December 2006, p6

2.3 Transfer of FCAS through Basslink

Basslink is the only High Voltage Direct Current (HVDC) interconnector in the NEM that is able to transport FCAS. Alternating current transmission lines automatically transfer FCAS and are paid as a regulated service though not explicitly for the transfer of FCAS. Directlink and Murraylink are also HVDC but do not have a frequency controller and therefore are unable to transfer FCAS. Being the sole interconnector between the Tasmanian and Victorian region Basslink allows Tasmania to take part in the global NEM FCAS and energy markets. There are two advantages of having a global FCAS market as opposed to a series of local FCAS markets.

The first advantage is that the system operator is able to procure and dispatch FCAS from a greater variety of sources from a global market. This increases the competition for FCAS provision and thus reduces the price of FCAS and allows for greater availability.

The second advantage is that FCAS depends on the demand and supply balance. Reserves of FCAS are required to regulate minor frequency variations that occur from time to time, meet the contingency of the largest generator tripping or the loss of the single largest load. In a global FCAS market, FCAS may be procured from outside a particular local region. This means that the total amount of FCAS required in the market can be reduced as there are generators in each of the particular local markets that are able to provide FCAS into the global market as a backup. Effectively the market is consolidated and less FCAS in total is required.

2.4 Basslink Frequency Controller

Basslink transfers FCAS through a frequency controller.[31]

The Basslink frequency controller adjusts the scheduled transfers of power across Basslink whenever the frequencies in the Tasmania or the Victoria region of the NEM depart from the nominal frequency level of 50Hz.[32]

The Basslink frequency controller thus allows the transfer of FCAS across Basslink, whilst at the same time accounting for the different frequency standards existing between the two interconnected regions.[33]

There is no payment mechanism or mechanism to make a dispatch offer for the transportation of FCAS across any interconnector in the NEM, including MNSPs. Hence Basslink, and by contract Hydro Tasmania, does not earn any revenue for transporting FCAS[34].

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[31] Hydro Tasmania Submission, 30 March 2007, p2 and Draft Review of Basslink Dispatch, NEMMCO, 22 December 2006.

[32] Ibid

[33] Ibid

[34] Hydro Tasmania Submission, 30 March 2007, p2

2.5 Limitations of FCAS transfer across Basslink

Basslink, like all transmission lines, has energy transfer capacity limitations. Basslink is not intended to transfer energy beyond 610MW to Victoria (Northward) and 480 MW to Tasmania (Southward). Unlike other transmission lines that are able to temporarily exceed their capacity limits, the Basslink capacity limits are absolute and cannot be exceeded because Basslink flows are explicitly controllable by NEMDE.

In addition to these limitations the technology used in conventional HVDC transmission lines such as Basslink means that this type of interconnector contains a "no go zone".[35] This is unique in the NEM as the other HVDC lines were constructed using different technology.

The "no go zone" means that Basslink is unable to operate at power levels less than 50MW (nominally), in either direction.[36] To make a transition from operation in one direction to the other (in other words to change the direction of the flow of energy), Basslink must be taken from the minimum sustainable level of 50MW directly to 0 MW, allowed to discharge for at least two minutes, and then moved to at least 50MW in the reverse direction.[37]

Basslink is unable to transfer either FCAS or energy through the "no go zone".[38]

The diagram below shows the Basslink "no go zone". A positive flow is the flow of energy in one direction while a negative flow is the flow of energy in the opposite direction. Zone's A and C are zones that energy and FCAS can be transported through. Zone B represents the no go zone. This is from -50MW to 0MW and from 0MW to +50MW. A change in the direction of flow of Basslink can only be undertaken if you transition through the "no go zone" where Basslink is unable to operate. The presence of the Basslink "no go zone" is an important factor when considering counter price flows.

[35] Proposed Second Solve of NEMDE to Manage Basslink Operating Capability, NEMMCO, p2

[36] Ibid, p2

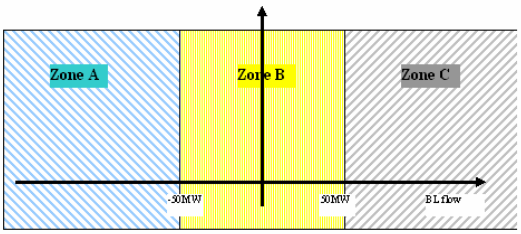
[37] Ibid

[38] Ibid

Figure 2.2 Basslink No Go Zone and FCAS Transfer

Basslink No Go Zone and FCAS Transfer

Basslink Initial point	Basslink FCAS Transfer	Feasible Region for Basslink Target
Zone A (BL< -50)	Scheduled	Zone A (BL ≤ -50) Including the boundary
Zone C (BL > 50)	Scheduled	Zone C (BL ≥ 50) Including the boundary
Zone B (50 ≥ BL ≥ -50)	Not Scheduled	Zones A, B or C subject to ramp-rate limit constraints



Data source: NEMMCO, "Proposed Second Solve of NEMDE to Manage Basslink Operating Capability", p.2.

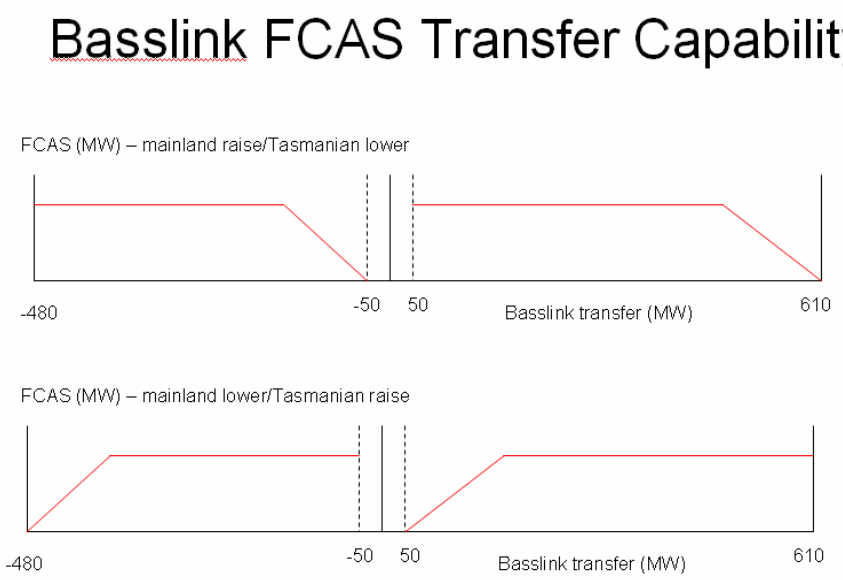
2.6 How the limitations affect counter price flows across Basslink

As Basslink power transfer approaches its northward flow limit of 610MW or the southward 50 MW no-go zone, the amount of FCAS lower services in Tasmania or FCAS raise services on the mainland which can be transferred reduces.

