



Appendix E

Submission Responses from Country Energy



ASB 33 274 464 218

Your Ref: SP-Strat-11

Great Lakes Council
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28 April 2006

GREAT LAKES COUNCIL

03 MAY 2006

RECEIVED RECORDS

Attention: Mr Alex Caras

Dear Alex,

RE: DRAFT TEA GARDENS HAWKS NEST STRATEGY

I refer to your letter dated 17 March 2006 and regret the delay in replying. Firstly I would advise that we have had a minor restructure in recent months which has involved Gracine Watkins moving into our Operations division, whilst I now have responsibility for planning and development matters at MidCoast Water.

In your letter you have advised that Council considers that the peak population of the Tea Gardens/Hawks Nest region may rise to 17,000 people. I would advise that a recent review of the water supply strategy for Tea Gardens/Hawks Nest confirmed that the scheme can accommodate 18,000 people using current water demand and technology, whilst our sewerage strategy has a capacity using current technologies to accommodate 15,000 people.

There are a number of important points relevant to the population capacities mentioned above:

1. We are currently undertaking detailed hydrological and environmental studies of the Tea Gardens water supply aquifer to confirm its yield is sustainable, and that environmental impacts are minimal. Our experience is that we have had no long term effects in the decades of operation of the scheme to date, but we do need to identify the ultimate sustainable limit of water extraction from the aquifer.
2. The constraint of 15,000 people on the sewerage scheme relates to the scheme's capacity to return treated effluent to the groundwater at Hawks Nest. We are currently working with Crownland Developments on the North Hawks Nest to find additional sustainable ways for this development to reclaim water where possible and return effluent to the groundwater table locally in North Hawks Nest where necessary. Similarly, we have asked Crighton Properties to look at opportunities to beneficially reuse effluent and/or pursue other sustainable water management practices. These initiatives will serve to extend the population capable of being served by sewerage in the Tea Gardens/Hawks Nest region.
3. Council may be aware that the Department of Energy, Utilities and Sustainability now requires that Integrated Water Cycle Management Plans be prepared for the operational areas of all water utilities. Preparing an IWCM plan entails broad consideration of water management issues and will require that Great Lakes Council and MidCoast Water work

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closely together to integrate issues relating to water supply, sewerage, stormwater and catchment management. The objective is to ensure that all water is used optimally and sustainably. As many development proposals are at a crucial point in planning, it will be important that the rules of sustainable water management are incorporated into development requirements. One important issue is the careful planning of effluent reuse and stormwater harvesting schemes to ensure that duplication is avoided and maximum benefit is obtained.

To summarise, MidCoast Water has quoted scheme capacities based on current demand values and the use of traditional water and sewerage technology. We would like to work closely with Council in developing sustainable and integrated water management strategies for the overall Council area that will alleviate the population constraints mentioned in this letter whilst reducing the impacts our current water management practices are having on the environment.

We would be pleased to set up a meeting with Council to discuss IWCM with a view to putting together a working group from both our councils. In the meantime, please contact me on 6591 7503 if the information above requires further clarification.

Yours faithfully

BRENDAN GUINEY
Planning & Development Manager



29 March, 2006

The General Manager
Great Lakes Council
Breese Parade, FORSTER
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NSW 2428

GREAT LAKES COUNCIL

05 MAY 2006

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Attention: Senior Strategic Planner, Mr Alex Caras

Dear Alex,

Re: Future electricity supply capacity requirements, Tea Gardens and Hawkes Nest

Thank you for your enquiry of 17 March 2006 regarding the draft housing Strategy for the Tea Gardens / Hawks Nest region, and the concerns regarding the anticipated electricity supply requirements associated with this level of development.

The population projections contained in the draft strategy are similar to those that Country Energy have been factoring into our network planning studies for this region, and the following dot points summarize the issues and solutions we currently anticipate:

