

13th October 2015

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Submission lodged online at: www.aemc.gov.au

Project Number: ERC0187

Dear Mr Pierce

Compliance with dispatch instructions Rule 2015 – Consultation Paper

Snowy Hydro appreciates the opportunity to comment on the Consultation Paper. We believe there is clearly a problem with the current arrangements where strict compliance is required for compliance with dispatch instructions. As outlined in our Rule change this strict compliance regime is economically sub-optimal and not required as there already exists strong commercial incentives to comply with dispatch instructions. It is also inconsistent to have a strict (exact) obligation to comply with dispatch instructions under 4.9.8(a) and also have a dispatch non-conformance procedure under 3.8.23 which recognises departures from dispatch targets are part of normal system operation.

The adverse consequence of the current strict compliance regime is to impose unnecessary regulatory risk on Scheduled Participants. This regulatory risk results in inefficient generation plant operations in order to minimise the risk of being in breach of the black letter requirement of Rules clause 4.9.8(a). Ultimately the Rules clause 4.9.8(a) is inconsistent with the National Electricity Objective.

Given the problems identified with the current Rule, an alternative construct of 4.9.8(a) is required. We believe on balance our proposed Rule change proposal appropriately trade-offs on the issues of: consistency between pricing and dispatch to ensure an efficient market, reduction in regulatory risk, reduction in compliance costs, and commercial incentives to comply with dispatch targets.

Snowy Hydro appreciates the opportunity to respond to this Consultation Paper. Should you have any enquires to this submission contact Kevin Ly, Head of Wholesale Regulation on kevin.ly@snowyhydro.com.au or on (02) 9278 1862.

Yours sincerely,



Roger Whitby

Executive Officer, Trading

Snowy Hydro's detailed responses to the issues outlined in the consultation paper are set out below.

Question 1(a) Is the standard of compliance with dispatch instructions under the current arrangements, taking into account the AER's approach to enforcing it, important for the efficient and safe operation of the NEM?

Under the current Rules there is a strict compliance obligation. Given the AER's broad guidance on enforcing dispatch obligations, it is our view Scheduled Participants take a very conservative approach to adhering to dispatch targets. This conservative approach imposes operational and compliance costs which ultimately has to be recovered through higher energy costs to end consumers. We argue that this increased cost is not commensurate with the benefit to the efficient and safe operation of the NEM derived from strictly following dispatch targets. This is because the NEM technical envelope is robust to cater for sporadic changes in supply and demand and there already exists other commercial drivers to reasonably follow dispatch targets.

The rule change is primarily concerned with the consistency between pricing and dispatch. That is, it is about the efficient operation of the NEM. The secure and "safe" operation of the NEM is catered for through:

- AEMO's power of Directions;
- Use of system constraint equations; and
- The procurement of contingency FCAS.

On balance we believe strict compliance to dispatch instructions under Rules 4.9.8(a) is unnecessary for the efficient and safe operation of the NEM. This strict compliance regime leads to unnecessary regulatory risk, which forces conservative behaviour to minimise the risk of being pursued for non-compliance, and ultimately results in net costs to end consumers with no real benefit.

Question 1(b) Under the current rules, how may a participant's non-compliance with dispatch instructions affect other participants in the NEM?

Participants have strong commercial incentives to adhere to dispatch targets through potential liability with FCAS causer pays payment and being excluded from the Spot clearing price process. The impact of a Participants non-compliance with dispatch instructions on other Participants is minimal because the system is robust i.e. frequency standard allows for deviations and the FCAS market provides a means for which deviations are corrected.

Question 2 (a) Are the costs of complying with the current rule greater than those which are likely to be incurred if there was an alternative compliance obligation that was less stringent, such as reasonable endeavours?

