country

KS:MF

15 March 2005

Mr Warwick Anderson
Director, Regulatory Affairs – Electricity
Australian Competition and Consumer Commission
470 Northbourne Avenue
CANBERRA ACT 2600

Dear Sir

Information on alternative back up supply to Tenterfield

I write to you in response to your 7 March 2005 letter seeking advice on statutory requirements and possible options for the retention of an N-1 supply to the Tenterfield area.

Does Country Energy face any statutory requirements to provide an alternative back-up supply to the Tenterfield load area?

The planning and development of the Country Energy network is carried out in accordance with a suite of statutory requirements including the *Electricity Supply Act 1995* (as amended), regulations under the Act, and the *National Electricity Code* (the 'Code'). Country Energy must also observe the requirements of licence conditions imposed under the legislation which includes service standards and network planning, and to report the extent of compliance as a matter of record.

While the statutory requirements do not specifically enforce the requirement to provide alternative back-up supply to the Tenterfield load area, it is the responsibility of Country Energy under the legislation to ensure that distribution customers connected to its network are provided with supply of adequate security and reliability, and to consult with customer groups and communities accordingly. Country Energy believes that there is evidence in other jurisdictions (in addition to NSW) of growing demand for reliable supply in regional areas as demonstrated by the landmark Somerville Inquiry in Queensland and the associated QCA distribution price review, and the most recent statements made by the Victorian Essential Services Commission saying it is to "test the capacity" of Victoria's regional networks to cater for continued economic growth and rising population.

In accordance with statutory requirements, Country Energy has adopted a process with a high level of integrity that enables it to determine acceptable levels of reliability of supply and planning criteria. This process is outlined below.

www.countryenergy.com.au
ABN 37 428 185 226
15 – 41 Lords Place, ORANGE NSW 2800
PO Box 718 QUEANBEYAN NSW 2620 Telephone 13 2356 Facsimile 02 6391 5399

- Development of a network management plan and network planning criteria

In accordance with the *NSW Electricity Supply (Safety and Network Management) Regulation 2002*, Country Energy and the other NSW electricity distributors are required to prepare and lodge a Network Management Plan (the 'Plan') with the NSW Department of Energy, Utilities and Sustainability. The Plan provides an overall framework for investment decisions and management of Country Energy's network to ensure an adequate, reliable and safe supply of electricity of appropriate quality and cost. This is achieved through the adoption of good electricity industry practice and implementation of prudent asset management strategies in the design, construction, operation and maintenance of the network. Under the terms of the Plan, Country Energy adheres to the NSW codes of practice including those relating to electricity service standards and network planning (including demand management), and various relevant industry codes and guidelines.

The Plan outlines Country Energy's obligations in relation to network planning, including the need to compile and publish an *Annual Electricity System Development Review*. A key element is Country Energy's network planning criteria and guidelines that are the technical standards that provide the basis for investment decisions about the most suitable way to provide supply capacity to customers. The planning criteria attempts to maintain a balance between what is considered an appropriate level of supply capacity, appropriate supply planning standards and the economic cost of electricity to customers. Country Energy believes it has adopted planning criteria that match nationally and internationally accepted practice and are in accordance with the Code requirements.

The planning criteria drive our review process on network supply security and capacity deficiencies. Augmentation will be recommended when the criteria have been exceeded and where the implementation of non-network solutions is not feasible. The NSW statutory requirements indirectly support this process.

The planning criteria is reviewed and modified on a regular basis as appropriate to ensure that they underpin long-term minimum reliability targets of the organisation, in accordance with broad community and industry expectations.

- Consultation process

Country Energy seeks input into the determination of acceptable reliability levels through consultation with customers and communities to ensure it meets local priorities. Once acceptable levels have been determined through the consultation process and agreed to by Country Energy and stakeholders including the regulator, all parts of the network will be planned to facilitate the achievement of reliability commensurate with the accepted levels. Country Energy's reputation and standing within the 1,500 country and coastal communities we serve is testament to this process.

Given this, the planning criteria was developed to ensure that Country Energy's planning principles and standards are consistent and appropriate to the type, location and criticality of the customers connected, and meet shareholder, regulator and environmental expectations and reasonable community expectations for security of supply. Country Energy's planning criteria received endorsement from IPART's

engineering experts Meritec during the recent 2004 NSW electricity distribution pricing review.

In accordance with the *Code of Practice – Electricity Service Standards*, Country Energy's published *Electricity Supply Standard* provides details of the objectives Country Energy has adopted in relation to system characteristics that influence quality, reliability and security of the electricity supply. This document was also developed in consultation with customer groups and forms part of the *Standard Form Connection Contract*. It also incorporates the Guaranteed Customer Service Standards (GCSS) which we are required to meet under the *Electricity Supply (General) Regulations Amendment 1998*. IPART has recommended to the NSW Minister for Energy an extension of the GCSS to include frequency of network interruptions and duration of outages. Compensation will be payable to customers. The recommended changes to the GCSS reinforce the need to maintain adequate supply reliability and security to customers in regional areas.

- Joint transmission network planning

The Code and the connection agreement between Country Energy and transmission network service providers (TransGrid and PowerLink) require cooperation and regular joint planning consultation. The focus of joint planning is the capability of the existing transmission connection points to meet expected peak loadings, and the need for augmentation to connection point capacity, or to provide a new transmission connection point where this is the most economic overall solution.

