National Electricity Law (Schedule to the National Electricity (South Australia) Act 1996) and the National Electricity Rules applied as a law of New South Wales by the National Electricity (New South Wales) Act 1997

IN THE DISPUTE RESOLUTION PANEL AT SYDNEY

BETWEEN

Snowy Hydro Limited ACN 090 574 431

Applicant

AND

National Electricity Market Management Company Limited ACN 072 010 327

Respondent

DECISION OF THE DISPUTE RESOLUTION PANEL
(Sir Anthony Mason AC KBE, Mr G E Fitzgerald AC QC and Mr G H Thorpe)

Background

1. This decision is complementary to, and should be read in conjunction with, the Panel's decision dated 29 August 2007.

2. In that decision, the Panel held that:

- because of scheduling errors it made on 31 October 2005, NEMMCO gave Snowy an instruction to operate its relevant scheduled generating units at lower levels than the levels at which each would have been instructed to operate if the scheduling errors had not occurred; and

- Snowy's compliance with that instruction reduced the quantity of electricity its relevant scheduled units dispatched.

- NEMMCO's scheduling errors also led to it:

    - operating the interconnector between the Snowy region and the NSW region at a reduced level; and
    - determining spot prices under cl.3.9 in both the Snowy region and the NSW region of the NEM that were higher than the prices that would have been determined had the scheduling errors not occurred.

3. Snowy claimed that:

- because it dispatched less electricity as a result of complying with NEMMCO's instruction, it sustained loss in the Snowy region spot market (spot market loss); and

- the higher spot prices affected its electricity price risk contracts and SRD agreements and caused it losses from:

    - the operation of price risk contracts (contract loss); and
    - reduced SRD payments (SRD loss). (Although SRD payments were higher because of higher spot prices, Snowy argues they would have been even higher had the interconnector flow not been reduced.)

4. The panel held that:

"36. .. Subject to discretionary considerations .., Snowy is entitled to compensation for its losses caused by its compliance with NEMMCO's instruction to operate its relevant scheduled generating units at lower levels than the levels at which each would have been instructed to operate if the scheduling errors had not occurred but only those losses. .. actual spot prices must be used .. when quantifying Snowy's loss.

37. Snowy's spot market loss can be determined by multiplying the Snowy region spot price by the reduction in the amount of electricity which Snowy dispatched as a result of giving effect to NEMMCO's instruction to operate its relevant scheduled generating units at lower levels than the levels at which each would have been instructed to operate if the scheduling errors had not occurred.

38. .. because Snowy presented its case on a different basis it is unclear whether it wishes to submit that all or part of its SRD loss and/or its contract loss was caused by its compliance with NEMMCO's instruction to operate its relevant scheduled generating units at lower levels than the levels at which each would have been instructed to operate if the scheduling errors had not occurred. It is therefore difficult at this point to determine Snowy's material loss and assess appropriate compensation.

39. In the circumstances, including the novelty of the issues for the Panel's determination, the parties may within 14 days make written submissions limited to:

(a) the correct assessment of Snowy's compensable loss in accordance with this decision;
(b) the amount to be paid to Snowy from the fund for that loss; and
(c) costs."

5. Snowy has not pursued its claim for contract loss and the parties are agreed that, subject to discretionary considerations, it is entitled to compensation for spot market loss and SRD loss.

Snowy's spot market loss.

6. Snowy's estimate of its spot market loss is $2108.12. NEMMCO's estimate of Snowy's spot market loss is $952.84 based on the Snowy scenario and the NEMMCO scenario respectively. Both sums are based on complex, hypothetical calculations but these same assumptions are also needed to determine SRD losses which are more significant and not agreed between the parties. It is appropriate that the same assumptions be adopted for any award of spot market loss and SRD losses.

Snowy's SRD loss.

7. Snowy's claim for compensation in respect of its SRD loss arising from its reduced level of dispatch proceeds on the premise that the reduced level of operation of the interconnector between the Snowy region and the NSW region (the "Snowy 1 interconnector") affected the quantity of electricity which Snowy would have dispatched across the Snowy 1 interconnector if it had not been required to comply with NEMMCO's instruction to operate its relevant scheduled generating units at lower levels than the levels at which each would have been instructed to operate if the scheduling errors had not occurred.