An alternative compliance obligation which recognises the practical difficulties in operating generation plant and as a result there is a less stringent dispatch conformance requirement would result in less costs to Participants. This reduction in costs would be derived from:

- Running generation plant more efficiently (i.e. turbine efficiency curve).
- Reduction in unit start / stop operational costs in meeting dispatch targets;
- Reduction in market cost due to generator offers not having to factor in a compliance cost of being the marginal generator;
- Less conservative bidding of plant i.e. higher ramp rates would be bid into central dispatch to allow the dispatch engine more available generation to meet demand for each dispatch period;
- Less compliance and systems monitoring costs would be incurred by Participants under a “reasonable endeavours” regime compared to the current strict compliance regime. This is because there would be practical operational tolerances provided to Participants under a reasonable endeavours regime; and
- Less administrative costs (i.e. internal reporting of small deviations from dispatch) would be less applicable under an alternative reasonable endeavours dispatch compliance regime.

With the first dot point (running generation plant more efficiently) we highlighted the turbine efficiency curve in our Rule change proposal.

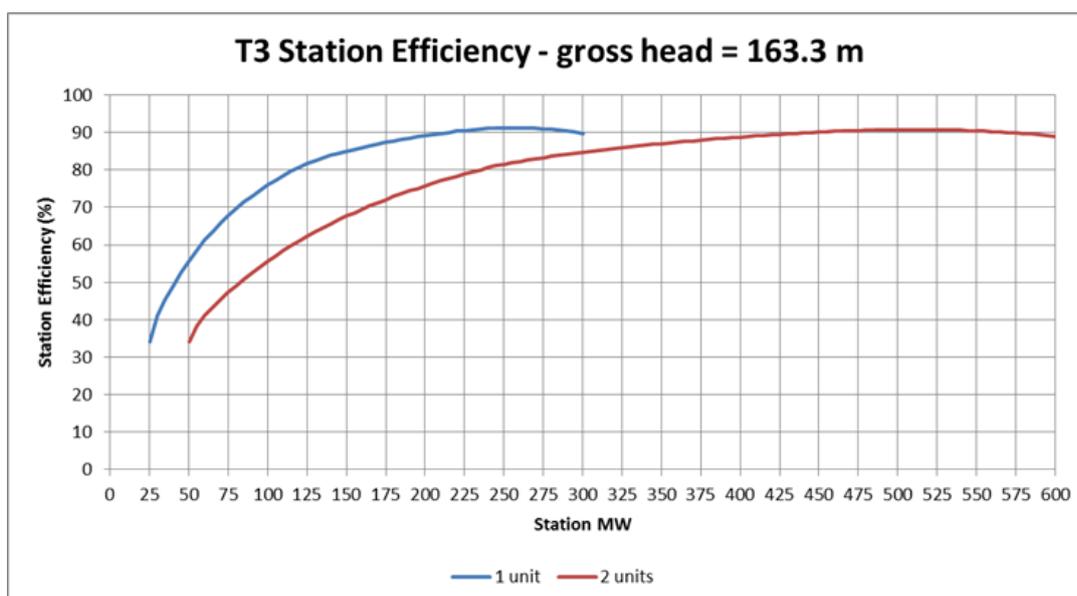


Figure 1 - Tumut 3 Power Station Efficiency Curves

Clause 4.9.8(a) mandates a dramatic reduction of energy conversion efficiency (from the renewable potential energy of the stored water) which increases costs as multiple machines are run at less efficient turbine efficiency points in order to minimise the risk of breaching the relevant Rule.

From Figure 1 there is a very material and direct trade-off between the efficiency of the energy conversion and the quantum of available spinning reserve. Two physical units running at 125MW each result in the station efficiency of 62% compared to one physical unit running at 250MW with a station efficiency of 91%.



There is over 8000 MW of generation in the NEM which is aggregated. Clause 4.9.8(a) mandates a dramatic reduction of energy conversion efficiency (from the renewable potential energy of the stored water) which increases costs as multiple machines are run at less efficient turbine efficiency points in order to minimise the risk of breaching the relevant Rule. For Snowy Hydro's aggregated hydro assets of over 3700MW, a 5 to 10% loss of energy conversion efficiency is plausible and would come at an economic dead loss of the order of \$10 to \$20 million per annum across the Snowy Hydro Electric Scheme. For other non-hydro aggregated generating assets we envisage comparable operational and economic losses.

Question 2 (b) How do the costs of complying with the current rule vary between participants?

As highlighted in our response to Question 2(a) from an Aggregate generator perspective the current rule results in more conservative behaviour as generation units in an aggregate group are run conservatively and hence at sub optimal levels to allow for sufficient reserve capacity to meet strict dispatch obligations.

