

# **Applications for Authorisation**

## **Amendments to the National Electricity Code**

### **Snowy Hydro Trading Pty Ltd - Extension of notional unit derogation**

**Date: 29 March 2001**

**Authorisation nos:**

A90776

A90777

A90778

**Commissioners**

Fels

Jones

Martin

Cousins

Bhojani

**File no: C2001/231**



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## **Glossary**

AGC	Automatic Generation Control
AUPAB	Aggregate Unit Planning and Bidding
Code	National Electricity Code
Commission	Australian Competition and Consumer Commission
DAC	Data Acquisition Control
Enron	Enron Australia Finance Pty Limited
IDP	Interstate Data Protocol
NECA	National Electricity Code Administrator
NEM	National Electricity Market
NEM1	National Electricity Market Stage 1 - Victoria/New South Wales linked state-based markets
NEMMCO	National Electricity Market Management Company Ltd
PASA	Projected Assessment of System Adequacy
SCADA	Supervisory Control and Data Acquisition
SHP	Southern Hydro Partnership
Snowy	Snowy Hydro Trading Pty Ltd
TPA	Trade Practices Act 1974
VPX	Victorian Power Exchange

# **1. Introduction**

## **1.1 The applications**

On 13 February 2001, the Australian Competition and Consumer Commission (“the Commission”) received applications for authorisation (A90776, A90777 and A90778) of changes to the National Electricity Code (Code). The applications were submitted by the National Electricity Code Administrator (NECA) under Part VII of *the Trade Practices Act 1974* (TPA).

The proposed amendments to the Code allow for an extension to an existing chapter 8 derogation for up to six months. The derogation allows Snowy Hydro Trading Pty Ltd (Snowy) to bid its generation capacity as if from 5 notional generating units, rather than having to place separate bids for each of its 31 individual generating units, or bids for a number of aggregated units.

Snowy is currently in the process of upgrading its Data Acquisition Control (DAC) and Automatic Generation Control (AGC) systems, and its Interstate Data Protocol (IDP) communications link with the National Electricity Market Management Company Ltd (NEMMCO). It is also developing an Aggregate Unit Planning and Bidding (AUPAB) system. These new communication and control systems are being designed so that the derogation will no longer be necessary, allowing Snowy to operate on an aggregated unit basis rather than a notional unit basis. However, delays encountered in the upgrade mean that Snowy has asked for a six month extension to the derogation, from its existing expiry date of 31 March 2001 to 30 September 2001.

The Commission has been requested to grant interim authorisation prior to the expiry of the existing derogation.

## **1.2 Statutory test**

These applications were made under sub-sections 88(1) and 88(8) of the TPA. The TPA provides that the Commission shall only grant authorisation if the applicant satisfies the relevant tests in sub-sections 90(6) and 90(8) of the TPA.

Sub-section 90(6) provides that the Commission shall grant authorisation only if it is satisfied in all the circumstances that:

- the provisions of the subject arrangements or conduct would result, or be likely to result, in a benefit to the public; and
- benefit would outweigh the detriment to the public constituted by any lessening of competition that would, or would be likely to result from the arrangements or conduct.

Sub-section 90(8) provides that the Commission shall grant authorisation only if it is satisfied in all the circumstances that the proposed provision or conduct would result

(or be likely to result) in such a benefit to the public that the proposed contract, arrangement, understanding or conduct should be allowed.

In deciding whether it should grant authorisation, the Commission must examine the anti-competitive aspects of the arrangements, the public benefits arising from the arrangements and then weigh the two to determine which is the greater. Should the public benefit or expected public benefits outweigh the anti-competitive aspects, the Commission may grant authorisation or grant authorisation subject to certain conditions.

Determining just what is a benefit to the public is therefore a key issue to the authorisation process. Some public benefits recognised in particular circumstances in past Commission decisions include:

- fostering business efficiency;
- industry rationalisation;
- expansion of employment;
- promotion of industry cost savings;
- promotion of competition in industry;
- promotion of equitable dealings in the market;
- development of import replacements;
- growth in export markets; and
- arrangements which facilitate a smooth transition to deregulation.

