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Mervyn English
General Manager
Electricity Commission
Level 7
ASB Tower
2 Hunter Street
WELLINGTON

Dear Mervyn

Request for Amendment to the Approved Costs – Bussing the 220 kV Islington-Timaru-Twizel Circuit at Ashburton

In April 2005, Transpower sought approval, under rule 16 of Section III of part F of the Electricity Governance Rules (Rules), for interim grid expenditure associated with a set of 30 Tactical Transmission Upgrade (TTU) projects. The Commission approved expenditure for 25 TTU projects for expenditure that had not been incurred or committed by Transpower at the date of application (April 2005). The expenditure approved by the Commission was based on P50 estimates of project costs, for each TTU project. In other words, on a median cost estimate basis with a 50% probability of actual costs being more or less than the estimate.

The cumulative expenditure sought for approval, for the 25 approved projects, was \$133 million of which some \$23 million had already been incurred or committed by Transpower as at 15 April 2005. The Commission therefore approved the difference of \$110 million.

The delivery of the work relating to the TTU projects is now well progressed. As expected, a number of the projects have been delivered and completed below the original expected costs (i.e. P50 cost estimate), whilst others have exceeded or are forecast to exceed the original expected cost. Cumulatively, Transpower is currently forecasting that it will complete the 25 approved TTU projects for less than the expected total expenditure approved for all projects.

Transpower recognises that the Rules require it to seek further approvals from the Commission for expenditure which exceeds the amounts approved under rule 16.

The subject of this application is an amendment of the approved Ashburton Bussing TTU Project (Proposal)¹.

There are a number of TTU projects that are still underway where amendments to the existing approvals are likely to be needed. Requests for amendments to these projects will be submitted to the Electricity Commission (Commission) as the additional cost information becomes available. These projects include the:

- thermal upgrade of the Otahuhu – Whakamaru A and B circuits²; and
- duplexing of the Livingstone – Islington³.

Transpower will write to the Commission to provide a status update for each of the TTU projects and financial status of the TTU programme as a whole in the near future.

Power to approve additional expenditure

Under Rule 17.2, section III of part F, the Board of the Commission may amend or revoke the approval of grid investment or expenditure with the consent of Transpower.

Transpower is seeking amendment to the Commission's approval of grid investment and expenditure granted in respect of the Proposal, approved by the Commission on 15 November 2005.

Transpower's initial cost estimate to implement the Proposal, and the expenditure that it originally sought approval from the Commission for was \$7.3 million. However, due to increases in project costs as detailed below, the cost of the Proposal is expected to increase to \$9.3 million, with a corresponding P90 estimate of costs of 10.3 million. Accordingly, Transpower is seeking approval for an increase in total project cost for the Proposal to \$10.3 million.

Project status

The forecast commissioning date for the Ashburton Bussing TTU Project is 26 May 2008.

As of 29 September 2007, Transpower had:

- incurred actual costs of \$230,000; and
- committed to \$1,920,000 of expenditure.

¹ TTU project 28 (<http://www.transpower.co.nz/?id=5397>)

² Chapter 4 of Transpower's Grid Development Proposal application

(<http://www.electricitycommission.govt.nz/pdfs/opdev/transmis/pdfsconsultation/gdp/GDP-App3.pdf>)

³ TTU project 27 (<http://www.transpower.co.nz/?id=5397>).

Justification

The increase in the costs associated with implementing the Proposal has been caused by:

1. **safety access:** additional safety access requirements;
2. **the need for additional space:** the requirement for additional space at the site has resulted in Transpower having to acquire further land which was difficult to obtain and to amend the scope of works to make the switchyard more compact;
3. **scope changes to meet the Grid Reliability Standards:** these have resulted in additional and more expensive equipment costs;
4. **provision for future reactive support:** this is being undertaken to defer future investment; and
5. **Ashburton Electricity requirements:** a request from Ashburton Electricity for a future enhancement at the Ashburton substation.

Each of these is discussed in more detail below.

The figures included in the sections below reflect approximate allocations of the additional \$2 million in expected costs for the whole project.

Safety access

As a result of an independent review of Transpower (and contractor) safety practices, changes have been made to the maintenance access requirements for Transpower assets, and these changes are being incorporated into all new works. The original proposal utilised the existing terminal tower, but this would have resulted in the tower being placed in the middle of the switchyard, when it was expanded, and there were safety concerns maintaining the line and tower. These changes became effective after the original application for approval of the Proposal was sought. As the Proposal required significant changes to the existing facility the Proposal is considered to be "new works" and this has necessitated tower replacement and relocation works at the Ashburton substation to meet new maintenance access requirements (+ \$1 million).

Additional space required

As a result of more detailed planning and design works, it became apparent that the Proposal required additional space at the Ashburton substation (arising from new safety practices discussed above). Transpower attempted to obtain further land, but was unable to gain sufficient land to fit the revised project. Transpower acquired that land that it could (+ \$200,000), but will also have to construct a more compact switchyard with more specialised equipment (+ \$100,000).

Scope changes to meet the grid reliability standards

An additional bus coupler circuit breaker is required to ensure that the switchyard arrangement meets the Grid Reliability Standards. This has resulted in an increase in the original budget (+ \$500,000).

Provision for reactive support

Additional costs are being incurred to make provision for future shunt capacitors at the Ashburton substation (+ \$100,000). This additional work (which is proving economic) is being undertaken to defer the need to install a new transmission line between the Waitaki Valley and Christchurch to meet future demand increases.

Electricity Ashburton requirements

Because of load growth in the Ashburton area, Electricity Ashburton is now planning to take increased supply from the Ashburton substation. Accordingly, additional supply transformers will be required in the future at the Ashburton substation. The switchyard arrangement has been redesigned to allow the connection of the additional transformers in the future (+ \$100,000).

P90 cost estimate

In accordance with recent practice, a Monte Carlo simulation was used to calculate the \$10.3 million 90% limit on project costs.

This P90 estimate reflects the possibility that the cost may escalate as a result of changes to a number of parameters such as prices, exchange rates, interest rates and inflation.

Recommendation

The factors causing the increased costs in implementing the Proposal as set out above are either beyond Transpower's control or examples of where even a well managed project exceeds its original P50 cost forecast. Therefore, Transpower requests the Commission amend the project costs for the Proposal by increasing the amount of grid investment or expenditure approved by \$3 million.

Accordingly, Transpower recommends that the Commission approve an amended total project cost for the Proposal of \$10.3 million.

Transpower is able to provide the Commission with further information on the Proposal's budget, work programme and rational if required.

Process and Timing

The Proposal is due for completion by 26 May 2008. In order to meet this deadline and have Ashburton Bussing Project delivered and installed, Transpower needs to place an order with the supplier by early November 2007. Accordingly, Transpower would appreciate consideration of this application as a matter of urgency.

Please do not hesitate to contact me if you have any queries or wish to discuss the matter set out in this letter.

Yours sincerely



hp Tim George
General Manager Grid Investment