For Scheduled Participants with thermal generation assets the current strict compliance regime imposes economic costs in the form of:

- More conservative bidding behaviour such as the offer of lower rates of ramping which means the dispatch engine has less available generation capacity to optimise central dispatch; and
- Increased thermal stress on assets as generation plant is worked harder to meet strict dispatch targets. Over time the economic life of these assets are reduced which would eventually impose economic costs to consumers through higher wholesale energy prices.

Question 3 (a) Does the discretion the AER has in deciding whether to take enforcement action and the nature of that action mean there is uncertainty about the extent to which compliance with clause 4.9.8(a) is required?

As demonstrated from our analysis summarised in tables 1 and 2 of our Rule change proposal it is virtually impossible for scheduled generators to strictly meet dispatch targets. Generators are in effect at the mercy of the AER. It is only the exercise of the AER's discretion (upon which there are no particular constraints) which prevents generators from being penalised for every dispatch interval in which they do not exactly generate the target output. This is an unsatisfactory situation, since the AER is not bound by own its own compliance policies and can modify or give new meaning to its stated position at any time.

We also believe that current rule is uncertain in its enforceability and scope, which in turn creates uncertainty for generators applying the rule to their generation activities.

Question 3 (b) What are the consequences of any such uncertainty?

This discretion to the AER creates unnecessary regulatory risk and uncertainty. This uncertainty results in increased costs which are ultimately passed on to consumers.

This uncertainty also has adverse implications for:

- Establishing a stable business environment to which long term economic decisions can be made; and
- Less certainty reduces rapid decision-making from scheduled generation plant to vary generation output in response to varying demand. This would have adverse consequences in the NEM which is becoming increasingly decentralised with increasing levels of varying demand due to distributed generation, solar photovoltaic penetration, and the emergence of battery storage.

Question 4 (a) Are market participants able to simultaneously comply with dispatch instructions for energy and FCAS? If so, how do market participants manage to do this?

No, Market Participants cannot simultaneously comply with both dispatch instructions for energy and FCAS. This is relevant for both scheduled FCAS Participants enabled for FCAS and for generation plant which are not enabled but provide automatic governor response to fluctuations in the frequency. This means strict compliance with dispatch instructions is impossible as evident in our analysis on deviations from dispatch target levels shown in Tables 1 and 2 of the Rule change proposal.

Question 5 (a) What is the likely impact on the behaviour of market participants having a reasonable endeavours obligation?

Less regulatory risk and more certainty means generators should operate in a less conservative manner. With an increasingly decentralised NEM due to the penetration of distributed generation i.e. solar PVs, and the intermittency in output from wind generation the variability in demand will continue to increase. The flexibility to respond to this changing macro environment is likely to become more important with far more variability in supply and demand. A reasonable endeavours obligation to comply with dispatch instructions will facilitate responsiveness from schedule generators as the risks and uncertainty imposed from the current strict compliance regime is reduced.

Question 5 (b) How is a reasonable endeavours obligation likely to impact uncertainty and compliance costs?

The AEMC assessment framework in section 4 of the Consultation Paper states that compliance cost is a “secondary” consideration. Snowy Hydro disagrees with this characterisation. The level of compliance and therefore the compliance cost to Participants is directly related to the level of regulatory certainty in the regulatory arrangements related to adhering to dispatch targets. Hence compliance costs should be considered a primary principle in the AEMC’s assessment of whether the Rule change promotes the National Electricity Objective.

A reasonable endeavours obligation to comply with dispatch instructions is likely to have a positive impact by reducing uncertainty and compliance costs. As outlined in question 2(a) and 2(b) the reduction in economic costs (which also incorporates compliance costs) comes from:

- Running generation plant more efficiently;

- Reduction in unit start / stop operational costs in meeting dispatch targets;
- Reduction in market cost of factoring compliance cost of being the marginal generator;
- Less conservative bidding of plant ie. higher ramp rates would be bid into central dispatch to allow the dispatch engine more available generation to meet demand for each dispatch period;
- Less thermal stress on assets as generation plant does not have to operate as hard to meet strict dispatch targets. This prolongs the economic life of these assets;
- Less compliance and systems monitoring costs would be incurred by Participants under a “reasonable endeavours” regime versus compared to the current strict compliance regime; and
- Less administrative costs (i.e. internal reporting of deviations from dispatch) would be applicable under an alternative reasonable endeavours dispatch compliance regime.

