Australian Energy Market Commission

Final Rule Determination

Rule Proposal: ***Price Revisions for Manifestly Incorrect Inputs***

Proponent: ***NEMMCO***

Date: ***November 2005***

Commissioners:
Tamblyn
Carver
Woodward

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Summary

NEMMCO has proposed that a change be made to the National Electricity Rules, to allow limited corrections to be made to spot market energy and ancillary service price outcomes, where those price outcomes are based on manifestly incorrect inputs to the dispatch algorithm. The National Electricity Rules currently make no provision for the correction of such pricing errors, allowing them to flow through to the spot market settlement process, and to persist as market price signals.

NEMMCO's proposal seeks to strike a balance between the accuracy of spot market price signals, and the short term uncertainty introduced by a price adjustment process. The proposal allows for potentially incorrect energy and ancillary service prices to be flagged when they are published, and for those prices to be replaced within 30 minutes if they are found to be calculated on the basis of manifestly incorrect inputs. The proposal also provides for compensation to participants that physically responded to the original price. The proposal also requires NEMMCO to report on each event where prices are corrected and to report annually on the effectiveness of the process. NEMMCO has indicated that four events during 2004 would have triggered a price change under the proposal.

NEMMCO's proposal was originally lodged with the National Electricity Code Administrator (NECA), and the Australian Energy Market Commission (Commission) became responsible on 1 July 2005 to take the proposal forward. This Rule Determination contains the Commission's assessment of the proposal, carried out in accordance with the requirements of the National Electricity Law.

In assessing the proposal, the Commission has recognised the initial consultation steps taken by NECA and the Code Change Panel to seek the views of interested parties.

The Commission published a draft determination on 16 September 2005. Three submissions were received in response to the draft determination. The Commission considered the minor suggestions made in the submissions and has changed its draft determination only to set a commencement date for the proposed Rule, 1 June 2006.

The Commission is satisfied that the Rule is likely to contribute to the National Electricity Market (NEM) objective, and that it therefore satisfies the Rule Making Test, by improving the quality and reliability of spot market price signals relied on in particular by Registered Participants and investors.

Accordingly, the Commission has determined that it intends to make a Rule to address the issue raised in the proposal. This Rule Determination sets out the reasons of the Commission in accordance with the requirements of the National Electricity Law.

1. The Proponent's Rule Proposal

NEMMCO lodged a proposal with NECA in February 2005, to change the (then) National Electricity Code to introduce a controlled mechanism whereby NEMMCO would be permitted to change published dispatch and ancillary service prices where they are based on manifestly incorrect inputs into the dispatch algorithm.

NEMMCO pointed out that the issue was considered by NECA in 2001, and that at that time it was decided to focus on reducing the incidence of incorrect inputs being used by NEMMCO's dispatch algorithm. Although considerable improvements have been made since that time, some potential for erroneous inputs remains. In 2004, NEMMCO identified four events where erroneous inputs were used by the dispatch algorithm and affected dispatch and pricing outputs. NEMMCO quantified the impact of those events in its proposal and identified that the most significant implications were on spot energy prices in South Australia, which were on average increased by $0.14, and on settlement residues, which were reduced by $315,000. A copy of NEMMCO's analysis of the events can be found in Attachment 2.

NEMMCO consulted with interested parties in 2004, and received support for a proposal to allow retrospective modification of prices through a specifically defined process. NEMMCO's Rule proposal is intended to have the following features:

- NEMMCO would automatically identify and flag in real time to the market, dispatch intervals which are to be subject to review due to possible incorrect inputs. The automatic procedure would be based on a test applied to dispatch algorithm outputs, and would be developed through a consultation process with Market Participants;
- NEMMCO would be required to establish the existence of a manifestly incorrect input within 30 minutes. The "manifestly incorrect input" could be any value that is used by the dispatch algorithm, excluding bids and offers submitted by participants. Examples would include measurements of power system status, five minute demand forecast values, constraint equations entered by NEMMCO, software setup or other input values;
- NEMMCO would be empowered to replace any prices published for a dispatch interval established as affected by an incorrect input (and any dispatch intervals immediately following it which are affected by the same incorrect input) by the prices from the last correct dispatch interval, provided this is done within a 30 minute period after the publication of the prices for the relevant dispatch interval.
- NEMMCO would be required to review and report annually on the adequacy of the automatic processes that have been set up to identify dispatch intervals as "subject to review", in meeting the following principles:

  a) Subject to (b) below, to detect as many instances as possible where incorrect inputs have resulted in material differences in pricing outcomes;

b) A majority of dispatch intervals that have been identified for review are subsequently found to either have had manifestly incorrect inputs or to be due to dispatch conditions returning to normal immediately following a dispatch input ceasing to be incorrect;

- NEMMCO would be required to report on any instances where initially published prices were subsequently replaced under the procedures;
- A mechanism would be introduced for scheduled generators and scheduled network service providers to seek compensation from the Participant Compensation Fund in specific situations where prices have been revised under this procedure.

According to NEMMCO, the introduction of such a price revision process would increase short-term uncertainty regarding whether published dispatch interval prices would stand for the purposes of settlement. However, NEMMCO also states that it would reduce the number of instances where incorrect dispatch inputs result in incorrect pricing outcomes.

NEMMCO states that its Rule proposal is an attempt to strike a balance between these two issues.

2. The Rule determination

The Commission has determined, in accordance with section 102 of the National Electricity Law (NEL), to make the Rule set out at Attachment 1 of this Rule determination. The wording of the Rule amends aspects of the proposed Rule as put forward by NEMMCO, for the reasons set out at section 5 of this determination.