Conversely, as the Basslink power transfer approaches its southward flow limit of 480MW or the northward 50 MW no-go zone, the amount of FCAS raise services in Tasmania or lower services on the mainland which can be transferred reduces.

The diagram below illustrates the amount of FCAS raise and lower services that Basslink can transfer as it approaches the "no go zone" and the upper and lower limits. Again a negative number denotes a flow in a southward direction while a positive number denotes the flow of energy in a northward direction. For a mainland raise/Tasmanian lower service the amount of FCAS that can be enabled is reduced (i.e. ramps down taking into account the physical ability of the generator to slow down) from -50MW to 0MW (as it approaches the "no go zone"). Once the "no go zone" is transitioned and flow occurs in the opposite direction, the amount of FCAS that can be enabled ramps back to the maximum amount.

Figure 2.3 Basslink FCAS transfer capacity



Furthermore no transfer of FCAS services is possible between Tasmania and the remainder of the NEM when Basslink is scheduled to reverse its power flow.

In normal dispatch NEMDE will co-optimise the dispatch of energy and FCAS. As a result, Basslink's energy transfer may be constrained to enable the provision of FCAS for regional or global requirements to meet the least cost market solution.[39]

When the flow of Basslink is trying to reverse it approaches the "no go zone" where Basslink cannot operate. As it approaches the "no go zone" the transfer of FCAS gets constrained, and the FCAS price increases. This causes a downward cost pressure from the FCAS market on the flow across Basslink to move away from the "no go zone". The price difference in the energy market however causes a cost pressure on the flow across Basslink to move through the "no go zone" (in the opposite direction to the pressure caused by the FCAS market). These counteracting cost pressures lead to equilibrium where Basslink's flow is counter price.

The FCAS transfer constraint equations relating to Basslink can operate to restrict Basslink's dispatch to a level greater than 50MW.[40] Thus if the pricing conditions are reversed, making the dispatch counter price, then Basslink can become trapped into this condition if the economic advantage from the FCAS markets (as measured by the NEMDE objective function) exceeds the cost incurred by the counter price energy flow.[41] This propensity for entrapment on one side or other of the "no go zone" was

[39] Draft Review of Basslink Dispatch, NEMMCO, 22 December 2006, p3
[40] Ibid
[41] Ibid

not foreseen as a major issue in the planning for Basslink entry to the NEM.[42] This process has led to the high instance of counter price flows across Basslink.[43]

2.7 Ability for MNSPs to recover value of FCAS transfer

The development of the MNSP rules and the rules governing FCAS transfer have not provided for MNSPs to recover the value of FCAS transfer.

In terms of the MNSP rules, The National Electricity Code Administrator's (NECA) electricity code change application lodged with the Australian Competition and Consumer Commission (ACCC) in 26 July 1999 and the ACCC's determination of the MNSPs' code change on 21 September 2001, both mentioned that MNSPs may have a revenue stream for providing ancillary services. It was not specified which type of ancillary service was contemplated, however, and FCAS was not specifically mentioned. On 6 December 2001 the MNSP rules were gazetted. These rules, however, contained no provision for MNSPs to receive revenue or make offers for transferring FCAS.

In terms of the provisions regarding the creation and operation of the FCAS markets, NECA's code changes were lodged with the ACCC on the 23 August 2000. The ACCC determination was made on 11 July 2001 and the Rules were gazetted on 9 August 2001. Neither the code change application nor the ACCC determination discussed the prospect of MNSPs recovering the value of FCAS transfer.

2.8 FCAS Review

NEMMCO is required under the Rules to undertake a review of the operation and effectiveness of the spot market for ancillary services, 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 on 14 December 2006, setting the scope of the review and calling for submissions from interested market participants.

Submissions were required by 23 February 2007 and a draft report was published on 3 May 2007. NEMMCO's final report and recommendations are due in July 2007, with Rule changes arising out of its recommendations (if any) to be submitted to the Commission by the end of October. The draft report has not explicitly commented on this issue.

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[42] Draft Review of Basslink Dispatch, NEMMCO, 22 December 2006, p3

[43] Ibid

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3 Draft Rule Determination

The Commission has determined in accordance with section 99 of the National Electricity Law ("NEL") not to make the Draft Rule.

This determination sets out the Commission's reasons for not making the Draft Rule. The Commission has taken into account:

1. The Commission's powers under the NEL to make the Rule;

2. The proponent's Rule change proposal and proposed Rule;

3. Submissions received;

4. Relevant Ministerial Council of Energy ("MCE") statements of policy principles; and

5. 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.

3.1 The Commission's power to make the Rule

The subject matters about which the AEMC may make Rules are set out in a general way in section 34 of the NEL and more specifically, in Schedule 1 to the NEL.

The proposed Rule is within the matters set out in section 34, as it relates to:

- The operation of the NEM (as it involves the rules for dispatching energy);

- The operation of the national electricity system for the purposes of the safety, security, and reliability of that system (as this matter involves the dispatch of FCAS which impacts on system security and reliability); and

- The activities of persons (in this Rule proposal most notably NEMMCO who is charged with the responsibility for system dispatch in the NEM), participating in the national electricity market or involved in the operation of the national electricity system.

As the Rule change proposal is in regards to NEMMCO's energy dispatch arrangements, the Commission is satisfied that the proposed Rule is a matter about which the Commission may make a Rule.

The Rule is also within matters set out in Schedule 1 to the NEL as it 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 (paragraph 7 of Schedule 1 to the NEL); and

- The operation of generating systems, transmission systems, distribution systems or other facilities (paragraph 11 of Schedule 1 to the NEL).

3.2 Relevant MCE statements of policy principles

The NEL requires the Commission to have regard to any MCE statements of policy principles in applying the Rule making test. The Commission notes that currently there are no MCE statements of policy principles that currently relate to the dispatch process, MNSPs or ancillary services including FCAS contained in the Rules.

3.3 Assessment of the draft Rule: the Rule making test and the national electricity market objective.

The NEM objective is the basis of assessment under the Rule making test and is set out under section 7 of the NEL:

> "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."[44]

The Rule making test states:

> (1) the Commission may only make a Rule if it satisfied that the Rule will or is likely to contribute to the achievement of the NEM objective;
>
> (2) for the purposes of subsection (1), the Commission may give such weight to any aspect of the national electricity market objective as it considers appropriate in all circumstances having regard to any relevant MCE statement of policy principles.[45]

Hydro Tasmania's Rule proposal sought to ensure that MNSPs are dispatched in accordance with their offers in the energy market. This would have the effect of reducing the instances of potential counter price flows across MNSPs.

The Rule change proposal outlined that NEMMCO and Hydro Tasmania were in disagreement over the interpretation of clause 3.8.1(a) of the Rules and that the clause 3.8.1(a) was unclear. The Commission is of the view that while it is not its role to comment on disputes on the interpretation of the Rules between parties, it is the Commission's role to form a view in relation to the proposition made in the Rule change proposal that the proposed Rule sought to clarify clause 3.8.1(a). The Commission's view is that the Rule change proposal sought change the dispatch process from the current approach undertaken by NEMMCO to the approach Hydro Tasmania has outlined in the Rule change proposal, rather than to clarify the dispatch process. The Commission is aware that should the Commission decide not to make a Rule on this matter that the current dispatch process will continue.