8. In paragraph 16 of its submission dated 10 September 2007, Snowy submits "that its SRD loss should be determined, using the DTS Snowy Scenario, as the product of:
the difference in the actual NSW region spot prices and Snowy region spot prices;
the reduction in the amount of electricity dispatched from SHL's scheduled generating units located in the Snowy region as a result of the scheduling errors; and
the percentage of Settlement Residue Auction (SRA) units relating to flows across the Snowy 1 interconnector from the Snowy region to the NSW region which were held by SHL for the period 9.00am to 11.00am on 31 October 2005, which was 66%.[1]
This amount must then be divided by two because SRA payments are made on the basis of MW/hr but spot prices are determined every half hour."

9. In the following paragraphs of its submission dated 14 September 2007, NEMMCO accepted Snowy's case that reduced levels of dispatch may lead to reduced flow on an interconnector but that the extent to which that might occur would depend on the prevailing circumstances.

> "25. ... the extent to which loss in respect of SRD agreement transactions is compensable … is (at least in part) a function of the extent to which Snowy's compliance with an instruction to operate its scheduled generating units at levels

[1] Annexure CF2 to the Consolidated Statement of Cameron Fisher, 4 June 2007; Statement of Mr Chris Deague, 29 May 2007, para 21.

lower than those at which it would have been instructed to operate the units if the relevant scheduling errors had not occurred caused a change in the flow on the Snowy to NSW interconnector (being the only interconnector in relation to which Snowy now claims loss).

Extent of causal nexus and calculation of SRD agreement loss

26. In relation to the Snowy to NSW interconnector, NEMMCO accepts that compliance by Snowy with an instruction to operate its Snowy region generating units at a level lower than that at which Snowy would have been instructed to operate the units if the relevant scheduling errors had not occurred may cause a change in flow on the interconnector. Whether it would, and the extent to which it would, do so at any particular time depends on the circumstances prevailing at the time.

27. For example, the circumstances prevailing at a particular time might dictate that a large part of any increase in Snowy output (such as the increase that occurs when postulating the situation that would apply absent the relevant scheduling errors) is transported southwards to Victoria, over the Snowy to Victoria interconnector, rather than northwards across the Snowy to NSW interconnector. This might occur, for example, if constraints on the Snowy to NSW interconnector were binding at the time, precluding further flow over the interconnector. This, indeed, is what occurred for a substantial part of the 9am to 11am period on 31 October 2005."

10. NEMMCO accepted that a direct relationship existed between reduced interconnector flow and reduced dispatch in relation to the period between 9am to 10.10am on 31 October 2005 where it submitted that:

"30. .. three sets of circumstances applied over the 9am to 11am period on 31 October 2005. In particular, in the period from:
(a) 9am to 10.10am, the base case indicates that Snowy output and flow on the Snowy to NSW interconnector were both generally reducing at approximately the same rate while flow on the Snowy to Victoria interconnector was generally unchanged. .. NEMMCO is prepared to concede that a one to one relationship between changes in Snowy output and changes in Snowy to NSW interconnector flow exists for this period;"

11. In paras.30 (b) and (c) of its submission, NEMMCO summarised the positions in the periods 10.10 to 10.20am and 10.20 to 11am as follows:

"(b) 10.10am to 10.20am, across all scenarios, in approximate terms, Snowy output increases rapidly by about 700MW while the Snowy to NSW interconnector flow increases by about 250MW and the Snowy to Victoria interconnector flow increases by about 650MW. On this basis, NEMMCO submits that in this period a one to 0.35 relationship between

increases in Snowy output and increases in Snowy to NSW interconnector flow may be said to exist;

(c) 10.20am to 11am, there is virtually no increase in Snowy generation and the Snowy to NSW interconnector limit is binding which would, in any event, have prevented any further Snowy generation flowing northwards. Moreover, … the impact of the scheduling errors on Snowy's generation output is negligible.[2] On this basis, NEMMCO submits that in this period there is no causal relationship between Snowy's generation output and changes in Snowy to NSW interconnector flow."

12. In para 31 of its submission NEMMCO summarised its position as follows:

(a) 9.30am and 10am trading intervals it would be appropriate to adopt a causal relationship factor of 1;
(b) 10.30am trading interval, NEMMCO submits it would be appropriate to adopt a causal relationship factor of 0.45 (representing the average of 1 for the first ten minutes, 0.35 for the second ten minutes and 0 for the remainder of the trading interval); and
(c) 11am trading interval, NEMMCO submits it would be appropriate to adopt a causal relationship factor of 0.