The Code also specifies the minimum and general technical requirements of the transmission network in a range of areas including planning for single contingency outages. The overriding planning principle contained in Country Energy's planning criteria, is that the transmission connection points should provide a level of capacity and security such that under sustained conditions, supply to Country Energy transmission connection points is secure for any single contingency outage ('N-1') and that this should be complementary to that provided by Country Energy within it own subtransmission network. We consider these standards to be appropriate and prudent given the nature of the Country Energy's network and in accordance with the Code.

- Country Energy's network planning criteria for 5-10 MVA loads

The current 6 MVA peak winter load at Tenterfield is within Country Energy's subtransmission planning criteria for loads between 5 to 10 MVA, which specifies the provision of a switched alternative supply for a single contingency. This is considered an effective outcome in seeking to balance increased reliability with the cost of provision to customers. However, in most rural areas, the 11 and 22 kV distribution feeder configurations within Country Energy's distribution network (such as Tenterfield) are constrained by geographical separation between the supply source and the loads and generally do not have sufficient capacity to provide even partial network backup. The planning criteria also requires that for loads in excess of 5 MVA, Country Energy's zone substations are generally designed using an N-1 criterion for transformers, namely a dual transformer substation arrangement.

What options (that is, augmentations or procurement of grid support services) would be possible within Country Energy's network to provide this back-up in an economic manner?

The Tenterfield transmission connection point servicing Country Energy is presently serviced by two single circuit 132 kV transmission lines from Lismore and Glen Innes owned by TransGrid that provide firm N-1 transmission capacity. If the Lismore to Tenterfield 132 kV line was removed in order to obtain a route for constructing the proposed Dumaresq to Lismore 330 kV line, the Tenterfield connection point would be serviced by a single 132 kV supply, effectively leading to a decline in reliability standards. That is, without back-up supply, for a single contingency condition on the transmission network supply to Tenterfield would be interrupted until the cause is located and rectified.

There are a number of options that could be implemented to provide backup supply to Tenterfield including:

- Augmentation of the 66 kV subtransmission network owned by Country Energy
- Augmentation of the 11 and 22 kV distribution network owned by Country Energy
- Non-network alternatives including embedded generation and demand management
- Augmentation of the 330 kV or 132 kV network owned by TransGrid

- Augmentation of the subtransmission and distribution network owned by Country Energy

Country Energy has previously reviewed the possibility of supplying Tenterfield by alternative means using for example a radial 66 kV subtransmission line from a neighbouring system or reinforcing the distribution voltage network. Although there is some sub transmission and distribution supply in the general area, the neighbouring distribution network have been historically constructed and operated as a radial system with little opportunity to increase interconnection capacity for power transfer due to the distance to the load centre and the economics of reinforcing capacity. Similarly, the loading and the distances involved also dictate that an extension of the 66 kV subtransmission network from Glen Innes to provide N-1 redundancy is neither practical nor feasible from a design perspective and as such could not be relied on as a reliable source.

- Non- network alternatives

The *Electricity Supply Act 1995* and the *Code of Practice – Demand Management for Electricity Distributors*, sets out obligations and the required processes that Country Energy must follow when evaluating strategies for the development of electricity supply. Country Energy has investigated and given due consideration to demand management and embedded generation opportunities in the far north coast area as part of the public request for information in response to the document 'Emerging Transmission Network Limitations on the New South Wales Far North Coast' issued jointly by TransGrid and Country Energy in August 2003. The investigation revealed that feasible and economically efficient opportunities for non-network alternatives for grid support are inadequate to provide this back-up support.

ABN 37 428 185 226
15 – 41 Lords Place, ORANGE NSW 2800
PO Box 718 QUEANBEYAN NSW 2620 Telephone 13 2356 Facsimile 02 6391 5399

- Augmentation of the 330 kV or 132 kV network

Customers and regional communities have increasing (rather than decreasing) expectations in terms of electricity reliability and quality. Country Energy is focussed on ensuring that reliability and quality of supply in our region is best practice for a rural overhead power network. A decline in reliability standards that would result from the removal of the Lismore to Tenterfield transmission line would be unacceptable to the Tenterfield community given that these customers are presently receiving N-1 capacity in accordance with Country Energy's planning criteria. In fact Country Energy has been implementing strategies and programs to reverse declining levels of network reliability performance in certain parts of our network.

Consequently in light of the practical limitations of any other means to provide back-up supply, if Country Energy's planning criterion is not met, TransGrid would need to initiate augmentation to maintain the current N-1 level of supply security at the Tenterfield transmission connection point through the joint planning process.

What would be the approximate cost for these augmentations or procurement of grid support?

Country Energy as a major customer of TransGrid and the local network service provider responsible for ensuring reliable supply to distribution customers in the area, is of the view that the only reasonable solution and least overall community cost to maintain adequate N-1 supply to Tenterfield in the event of the dismantling of the Lismore to Tenterfield 132 kV line (to enable the construction of the new Lismore to Dumaresq 330 kV line) is the development of the 132 kV or 330 kV transmission network owned by TransGrid. This may involve duplication of the 132 kV transmission line from Glen Innes or the construction of a new 330/132 kV substation at Tenterfield. The selected option would require joint network planning with TransGrid to ensure that any project development is optimal leading to the lowest possible cost of transmission. Country Energy agrees with the Burns and Roe Worley cost estimates for the construction of a second Glen Innes to Tenterfield 132 kV circuit in the Directlink Joint Venturer's 8 February 2005 supplementary submission and that this option would represent the least cost option.

If you would like to discuss this matter further please contact Mr Terry Holmes on 02 6589 8694.

Yours sincerely

Ken Stonestreet
Group General Manager Networks and Infrastructure