If the Commission determines that the public benefits do not outweigh the anti-competitive detriment, the Commission may refuse authorisation or alternatively, in refusing authorisation, indicate to the applicant how the applications could be constructed to change the balance of detriment and public benefit so that authorisation may be granted.

The value of authorisation for the applicant is that it provides protection from action by the Commission or any other party for potential breaches of certain restrictive trade provisions of the TPA. It should be noted, however, that authorisation provides exemption only for the particular conduct specified. Authorisation does not provide blanket exemption from all provisions of the TPA. Further, authorisation is not available for misuse of market power (section 46).

### **1.3 Public consultation process**

The Commission has a statutory obligation under the TPA to follow a public process when assessing an application for authorisation.

The Commission received the applications for authorisation of the changes to the Code on 13 February 2001. Notification of the applications and a request for submissions were advertised in *The Weekend Australian* on 17 February 2001 and posted on the Commission's web site. Interested parties were asked to make submissions to the

Commission regarding their views on the issues of public benefit and anti-competitive detriment arising from implementation of the proposed changes.

The Commission received 2 submissions, from Snowy and TransGrid. The submissions have been placed on the Commission's public register.

## **1.4 Commission processes**

The Commission has produced this draft determination outlining its analysis and views on the Code according to the statutory assessment criteria set out in section 1.2 of this draft determination. The Commission now invites the applicants and other interested persons to notify it within 14 days of 2 April 2001 as to whether the applicants or other interested persons wish the Commission to hold a conference in relation to this draft determination.

If the applicants or an interested party notifies the Commission in writing within the 14 days of 2 April 2001 that they want the Commission to hold a conference, the Commission will appoint a date, time and place for the holding of the conference and notify all interested parties. The applicant, interested parties who receive a copy of the draft determination and any other interested parties whose presence the Commission considers appropriate are entitled to participate in the conference.

Following the conference, the Commission will take into account issues raised at the conference, and any related submissions, and will issue a final determination. If no pre-determination conference is called then this draft determination will become the final determination.

A person dissatisfied with the final determination may apply to the Australian Competition Tribunal for its review.

## 2. Background

The Snowy Mountains Hydro Electricity scheme consists of seven power stations cascaded over several river systems. Snowy is responsible for the operation of the power stations. Capability of each station is dependent on the actual operation at other stations due to water (the energy source) interdependencies. Individual generating units also have constraints due to rough running bands, minimum loads, intermediate pond level control, variable efficiency curves, ramp rate restrictions, surge tank draw down etc.

Snowy has the ability to rapidly change its outputs over a wide operating range at immediate notice, a capability of immense potential benefit to the National Electricity Market (NEM). To maintain this flexibility and manage the water interdependencies and individual unit constraints, it is necessary to be able to adjust the allocation of total Snowy generation between power stations in real time, i.e. at the time of dispatch. This is achieved by the AGC which receives a single signal from NEMMCO via TransGrid and automatically changes the generation between units and stations in real time.

Prior to the commencement of the NEM Snowy participated in the National Electricity Market Stage 1 (NEM1) markets using five notional generating units, each equivalent in size to Snowy's total capacity. Those units were "notional" in the sense that there was not a direct mapping to physical generating units, however, the total capacity offered for the five notional units had to exactly match the total available physical capacity. In the NEM1 arrangements Snowy generated to a single aggregate dispatch target.

From the commencement of the NEM, Snowy has operated under a derogation to the Code to enable continued use of their notional unit arrangements.

The derogation to the Code sets out that:

- Snowy can bid 5 notional units into the NEM;
- each notional unit spans all Snowy generation (no physical mapping of notional units to actual generating units);
- the capacity of each notional unit is less than or equal to the total available physical capacity; and
- the total capacity to be bid must be the sum of all generating capacities.