In coming to its decision, the Commission has considered:

- The Rule proposal and the proposed Rule put forward by NEMMCO (see section 2 of this determination);
- submissions received (see section 1 and section 6 of this determination);
- the requirements under the NEL (see section 4 of this determination)

The Commission has applied the statutory Rule making test and for the reasons set out in section 7 of this Rule determination, is satisfied that the Rule is likely to contribute to the achievement of the NEM objective.

3. Requirements under the NEL

3.1 The Rule Making Test

The NEL requires the Commission to apply the Rule making test in its analysis and assessment of a Rule proposal at the draft and final determination phases of the Rule making process. The Rule making test states:

> *"(1) The AEMC may only make a Rule if it is satisfied that the Rule will or is likely to contribute to the achievement of the national electricity market objective.*
>
> *(2) For the purposes of subsection (1), the AEMC may give such weight to any aspect of the national electricity market objective as it considers appropriate in all the circumstances, having regard to any relevant MCE statement of policy principles."* (s.88 NEL)

The NEM objective is at the centre of the Rule making test, and is set out in 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."*

The Second Reading Speech for the NEL also provides guidance as to the way in which the NEM objective is to be understood:

> *"The market objective is an <u>economic concept</u> and should be interpreted as such. For example, investment in and use of, electricity services will be efficient when services are supplied in the long run at least cost, resources including infrastructure are used to deliver the greatest possible benefit and there is innovation and investment in response to changes in consumer needs and productive opportunities.*
>
> *The long term interests of consumers of electricity requires the economic welfare of consumers, over the long term, to be maximised. If the NEM is efficient in an economic sense the long term interests of consumers in respect of price, quality, reliability, safety and security of electricity services will be maximised."* (Hon. P.F. Conlon (Minister for Energy), *National Electricity (South Australia) (New National Electricity Law) Amendment Act* (NEL), second reading speech, 9 February 2005 – emphasis added)

In summary, the Rule making test imposes the following requirements on the Commission in preparing a Rule determination:

- The Commission must be satisfied that a Rule that is to be made will or is likely to contribute to the achievement of the NEM objective;
- The NEM objective is to be understood and interpreted as an economic objective;

- The Commission may *only* make a Rule if it is satisfied in accordance with the Rule making test;
- The Commission is empowered to give weight to any aspect of the NEM objective as it considers appropriate in the factual circumstances presented by particular Rule proposals;
- In weighting aspects of the NEM objective, the Commission must have regard to any relevant MCE statement of policy principles; and
- The Commission must set out the reasons as to whether it is satisfied as to the Rule making test in its determination in relation to a proposal for a Rule..

3.2 Content of a Rule Determination

A Rule determination must contain a statement of reasons of the Commission as to whether or not it should make the proposed Rule or another Rule.

The statement of reasons must (at least) include:

1. reasons as to whether the Commission is satisfied the proposed Rule or the other Rule (if any) will or is likely to contribute to the achievement of the NEM objective;
2. reasons having regard to any relevant MCE statement of policy principle
3. in the case where the proposed Rule or other Rule is a proposed jurisdictional derogation, the reasons having regard to the matters specified in s.89.

If the Commission determines to make a Rule, the Rule determination must contain the Rule to be made. The Rule determination must also contain any other matters prescribed by the Regulations.

3.3 The head of power for the Rule

The Commission is satisfied that the Rule falls within the subject matters for which the Commission may make Rules as set out in s.34 of the NEL and in Schedule 1 to the NEL. The Rule relates to the operation of the national electricity market, and s.34(3) enables the Commission to make Rules conferring functions or powers on NEMMCO, and to allow NEMMCO to determine matters specified by the Commission.

The Rule also relates specifically to items 7 and 8 of Schedule 1, which state that the subject matter for the Rules may include:

> *7. The setting of prices for electricity and services purchased through the wholesale exchange operated and administered by NEMMCO, including maximum and minimum prices.*
> *8. The methodology and formulae to be applied in setting prices referred to in item 7.*

The purpose of this Rule is to ensure that prices for energy and market ancillary services are set more accurately and to specify a methodology for price revision to take place, in strictly limited circumstances.

3.4 Other relevant statutory matters

The NEL also requires the Commission to have regard to any MCE statements of policy principle in applying the Rule making test. The Commission notes that currently, there are no relevant MCE statements of policy principle.

The Commission also notes that there are currently no prescribed requirements in the NEL Regulations as to the content of a Rule determination as referred to in s.102(2)(b).

4. Consultation Process

On 20 August 2004, NEMMCO began consultation on a proposal for revision of dispatch pricing outcomes following a use of a manifestly incorrect input by the dispatch algorithm. NEMMCO received three submissions from industry participants on its initial proposal. The submissions supported the proposal in principle, but proposed changes in detail. NEMMCO issued a draft report addressing the issues raised, and two further submissions were received, again proposing adjustments in detail. The matters raised in those submissions were addressed in a final report, which was published on 17 November 2004.

On 15 February 2005, NEMMCO submitted to NECA a proposal to change the National Electricity Code, as described in section 1 of this report. The Code Change Panel began consultation on the proposal, and received two submissions. Responsibility for assessing the proposal was transferred to the Commission after receiving submissions.

Under the transitional provisions of the NEL, current Code change proposals that had not been finalised as at the date of commencement of the Commission on 1 July 2005, are to be treated as Rule making requests under the newly amended NEL, and to be progressed by the Commission.

The Commission has made an assessment that the (now) Rule proposal meets the content requirements for a proposal under the new NEL.

Under the transitional powers, the Commission may decide to dispense with a step in the Rule making process if it is of the opinion that it duplicates a step that was taken as part of the Code change process. The Commission notes that the proposal had already been the subject of consultation by the previous Code Change Panel and considered that it would be appropriate to accept the submissions received in response to that consultation as if they had been received by the Commission in the first stage of the Rule making process.