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[44] National Electricity Law, Section 7

[45] National Electricity Law, Section 88

In ensuring that MNSPs are dispatched in accordance with their offers in the energy market, the Rule change proposal proposed a deviation away from the co-optimisation process.

The co-optimisation process seeks to provide the optimal value of trade for the market as a whole of FCAS and energy through the dispatch of market participants. The Commission considers that this process is consistent with the NEM objective of providing efficient use of electricity for the long term interests of consumers of electricity.

The Commission realises, however, that at certain times, the current central dispatch process, in accordance with the co-optimisation process which seeks the most optimal value of trade, will provide an outcome which may disadvantage certain individual market participants despite being advantageous to the market as a whole. During periods of high or low demand it may be necessary for NEMDE to move the energy targets of scheduled market participants in order to minimise the cost of energy and FCAS in the NEM.

The Commission remains of the view that in these situations the co-optimisation process remains consistent with the NEM objective in seeking the most optimal value of trade for the market as a whole and therefore provides for the efficient use of electricity for the long term interest of consumers of electricity.

In its supplementary submission Hydro Tasmania submitted that in the case of counter price flows across Basslink that:

> "The settlement volume, summated over all FCAS provisions is much smaller than the settlement volume for energy. Hence a trade off based purely on price where the energy benefits are sacrificed for FCAS gains, will generally raise the total cost to customers."[46]

The Commission is of the view that total costs to customers may or may not be raised in the short term by the co-optimisation of energy and FCAS across Basslink, however the total production costs of supplying energy and FCAS over the entire market is minimised in a dispatch period. This is expected to lead to long term benefits to electricity consumers through competition and efficient price signals. The Commission therefore is of the view that co-optimisation, as it occurs under the status quo is consistent with the promotion of the NEM objective. The Commission considers that adopting Hydro Tasmania's proposal would detract from this promotion of the NEM objective.

Hydro Tasmania also stated in their supplementary submission that:

> "The second issue is the effect over time. The effect of the current practice is commonly to "trap" the dispatch outcome in the wrong flow direction relative to energy prices. This may continue for significant periods.

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[46] Hydro Tasmania Supplementary Submission ,15 May 2007, p4

"If the dispatch process were able to examine the forward consequences of this, the optimum solution would usually be to reverse the Basslink flow direction, and following a brief elevation in FCAS prices during the reversal, enjoy benefits in both energy and FCAS markets following the reversal.

"Our proposal avoids this trap and hence is more consistent with optimisation beyond the current dispatch interval, and hence benefits to customers."[47]

The Commission is of the view that this argument is more relevant to reversing the flow of Basslink rather than a requirement for the system controller to dispatch electricity in accordance with an MNSPs energy market offer (subject to the exceptions listed in the rule change proposal). The Commission remains of the view that the Rule change proposal would not bring about the reversal of Basslink flow in a way that promotes the NEM objective.

At present MNSPs that are capable of transferring FCAS (of which Basslink is the only example in the NEM) are dispatched in accordance with an explicit energy offer and an implicit FCAS offer. The FCAS offer is implicit because at present (unlike the energy market where MNSPs can capture the value for energy transfer) MNSPs are presently unable to capture the value of FCAS transfer. Also the Rules do not define an FCAS offer so MNSPs are unable to make one. Instead an offer is assumed as the capability is enabled, and is necessary to have an offer to incorporate FCAS transfer into NEMDE.

The Rule change proposal sought to change the dispatch of MNSPs from the process outlined above to one explicitly requiring the system operator to dispatch MNSPs solely in accordance with their offers in the energy market. The two exceptions to this process included in the Rule change proposal were:

"(i) such dispatch cannot be achieved because of a limited rate of change applying to that scheduled network service, or

(ii) dispatch contrary to the current network service offer is necessary to allow NEMMCO to dispatch in accordance with requirements for reliability of supply to customers or power system security."[48]

This effectively was a proposal that MNSPs be dispatched in a way that ignored their implicit FCAS offer, subject to the two exceptions stated in the Rule change proposal. This proposed movement away from a co-optimised outcome, however, can not be seen as promoting the NEM objective as it would effectively mean a deviation from finding the most optimal value of trade for the market as a whole.

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[47] Hydro Tasmania Supplementary Submission, 15 May 2007, p4

[48] Hydro Tasmania Rule Change Proposal, 10 January 2007,p9

Should MNSPs be dispatched in accordance with their offers in the energy market, with their implied offer in the FCAS market ignored, a sub optimal outcome in terms of the entire market would result, which would be contrary to the NEM objective of providing efficient use of electricity services for the long term interests of electricity consumers.

The Commission has therefore decided not to make a draft Rule on this matter. Further analysis and detailed consideration of the relevant issues relating to this proposal are provided in section 4 below. Submissions received from the consultation process to the Rule proposal broadly support the Commissions findings in this regard.[49]

In assessing this Rule change proposal submissions have raised the issue that the FCAS market lacks a mechanism for MNSPs to capture the value of FCAS transfer. The Commission has examined the development of the MNSP rules and the rules governing the FCAS markets and is of the view that there appears to be no clear reason for the lack of alignment between the FCAS and energy markets in terms of the ability of MNSPs to capture the value of energy transfer but not that of FCAS transfer. The Commission notes that this lack of alignment might be addressed through amendments to the MNSP rules; however this matter is outside the scope of this Rule change proposal.

3.4 Consultation on the Rule proposal

On 1 February 2007 the Commission commenced consultation under section 95 of the NEL on the proposal. Consultation closed on 30 March 2007. The Commission received four submissions to the proposal from the following parties:

- TRUenergy;
- Hydro Tasmania;
- Aurora Energy; and
- NEMMCO.

Hydro Tasmania's submission supplemented the information provided in its proposal. The other submissions were unsupportive of the proposal. The key issues addressed in the submissions are discussed in section 4 below.

On 15 May 2007 the Commission received a further supplementary submission from Hydro Tasmania that commented on key issues pertaining to this Rule change proposal including issues raised in other submissions. These matters are also discussed in section 4 below.

[49] TRUenergy Submission, 30 March 2007, p1, NEMMCO Submission, 30 March 2007, p1.

