



**Australian  
Competition &  
Consumer  
Commission**

## **Applications for Authorisation**

# **Amendments to the National Electricity Code Averaging loss factors in distribution networks**

**Date: 6 June 2001**

**Authorisation nos:**  
A90783  
A90784  
A90785

**Commissioners:**  
Fels  
Shogren  
Martin  
Cousins

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# Contents

<b>Contents</b> .....	<b>i</b>
<b>Glossary</b> .....	<b>ii</b>
<b>1. Introduction</b> .....	<b>1</b>
1.1 The applications.....	1
1.2 Statutory test.....	1
1.3 Public consultation process .....	2
1.4 Commission processes.....	2
<b>2. Averaging loss factors in distribution networks</b> .....	<b>4</b>
2.1 Background.....	4
2.2 National Electricity Distributors Forum proposal.....	4
<b>3. Issues for the Commission</b> .....	<b>5</b>
<b>4. What the applicant says</b> .....	<b>5</b>
<b>5. What the interested parties say</b> .....	<b>6</b>
5.1 Submissions to NECA.....	6
<b>6. Commission considerations</b> .....	<b>6</b>
<b>7. Draft Determination</b> .....	<b>8</b>

## **Glossary**

Code	National Electricity Code
Commission	Australian Competition and Consumer Commission
DCP	Distribution Connection Point
DNSP	Distribution Network Service Provider
Energex	Energex Limited
NECA	National Electricity Code Administrator
NEDF	National Electricity Distributors' Forum
NEM	National Electricity Market
Panel	NECA Code Change Panel
TCP	Transmission Connection Point
TLF	Transmission Loss Factor
TPA	Trade Practices Act 1974
VTN	Virtual Transmission Node

# 1. Introduction

## 1.1 The applications

On 20 March 2001, the Australian Competition and Consumer Commission (“the Commission”) received applications for authorisation (A90783, A90784 and A90785) 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 amendments to the Code relate to a proposal to allow distribution network service providers (DNSPs) to assign smaller contestable customers to non-physical transmission connection points (TCPs) using an averaged transmission loss factor (TLF). The proposal will replace the existing obligation on DNSPs to assign all such customers to physical connection points.

## 1.2 Statutory test

These applications were made by NECA, on behalf of all current and future Code Participants, 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
- the 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. Public benefits recognised in the past 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 20 March 2001. Notification of the applications and a request for submissions were advertised in *The Financial Review* on 6 April 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 did not receive any submissions from interested parties.

### **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 8 June 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 8 June 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 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. Averaging loss factors in distribution networks

### 2.1 Background

The network of the National Electricity Market (NEM) provides the connection between generators and customers and enables trade in electricity. The configuration of the network varies, as it is dependent upon the terrain over which it passes, the distance it covers and the amount of electricity transported.

Electrical energy losses occur when electricity is transported from the point of generation to the point of consumption. In the NEM, loss factors are applied as price multipliers to the spot price determined at each regional reference node in order to reflect the costs arising from transporting electricity.

The higher voltage transmission network provides supply to the lower voltage distribution networks at transmission connection points (TCPs). Within densely settled urban areas, the transmission network supplies some distribution zone substations, as well as accommodating flows between generators and distributors. Distribution level loads are supplied at distribution connection points (DCPs). Embedded generators also connect at DCPs while large generators and loads connect directly to the transmission network at TCPs.

There are generally open points in the distribution networks that define areas supplied by each TCP. These open points increasingly are automatically or remotely controlled and thus readily altered. A change in any open point can result in a significant change in the area supplied by a TCP. The open points frequently change for operational purposes, during system development, and on a seasonal basis to improve the utilisation of the network.

To ensure that price signals are passed through to DCPs, and to allow local retailers' wholesale market purchases to be settled on the basis of metering at TCPs, each DCP is required to be assigned to a TCP.

The Code specifies the responsibilities of DNSPs in relation to the assignment of DCPs to TCPs as follows:

**3.6.3 (a)** Each *Distribution Network Service Provider* shall assign each *connection point* on its *distribution network* to a single *transmission network connection point* taking into account normal *network* configurations and predominant *load* flows.

The Code thus imposes an obligation on DNSPs to assign each DCP to a specific TCP.

### 2.2 National Electricity Distributors Forum proposal

The National Electricity Distributors Forum (NEDF) argues that the present Code provision cannot be fully implemented at reasonable cost, particularly in metropolitan areas. The NEDF states that the accurate assignment of a DCP to an individual TCP is

not always possible, because of the complex and variable nature of the network configuration.

The NEDF believes that there is often a degree of uncertainty associated with the assignment of a TCP (particularly in an urban area) and a distributor may be considered to be in breach of the present requirements of the Code. This situation may be exacerbated, as the threshold of contestability decreases and much larger numbers of small customers participate in the market settlements.

The NEDF proposes a change to the Code to resolve this matter. It would permit the creation of a non-physical TCP or virtual transmission node (VTN) with an averaged TLF. This connection point would be used for market settlements and have a TLF equal to a volume weighted average of the TLFs at adjacent TCP locations.