As Snowy's notional units span different connection points, an operating agreement was established with NEMMCO, to enable NEMMCO to manage system security. The agreement included:

- through a special facility Snowy must provide NEMMCO, to the best of its ability, forecast allocations of total output across the connection points;
- NEMMCO would have the right where necessary for system security purposes, to advise Snowy of any constraints to be placed on this distribution across connection points;
- real time data of physical unit operation would be made available to NEMMCO; and
- NEMMCO would have the right to direct the operation of a particular physical generator if required for system security purposes.

Snowy is currently in the process of upgrading its control and communication systems so that the derogation will no longer be necessary and Snowy can operate on an aggregated unit basis rather than a notional unit basis. Delays have been encountered in that program



and Snowy has asked for a six-month extension to the derogation, from its existing expiry date of 31 March 2001 to 30 September 2001.

### **3. Issues for the Commission**

This derogation may offer Snowy a competitive advantage in the NEM trading environment depending on whether the flexibility to manage their output is greater than other generator participants are allowed, through their ability to use a greater number of price bands for each of their physical units.

This derogation may also impact on the public benefit of the NEM if the derogation affects system security and the provision of ancillary services.

The Commission authorised the initial derogation, in its determination of 19 October 1998, on the basis that it was satisfied that Snowy would otherwise be unable to comply with the Code until it had time to upgrade its control and communication systems.

### **4. What the applicant says**

NECA states that the existing derogation may afford Snowy a potential competitive advantage and notes that the current derogation causes substantial uncertainty in the short-term Projected Assessment of System Adequacy (PASA) and pre-dispatch, for forecasting power transfer capabilities across the Snowy.

NECA states it drew attention to those issues in its consultation process and has provided the Commission with copies of the three submissions received.

Whilst less than ideal, NECA is satisfied that a renegotiated agreement can provide appropriately enhanced safeguards. NECA is satisfied that the delays to the replacement of Snowy's data acquisition and other systems are genuine and outside Snowy's control. NECA states it is not an option simply to insist that the new systems should nonetheless be in place by the existing expiry date for the derogation of 31 March 2001.

NECA recommends that the Commission should agree to an extension to the existing derogation on condition that:

- Snowy and NEMMCO negotiate the necessary amendments to the notional unit agreement so that it provides appropriately enhanced safeguards for the market; and
- in order to ensure that the derogation does not remain in place longer than is absolutely necessary, Snowy should report to NECA monthly from 31 March 2001 on progress with acceptance testing of the new systems. Those reports should include an assessment of the scope for introducing those systems in advance of an absolute deadline of 30 September 2001.

### **5. What the interested parties say**

#### **5.1 Submissions to NECA**

Enron Australia Finance Pty Ltd (Enron) argues in its submission to NECA that Snowy would be afforded a market advantage as a result of extending the derogation because of its ability to bid significantly more than ten price bands.

Enron states that the aggregation of multiple units constitutes a market risk to Snowy and other market participants. For example, if there is a separation in the middle of a notional aggregated unit it would not be possible for the market systems to dispatch correctly regardless of how many constraints had been imposed. Had the Snowy units not been aggregated, it could well have been possible to overcome the transmission failure by bidding to one of the other connection points which form part of the aggregated unit.

Enron states that under the current dispatch arrangements the participant trial of the ancillary services market will not reflect the final implementation as the aggregated units would become disaggregated some time after market implementation. It believes that this could be addressed by not extending the derogation beyond the implementation date of the ancillary services market.

Enron questions the extension of the derogation and believes that should NECA decide to grant an extension, it should be for only such a period of time as is absolutely necessary.

NEMMCO remains opposed to this derogation and to any proposed extension of it. NEMMCO also believes that there has been a lack of information provided to the market regarding any substantive arguments as to why the derogation should be extended.