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4 Additional matters arising from consultation and the Commission's analysis

4.1 Interpretation of Relevant Clauses of the Rules in relation to this matter

The basis for the Rule change proposal according to the proponent was that there has been an unintentional misinterpretation of clause 3.8.1(a). The proponent therefore sought to clarify this clause and in turn reduce the instances of counter price flows across Basslink (and other similar MNSPs should they be built in the NEM).[50] Submissions have also commented on related clauses and on the difficulty in interpreting clause 3.8.1(a) and the proposed clause 3.8.6A(k) provided by the proponent as part of the Rule change proposal.[51]

4.1.1 Submissions

NEMMCO submitted that:

> "NEMMCO does not agree with Hydro Tasmania's assertion that dispatch has been contrary to the requirement of Rule 3.8.1(a)…
>
> "…The phrase 'on the basis of dispatch offers and dispatch bids' is interpreted by NEMMCO as requiring the dispatch offers and bids to be key inputs and key components for evaluation in the optimisation process. Clauses 3.8.1(a) and (b) clearly contemplate that the optimisation is to be subject to the physical realities of the power system operation and the optimisation of dispatched ancillary services.
>
> "As a result of these requirements there is no obligation to dispatch in accordance with each of the bids and offers, even though this would be the natural outcome in the absence of system operation constraints and ancillary services.
>
> "NEMMCO believes Hydro Tasmania's request is inconsistent with the objective of Central Dispatch described in clause 3.8.1(a) of the Rules. To comply with Hydro's proposed Rule, the dispatch engine must select a market solution in which a Market Network Service Provider (MNSP) is dispatched in accordance with its offer."[52]

TRUenergy submitted that:

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[50] Rule Change Proposal, Hydro Tasmania, 10 January 2007

[51] TRUenergy Submission, 30 March 2007, p2; NEMMCO Submission, 30 March 2007, p1; Aurora Energy Submission, 26 March 2007, p1-2.

[52] NEMMCO Submission, 30 March 2007, p1

"NEMMCO correctly interprets this clause [3.8.1(b)] to require that the cost of all forms of supply is to be minimised including both FCAS and energy."[53]

In terms of interpreting the proposed clause submitted by the proponent as part of the Rule change proposal, TRUenergy submitted:

"The proposed Rule is quite generalist in its wording of preserving the offer. So how broadly should NEMMCO interpret the new Rule? It may be impossible to dispatch an MNSP wholly consistent with its energy offer whilst also allowing FCAS transfer, as the NEMDE will need to be constrained from optimising its total objective function.

"Alternatively, if NEMMCO were to interpret the proposed Rules 'network dispatch offer' in a substantive rather than literal meaning, they may presume the MNSP had a zero priced implicit offer to transfer FCAS. In that case, current practice would prevail."[54]

Aurora energy submitted that:

"Hydro Tasmania's interpretation of clause 3.8.1(a) of the NER places the main emphasis on the basis of dispatch offers, but equally an interpretation of the same clause could emphasise that the main objective is to maximise the value of spot markets. It is clear that this clause is open to interpretation."[55]

4.1.2 Proponent

The proponent, in its Rule change proposal, submitted:

"Hydro Tasmania believes that these dispatch outcomes have been contrary to the requirement of clause 3.8.1(a) which includes a requirement that central dispatch must –

…maximise the value of spot market trading on the basis of dispatch offers and dispatch bids."

"We believe that the dispatch of Basslink has not been on the basis of its dispatch offer, and hence is contrary to the Rules.'[56]

In its supplementary submission to the Rule change proposal the proponent submitted that:

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[53] TRUenergy Submission, 30 March 2007, p2

[54] Ibid, p3

[55] Aurora Energy Submission, 26 March 2007, p1

[56] Rule Change Proposal, Hydro Tasmania, 10 January 2007, p1

"NEMMCO have put forward their view that their current practice is consistent with the Rules. We have put forward a different view. The existence of genuine but contrary views indicates clearly that a clarification of the Rules to deal with this unanticipated development is desirable.

"Our proposal is to provide this certainty in a way which avoids future disadvantage to the existing provider of these services, and also avoids unreasonable risks being imposed on any new provider of such services.

"While we do not suggest further providers of such services are now likely, we do not believe that at the Rules should discriminate against any future similar developments."[57]

4.1.3 Commission's Considerations

The Commission considers that it is not its role to comment on disputes between parties on the interpretation of the Rules. The Commission considers that issues of this nature are to be dealt with by the courts and/or the dispute resolution process set out in chapter 8 of the Rules. In putting the legal interpretation of the clauses of the Rules aside, the Commission views the policy interpretation (over which NEMMCO and Hydro Tasmania are in disagreement) of the respective parties as that summarised below.

The Commission considers that Hydro Tasmania has taken one of eleven factors in clause 3.8.1(b) as the dominant factor to be applied when determining the dispatch outcome for Basslink's transmission service.[58] That factor is that an MNSP must be dispatched in accordance with its current network dispatch offer.[59] The Rule change proposal sought to make that the dominant factor (subject to generator ramp rates and reliability of supply to customers or power system security) in determining the dispatch outcome.[60]

NEMMCO argues that all the eleven factors set out in clause 3.8.1(b) should be taken into account in determining the dispatch outcome.[61]

In its Rule change proposal Hydro Tasmania considered that clause 3.8.1(a) is not clear and that the Rule change proposal sought to clarify the clause. The Commission however, is of the view that the Rule change proposal sought to change the dispatch process from a co-optimised process (as currently undertaken by NEMMCO) to one where MNSPs were dispatched solely in accordance with their offer, subject to the

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[57] Hydro Tasmania Supplementary Submission, 15 May 2007, p1, and Clauses 3.8.1(a) and 3.8.1(b) National Electricity Rules

[58] Rule change proposal, Hydro Tasmania, 10 January 2007, p1, and Clauses 3.8.1(a) and 3.8.1(b) National Electricity Rules

[59] Ibid

[60] Ibid

[61] NEMMCO Submission, 30 March 2007, p1 and, Clauses 3.8.1(a) and 3.8.1(b) National Electricity Rules.

two exceptions stated in the Rule change proposal, rather than clarify clause 3.8.1(a) of the Rules.

In analysing the Rule change proposal the Commission has decided not to make a draft Rule in relation to this matter, as it considers that the Rule change proposal has failed to meet the Rule making test as it is unlikely to promote the NEM objective in a manner that is an improvement on the status quo.

The Commission is mindful that should a Rule not be made in relation to this matter (due to its failure to meet the requirements of the Rule making test) NEMMCO's current dispatch process will continue.

4.1.4 Commission's Decision

The Commission has decided that it is not its role to comment on the interpretation of clauses set out in the Rules that are the subject of a dispute between parties. The Commission considers, however, that Hydro Tasmania's Rule change proposal is not a clarification of clause 3.8.1(a) but rather a request to change the Rule from the current dispatch process adopted by NEMMCO to a dispatch process which seeks to dispatch MNSPs in accordance with their offers, subject to two exceptions outlined in the Rule change proposal.

The Commission is mindful that should a Rule not be made in relation to this matter (due to its failure to meet the requirements of the Rule making test) NEMMCO's policy interpretation will continue to determine how dispatch is conducted.

4.2 Effects of the Rule change proposal on the co-optimisation process

The Rule change proposal effectively sought to alter the dispatch solution from a co-optimised solution to one that considered MNSP's offers of energy only. Under the Rule change proposal the MNSP's implied offer for FCAS transfer would be ignored.