Question 5 (c) What would amount to reasonable endeavours in complying with a dispatch instruction?

Snowy Hydro notes that the use of “reasonable endeavours” in many instances in the Rules is the standard in place for AEMO to meet its obligation to centrally dispatch the market and maintain the market in a reliable and secure state. To impose a much higher obligation on Scheduled Participants under 4.9.8(a) to strictly meet dispatch targets is absurd and inconsistent with the standard of compliance in other parts of the Rules.

Reasonable endeavours to comply with dispatch instructions would not require strict compliance with a dispatch instruction or compliance in all circumstances, including but not limited to:

- (a) circumstances in which the Registered Participant has taken reasonable steps to comply;
- (b) further or alternatively, circumstances in which compliance is not practicable; and
- (c) further or alternatively, circumstances of inadvertence or misunderstanding.

Snowy Hydro believes that a “reasonable endeavours” requirement to comply with dispatch instructions needs to consider what is reasonable in the circumstances, having regard to the specifics of the situation and the commercial circumstances in which the dispatch of the generation plant was made.

Question 6 (a) Is AEMO's non-conformance process appropriate for the purpose proposed in the rule change? Is it likely to impact on market efficiency or power system security if used in this way?

AEMO's non-conformance process is appropriate for assessing whether Scheduled Participants have met their obligations to meet their dispatch targets. The AEMC states on page 2 of the Consultation Paper that:



Consistency between central dispatch and pricing is therefore a key market design principle of the NEM². Non-compliance with dispatch instructions may lead to inconsistencies between central dispatch and pricing and distort the efficiency of market outcomes.

Further to this Snowy Hydro agrees with the AEMC's assessment that the purpose of AEMO's non-conformance process¹ is to monitor conformance of participants' dispatch against dispatch targets for the efficient operation of the market (i.e. aligning pricing with dispatch).

Hence it is clear that the AEMO non-conformance process/procedure is the accepted means to monitor compliance with dispatch targets.

As outlined by the AEMC in Table 2.1 of the Consultation Paper, power system security is managed through the use of system constraints, directions, and the procurement of Contingency FCAS. That is, the use of the AEMO non-conformance process/procedure would not impact on power system security.

Question 6 (b) It is appropriate for compliance with dispatch instructions to be partly determined by AEMO?

Yes it is appropriate for compliance with dispatch instructions to be determined through an AEMO process/procedure. The non-conformance with dispatch targets outlined in AEMO's Dispatch System Operating Procedure is a transparent and known procedure. This provides Scheduled Participants with certainty as to how compliance with dispatch instructions will be monitored and triggered. This certainty lowers risk which lowers cost and hence achieves a more efficient outcome.

The AEMC notes that the Dispatch System Operating Procedure is made under clause 4.10 of the Rules and that there is no requirement for AEMO to consult with Stakeholders when revising this procedure. Snowy Hydro has observed that AEMO does consult with Stakeholders when it develops or revises an operational procedure. However, to remove all doubt, a Rules requirement can be included as part of this Rule change that requires AEMO to consult with Stakeholders using the normal consultation process for any revision to the Dispatch System Operating Procedure.

In summary, we believe the AEMO procedure appropriately trade-offs the cost and benefit of adhering to dispatch targets for the efficient operation of the market.

Question 7 (a) If the proposed rule is made, are the financial incentives provided by the FCAS cost recovery process and removal of the generator's offer from the basis of setting the wholesale spot price, sufficient for market participants to comply as precisely as possible, with dispatch instructions?

Yes they are. Regulation FCAS cost can be very high as shown in Figure 2 below.

¹ AEMO's, Dispatch System Operating Procedure, 23 October 2014.