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

These changes to the Code may be considered to be:

- price fixing arrangements, to the extent that participants are employing formulae which may have the effect of fixing or controlling the price of electricity in a region; or
- anti-competitive arrangements, to the extent that loss factors, which result from the averaging of losses across an area, may create cross-subsidies from those whose actual losses are low to those whose actual losses are high, resulting in inequality and inefficient market signals; or
- complex, in that they may add further complexity to the method of calculating market settlements.

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

The NECA Code Change Panel (Panel) sought comments on the proposed changes and in particular on whether:

- averaged TLFs should be allowed, as proposed by the NEDF, but only across TCPs physically able to serve the relevant customer;
- if non-physical TCPs are allowed, the proposal appropriately limits the number of physical connection points that may be averaged to arrive at the loss factor for that VTN;
- the other proposed safeguards are adequate; and
- the proposal creates, or increases, risk for the local retailer or any other party or results in an unreasonable diminution of the amounts accruing within the settlements system or the inter or intra-regional settlements surplus accounts.



The Panel notes that the current NEM design achieves some of its locational signalling through transmission and distribution loss factors and considers it essential that larger customers continue to receive this signal. However, the Panel also notes that for smaller customers the allocation of transmission use of system and distribution use of system charges by customer class is likely to be both economically efficient and an adequate basis for informing consumers.

The NEDF proposed that the threshold of 10 MW or 40 GWh apply for the averaging of TLFs and is thus consistent with the recommendations of the NECA review. The Panel considers that implementation of this proposal represents progress towards the unbundling of network charges for all customers. The Panel endorses the proposal, subject to minor changes to clarify the calculation of the average TLF suggested by the Code change focus group.

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

### **5.1 Submissions to NECA**

Energex Limited (Energex) states that it fully supports the proposal and that it is a pragmatic approach that will simplify the process of assigning a transmission node identifier by the local network service provider; particularly in cases where premises can be supplied from multiple TCPs.

Energex considers that the error arising from the averaging of TLFs will generally be minimal and this is unlikely to lead to degradation of locational pricing signalling.

Energex believes that the proposals to:

- continue the current Code requirement of assigning a single transmission network connection point to larger customers or generators (>10MW or 40 GWh per annum); and
- allow averaging (subject to Jurisdictional Regulator's approval) of TLFs in circumstances where customers can be supplied from multiple connection points;

will improve market efficiency whilst not degrading market effectiveness for market participants.

## **6. Commission considerations**

Consideration of losses in the spot market is necessary to provide economically efficient locational price signals and to ensure that central dispatch and pricing achieve the most economic outcome. Consideration of losses is also important in ensuring that new investment is appropriate and that the right balance is achieved between investment in generation, demand side measures and/or the main transmission network.

For the smaller urban customers connected within distribution networks, transmission losses contribute to only a small proportion of the energy cost. Consequently, any differences in electricity prices due to averaging loss factors at the transmission level are likely to be insignificant, compared with the averaging inherent in distribution loss factors. TCPs of distribution zone substations are physically and electrically close together and hence the differences in transmission losses are small.

The Commission considers that the averaging of transmission loss factors in distribution networks for smaller customers is unlikely to distort economic signals to any greater degree than the system now in place. It is accepted that this process will entail some degree of cross subsidisation. However, averaged transmission losses will only apply to smaller customers where it is said to be not economically feasible to assign DCPs to TCPs.

The Commission believes that the averaging envisaged in these code changes does not have a material impact on competitive outcomes in the spot market.

The Commission considers that the level of complexity involved in these Code changes is not significantly greater than the current system and does not increase potential barriers to entry for new participants and barriers to direct trading for end use customers.

The Commission believes that there is a public benefit in reduced administration costs and certainty in the arrangements for averaging transmission losses between TCPs while the alternative of assigning every DCP to a TCP is complex and does not increase the benefit to end users.

The Commission does acknowledge that simplifications and approximations will occur. However, the Commission considers the calculation of loss factors, as proposed in these Code changes, as a pragmatic approach.

While this Code change proposal does not require DCPs to be assigned to specific TCPs, section 3.15 of the Code requires the energy flowing to these DCPs to be accounted for in market settlements. The Commission considers that the aggregate adjusted gross energy for DCPs assigned to VTNs must be accounted for when calculating adjusted gross energy for TCPs. Therefore, section 3.15 of the Code must be amended as a condition of authorisation to ensure market settlements are calculated correctly.

## **7. Draft Determination**

The Commission considers that the proposed arrangements and conduct set out in these code changes are not likely to materially 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 section 6, the Commission concludes that, subject to the conditions set out below, in all the circumstances the proposed code changes:

- 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 A90783, A90784 and A90785.

As a condition of the authorisation, NECA must amend section 3.15 of the Code relating to Settlements to ensure that the aggregate adjusted gross energy for distribution connection points assigned to virtual transmission nodes are accounted for when calculating the adjusted gross energy for transmission connection points.

The Commission now invites the applicants or interested parties to notify it within 14 days of 8 June 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.