4.2.1 Submissions

TRUenergy submitted that to respect an MNSP's energy offer to the detriment of their implied FCAS offer would lead to the inconsistent dispatch of MNSPs compared to the way other interconnectors and participants are dispatched. TRUenergy considered that this would be contrary to the philosophy of identifying a minimum total cost solution at the dispatch stage.[62]

TRUenergy submitted that:

> "The concept of maximising the value of trade is consistent with the economic interpretation of the market objective. A rule that results in an Objective function that is not minimised is a prima facie deviation from the Market

[62] TRUenergy Submission, 30 March 2007, p3

> Objective and needs to be justified by outweighing benefits, such as improvements to financial risk."[63]

TRUenergy opined that there are similarities between the dispatch of MNSPs for energy and FCAS and generators that are constrained "on" or "off" in that in each case the NEMDE is attempting to optimise dispatch[64]. The key difference according to TRUenergy is that generators are settled according to the total value the generator offers in the central dispatch process (in the energy and FCAS markets).[65] TRUenergy concluded that "the solution is not to divert from optimal dispatch but to resolve the settlement anomaly" by providing a mechanism for MNSPs to capture the value of FCAS transfer.[66]

TRUenergy submitted further that:

> "From the dispatch engines perspective, a regulated interconnector is identical to a market network service provider with a zero priced offer for energy. Effectively, both are offering to transfer energy and FCAS at zero cost (energy losses). We do not believe that operating either in a manner that is counter price to energy is 'violating the network service offer', any more than, say, constraining a generator to provide FCAS is 'violating' its offer.
>
> "Attempting to respect an MNSP's energy offer to the detriment of its implied FCAS transfer offer would be to dispatch it inconsistently with how other participants and interconnectors are dispatched and the philosophy of identifying a minimum total cost solution.
>
> "The concept of maximising the value of trade is consistent with the economic interpretation of the Market Objective. A Rule that results in an objective function that is not minimised is a prima facie deviation from the Market Objective and needs to be justified by outweighing benefits, such as improvements to financial risk."[67]

Aurora Energy submitted that the proposed arrangement would eliminate the co-optimisation of energy and FCAS across Basslink which would be inconsistent with the treatment of other interregional interconnectors.[68]

Aurora argued that without the co-optimisation process the available headroom between the dispatch offer and Basslink's flow limits would determine the amount of transferable FCAS. This in turn would restrict the competition for those FCAS

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[63] TRUenergy Submission, 30 March 2007, p3

[64] Ibid

[65] Ibid

[66] Ibid

[67] Ibid, p4

[68] Aurora Energy, 26 March 2007, p1

services in Tasmania and, as acknowledged by Hydro Tasmania, may lead to transient increases in ancillary service prices.[69]

NEMMCO submitted that Hydro Tasmania's proposal leads to a situation where, if the optimal solution dispatched was against an MNSP's offer, then an alternate dispatch solution must be found which would match the offer.[70] NEMMCO stated that the alternate solution would have a higher value of the objective function, otherwise the first solution would not have been optimal (and hence would not have resulted).[71]

NEMMCO then concluded that if the Rule change proposal came into effect the aggregate cost to the entire market (including the net market payment to or from the MNSP) would increase.[72] Effectively, according to NEMMCO, the rest of the market would pay for the negative settlement residue that the MNSP would otherwise incur, and there would also be a premium paid on top of that to cover the additional cost of the less efficient dispatch solution.[73]

NEMMCO stated that generators that are constrained "on" or "off" are dispatched in a manner inconsistent with their particular dispatch offer, and are of the view that Hydro Tasmania has given no reason as to why MNSPs should be given special treatment.[74]

4.2.2 Proponent

Hydro Tasmania stated that the high incidence of counter price flows across Basslink is the result of complex interactions between energy transport and FCAS transport, given the technical characteristics of Basslink.[75]

Hydro Tasmania claimed that while in the narrow context the current dispatch outcomes may appear valid, it believes that for the service offered by Basslink to be used for the benefit of other market participants while forcing Basslink to pay NEMMCO is not in the interests of the NEM objective.[76]

Hydro Tasmania contrasted an MNSP's situation to that of a generating unit with respect to co-optimisation. According to Hydro Tasmania the dispatch outcome for generators may have the appearance of dispatch contrary to their offer, however the dispatch outcome for generators takes into account the offers of linked services such

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[69] Aurora Energy, 26 March 2007, p1
[70] NEMMCO Submission, 30 March 2007, p1
[71] Ibid
[72] Ibid
[73] Ibid
[74] Ibid
[75] Rule Change Proposal, Hydro Tasmania, 10 January 2007, p4
[76] Ibid

as FCAS as well as the energy value.[77] Hydro Tasmania considered this is not applicable to Basslink, as Basslink is unable to make offers for FCAS.[78]

In its supplementary submission Hydro Tasmania stated:

> "The existence of a Scheduled Network Service with the capability of transporting Frequency Control Ancillary Services (FCAS) was not explicitly anticipated in the Rules."[79]

The supplementary submission discussed three major issues including issues that have been raised by other submissions. The first major issue discussed was the focus on the exploitation of free service provisions where Hydro Tasmania stated:

> "All three submissions, in different ways, focus on how the market may exploit the provision of a free FCAS transport service to the benefit of third parties. In adopting this focus, they overlook the more fundamental question of ensuring the continued provision of that free service.
>
> "TRUenergy is a partial exception here, in that they have suggested that a market mechanism could be developed to reward this service. However, this suggestion has little detail. We see no arguments in principle against this suggestion, but we consider that (a) it is not a substitute for our proposal because of the lengthy development of the concept that appears necessary, and (b) the outworking of this concept is likely to be complex and hence its cost may outweigh its benefits, particularly as its application is likely to be limited to the Basslink interconnector.
>
> "The provision of FCAS transport is an outcome of the Tasmanian jurisdiction's decision to have a single FCAS market across Tasmania and the mainland. This lead to Basslink providing the service of transporting FCAS although the market has no explicit recognition of this service, or revenue for its provision.
>
> "However, this service is not committed to NEMMCO or to the connecting network service providers, and could be unilaterally withdrawn by Basslink either for an extended period or when necessary to avoid counter price flows."[80]

The second major issue discussed in the supplementary submission was the treatment of MNSPs relative to other participants, where Hydro Tasmania stated:

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[77] Rule Change Proposal, Hydro Tasmania, 10 January 2007, p4

[78] Ibid

[79] Hydro Tasmania Supplementary Submission, 15 May 2007, p1

[80] Ibid, p2

"Aurora Energy says that the proposal 'would enable Basslink to be dispatched in a manner similar to market generators', which is true, but then they greatly overstate the consequences of this. Our proposal does not 'eliminate the co-optimisation process between energy and frequency control ancillary services' as claimed, but will only limit this when it would lead to violation of the market offer by Basslink.