13. Snowy disputed critical aspects of NEMMCO's argument in its reply dated 18 September. Paragraphs 4-7 of Snowy's reply state:

"4. There is nothing controversial about NEMMCO's observations, but they do not address the relevant issue. … The relevant issue is: did the reduction in SHL's output that was caused by the scheduling errors also cause a reduction in the northward flow on the Snowy 1 interconnector? To answer that question, it is necessary to compare the relevant interconnector flows (both Snowy 1 and Vic-Snowy) in the Snowy (or NEMMCO) Scenario with the Base Case for each trading interval between 9.00 am and 11.00 am. If the reduction in SHL's output caused a partial reduction in the northward Snowy 1 interconnector flow and a partial reduction in the southward Vic-Snowy interconnector flow, that will be shown in the comparison of the outputs of the Snowy and NEMMCO Scenarios with the Base Case.

5. There is no material difference between SHL and NEMMCO in terms of the relevant calculations comparing the Snowy and NEMMCO Scenarios, on the one hand, and the Base Case, on the other hand.

6. However, .. the application of NEMMCO's proposed 'correlation' methodology .. does not address the relevant issue. Moreover, the application of NEMMCO's methodology yields results that are

> inconsistent with the DTS modelling. .. Taking the 10.30 am trading interval as an example, .. the removal of the scheduling errors results in:
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> (a) SHL's output increasing by 81.75MW ..;
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> (b) the southward flow on the Vic-Snowy interconnector decreasing by 89.00MW..; and
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> (c) the northward flow on the Snowy 1 interconnector increasing by 169.50MW ..,
>
> thereby balancing the flows (subject to transmission losses). Yet NEMMCO contends that only 45% of SHL's increased output (i.e. 36.79MW ..) would have flowed northward over the Snowy 1 interconnector. If only 36.79MW of the increase in SHL's output flowed northward and the Vic-Snowy flow southwards decreased by 89MW, this only explains 125.79MW of the increase in Snowy1 interconnector flow. This begs the question: where did the remaining 43.71MW of the increase in flows on the Snowy 1 interconnector come from? Similarly it begs the question that, if only 36.79MW of the 81.75MW increase in SHL's output flows northward, and it didn't flow southward as the Snowy-Vic flow decreased by 89MW, then where did it go? The answer to both these questions is provided by SHL's methodology which demonstrates that all of the increase in SHL's output would have been transported northward over the Snowy 1 interconnector.

.. Constraints

> 7. NEMMCO also asserts that constraints on the Snowy 1 interconnector would have prevented increased flows on that interconnector in the absence of the scheduling errors. This assertion is contradicted by the DTS modelling that has been undertaken, which incorporates the effects of all relevant constraints. The modelling demonstrates that, in the absence of the scheduling errors, the flow on the Snowy 1 interconnector would increase, and this is possible despite any relevant constraint on that interconnector binding because the constraint will trade this off with a decrease in New South Wales generation." (Emphasis added)."

14. On the basis that there are material differences between the claims by the parties arising from whether the Snowy scenario or the NEMMCO scenario is adopted, the Panel understands paragraph 5 of Snowy's reply to be referring to the parties reaching materially the same result when assessing the same scenario.

15. The parties exchanged further submissions on 20 September in which they criticised each other's earlier submissions but also provided some additional focus to the dispute.

16. NEMMCO submitted that it is necessary "to apply the issue to a time period, whether it be a dispatch interval or trading interval " and to "recognise the issue of extent of effect; if a reduction in interconnector flow was caused in a time period, what was the

extent of the reduction?" NEMMCO had, it stated, "considered dispatch interval results to derive a trading interval outcome, because interconnector flows are measured on a dispatch interval basis, but settlements occur on trading interval basis."

17. NEMMCO also disputed Snowy's contention that "the application of NEMMCO's methodology yields results that are inconsistent with the DTS modelling. .. Taking the 10.30 am trading interval as an example". According to NEMMCO, Snowy's criticism of NEMMCO's methodology "fails to recognise that:

(a) a trading interval result is of necessity an approximation given the need to average dispatch interval results to come to a factor of use in the calculation of SRD loss. Given the movement of flows from one dispatch interval to another, NEMMCO would not expect an energy balance calculation based on outcomes at the end of a trading interval to balance. For example, the 10:30 am trading interval correlation calculation sought to average out the effect of three different sets of circumstances .. ;

(b) .. the result of the DTS studies on a dispatch interval basis .. reveal that changes in Snowy output do not all feed through on a one-to-one basis to changes in flow on the Snowy-NSW interconnector. For example, in the 10.30am trading interval, assuming no scheduling errors, Snowy's modelled output would have increased in an amount significantly in excess of the increase in Snowy-NSW interconnector flow."