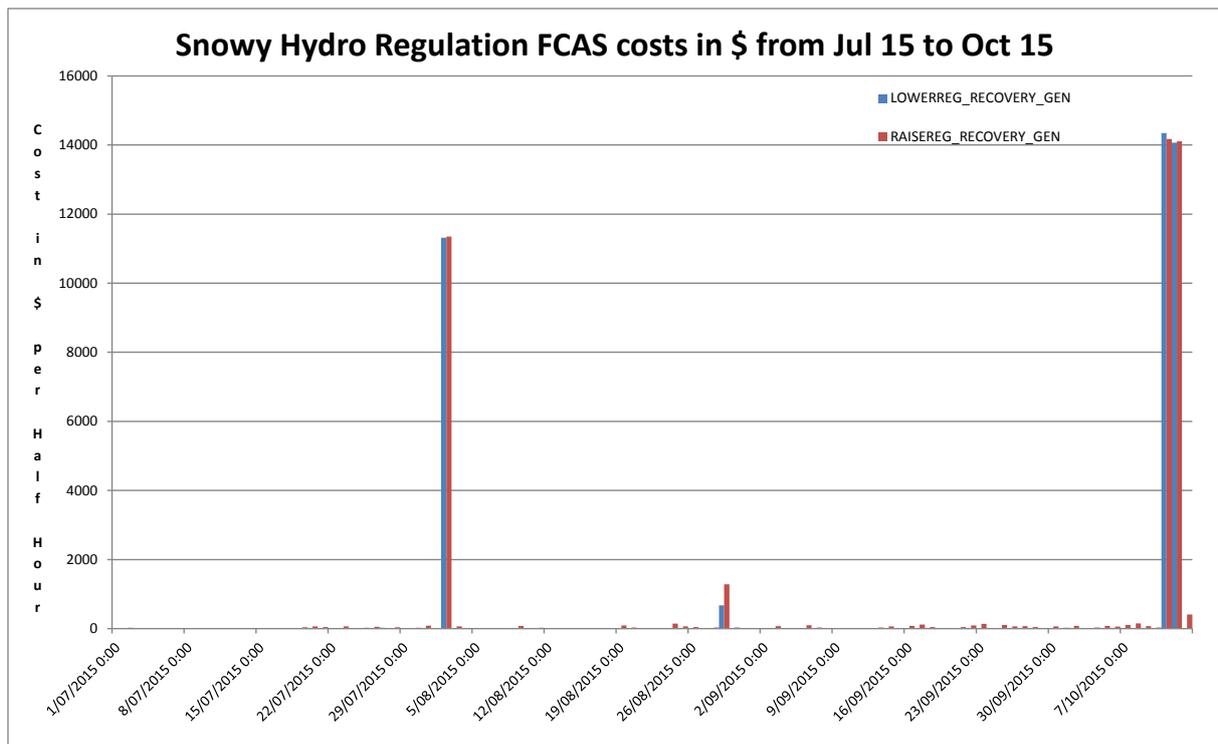


Figure 2: This graph shows the volatility in Regulation FCAS cost

From Figure 2, Regulation FCAS costs can be very high and volatile. In the three month period from July 2015 to October 15 Regulation Raise and Lower cost exceeded \$14,000 per Trading Period (half hour). Hence the risk of large Causer Pays liability if Scheduled Participants have deviated from their dispatch targets is a strong and sufficient incentive to comply as reasonably as possible with dispatch targets.

The NEM Spot price is determined by the Offer of the marginal generator. Hence there is also a very strong incentive for all Scheduled Generators to be part of the supply curve and possibly set the wholesale spot price if they are the marginal generator.

Question 8 (a) Is the proposed rule likely to change the behaviour of market participants in complying with other components of a dispatch instruction?

No, because there are strong commercial incentives to comply with other components of a dispatch instruction.

Question 9 (a) If there is a problem with the current arrangements, is there an alternative solution which better addresses the problem?

There is clearly a problem with the current arrangements. We have shown that it is impossible to comply precisely with the current strict compliance requirement in the Rules. The AER retains the discretion to take enforcement action on Scheduled Participants which creates unnecessary uncertainty and therefore increased risks and costs.

We believe on balance our proposed solution trade-offs on the issues of: consistency between pricing and dispatch to ensure an efficient market, reduction in regulatory risk, and commercial incentives to comply with dispatch targets. However, we are open to alternative solutions which better address the problem.