Accordingly, the Commission published a draft Rule determination on 16 September, and invited submissions on the draft determination. The Commission received three submissions, from:

- TRUenergy
- Hydro Tasmania
- NEMMCO

All submissions were broadly supportive of the Commission's approach in its draft determination. After considering the submissions on the draft determination, the Commission has now made this final determination on the proposed Rule.

5. Matters raised in Analysis and Consultation

The Code Change Panel received two submissions in relation to the original proposal. The submissions were from the Energy Retailers Association of Australia (ERAA), and Hydro Tasmania (HT).

Both ERAA and HT support the core intent of the proposal to revise prices where they are in error due to the use of manifestly incorrect inputs in the dispatch algorithm.

ERAA stated that:

> *Although it is recognised that a 'cost' of the proposal could be a potential loss of price certainty for market participants, the ERAA's view is that such a risk is not sufficient to delay or prevent these code changes from being implemented. We believe that the proposal contains an adequate range of safeguards to overcome and negate this possibility.*

In this section, the Commission addresses a number of issues that have been raised in submissions or that have emerged during the Commission's analysis.

5.1 Identification of dispatch intervals subject to review

What the proponent said

NEMMCO proposed to automatically identify dispatch intervals that would be subject to review, through procedures to be established in consultation with Market Participants.

NEMMCO proposed that the Rules would specify that the procedures must be accurate and robust enough to ensure that the majority of intervals subject to review must be subsequently found to either;

a. have had manifestly incorrect inputs to the dispatch algorithm when run in that dispatch interval; or

b. be the result of the dispatch algorithm being run with correct inputs immediately after being run with incorrect inputs.

NEMMCO's proposal states:

> *A system would be implemented to monitor the change in inputs to the dispatch process (excluding bids and offers) from one dispatch interval to another so as to highlight to NEMMCO any abnormal changes. This would allow, if presented properly, NEMMCO to quickly identify any abnormal changes and confirm whether or not these changes are physically realistic, or to identify where outcomes have been incorrect due to a problem with other inputs including the five minute demand forecast, network constraints, software setup etc.*

What the submissions said

ERAA stated that the target of limiting the number of dispatch intervals incorrectly identified to not more that 50% of all intervals nominated provided a safeguard against the potential loss of price certainty for market participants.

The Commission's consideration and reasoning

The Commission considers it appropriate that the National Electricity Rules do not contain the technical details relating to how potentially incorrect inputs are identified. However the Commission also considers that the Rules should provide broad guidance as to the required performance of the identification procedure.

There is potential for a number of 'false positives' in the identification of events, where events are identified as subject to review, but prices are not replaced. These incidents would add uncertainty to pricing outcomes that are relied upon and used by Registered Participants and other stakeholders.

NEMMCO has suggested that the procedure should operate with a benchmark of identifying 50% 'real' input errors. The Commission considers that this level is appropriate as a minimum benchmark for the identification procedure.

It may be possible, with the benefit of experience, to reduce the number of false positive results. Therefore, the Commission proposes, in the interests of transparency of the process and better quality information to the market, that NEMMCO should report on the causes of false positive incidents as part of its proposed annual report on the identification procedure.

The Commission's finding in relation to this issue

For the reasons set out above, the Commission supports NEMMCO's proposal to develop, in consultation with interested parties, a procedure to automatically identify dispatch intervals that are subject to review. However, the Commission has decided to modify the proposed Rule to require NEMMCO to report annually on the cause of any dispatch intervals being identified as having potentially incorrect inputs, but where prices were not subsequently modified.

5.2 Replacement Prices

What the proponent said

NEMMCO has proposed that where an error is detected, energy and market ancillary service prices for that dispatch interval would be replaced with prices from the last valid dispatch interval. Half hourly energy prices would be recalculated based on the corrected dispatch price.

NEMMCO stated:

In the earlier NECA consultation, NEMMCO had expressed concerns that replacing a published price with the last valid price might lead to significant distortions. However experience of the type of events that would lead to price revision, since that consultation, has indicated to NEMMCO that such risks do not seem to be, in fact, significant.

What the submissions said

No comment was made on this matter in submissions.

The Commission's consideration and reasoning

Replacement with the last valid price is not the only option available to replace an incorrect price. The Commission considered three options for a replacement price, each of which has advantages and disadvantages – an administered price, a recalculated price and NEMMCO's suggestion of replacement with the last valid price.

An administered price, such as that used under conditions of market suspension, seems to have the least attraction as it would not represent current market conditions.

A recalculated price is currently the process used to calculate dispatch prices resulting from over constrained dispatch. However, in the case of a manifestly incorrect input, there is significant disadvantage in recalculating a correct price. A recalculation cannot run without resolving the correct level for the incorrect input. Resolution of the correct value of a particular input may take a significant amount of time, depending on the type of error. While a recalculated price may provide a more accurate result, the time taken to determine that price, and the resulting uncertainty in the market makes the option unattractive.

The last valid price has the advantage of being administratively straight forward, would reasonably reflect prevailing market conditions, and could be established more quickly and with more certainty to market participants than recalculating the dispatch.

The Commission notes also that the proposal to substitute the last valid dispatch price is consistent with existing provisions of the Rules which require NEMMCO to use the most recent successful run of the dispatch algorithm in cases where the dispatch algorithm fails to run successfully[1].

Another advantage with a using the last valid price is that once a price is flagged, market participants can immediately be certain that the price will be set at one of only two levels - either the dispatch price if the dispatch is not replaced, or at the last valid dispatch price.

The proposal to replace erroneous prices with the last valid dispatch price is transparent to stakeholders, and practical for reliable delivery within the available 30 minute time period. There is a question as to whether this is the most efficient price to use as a substitute. Arguably, a more efficient price would be determined by re-calculating the dispatch price with corrected input values, but such an approach would decrease transparency to market participants, and would potentially be problematic in terms of being able to reliably reconstruct inputs for use by the dispatch process within the short time available.