- The sub-transmission supply at 33,000 volts into Tea Gardens Zone Substation is currently available from the Energy Australia network (normal supply) and also from the 132/33 kV Bulk Supply Point at Stroud (back-up supply). Neither of these supplies are considered to be adequate in the longer term, and for this reason Country Energy is in consultation with Transgrid regarding the establishment of a new 132/33 kV Bulk Supply Point (RSP) less than approximately 7km from the existing Tea Gardens Zone Substation. Supply at 132kV into this new BSP could be sourced either from the north or south, and there will be redundancy in the 132/33kV step down transformers, and also in the twin 33kV lines that will be established between the new BSP and the Tea Gardens Zone Substation. The development of this new BSP, and the construction of the necessary twin circuit 33kV between the BSP and the Tea Gardens zone, will be subject to site and route selection processes, and acquisition of land and easement approvals. Country Energy is working toward achieving this new BSP and 33kV interconnection within 5 years, but will be looking to reduce this time frame wherever possible.
- The existing Tea Gardens Zone Substation steps the supply voltage down from 33kV to 11kV, via two transformers of 6.25MVA capacity each. Supply at 11kV is then distributed via three 11kV feeders, being the "Hawkes Nest", "Tea Gardens" and "North Arm / Karuah" feeders. Due to increase in load Country Energy is currently in the process of installing a larger 16 MVA transformer to cater for future load growth.
- Studies have been done which indicate the existing zone substation site is reasonably well located to service future development at Tea Gardens / Hawkes Nest. However, the existing substation will need to accommodate additional outgoing feeders, larger transformers, higher ratings of equipment, and some existing age-related issues need to be addressed. For these reasons, Country Energy has decided to completely

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rebuild the existing Tea Gardens Zone Substation, and this project is anticipated to be completed within a 3 year time frame.

- Our studies indicate that an ultimate population of 14,000 people plus tourists in the peak season could result in a peak annual load by 2030, exceeding 20MVA. Therefore, Country Energy plans to rebuild the Tea Gardens zone substation so that it can accommodate 24/30MVA transformers in the longer term, but to only equip it with 10/18MVA transformers in the short to mid term.
- Rebuilding the existing zone substation requires acquisition of additional land, preferably within several hundred metres of the existing site, (although other locations are also possible), the process of acquiring a suitable site and securing any additional easements is a significant factor in the anticipated project completion timeframe.
- The new zone substation is planned to ultimately accommodate 8 to 10 outgoing 11kV feeders, although the visual impact will probably be less than the existing site because Country Energy has a policy of under-grounding new distribution feeders out of zone substations wherever possible for the first several spans at least, to minimize impact in the area where all the feeders are concentrating back to the one location. An example of this is the recently completed 24/30MVA, 33/11kV "Clearwater" substation on Ocean Drive at Port Macquarie, where this principle has been deployed to good effect; there is almost no visual association between the zone substation and the 11kV distribution circuits on Ocean Drive adjacent.
- A preliminary conceptual layout plan for the additional 11kV distribution feeders has been prepared, but Country Energy would like to discuss the suitability of the proposed layouts in some detail with Council planners.
- An immediate issue being confronted is that the two existing 11kV feeders supplying Tea Gardens and Hawkes Nest do not provide enough flexibility for network switching in the event that a fault occurs on one feeder during times of high load. We have taken steps to provide an additional "temporary" feeder out of the existing substation, to in effect provide a third feeder into the Tea Gardens / Hawkes Nest urban area. This will enable us to operate our network more flexibly prior to completion of the new zone substation. We are currently also pursuing the replacement of an existing limited capacity river crossing, with a new high capacity cable under-bore of the river. If this is achieved, the alternate supply route via Mineral Sands to Hawks Nest, will be of substantially improved capacity.
- We have also provided for a second temporary feeder out of the existing zone, which will allow us to extend a direct connection into the development area east of the Bi-Lo complex, should the need arise in the time prior to the new zone substation being completed.
- As load increases, very localized capacity constraints can arise if the distribution transformers and low voltage circuits supplying individual streets are not upgraded to accommodate load increases. These constraints can manifest as blown low voltage fuses, or poor voltage being received by customers at times of high demand. Country Energy is aware of this, and currently has some \$300,000 of work underway to upgrade existing distribution substations and low voltage circuits, and construct

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several new distribution substations where none currently exist, in the Hawkes Nest area. This process of localized monitoring and upgrading at points around the network, is an ongoing process that Country Energy carries out continuously and as required.

Thank you for this opportunity to provide input to your housing strategy planning process.

If you think it would be beneficial, Country Energy would be prepared to attend at a time suitable to your Council to further discuss our plans and also answer any additional queries relating to electricity supply in your Council area.

Country Energy does also see benefit in meeting with you to compare our conceptual layout of 11kV feeders, with your anticipated directions, areas and densities of future development. Our Network Planner for the Mid North Coast region, Graeme Bell, will contact you shortly to discuss this.

Yours sincerely



Peter Bereicua
Regional General Manager
Mid North Coast