"On the other hand, TRUenergy and NEMMCO both claim that the proposal gives special status to Scheduled Network Service providers, relative to other market participants especially generators. This view is based on a misunderstanding of the current market processes and the Rules that support them.

"Except in the difficult case of Basslink, the dispatch process is based on offer and bid process and the constraints necessary for system security. The constraints result in dispatch at some locations being based on different, implicit, local prices. In the dispatch process the Regional Reference Node price does not exist, as it is an outcome of calculation following the dispatch and has no status or effect within the dispatch process.

"The authority in the rules for 'constrained on' and 'constrained off' outcomes lies in the requirement for regional settlement, which implies that some participants may be settled at a price either above or below the local price implicit in their dispatch. [For completeness we note here that dispatch in accordance with the participant's offer includes all applicable offers i.e. both energy and FCAS].

"The aim of our proposal is to ensure that a Scheduled Network Service provider is dispatched in accordance with its offer, as applies with all other participants, and is subject to the same risk through regional settlement.

"Both TRUenergy and NEMMCO have inferred an offer from Basslink to transport FCAS. This is inconsistent with the Rules as no such service exists anywhere in the Rules. No payments have ever been made for FCAS transport. Furthermore, the definition of the capability of the alternating current part of the network is based on consequences of credible contingencies and hence implicitly provides for the flow of FCAS without any additional constraints on dispatch.

"In summary, our proposal seeks equivalent treatment of Scheduled Network Services providers and other participants, despite the technical complexities which call for different dispatch techniques to achieve this equivalence of outcome."[81]

81 Hydro Tasmania Supplementary Submission, 15 May 2007, p2, 3

In regards to a comparison with regulated interconnectors the supplementary submission stated that:

> "TRUenergy has drawn an analogy between the dispatch of a Scheduled Network Service provider and a regulated interconnector. This ignores the important differences, in that a Scheduled Network Service provider makes market offers, and is financially reliant on dispatch outcomes. We therefore submit that this analogy should not be relied on."[82]

The third major issue discussed in the supplementary submission was whether the value of trade should be maximised at the expense of a participant. On this issue Hydro Tasmania commented that:

> "Both TRUenergy and NEMMCO have advocated maximising the value of trade even though the dispatch is contrary to the Basslink offer. We have opposed this in principle, and continue to do so. We believe that a policy of respecting participant offers, unless security would be at risk, is in the long-term interest of customers."[83]
>
> "However, even if this argument on market policy is set aside, the proposed outcome is likely to prove harmful to the immediate interests of end-use electricity customers.
>
> "The first issue involved in trading off benefits in the FCAS market against dis-benefits in the energy market is the large disparity in settlement volumes. The settlement volume, summated over all FCAS provisions is much smaller than the settlement volume for energy. Hence a trade-off based purely on price where energy benefits are sacrificed for FCAS gains, will generally raise the total cost to customers.
>
> "The second issue is the effect over time. The effect of the current practice is commonly to 'trap' the dispatch outcome in the wrong flow direction relative to energy prices. This may continue for significant periods.
>
> If the dispatch process were able to examine the forward consequences of this, the optimum solution would usually be to reverse the Basslink flow direction, and following a brief elevation in FCAS prices during the reversal, enjoy benefits in both energy and FCAS markets following the reversal.
>
> "Our proposal avoids this trap and hence is more consistent with optimisation beyond the current dispatch interval, and hence benefits to customers.

[82] Hydro Tasmania Supplementary Submission, 15 May 2007, p5

[83] Ibid, p4

"For both these reasons, the proposition that the principle of respecting the market offer be abandoned for scheduled network services does not even achieve the short-term customer benefits claimed for it."[84]

4.2.3 Commission's Considerations

While fundamentally the Rule change proposal may result in reducing the potential instances of counter price flows across Basslink, it also proposed a solution that deviated from co-optimisation. The Commission agrees with submissions that a deviation from the co-optimisation process (which effectively is what the Rule change proposes) would result in a sub-optimal outcome that is difficult to justify in terms of promoting the NEM objective.[85] This is because the dispatch solution is the most optimal outcome from a whole of market perspective, which leads to the most efficient use of electricity services in terms of both the energy market and FCAS markets.

In its supplementary submission Hydro Tasmania was of the view that because the settlement volumes summated over all FCAS provisions are much smaller than the settlement volume for energy, that a trade off based purely on price where energy benefits are sacrificed for FCAS gains would generally raise the total cost to customers.[86] Hydro Tasmania also stated that:

"The effect of the current practice is commonly to 'trap' the dispatch outcome in the wrong flow direction relative to energy prices…

"If the dispatch process were able to examine the forward consequences of this, the optimum solution would usually be to reverse the Basslink flow direction, and following a brief elevation in FCAS prices during the reversal, enjoy benefits in both energy and FCAS markets following the reversal."[87]

Hydro Tasmania considered that:

"For both of these reasons, the proposition that the principle of respecting the market offer be abandoned for scheduled network services does not even achieve the short-term customer benefits claimed for it".[88]

The Commission is of the view that while total costs to customers may or may not be raised in the short term by the co-optimisation of energy and FCAS across Basslink, the total production costs of supplying energy and FCAS over the entire market is minimised in a dispatch period. This is expected to lead to long term benefits to electricity consumers through competition and efficient price signals. The Commission therefore is of the view that co-optimisation, when compared with the

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[84] Hydro Tasmania Supplementary Submission, 15 may 2007, p4

[85] TRUenergy Submission, 30 March 2007, p3,4; NEMMCO Submission, 30 March 2007, p1

[86] Hydro Tasmania Supplementary Submission, 15 May 2007, p4

[87] Ibid

[88] Ibid

Hydro Tasmania proposal, is more likely to contribute to the NEM objective which results in Hydro Tasmania's proposal not satisfying the Rule making test.

In regards to Hydro Tasmania's argument that the current dispatch arrangements lead to Basslink being "trapped" into counter price flows for "significant periods" the Commission is of the view that this is a valid argument for reversing the flow of Basslink. The Commission however, remains of the view that the Rule change proposal does not bring about a reversal of Basslink flow in a way that satisfies the NEM objective as it deviates from the co-optimisation process.

While delivering a benefit to the market at large, the Commission recognises that MNSPs are disadvantaged in the process, in that they provide a service and through the MNSP Rules a negative settlement residue may occur. The negative settlement residue emerges through the interaction of the counter price flow and the way MNSPs obtain their revenue which is taken from the energy price difference between the regions that they service.

Submissions and the Rule change proposal have examined the way that other market participants are affected by the interaction of the FCAS and energy markets.[89] The Rule change proposal and submissions compared the example of generators to MNSPs.[90] Generators may be constrained "on" or "off" by the system operator due to intra-regional constraints. Hydro Tasmania argued that where this occurs the generators are still dispatched in accordance with their offers, but are settled at a different amount.