On balance, the Commission is of the view that replacing incorrect dispatch prices with the last valid price represents an appropriate balance between transparency and reliability on the one hand, and accuracy on the other.

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1 Clause 3.8.21(b) of the Rules provides that: "The *dispatch algorithm* is to be run by NEMMCO for each *dispatch interval*. If the *dispatch algorithm* is not successfully run for any *dispatch interval*, then the values for the last successful run of the *dispatch algorithm* must be used for that *dispatch interval*.

The Commission's finding in relation to this issue

For the reasons set out above, the Commission accepts NEMMCO's proposal to use prices from the last valid dispatch interval to replace prices that are based on manifestly incorrect inputs, as the most appropriate means to address the issue in the Rule.

5.3 Time limit of 30 minutes

What the proponent said

NEMMCO has proposed that prices be replaced only where NEMMCO can determine that inputs were manifestly incorrect within 30 minutes.

What the submissions said

ERAA was of the view that the 30 minute time limit capped the length of any price uncertainty.

The Commission's considerations

While the selection of any time limit is to some extent arbitrary, a 30 minute time limit seems to provide a reasonable balance between giving NEMMCO adequate time to determine whether a dispatch interval identified as subject to review is in fact incorrect and minimising market uncertainty as to what the price will be.

The time limit of 30 minutes requires NEMMCO to act swiftly to resolve a potentially incorrect input, and may in some cases prove challenging. There may be some potential for the tight time limit to lead to some 'correct' dispatches being replaced if they are flagged as suspicious and NEMMCO decides to replace them, before determining that the dispatch was in fact unusual but correct. Alternatively, minor errors may be let through as correct when in fact they were inaccurate.

The Commission considers that the time limit places a discipline on NEMMCO to focus on the large and obvious errors, and accepts that any practical process will not pick up all errors. Additionally, the 30 minute time period limits the extent of any market uncertainty to the length of one trading interval. With these considerations in mind, the proposed time limit of 30 minutes appears reasonable.

The Commission's finding in relation to this issue

The Commission accepts NEMMCO's proposal that a 30 minute time limit for effecting price changes is reasonable.

5.4 Review and Transparency

What the applicant said

The proposal requires NEMMCO to report annually on the effectiveness of the procedures to accurately identify dispatch intervals for review. If NEMMCO's review of the procedures finds that the process is failing materially to meet its objectives, then NEMMCO will be required to review the procedures in consultation with Registered Participants.

Additionally NEMMCO has also proposed that it publish a report after every event where it replaces a dispatch price under the proposed Rule. The report would provide analysis to market participants on the cause of the error and whether the input determined as manifestly incorrect was, in fact, incorrect.

What the submissions said

Submissions did not address this element of the proposal.

The Commission's consideration and reasoning

NEMMCO has proposed a reasonably comprehensive structure for reporting on the operation of the Rule. It is noted that the proposed reporting obligations appear to have been influenced by submissions NEMMCO received to its earlier consultation on this matter.

There would be an annual obligation on NEMMCO to assess whether the automatic identification procedure is meeting the 50% accuracy benchmark, and if the mechanism is failing to meet that requirement, undertake a review of the automated procedure in consultation with interested parties.

The proposed obligation for NEMMCO to annually review the automatic identification procedure, as well as a requirement to conduct a report after every incident of price replacement strikes a balance between ensuring that market participants have adequate information on the operation of Rule proposal and ensuring that the reporting obligations are not overly onerous on NEMMCO and participants.

In addition, the annual report on the trigger mechanism will provide an opportunity for NEMMCO to assess and improve it. The reporting arrangements are expected to have the benefit of making the process transparent to market participants and the public.

The Commission's finding in relation to this issue

For the reasons set out above, the Commission accepts NEMMCO's proposed reporting obligations as providing a reasonable level of transparency and discipline on the proposal without imposing unnecessary cost on the industry.

5.5 Over-constrained dispatch

What the proponent said

As part of their proposed Rule changes, NEMMCO has proposed the following changes to clause 3.8.24:

If either:

a) *the dispute resolution panel determines under clause 8.2 that NEMMCO has failed to follow the central dispatch process set out in this clause 3.8;*

or

b) *NEMMCO declares that it has made a scheduling error; or*

c) *prices for a dispatch interval have been replaced in accordance with Clause 3.9.2(c1) ;*

then a scheduling error will be deemed to have occurred. Spot prices and ancillary service prices will not be adjusted when a scheduling error is deemed to have occurred except through re-running the dispatch algorithm to give effect to the procedures developed under 3.8.1(c) or through an application of Clause 3.9.2(c1)

What the submissions said

No submission raised this issue.

The Commission's consideration and reasoning

The Commission notes that clause 3.8.1(c) of the Rules do not state that the dispatch algorithm must be re-run in the case of an over-constrained dispatch. The Rules require that:

> *NEMMCO must establish procedures to allow relaxation of power system constraints listed in clause 3.8.1(b) in order to resolve infeasible dispatch solutions*

Additionally, over constrained dispatch is not considered a scheduling error under the Rules. As such, it appears inappropriate for the proposed clause to refer to clause 3.8.1(c).

The Commission's finding in relation to this issue

For the reason set out above, the Commission has modified NEMMCO's wording of the proposed Rule in the Rule to remove the reference to over constrained dispatch from proposed clause 3.8.24, while still allowing the over-constrained dispatch process to progress.

5.6 Definition of scheduling error

What the proponent said

NEMMCO's proposed Rule seeks to alter clause 3.8.24, by adding an additional criterion for a scheduling error as follows:

> if "prices for a *dispatch interval* have been replaced in accordance with Clause 3.9.2(c1)".

NEMMCO states that this clause is necessary to place beyond doubt the right of scheduled generators and scheduled network service providers to seek compensation from the Participant Compensation Fund.

What the submissions said

No submission raised this issue.

