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Dr John Tamblyn
Chairman
AEMC

By email: submissions@aemc.gov.au

Dear Mr Chairman

Clarification of the basis for market dispatch

Please find attached some comments by TRUenergy regarding the abovementioned rule change as proposed by Hydro Tasmania.

This submission may be published on your website. I may be contacted on (03) 8628 1280.

Yours Sincerely,

Ben Skinner
Senior Regulatory Manager, Wholesale Markets

Summary

TRUenergy is sympathetic to the applicant's commercial concerns that, in attempting to maximise the value of trade, the dispatch process will occasionally operate Basslink counter-price in the energy market so as to incur a greater benefit in the FCAS markets. The current market design has a shortcoming in that, unlike energy, the MNSP cannot capture the benefit of transferring FCAS.

We believe that rules can be proposed, directly or via the NEMMCO FCAS review, that would enable a MNSP to receive the benefit of FCAS that is transferred between regions of different local FCAS price.

Such rules would probably take around 2 years to develop, make and implement. In the meantime, the impacts of the shortcoming will be moderated by NEMMCO's recent "dual pass" proposals to improve the dispatch of Basslink. There are also operational options open to MNSP's that can safely curtail counter-price energy flows.

Thus we do not support this rule change at this time as it would detract from the market objective by inhibiting the co-optimisation of energy and ancillary services.

Principle of co-optimisation

3.8.1(b) states:

*"The central dispatch process should aim to maximise the value of spot market trading i.e. to maximise the value of dispatched load based on dispatch bids less the combined cost of dispatched generation based on generation dispatch offers, dispatched network services based on network dispatch offers, and dispatched market ancillary services based on market ancillary service offers
subject to:
(1) dispatch offers, dispatch bids and market ancillary service offers;..."*

NEMMCO correctly interprets this clause to require that the cost of all forms of supply is to be minimised, including both FCAS and energy. This means that commonly:

- generators are constrained from their optimal energy position such that the lowest total cost is found; and
- regulated interconnectors are operated counter-price to energy in the search for the optimal joint FCAS/energy solution.

This process is often called "co-optimisation". It frequently affects the Vic-SA Heywood interconnector, for example, when one line is unavailable. If SA FCAS raise services are expensive, then counter-priced energy exports will occur to avoid the NEMDE having to source local FCAS for SA.

From the dispatch engine's 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 cost total 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.

Interpretation

We understand the proponent is only hoping to achieve a minor adjustment to the selection of the preferred solution from the dual pass optimisation. But 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 rule's "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.

Intra-Regional Network Constraints

Like generators, MNSP's can be affected by the value of energy at their termination points varying from the regional reference price at which they are settled, and intra-regional constraints have affected Basslink at either end. On first inspection, an attempt to dispatch wholly in accordance with its offer conflicts with the need to constrain an MNSP around intra-regional congestion.

The supporting paper suggests that that is not the intention of the proponent, in that constraints for intra-regional congestion are considered by the proponent to be consistent with the offer.

The rule, if accepted, would need to clarify this.

FCAS trading

The proposal contrasts the MNSP issue with that of constraining generators for FCAS¹ and that of generators suffering intra-regional constrained-on or off operation². We however note similarities, in that in each case the NEMDE is attempting to optimise consistent with the Market Objective. The key difference is that generator FCAS provision is settled according to the total value the generator is bringing to the dispatch-and therefore the generator is happy to be constrained-whilest the other two are settled inconsistently.

The solution is not to divert from optimal dispatch, but to resolve the settlement anomaly.

This can be achieved by allowing the MNSP to capture the value of its FCAS transfer. This is a design shortcoming of the MNSP provisions, which preceded the FCAS markets and Basslink.

TRUenergy has not considered in detail how such a mechanism may be implemented. The aim would be to adjust the settlement formula in 3.8.6A(g) to include the FCAS transfer volume multiplied by the FCAS local price difference. Such an amount should always equal or outweigh the losses incurred by counter-price energy flows caused by FCAS optimisation.

As this has impacts in the FCAS settlements area of 3.15.6A, it would need some thoughtful design consideration. The NEMMCO FCAS review underway at present would be ideal environment for that. TRUenergy suggests that the commission in its draft determination could recommend including this activity.

Materiality of issue

The proponent has identified a number of situations where Basslink operation has incurred material loss during 2006. We understand that these were mainly caused by the difficulties of dispatching around and through the "no-go zone" of +/-50MW. This integer limitation causes numerous difficulties to a linear program solution. NEMMCO attempt to manage it within the NEMDE rather than have the participant manage it via interactive rebidding³ as occurs with other integer problems.

An obvious result is that the dispatch engine can become easily "trapped" at one end of the no-go zone, and fails to recognise the advantages of moving through it. This is the cause of such major events as 23 May 2006.

Having decided to manage the no-go zone within the NEMDE, it is not surprising that fixes are required. In that vein, NEMMCO have had to introduce the "dual pass" process where the entire NEMDE must be run twice to identify if it is optimal to transit the no go zone.

¹ Referring to the "linked bid" nature of FCAS/Energy offers

² Claiming that such generators are dispatched according to their local energy value

³ The "Fast-Start Inflexibility Profile" is an example of effectively an automatic rebidding process.

This enhancement will be implemented in late 2007 and will greatly reduce the incidence, although not entirely eliminate, the materiality of the counter-price energy flows.

Behavioural Remedies

We are sympathetic to the financial harm that could be done to an MNSP whilst it is awaiting a mechanism that allows it to be fairly rewarded for its provision of FCAS transfer. In that regard, even in the current rules there would appear to be some behaviours available to an MNSP to avert this⁴:

- Counter-price energy flows are likely to occur where the network service energy offer price is low in comparison to the FCAS transfer value. Such flows should not occur if the network offer price were greater than the difference in local FCAS price at each end of the MNSP.
- Where counter-price energy flows are occurring or expected, an MNSP is at liberty to withdraw its FCAS transfer capability (in a controlled manner). If withdrawal of service were to cause security concerns, it would be averted through direction.

TRUenergy believes that unlike our preferred solution such behaviours would not further the market objective as they inhibit the optimisation of FCAS trade. Therefore we do not see them as a long-term solution. However the outcome of the former, from a value of trade perspective, is identical to that of the proposed rule.

⁴ Please note that these are in no way intended to be a suggestion, but are presented only as hypothetical examples to educate the commission as to how alternative solutions may exist within the current rules.