NEMMCO states that it believes Snowy can operate its generators as aggregated units until its control and communication systems are replaced. NEMMCO does not believe that having the Snowy generating units operate on an aggregate basis would "pose considerable risk to its ability to provide ancillary services" as the current ancillary services agreement with Snowy provides for ancillary services to be provided on an aggregated basis.

NEMMCO is also concerned about its ability to maintain power system security. For example, NEMMCO believes Snowy could rearrange the physical distribution of its generating output whilst still meeting the notional dispatch targets, which could create an insecure operating state. NEMMCO state that in other cases throughout the NEM the dispatch process will attempt to automatically address this at the next dispatch interval. However, in the case of Snowy this needs to be detected by NEMMCO and then be addressed via verbal communication with Snowy with resulting delays.

NEMMCO states that Snowy lines cannot be directly managed through the dispatch process which creates an inherent weakness in the dispatch process as additional analysis and communication is required. In emergency conditions this could become a critical issue.

NEMMCO also states that the current derogation limits competition in the NEM as Snowy's use of notional units means that NEMMCO must use conservative assumptions when forecasting interconnector limits in pre-dispatch. Feedback from participants to NEMMCO has indicated that this at times is a significant issue to them in managing their contract positions, and on the transparency of the operation of the market and power system.

NEMMCO believes that Snowy's use of notional units means that the effect of intraregional losses is not accounted for in the Snowy region in the same manner for all other regions.

NEMMCO also drew attention to occasions in November 2000 and January 2001 when some of these concerns became real. NEMMCO states that the derogation was, however, authorised in the first instance only because NEMMCO was satisfied that adequate safeguards could be put in place through what became the notional unit agreement between it and Snowy.

NEMMCO has said it will wish to revisit that agreement in the light of experience, including of last November and this January, to improve its operation if the derogation is extended.

Southern Hydro Partnership (SHP) points out that it changed its own procedures and systems, rather than seek an equivalent derogation, ahead of market launch. SHP has concerns about the lack of transparency as a result of the derogation for Snowy and the impact on short-term PASA, pre-dispatch and interconnector constraints.

SHP states that its ability to manage its position in the market is limited by the lack of transparent information on Snowy's physical generation units and how they are performing. SHP argues that Snowy has had ample time already to upgrade its control and communication system, and that the derogation should not be extended.

## **5.2 Submissions to the Commission**

TransGrid states essentially that it agrees with NEMMCO's concerns.

In its submission, Snowy states that the upgrade has been delayed but the delay is beyond its control. Snowy has several staff in the USA monitoring the progress of the new systems that are being developed. Snowy states that it hopes that the upgrade will be completed by June and that it will report to NECA regarding its progress on a monthly basis.

Snowy argues that the proposed extension will not impact other market participants or put system security at risk. Further, Snowy argues that if required to operate without the existing derogation, there would be considerable risk to its ability to provide ancillary services to the NEM.

Snowy also states the extension to the derogation is required to avoid a significant impact on its operational efficiency and its ability to meet its water inflow management and diversion obligations.

Snowy's states that its current AGC system operates on a scheme wide basis and cannot be modified to operate on an aggregated basis. Therefore, Snowy argues that if the derogation is not extended, it will have to operate its system without the AGC, instead relying on some sort of manual override arrangement.

Snowy states that if it were to operate without its AGC system there would be a system security threat arising from the manual dynamic loading of the Snowy plant. Snowy also states that without a replacement AGC in place, it is simply unable to provide frequency control ancillary services on an aggregate basis. Snowy states that full Supervisory Control and Data Acquisition (SCADA) data is provided to NEMMCO to maintain power system security and that the power flow on Snowy's lines can be managed. Snowy argues that the material effect on loss factors within the Snowy region is negligible, as the losses between the internal Snowy transmission nodes are small.