The Commission’s consideration and reasoning

The Commission notes that the causes of a “scheduling error” are detailed in clause 3.8.24 of the Rules, and that NEMMCO’s proposal modifies those clauses. However, “scheduling error” is also defined in Chapter 10 of the Rules as follows:

> *A failure by NEMMCO to follow the central dispatch process in accordance with Chapter 3.*

The Commission notes that operation of the dispatch algorithm with incorrect inputs may not constitute a failure by NEMMCO to follow the central dispatch process in accordance with Chapter 3. Whilst the proposed drafting for Clause 3.8.24 may be effective, the Commission is of the view that clarity and consistency of the Rules would be improved by expanding the glossary definition in Chapter 10 of “scheduling error” to refer specifically to the matters covered in clause 3.8.24.

The Commission’s finding in relation to this issue

For the reasons set out above, the Commission has decided that the Rule should be modified to include an additional change to the glossary definition of “scheduling error” in Chapter 10 of the Rules to refer specifically to the matters in 3.8.24.

5.7 Compensation

What the proponent said

NEMMCO's proposal is to allow Scheduled Generators and Scheduled Network Service Providers access to compensation from the Participant compensation fund through a mechanism that already exists for scheduling errors in clause 3.16 of the Rules. That mechanism relies on the dispute resolution panel to determine compensation.

What the submissions said

Submissions to the Commission did not address this matter.

The Commission’s consideration and reasoning

The Commission notes that the proposal provides for only Scheduled Generators and Scheduled Network Service Providers to access compensation when prices are retrospectively changed in accordance with the procedure. This is consistent with the current provisions in the Rules for compensation relating to scheduling errors under 3.8.24 and 3.16 of the Rules. It would be problematic for other classes of participant to receive compensation from the Participant compensation fund, as only Scheduled Generators and Scheduled Network Service Providers contribute to the fund.

Furthermore, the parties most likely to have a claim for compensation following a retrospective price adjustment are those that followed dispatch instructions from NEMMCO that were consistent with the original price, but may turn out to be inconsistent with the replacement price. This is discussed in more detail in section 6.9 of this determination.

The proposal will not afford non-scheduled participants that responded physically to the original price access to compensation. To do so would require funding, perhaps through broader contribution to the Participant compensation fund, or through a levy. The risk for non scheduled participants is however mitigated in two respects. Firstly, they are not under a Rules obligation to follow dispatch instructions from NEMMCO, and secondly the original price will have been flagged as subject to change, affording an opportunity to moderate any physical response being contemplated.

On the basis of the above consideration, and the industry support for the proposal, the Commission is satisfied that the Participation compensation fund is a reasonable and practical source for compensation.

The Commission's finding in relation to this issue

For the reasons set out above, the Commission is satisfied with the intent of the proposal for compensation to be determined by the dispute resolution panel, paid from the Participant compensation fund, as this is consistent with current Rules provisions for scheduling errors. However, the Commission has modified the wording of the Rule to better achieve the desired intentions and outcomes in the Rules.

5.8 Requirement to seek compensation

What the proponent said

NEMMCO's proposed Rule states that a scheduled generator or scheduled network service provider "*is entitled to receive in compensation an amount determined by the Dispute Resolution Panel*"

NEMMCO stated that the purpose of the proposed clause is to *"ensure appropriate compensation is available to scheduled generators that increase output in response to dispatch instructions issued in a dispatch interval for which prices are later revised."*

What the submissions said

No submission raised this issue.

The Commission's consideration and reasoning

The Commission notes that clause 3.16.2 (a) states:

> *"Where the dispute resolution panel has made a determination that NEMMCO has made a scheduling error, the dispute resolution panel may determine which Market Participants may receive compensation and the amount of any such compensation payable from the Participant compensation fund."*

In some cases, the level of compensation available to a participant under the proposed Rule may be small, and the Commission is concerned that participants not be compelled to take part in a process that may cost them more than they receive in compensation.

There also may be cases where participants would prefer not to claim compensation in order to avoid disclosure of confidential information for little benefit.

While the proposed Rule states that participants are "entitled" rather than "required" to receive compensation, the Commission sees value in ensuring that the Rules explicitly provide that a participant is not obliged to participate in the dispute resolution process in respect to claiming compensation for revised prices.

The Commission's finding in relation to this issue

For the reasons set out above, the Commission has modified the proposed Rule to ensure that participation in the compensation process is not compulsory.

5.9 Apparently asymmetric treatment of compensation.

What the proponent said

In the covering letter to its proposal, NEMMCO stated that one of the essential features of the proposal was:

> *"to place beyond doubt the right of Scheduled Generators and Scheduled Network Service Providers to seek compensation from the Participant compensation fund in situations where prices have been revised under this process,"*

As part of giving effect to this proposal, NEMMCO included a proposed Rule 3.16.2(c2), which would provide for Scheduled Generators access compensation where:

> "*the revised dispatch price … is less than the dispatch offer price … for a price band consistent with the dispatch instruction issued to that generating unit for that dispatch interval.*"

A similar provision for Scheduled Network Service Providers was proposed as new clause 3.16.2(c3).