According to Hydro Tasmania, the interaction of the FCAS and energy markets imposes constraints across Basslink, where Basslink is dispatched contrary to its energy offer.[91] Currently Basslink is unable to make offers in the FCAS market and is therefore unable to capture the value of FCAS that it transfers.

TRUenergy, however, considered that generators that are constrained "on" or "off" are dispatched in a manner that is co-optimised and optimal which promotes the NEM objective.[92] TRU energy submitted that "the solution is not to divert from optimal dispatch, but to resolve the settlement anomaly".[93]

One key difference in terms of the interaction of the FCAS and energy markets for generators, as opposed to MNSPs' market offers, is that generators are able to make linked offers in the FCAS and energy markets. Generator dispatch is therefore co-optimised but any disadvantages incurred by generators are ameliorated by their ability to recover the value of FCAS that the generator is enabled for. MNSPs are unable to do this as currently there is no market for FCAS transfer.

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89 TRUenergy Submission, 30 March 2007, pp3,4; NEMMCO Submission, 30 March 2007, p1, Rule Change Proposal, Hydro Tasmania, 10 January 2007, p5

90 Ibid

91 Rule Change Proposal, Hydro Tasmania, 10 January 2007

92 TRUenergy Submission, 30 March 2007, p4

93 Ibid

Examining the reason as to why the energy and FCAS markets are not aligned in terms of MNSPs being able to capture the value of transfers of energy and not FCAS, leads to the analysis of the historical development of the MNSP rules contained in the Rules, and the historical development of the FCAS market provisions contained in the Rules.

In terms of the MNSP rules, the National Electricity Code Administrator's (NECA) electricity code change application lodged with the ACCC in 26 July 1999 and the ACCC's determination of the MNSPs' code change on 21 September 2001, both mentioned that MNSPs may have a revenue stream for providing ancillary services. It was not specified which type of ancillary service was contemplated, however, and FCAS is not specifically mentioned.[94] On 6 December 2001 the MNSP rules were gazetted. These rules contained no provision for MNSPs to receive revenue or make offers for transferring FCAS.

There is no apparent reason as to why no provision was considered in the MNSP Rules for MNSPs to capture the value of ancillary services transfer.

In terms of the provisions regarding the creation and operation of the FCAS markets, NECA's code changes were lodged with the ACCC on the 23 August 2000. The ACCC determination was made on 11 July 2001 and the Rules were gazetted on 9 August 2001.[95] Neither the code change application nor the ACCC determination discussed the prospect of MNSPs recovering the value of FCAS transfer.

There is no apparent reason as to why a mechanism for MNSPs to capture the value of FCAS transfer was not implemented, particularly in light of the fact the MNSP Rules and the provisions regarding the creation of the FCAS markets were completed within a short time of each other. It may be because the first two HVDC MNSPs that were commissioned (Murraylink which began operation in late 2001,[96] and Directlink which began operation in August 2002[97]) were not required to transfer FCAS as there were parallel alternating current transmission lines that were capable of providing this service.

In this regard a comparison can be made between MNSPs that are able to transfer FCAS and Transmission Network Service Providers (TNSPs) as alternating current regulated TNSPs are also able to transfer FCAS. Unlike MNSPs such as Basslink, however, TNSPs are not directly dispatchable (or controllable) by the system operator, and do not contain a "no go zone". Instead electricity flows across the transmission lines depending on generator dispatch.

Unlike MNSPs, TNSPs are regulated service providers that operate in a regulatory framework. TNSPs' revenues are determined in accordance with the Rules and

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[94] Applications for Authorisations of Amendments to the National Electricity Code – Network Pricing and Market Network Service Providers Determination (Authorisation numbers A90704, A90705 and A90706), 24 September 2001, NECA, Transmission and Distribution Pricing Review, 26 July 1999.

[95] ACCC Determination Applications for Authorisation National Electricity Code Ancillary Services Amendments, 11 July 2001.

[96] NEMMCO, Statement Of Opportunities 2001

[97] NEMMCO, Statement Of Opportunities 2002

subject to determinations by the Australian Energy Regulator. It may be argued that energy and FCAS transfer is indirectly taken into account in determining the revenue, in that network assets need to be built and operated in a manner that ensures the security and reliability of the system.

The Commission has noted suggestions that have been made that MNSPs providing a service and incurring a negative settlement residue may not be in the interest of the NEM objective as it might provide a disincentive for the construction of MNSPs, or for MNSPs to transfer FCAS.[98]

The Commission, however, agrees with submissions that deviating from optimal dispatch is not an adequate solution to this issue in terms of promoting the NEM objective.[99]

4.2.4 Commission's Decision

The Commission does not consider that the solution proposed in the Rule change proposal satisfies the NEM objective. The Commission does, however, note that the Rule change proposal has identified an issue which may lie within the current MNSP Rules.

4.3 Alternative Solutions

Submissions have raised the possibility of a number of alternative solutions to the problem outlined in the Rule change proposal. These are discussed below.

4.3.1 NEMMCO's "Second Solve" Solution

Currently NEMMCO dispatches Basslink assuming the frequency controller is turned on (so that Basslink is available for the transfer of FCAS) and that it cannot be dispatched through the "no go zone".

NEMMCO are proposing to produce a second solution for each dispatch interval assuming that Basslink is unable to transfer FCAS and that Basslink can be dispatched in its "no go zone".[100] According to NEMMCO the second solution may have a lower market cost than the first as the benefit of dispatching Basslink in the "no go zone" may outweigh the additional cost due to the temporary inability to transfer FCAS.[101] NEMMCO state that if this was the case then the second (or lower cost) solution would be used for dispatch.[102]

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[98] Rule Change Proposal, Hydro Tasmania, 10 January 2007, p5

[99] TRUenergy Submission, 30 March 2007, p3, 4; NEMMCO Submission, 30 March 2007, p1

[100] NEMMCO Submission, 30 March 2007, p3

[101] Ibid

[102] Ibid

4.3.2 Submissions

Other submissions in addition to NEMMCO's have made reference to the "second solve" proposal. TRUenergy have submitted that the "second solve" enhancement represents an attempt by NEMMCO to manage counter price flows across Basslink through its dispatch engine.[103] TRUenergy submitted that it expects that this enhancement would greatly reduce the instances of counter price flows (and therefore reduce the materiality of the problem) across Basslink.[104]

Aurora Energy submitted that it believes the "second solve" is a workable solution and that the Commission should consider it as a response to the Rule change proposal.[105]

4.3.3 Proponent

In its supplementary submission the proponent submitted that:

> "Both NEMMCO and Aurora have advocated a NEMMCO proposal (as described in the NEMMCO submission) as an alternative to our Rule change. This proposal has adverse consequences in both a practical sense and also in terms of regulatory principles.
>
> "In practical terms, as revealed by NEMMCO analysis, this proposal would deal with only a fraction of the relevant cases. More importantly, in our opinion, there is now uncertainty over the meaning of that part of the Rules in the cases dealt with by our proposal. Our analysis and that by NEMMCO have led to opposing conclusions on the meaning of the relevant provisions. The proposition that our Rule change should simply be rejected, so that the NEMMCO proposal can proceed, would do nothing to resolve this uncertainty.
>
> "In our view, one Scheduled Network Service provider, Basslink, has been inadvertently subjected to additional risks beyond those applicable to other participants. We seek to eliminate this.
>
> "If, on the other hand, the Commission were to take the view that these additional risks should continue, we submit that the nature and extent of these additional risks should be clear from the Rules, and not reside in an ambiguity about the meaning of the Rules."[106]

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[103] TRUenergy Submission, 30 March 2007, p5; Aurora Energy Submission, 26 March 2007, p2

[104] Ibid

[105] Aurora Energy Submission, 26 March 2007, p2

[106] Hydro Tasmania Supplementary Submission, 15 May 2007, p4, 5

4.3.4 Commission's Considerations and Decision

The Commission acknowledges that NEMMCO has attempted to manage the problem of counter price flows across Basslink within its dispatch engine and notes that the "second solve" proposal may reduce the instances of counter price flows. The "second solve" may also represent an improvement to the operation of the NEMDE in this circumstance, as it may lead to a more optimal dispatch solution.

The Commission's view in relation to the clarity of Rule 3.8.1(a) is discussed above in section 5.1 of this draft Rule determination. The Commission's view is that the Rule change proposal does not seek a clarification of clause 3.8.1(a) but rather is a Rule change proposal seeking a change from the current dispatch process as undertaken by NEMMCO.

4.4 An FCAS Transfer Payment Mechanism

4.4.1 Submissions

TRUenergy submitted that the fundamental issue to the Rule change proposal is related to a shortcoming in market design[107]. TRUenergy described that shortcoming as being that an MNSP cannot capture the benefit of transferring FCAS.[108]

TRUenergy considered that an appropriate solution involves allowing MNSPs to capture the value of their FCAS transfer and that this facility should be provided for in the MNSP provisions, which preceded the FCAS markets and Basslink.[109]

TRUenergy further submitted that the impacts of such a proposal should be considered by NEMMCO in its FCAS review.[110]

4.4.2 Proponent

In its supplementary submission the proponent commented that:

> "TRUenergy have proposed that a payment to Scheduled Network Service providers for the transport of FCAS would provide an alternative solution.
>
> "We do not oppose this in principle, although we do not see it as alternative to our proposal. We suggest that -
>
> - This would prove complex to implement, and hence the cost may not be justified by the benefits.

[107] TRUenergy Submission, 30 March 2007, p2, 4
[108] Ibid
[109] TRUenergy Submission, 30 March 2007, p4
[110] Ibid

- The time required to develop and implement this arrangement, even if it were justified, would be such that an interim arrangement, such as our proposal should be applied in the meantime,

- The relationship between FCAS transport volume (as affected by the no-go zone) and the energy volume are such that additional FCAS price differences would be needed to make the provider indifferent to counter-price energy flows. Thus, as a minimum, the ability to offer prices for FCAS transport would be needed to make the arrangement work. This further reinforces our concern about complexity.

"In summary, we are sceptical about the benefits of this proposal, but would not oppose its consideration for later implementation. However, we do not see it as an alternative to a timely resolution to the current issue."[111]

4.4.3 Commission's Considerations and Decision

Through the analysis of the historical development of the MNSP rules and the rules governing the operation of the FCAS markets it appears that there is no clear reason as to why a mechanism for MNSPs to capture the benefit for the FCAS transfer service they supply has not been considered for inclusion in the Rules. The historical development of the MNSP and FCAS market rules has been discussed further in section 5.2 of this draft Rule determination.

The Commission has noted the suggestions that there should be sufficient incentives for MNSPs to be constructed, and for existing MNSPs to transfer FCAS. However, the Commission believes that this issue is outside the scope of this Rule change proposal.

4.5 Other Alternative Solutions

4.5.1 Submissions

TRUenergy have submitted that it believes that behavioural remedies may reduce the instances of counter price flows across Basslink.[112]

TRUenergy described these behavioural remedies as:

- For the MNSP to make the network offer price greater than the difference in the local FCAS price at each end of the MNSP; or

- For the MNSP to withdraw its FCAS transfer capability where counter price energy flows are occurring or expected.[113].

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111 Hydro Tasmania Supplementary Submission, 15 May 2007, p4, 5

112 TRUenergy Submission, 30 March 2007, p5

4.5.2 Proponent

Hydro Tasmania stated in its submission to the Rule change proposal that Hydro Tasmania has undertaken a risk mitigation strategy to minimise the times that Basslink is dispatched contrary to its offer.[114]

Hydro Tasmania further submitted that:

> "… the frequent use by Hydro Tasmania of generator offer changes to influence Basslink reversals will be apparent to your Commission through publicly available market data and will indicate the ongoing materiality of the issue.
>
> "We maintain the materiality of the issue has remained substantial; but has altered in its form as a result, in particular, of risk mitigation strategies which have other adverse effects in the market."[115]

In its supplementary submission the proponent further stated that:

> "TRUenergy has suggested behavioural remedies including the use of higher energy transport offers by Basslink. The use of such offers has implications for competition between Tasmanian suppliers and mainland suppliers and has been restricted by the Tasmanian government.
>
> "Even if this were not so, the use of non-zero transport offers would not be a remedy. These offers must under the market rules have increasing price for increased flow and therefore tend to limit flow. However, the issues of concern apply at relatively low flows and hence limiting flows would aggravate, not mitigate, the issues."[116]

4.5.3 Commission's Considerations and Decision

The Commission notes that behavioural mitigation strategies are limited by Tasmanian Government guarantees to the Australian Competition and Consumer Commission.[117] The guarantees include that Hydro Tasmania is restricted from bidding Basslink at a negative price for both northward and southward flows across the link, and is restricted from bidding Basslink at a positive price in a southerly direction except where:

- Technical (including environmental) reasons associated with operating the link exist;

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113 TRUenergy Submission, 30 March 2007, p5

114 Hydro Tasmania Submission, 10 January 2007, p4

115 Ibid, p5

116 Hydro Tasmania, Supplementary Submission, 15 May 2007, p5

117 ACCC Decision Application for Acceptance Access Undertaking Basslink Pty Ltd, 11 September 2002.

- There are pricing efficiencies to allow for the recovery of short run marginal cost of transportation across the link; and

- To preserve Basslink's dynamic rating.[118]

These guarantees were sought by the ACCC to reduce the potential scope for Hydro Tasmania to strategically bid Basslink in a way that would prevent imports of electricity from competing generation on the mainland.

The Commission considers that the limitations discussed above would reduce the effectiveness of behavioural mitigation strategies by MNSPs and generators to reduce the instances of counter price flows across Basslink.

[118] ACCC Decision Application for Acceptance Access Undertaking Basslink Pty Ltd, 11 September 2002