18. Finally, NEMMCO submitted that "[i]n the period 10.20am to 11am, the scheduling errors caused virtually no reduction in Snowy output. Hence, in that period, there would have been virtually no increase in output (derived from removal of the scheduling errors) to flow through to an increase in interconnector flow."

19. Snowy's final "reply" asserted that "[c]ontrary to .. NEMMCO's submission, [Snowy's] contention is that NEMMCO's methodology is flawed because the correlation factors derived are not based on comparing the outcome under a scenario free of the scheduling errors (ie. the Snowy or NEMMCO scenario) with a scenario incorporating the scheduling errors alone (the Base Case). Instead, those correlation factors are derived by considering the outcomes under each of the Snowy, NEMMCO and Base Case scenarios separately from each other. The effect of this is that NEMMCO's methodology does not address the reduction in [Snowy's] output (and the consequent reduction in flow on the Snowy 1 interconnector) that was caused by the scheduling errors."

20. Before proceeding to a consideration of the broader issues and the specific questions which arise for consideration, the Panel notes that, in relation to the period from 9 am to 10.10 am, NEMMCO does not contest that there was a direct one to one relationship between changes in Snowy output as a result of compliance with a dispatch instruction to operate at a reduced level and changes in the Snowy to NSW interconnector flow. Although, as already noted, each party pursues a different methodology in arriving at an answer to this question and other questions, the parties are in agreement as to the amount of output that Snowy would have dispatched across the interconnector in this period. There is no occasion for the Panel to go beyond what is common ground between

the parties on this question, although it is necessary to determine which methodology is to be preferred in dealing with other questions which arise.

21. Both alternatives for how SRD losses should be calculated involve calculations of hypothetical situations and require assumptions about physical and market outcomes but are also subject to the overriding requirement to be consistent with the provisions of cl 3.16.2 of the Rules. The Panel accepts that such assumptions are necessary and notes that the parties have put emphasis on different elements of the assumptions. Snowy has in essence argued that compensation should be calculated by removing all effects of the scheduling errors and NEMMCO's argument can be described as assessing compensation looking only at the effect of changes in dispatch resulting from the scheduling error and thus leaving in place the prevailing limitations on the Snowy 1 interconnector.

22. The Panel considers that the requirements of cl. 3.16.2 are more appropriately answered by the approach put forward by NEMMCO. A calculation removing all effects of the scheduling error would be more consistent with compensation for total losses flowing from a scheduling error which the Panel has previously determined is not provided for. Accordingly, only the direct effect of reduced dispatch brought about by compliance with a dispatch instruction is compensable and this is in accord with NEMMCO's submission. This conclusion applies to the period between 10.10 am and 11 am comprising the market settlement periods ending 10.30 am and 11.00 am and results in the factors proposed by NEMMCO and stated in para. 12 above being 0.45 for the market period ending 10.30 am and zero for the market period ending 11 am.

23. The parties also differ on whether the dispatch and interconnector flows should be based on the Snowy scenario or the NEMMCO scenario. The scenarios used similar values for the capability of the Snowy 1 interconnector but applied a different approach on the question of hand-dressing in place of metered quantities on which dispatch is based. The reconstruction of market operation in the NEMMCO scenario assumed hand-dressing should be undertaken each 15 minutes which NEMMCO submitted was what it could reasonably have achieved. On the other hand the Snowy scenario is based on hand-dressing each five minutes, being the same period that metering would have provided updates.