What the submissions said

In its submission, Hydro Tasmania questioned the asymmetric compensation arrangement, and suggested that this aspect of the proposal be revised. Hydro Tasmania made the following point:

> *" … the desirability of the asymmetric treatment of generators where inappropriate dispatch results from an erroneous input. This compensation, as drafted, is specific to generators dispatched below their correct level. We note that generators are disadvantaged by either use of their offered resource at less than the offered price, or by failure to dispatch an offered resource when the market price is above the offer and there is no impediment to dispatch."*

The Commission's consideration and reasoning

The Commission has considered this matter from the following two perspectives:

a) Cases where the dispatch price has be modified (through the procedure proposed by NEMMCO) to a value lower than the offer price consistent with the dispatch instruction issued to the generator. This is most likely to arise where the price is modified downwards, and gives rise to the risk that spot market payments are inadequate to cover the actual costs incurred by the participant, unless the Generator is party to a financial contract that overcomes the issue. Compensation therefore addresses the issue that the participant delivered a service on good faith, but the price was subsequently reduced outside of its control. The drafting of the proposal covers this issue in the proposed clause 3.16.2(c2). A similar issue arises for Scheduled Network Services, and is covered in the proposed clause 3.16.2(c3).

b) Cases where the dispatch price has been modified to a value higher than the offer price consistent with the dispatch instruction issued to the generator. This is most likely to arise where the price is modified upwards, and gives rise to the risk that the generator would have been given a dispatch instruction to operate at a higher generation level if the input error had not occurred. This in turn gives rise to a risk of exposure under financial contracts due to the increased price. Compensation would address the issue of the generator not being sent a dispatch instruction consistent with its offer and the dispatch price that is used for settlement purposes. The Commission considers compensation in this circumstance to be potentially more problematic than that discussed in a) as determination of the compensation would be dependent upon an assumption as to whether the generating plant would have actually run in accordance with the dispatch instruction that would have been issued. Nevertheless, the Commission notes that compensation to cover this issue is already provided for in clause 3.16.2(c) of the Rules for Scheduled Generators and in existing clause 3.16.2(c1) for Scheduled Network Service providers.

On the basis of the above considerations, the Commission considers that the provisions existing in the Rules, together with the new provisions proposed by NEMMCO, deliver compensation for changes in the dispatch price, whether the change is to increase or to decrease the originally published price.

The Commission's finding in relation to this issue

The Commission is not persuaded of the case for modifying the intent of the proposal in respect of the matter of symmetry of compensation raised by Hydro Tasmania. However, the Commission has modified the wording of the compensation provisions of the proposed Rule to ensure consistency between the existing Rules and the proposed new clauses.

5.10 Relevant Inputs to the Dispatch Algorithm

What the proponent said

In its proposal, NEMMCO explained that

> *"a system would be implemented to monitor the change in inputs to the dispatch process (excluding bids and offers) from one dispatch interval to another so as to highlight to NEMMCO any abnormal changes. This would allow, if presented properly, NEMMCO to quickly identify any abnormal changes and confirm whether or not these changes are physically realistic, or to identify where outcomes have been incorrect due to a problem with other inputs including the five minute*

demand forecast, network constraints, software setup etc. This would not include bids and offers submitted by Participants".

What the submissions said

No comment was made in submissions about whether the process should be limited certain classes of input value.

The Commission's consideration and reasoning

The Commission considers that it is important to be clear on whether the proposal allows prices to be adjusted on the basis of manifest errors in all, or only some, classes of input to the dispatch algorithm.

In its proposal, NEMMCO has excluded bids and offers submitted by Participants from any investigation that it carries out to identify manifest errors in the 30 minute period during which a change in prices can be initiated. No other limitations were placed on the scope of input values that could trigger price adjustments. No specific reasoning was put forward for this separation.

The dispatch algorithm uses a broad range of inputs, some of which relate to the competitive position being taken by Participants (ie bids and offers), while others relate to the current or future status of the power system (measurement data, demand forecasts, constraints, ancillary service requirements and others).

The Commission is satisfied that NEMMCO cannot take a view as to whether a participant's bid or offer is correct or manifestly incorrect, as the bid or offer is a matter for the participant to determine. It is conceivable however that NEMMCO could identify manifest errors in values that are derived from other sources, such as manually entered constraint information, demand forecasts determined by NEMMCO systems, and measurements telemetered to NEMMCO from remote power system locations.

Furthermore, the Commission believes that the very limited period that NEMMCO has to identify manifestly incorrect inputs will limit price adjustments to events where input errors are readily identifiable. This, together with the obligation to report the details of each price adjustment, and on the process more generally on an annual basis, will impose considerable discipline and transparency on the mechanism.

On this basis, the Commission is satisfied that it is sufficient and appropriate to limit price adjustments to events where manifestly incorrect inputs to the dispatch algorithm, of any kind other than bids and offers submitted by participants, have been identified within the time period allowed. This should however be clear in any new Rule that may be made in respect of the proposal.

The Commission's finding in relation to this issue

For the reasons set out above, the Commission accepts that the definition of manifestly incorrect inputs to the dispatch algorithm that can trigger price adjustments, should exclude bids and offers submitted by participants, but could include any other classes of input. The Commission has modified the wording of the proposed Rule to reflect this finding.

5.11 Commencement of the Rule

What the proponent said

NEMMCO have suggested a date of commencement for the Rule proposal of 1 June 2006. According to NEMMCO, this date would manage the risks of implementation and provide time to consult with the market on the details of implementation, in accordance with the requirements of the Rule. This date will also allow the changes required to be implemented at the first opportunity in NEMMCO's Market Management System project release cycle.

What the submissions said

No submission raised this issue.

The Commission's consideration and reasoning

The draft Rule and draft Rule determination did not specify a date for the commencement of the proposed Rule. Given the practical issues associated with integrating this kind of Rule proposal into market systems, the Commission requested advice from NEMMCO on NEMMCO's view of an appropriate start date for the proposed Rule.

The Commission understands that the implementation of the Rule proposal requires integration with NEMMCO's systems, and that such a process of implementation and testing will take some time. However, the Commission is also of the view that as it has determined that the Rule proposal will contribute to the NEM objective, the market should be able to benefit from this Rule change as quickly as possible. It does not benefit the market or consumers for the implementation of this Rule change to be unnecessarily delayed.

The Commission considers that a 1 June 2006 implementation date fairly balances the need for the Rule to be implemented as quickly as possible, with the practical realities of implementing the Rule proposal.