Snowy submits that the notional unit agreement between NEMMCO and Snowy covered the transparency of information that NEMMCO requires to manage system security. Snowy states that the current notional unit agreement between NEMMCO and Snowy provides a mechanism to address the pre-dispatch/dispatch uncertainty issue. Snowy states that it understands that NEMMCO's has chosen not to implement IT systems to utilise the information Snowy offered to provide. Snowy offers to provide this information and if required to negotiate with NEMMCO in good faith to further enhance the current notional unit agreement.

Snowy considers that there is no real competitive advantage as with 31 individual generating units theoretically it could offer up to 310 price bands and up to 50 or so with the current notional arrangement but for ease of management offers only about 20.

## **6. Commission considerations**

### **6.1 System Security**

The Commission notes the concerns of NECA, Enron, NEMMCO and SHP with respect to system security and transparency of information. However, as Snowy states that it cannot reconfigure its current AGC to operate on an aggregate unit basis, and the only alternative is a notional system, the Commission believes that the extension of the derogation is required at this time.

In particular, the Commission accepts Snowy's claim that a reconfiguration of its current AGC system to operate on an aggregate unit basis would be likely to require a significant manual operating procedure. The Commission accepts that such an arrangement would represent a greater risk to system security in the NEM than the present notional unit configuration.

The Commission accepts the risks to system security are smaller with the derogation and therefore this results, or is likely to result in a benefit to the public.

However, the Commission considers that NEMMCO and Snowy must renegotiate their notional unit agreement to ensure those information requirements regarding short-term PASA and pre-dispatch, interconnector constraints and forecasting power transfer capabilities are supplied by Snowy to NEMMCO and appropriately enhanced safeguards are established. This is a condition of the authorisation.

### **6.2 Ancillary Services**

Again the Commission notes the concerns of interested parties regarding the arrangements for the provision of ancillary services under the derogation. However, as with the system security concerns the Commission considers that if the derogation is not extended, requiring Snowy to manually configure its operating system, its ability to provide ancillary services, especially frequency control ancillary services, will be reduced.

With respect to Snowy's participation in the ancillary services market the changes in its control and communications systems may impact on how it participates in the ancillary service market, both in their current formulation and in respect of any future developments to those markets. However, the Commission considers that it remains Snowy's responsibility to manage their system to enable their participation in the ancillary services markets. Thus although the upgrade of Snowy's communication and control systems may impact on how they participate in the ancillary service markets, this should not either delay the market testing or the upgrade of Snowy's systems.

Hence, the Commission considers that by facilitating Snowy's participation in the current ancillary services arrangements the extension of the derogation, will result, or will likely result in a benefit to the public.

### **6.3 Competitive Advantage**

The Commission notes Enron's and NEMMCO's concerns regarding market advantage and limiting competition. The Commission understands that this advantage arises from the increased flexibility that Snowy has, to manage the generating units under its control, in comparison to other generators that operate individual generating units on an aggregate, not notional basis.

The Commission accepts that Snowy could theoretically bid its capacity using a greater number of price bands than is available to other market participants, where each generating unit can be bid as a component of any of the 5 notional units. The Commission considers that this increased flexibility may offer Snowy some competitive advantage in the NEM, but notes that Snowy generally offers only around 20 price bands, rather than 50.

In regards to limiting competition when NEMMCO forecasts interconnector limits, the Commission also considers that Snowy and NEMMCO can renegotiate this issue as part of the notional unit agreement to improve transparency of information.

### **6.4 Upgrade delays**

Although the Commission has not investigated the delays to Snowy's data acquisition and other relevant systems, the Commission has no reason to doubt Snowy's and NECA's statements that they are genuine and outside Snowy's control.

The Commission is satisfied with NECA's opinion that it is not an option simply to insist that the new systems should be in place by 31 March 2001. Further, the Commission notes that while Snowy expects the new systems to be in place before 30 September 2001, they state they are still not in a position to guarantee this outcome.

As a condition of authorisation, the Commission requires Snowy to report to NECA monthly regarding its systems progress and to take every step to ensure those systems are introduced in advance of the derogation expiring, if at all possible.