24. The central dispatch process in the NEM operates on a five minute basis and numerous parts of the submissions by both parties noted the substantial changes in price from one five minute period to the next. While the approach proposed in the NEMMCO scenario considered each five minute period it assumed that hand dressing updated key inputs only each fifteen minutes. The Panel has previously held at para 86 of our determination of 1 February 2007 that ….."[N]evertheless it can be said that, prima facie, the central dispatch process was not followed as the requirement of cl. 3.8.1 (b)(8) that current data about generation levels be taken into account was not satisfied". At para 87 the Panel also held that there does not need to be fault on the part of NEMMCO for a scheduling error to occur when it stated "……we have concluded that there does not need to be fault on the part of NEMMCO, simply that in the management of central dispatch there was a failure to follow the central dispatch process, subject to the limitation that

NEMMCO is only required to exercise reasonable endeavours in relation to those elements related to system security." While practical limitations may limit NEMMCO's hand dressing inputs to the central dispatch process to less frequently than the five minute basis of the central dispatch process, any consequences of failure to take into account the current levels of dispatched levels of generation accrue on a five minute basis. Accordingly the Panel considers it appropriate that compensation be based on assessments at a five minute reset in accordance with the Snowy scenario

25. The final matter to consider in determining quantum is NEMMCO's submission that SRD losses should be discounted by 48.4% to account for NEMMCO's assessment that 48.4% of Snowy's contracting activity was not related to its normal participation in the electricity market in that NEMMCO submitted that certain types of contracts were not entered into in the normal course of participation in the electricity market and therefore do not qualify as hedges in accordance with Accounting Standard AASB 139. NEMMCO's response of 14 September submitted that as SRD activity is undertaken in support of contracting activity 48.4% SRDs therefore should not be regarded as being entered into in the course of normal market participation.

26. The matter of discounting Snowy's contracting activity in this way was the subject of lengthy submissions during the course of the hearings in the context of Snowy's claim for contract losses. NEMMCO's claim was disputed by Snowy. Following the Panel's determination of 29 August Snowy has not pursued its claim for contract losses.

27. It was apparent in the hearings that notwithstanding that the contracts that NEMMCO's expert submitted would not qualify as hedges under Accounting Standards are commonly used within the market – this point was acknowledged by NEMMCO's expert Mr Robinson, in answer to a question from the Panel.

28. The Panel is not persuaded that a failure of a commonly used contract form to be classified as a hedge in accordance with Accounting Standards is a basis to conclude that the relevant contracts were not entered into as part of the normal course of business by a market participant. The Panel is also not persuaded that even if this were the case that a pro-rata discount of the total amount of non-qualifying contracts should be applied to SRDs Agreements as proposed by NEMMCO. The Panel therefore does not accept that any discount should be applied to SRD volumes.

29. All of the numerical calculations were based on the results of NEMMCO's analysis using its DTS facility and Snowy accepted the volumes of dispatch from the Snowy generators and the changes in flow on the Snowy 1 interconnector and spot prices that resulted from the runs for the Base Case the NEMMCO scenario and the Snowy scenario.

30. While the parties disagreed on which scenario should be adopted they agreed with each other's calculation of quantum of spot market losses under the two scenarios.

31. In respect of SRD losses, NEMMCO calculated Snowy's quantum of SRD losses that would apply under both scenarios according to its approach to causation of SRD loss due to reduced dispatch, however, Snowy calculated the quantum of SRD losses that would apply under both scenarios but according to its approach to causation of SRD loss due to reduced dispatch. The Panel's decisions at paras 22, 24 and 28 above require calculation based on the Snowy scenario and the NEMMCO approach to causation which has only been undertaken in full by NEMMCO. The Panel accepts NEMMCO's calculations in this respect

32. In summary, the Panel considers that Snowy should be awarded compensation based on calculations using the Snowy scenario to determine changes in dispatch of Snowy's generating units and interconnector flows and the NEMMCO approach to calculation of the relationship between those changes and SRD losses.

33. Accordingly the Panel awards Snowy total compensation of $438.892.01 comprising:

a) spot market losses in the amount of $2,108.12; and
b) SRD losses in the amount of $436,783.89

Costs

34. The only issue to be determined in relation to costs concerns the costs associated with the Panel's hearing and determination of the dispute. Snowy pointed out that the Panel's decision resolved issues that are of significance to the industry and submitted that NEMMCO should pay the costs associated with the Panel's hearing and determination of the dispute from the Fund. On the other hand, although Snowy succeeded in recovering compensation, it was awarded much less than it claimed and many of its arguments were rejected. Those arguments complicated the proceedings and contributed significantly to the cost. Each party is to bear its own costs of the dispute and, in all the circumstances, the Panel considers that each should pay half of the costs associated with the Panel's hearing and determination of the dispute.

DATED the 18th day of October 2007.

Signed
A.F. Mason

Sir Anthony Mason AC KBE
Chairman