The Commission's finding in relation to this issue

The Rule will commence on 1 June 2006.

5.12 Substitution of prices in regions not affected by an input error

What the proponent said

The proponent did not raise this issue.

What the submissions said

TRUenergy's submission on the draft determination noted that the substitution of price in regions that are not affected by the incorrect price was a potential drawback of the proposal, although it also noted that the drawbacks were, on balance, well outweighed by the benefits of the proposal.

Hydro Tasmania also raised a similar issue in its submission on the draft determination. While Hydro Tasmania noted that "in general a disturbance to dispatch due to incorrect inputs may affect all market regions either directly or indirectly" However, it noted that this did not apply to regions that were not physically connected to the regions affected by a manifestly incorrect input.

In the case of Tasmania, this would occur before the Basslink interconnector is commissioned, or when it is out of service.

Hydro Tasmania has therefore proposed an alteration to the Rule to the effect that if NEMMCO is satisfied that one or more regions have not been affected by the relevant manifestly incorrect input, because of the absence of an electrical connection to regions that were affected, then the replacement of prices should not occur in such regions.

The Commission's consideration and reasoning

The risk identified by both the Hydro Tasmania and the TRUenergy submissions is that potentially correct energy and ancillary services prices could be replaced due to an input error in another part of the NEM. This would be a less than optimal outcome.

On the other hand, an ability to replace prices necessarily adds some uncertainty to the process of price setting. As the ERAA noted in its submission to NECA's initial consultation on the proposal, "a 'cost' of the proposal could be a potential loss of price certainty for market participants". In the Commission's view it is prudent, to the greatest extent possible, to reduce this level of uncertainty while still allowing the proposal to operate effectively.

One of the major benefits of the current proposal to replace prices is its simplicity. Prices must be clearly flagged to the market, and the price must be determined within 30 minutes. Additionally, once a dispatch interval is flagged, participants can be certain that the price for the interval is limited to one of two prices, the flagged price, or the price of the previous dispatch interval.

An amendment to the proposed Rule to require NEMMCO not to replace prices where a region is not electrically connected to the rest of the NEM would add complexity to the proposal, by allowing prices to be replaced in some regions but not in others. NEMMCO would also be required to conduct an additional assessment in the limited time available as to whether regions were electrically connected, or not.

The Commission has also considered the benefit of the proposal in terms of additional accuracy of prices. Under the proposed Rule, when prices are replaced, they are to be replaced with prices from the last correct dispatch interval. One of the reasons for selecting the last correct dispatch interval as the replacement price was that it provided an appropriate balance between simplicity and certainly on one hand and accuracy on the other. The prices from the previous correct dispatch interval should be able to provide a reasonably accurate reflection of prevailing market conditions.

With that in mind, the benefits of upholding prices in one region when they are replaced in others would seem to be limited. It should also be noted that after Basslink is commissioned, the likelihood of both a manifestly incorrect input occurring and a region being disconnected from the rest of the NEM would seem to be quite remote.

The Commission also notes that the reporting requirements require NEMMCO to report on each replacement action and also on an annual basis. These reporting requirements should identify events where prices were incorrectly replaced, for reasons of regions being disconnected or otherwise. If this analysis suggests that incorrect replacement due to a region being disconnected is a major problem, an amendment to the proposed Rule could be considered at that time, and with the benefit of experience to justify further complexity.

The Commission's finding in relation to this issue

Due to the reasoning above, the Commission has determined not to amend the proposed Rule to address this issue.

5.13 Summary of differences between the proposed Rule and the Rule to be made

Arising from the above considerations, the Commission has determined to make the following changes to NEMMCO's original proposed Rule in formulating the Rule that is considered in light of the statutory Rule making test:

- NEMMCO will be required to report annually on the cause of any dispatch intervals identified as having potentially incorrect inputs, but where prices were not subsequently modified;
- the reference in the proposed Rule to "over constrained dispatch" will be removed from proposed clause 3.8.24;
- the definition of a "scheduling error" in the Rules will be altered to refer specifically to matters in clause 3.8.24;
- Participation in the process to be run by the Dispute Resolution Panel for determination of compensation will be optional; and
- The definition of input will be defined so as to exclude bids and offers from Participants.

In addition to these changes, as identified above, the Commission has modified the wording of parts of the Rules to improve their effectiveness as Rules, or to improve the consistency of drafting.

6. Commission's consideration and reasoning in relation to the Rule Making Test

The Rule making test is set out in detail in section 3 of this report and requires the Commission to be satisfied that a Rule that it proposes to make will contribute to the achievement of the NEM objective. The NEM objective is concerned with promoting the efficiency of the NEM in an economic sense for the long term interests of consumers of electricity.

6.1 Assessment against Rule making test

The Commission considers that spot market price signals that more accurately reflect the underlying market and power system conditions will improve investor confidence and the efficiency of decisions made by market participants. Measures to reduce distortions to the market pricing and dispatch process will therefore contribute to more efficient electricity market outcomes and improved reliability and security of supply over the longer term. The long term interests of consumers will be served as a result.

Registered participants, potential investors, electricity users and other stakeholders in the NEM depend on reliable information, including price signals, for the business decisions they make. This is the case for investment and operational decisions alike. Decisions that are made on the basis of uncertain information, will inherently carry greater risk, which must in turn be priced or managed.

The spot market dispatch process aims to deliver productively efficient generation dispatch, and price outcomes that reflect the marginal cost of supply, based on the offers submitted by Registered Participants. If the inputs to NEMMCO's dispatch process do not reflect accurately the underlying market realities, then both dispatch and pricing outputs will deviate from the intended productively efficient values.

The Commission considers that the proposed Rule has most relevance to the following electricity services:

- Provision of wholesale electricity
- Provision of Market Ancillary Services
- Sale of electricity

The Commission is of the view that the implications of the proposed Rule for other services such as electricity transmission and distribution services will not be material.