Further, the Commission considers that Snowy should not be afforded the ability to further extend this derogation, if further delays in the development and installation of their new systems are experienced. Therefore the Commission requires Snowy to ensure that, in the event its new systems are not in place by 30 September 2001, an alternative mode of operation has been developed for its existing systems, such that Snowy can continue to participate in the NEM without this derogation applying.

### **6.5 Overall**

The Commission considers that as with the initial derogation, it is satisfied that Snowy would otherwise be unable to comply with the Code until it has time to upgrade its control and communication systems. Given the timing of this application for authorisation, the Commission accepts that modifications to Snowy's existing communications and control systems are not able to be made before the current derogation expires. As such, the Commission considers that in terms of safeguarding risks to system security and provision of ancillary services that there is a greater public benefit if the derogation is extended at this time.

However, the Commission considers that Snowy is afforded some competitive advantage through the increased flexibility the notional unit configuration confers on the management of the generation units.

On balance, the Commission considers that the public benefits of facilitating system security and ancillary service provision outweigh any anti-competitive detriment arising from the competitive advantage that Snowy accrues.

## **7. Draft Determination**

Although the Commission considers that the proposed arrangements and conduct set out in the derogation would be likely to lessen competition, it also considers that there is likely to be a significant public benefit resulting from the proposed arrangements and conduct. For the reasons outlined in sections 6, the Commission concludes that, subject to the conditions set out below, in all the circumstances the proposed Snowy derogation extension arrangements and conduct:

- are likely to result in a benefit to the public which outweighs the potential detriment from any lessening of competition that would result if the proposed conduct or arrangements were made, or engaged in; and
- are likely to result in such a benefit to the public that the proposed conduct or arrangements should be allowed to take place or be arrived at.

The Commission proposes, subject to any pre-determination conference requested pursuant to s.90A of the TPA, to grant conditional authorisation to applications A90776, A90777 and A90778.

The authorisation that the Commission proposes to grant is subject to the following conditions:

1. Snowy and NEMMCO must negotiate the necessary amendments to the notional unit agreement so that it provides required system information such as that regarding short-term PASA and pre-dispatch, interconnector constraints and forecasting power transfer capabilities and appropriately enhanced safeguards for the market;
2. Snowy must report to NECA monthly from 31 March 2001 on progress with acceptance testing of the new systems. Those reports should include an assessment of the scope for introducing those systems in advance of an absolute deadline of 30 September 2001; and
3. Snowy must proceed with alternative arrangements for its communications and control systems to enable it to participate in the NEM from 30 September 2001, without the derogation being in place.

The Commission now invites the applicants or interested parties to notify it within 14 days of 2 April 2001 as to whether the applicants or interested party wishes the Commission to hold a pre-determination on this draft. If a pre-determination conference is not called, this draft determination will become final. If authorisation is granted, it will expire on 30 September 2001.

### **7.1 Interim Authorisation**

Pursuant to subsection 91(2) of the TPA, the Commission hereby grants interim authorisation for the amendments to the Code in the applications A90776, A90777 and A90778.

The interim authorisation that the Commission proposes to grant is subject to the following conditions:

1. Snowy and NEMMCO must negotiate the necessary amendments to the notional unit agreement so that it provides required system information such as that regarding short-term PASA and pre-dispatch, interconnector constraints and forecasting power transfer capabilities and appropriately enhanced safeguards for the market;
2. Snowy must report to NECA monthly from 31 March 2001 on progress with acceptance testing of the new systems. Those reports should include an assessment of the scope for introducing those systems in advance of an absolute deadline of 30 September 2001; and
3. Snowy must proceed with alternative arrangements for its communications and control systems to enable it to participate in the NEM from 30 September 2001, without the derogation being in place.

These interim authorisations take effect from 29 March 2001 and will lapse when the Commission reaches a final determination in regard to each application.

Please note that under subsection 91(2) of the TPA, the Commission may revoke an interim authorisation at any time.