The Rule making test requires the Commission to consider the implications of the proposed new Rule, for the efficient investment in, and efficient use of these electricity services, in respect of specified elements which impact on the long term interests of consumers of electricity. The Commission has applied the Rule making test to the proposed new Rule, as modified by the outcomes of analysis and discussion in section 6 above (the Rule).

The investment and usage aspects of the test are considered separately below.

Efficient Investment in electricity services

Prospective spot market revenues form an integral part of the business case for potential investors in electricity infrastructure such as generation facilities. Counterparties to prospective financial contracts, and lenders will also form views on future spot market outcomes, with uncertainties and risks priced into these considerations.

The Rule aims to reduce one of the sources of uncertainty surrounding future spot market outcomes for both energy and market ancillary services. Depending on the nature of the error that occurs, investors could win or lose in comparison with the intended or expected outcome if the error is carried through to market settlement. While the events being addressed by the proposal are not common, they have the potential to negatively influence the confidence of investors and their counterparties in the ability of NEM processes to produce price and dispatch outcomes that accord with their intended design.

Conversely, the proposed process for detection and correction of errors can, of itself give rise to uncertainty. In particular, if the process provided for long delays prior to advice of a change in price, or if the mechanism for determining the replacement price created uncertainties greater than the original issue, then the solution would arguably replace one form of uncertainty with another. In the case at hand however, the proposal to implement changed prices within 30 minutes of dispatch strictly limits the time for which price uncertainty can exist. Furthermore, the uncertainty is restricted to prices that are flagged in real time, and stakeholders know in advance that the price can only be changed to the value from the last correct dispatch interval.

In a similar way, the proposed new Rule also corrects price outcomes for market ancillary services, where they have been derived on the basis of incorrect inputs.

Although the Rule is expected to change average spot market energy and ancillary services prices only marginally, the Commission is of the view that the quality of the overall information environment will be improved if the Rule is made. This leads to a better functioning market, better informed investors and more efficient investments, and ultimately benefits in terms of more efficient price outcomes and improved reliability of supply to the benefit of consumers of electricity in the long term.

Efficient use of Electricity Services

The proposed Rule change aims to provide a standardised commercial solution for situations where the market has been dispatched on the basis of incorrect input values. As discussed previously, the proposal cannot undo the physical dispatch that has taken place due to use of the incorrect input values. Nevertheless, the Rule does provide additional information that can be considered by Registered Participants in particular and possibly by other NEM stakeholders, in determining the physical and commercial actions they will initiate in response to spot market prices. The real-time 'flag' attached to potentially unreliable dispatch and price outcomes is designed to deliver a 50% or greater probability that flagged dispatch intervals will be adjusted due to having incorrect inputs. This additional piece of information may, for example, be useful to parties deciding whether to initiate a physical response to price outcomes that deviate significantly from expected values.

The proposal provides for scheduled generators and scheduled network service providers to be able to seek ex post compensation for physical dispatch distortions related to price adjustments associated with erroneous inputs to the dispatch process. Such compensation is not available to Market Customers or consumers, because they do not participate in the Participant compensation fund process. The proposed Rule change will ensure however, that Market Customers and consumers can access the additional information afforded by the flagging of potentially unreliable price outcomes.

As a result, all physical participants in the NEM would be able to receive and act upon data that better reflects the actual operation of the market rather than the spurious values that can currently arise on some occasions.

While these benefits are arguably marginal, the Commission is satisfied that they represent improvements in the quality and reliability of information available to NEM stakeholders in making their business decisions, and that they will therefore improve the efficiency of the NEM in the long term interests of consumers of electricity.

6.2 Summary of reasoning

In view of the above discussion, the Commission is satisfied that the Rule, which includes the modifications discussed in section 5, is likely to contribute to the achievement of the NEM objective for the following reasons:

- Investment decisions for the provision of energy and market ancillary services will be based on higher quality and more reliable information that better reflects the value of the services;
- Consumers of energy and market ancillary services will face prices that are more efficient because they better reflect the market value of the service;
- Users of energy and market ancillary services will be better informed in real time as to the quality of the price signals they see, so that their physical response can be better informed.

Attachment 1: Rule

Attachment 2: NEMMCO Analysis

Major impacts on dispatch pricing due to manifestly incorrect dispatch inputs for calendar year 2004

The following events are ones detected by NEMMCO's review processes that involved:

1. significant movements in energy dispatch prices; and
2. manifestly incorrect inputs to the dispatch algorithm which would have been detected within thirty minutes of the event.

Date	Event	Effect on Energy Prices	Effect on Inter-regional Settlement residues
20 February	False SCADA value Vic -Snowy Interconnector	Vic price rose to $9501 for one dispatch Interval SA price rose to $9600 for one dispatch interval	-$353,000
24 June	EMS Failover	Qld Price fell to -$1000 for one dispatch interval	Nil
30 October	False SCADA value in Victoria	Vic price fell to -$997 for one dispatch interval	+$26,000
31 October	False Status indication Victoria	Vic price fell to -$1000 for one dispatch Interval SA price rose to $4929 for one dispatch interval	+$12,000

Affect on price and volatility of 2004 manifestly incorrect dispatch inputs

Region	**Average Spot Price for Year ending 31 Dec 2004**	**Net Effect on Average Price of Events in Attachment B**
Queensland	$34.51	-$0.01
NSW	$45.14	Nil
Snowy	$40.68	Nil
South Australia	$41.61	+$0.14
Victoria	$30.04	+ $0.07

Region	Measure of Actual Price Volatility for 2004	Revised Measure if Price Review Process had Applied
Queensland	4.94	4.94
NSW	6.42	6.42
Snowy	5.11	5.11
South Australia	4.02	4.02
Victoria	2.03	1.99