

# TAG Information Paper

## Current Approval Projects

Prepared by the Electricity Commission

15 August 2008

# 1. Purpose of this report

1.1.1 The purpose of this report is to provide TAG members with a progress update on the current projects submitted to the Commission by Transpower.

1.1.2 The projects covered in this report are:

- (a) HVDC Grid Upgrade Proposal
- (b) North Auckland and Northland (NAaN) Proposals
- (c) North Island Grid Upgrade Proposal (400kV Auckland Grid Upgrade)
- (d) Wairakei Ring and Lower South Island Projects
- (e) Southland Grid Upgrade
- (f) Small Reliability Investments.

## 2. Updated summaries of current approval projects

### 2.1 HVDC Grid Upgrade Proposal

2.1.1 On 2 May 2008, Transpower sought approval for \$728 million for a grid upgrade plan which included a two stage process:

(a) stage 1: procuring, constructing and commissioning a new thyristor-based 700 MW pole and associated equipment (converters, condensers, new control systems, transformers, etc) at Haywards and Benmore by 2012; and

(b) stage 2: increase the link capacity to 1200 MW (scheduled for 2014).<sup>1</sup>

2.1.2 The proposal was submitted as an economic investment and formed part V of Transpower's Grid Upgrade Plan submitted in September 2007.

2.1.3 Some of the key issues that the Commission worked through with Transpower included exchange rates, price and scope contingencies, expected costs, procurement and timing issues.

2.1.4 On 31 July 2008, the Commission published a Notice of Intention to approve the proposal. The Commission also published its Reasons for Decision document, and an Economic Report which was provided to the Commission Board for consideration.<sup>2</sup>

2.1.5 In the Commission's view, there are four main drivers in favour of the proposal:

(a) investment in the HVDC link will enable existing South Island hydro plant to better contribute to peak demand in the North Island, deferring the need for new peaking plant to be built in the North Island;

(b) an increase in the HVDC link capacity enables greater flexibility in the scheduling of generation in both the North and South islands to better manage the risk of low hydro flows;

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<sup>1</sup> Transpower's revised 9 May 2008 *HVDC Grid Upgrade Proposal* can be found on the Commission's website at: <http://www.electricitycommission.govt.nz/opdev/transmis/hvdc/index.html> .

<sup>2</sup> The *Reasons for Decision set out in Notice of Intention to Approve Transpower's HVDC Grid Upgrade Proposal* and *Economic Report* documents, as well as external reports and key correspondence, can be found on the Commission's website at: <http://www.electricitycommission.govt.nz/opdev/transmis/hvdc/index.html> .

- (c) an increase in the HVDC link capacity will enable South Island hydro plant to better contribute to the firming of North Island wind generation, allowing compensation for the intermittent nature of wind generation; and
  - (d) the increase in transfer voltage means that transmission losses over the HVDC link are reduced.
- 2.1.6 Transpower also advised that it will consider including in the HVDC works a number of frequency and power control features which could benefit the wholesale electricity market. The Commission has encouraged Transpower to fully explore these features.
- 2.1.7 The Commission received a request for a public conference on the proposal and has set 22 September 2008 as the date of the conference.
- 2.1.8 Currently the Commission is requesting registration of participants and receiving submissions for the conference. The submission process closes on 1 September 2008.
- 2.1.9 At this stage, the Commission expects to publish a final decision in late September, well before the 24 October 2008 date in the agreed timetable.

## 2.2 North Auckland and Northland (NAaN) Proposals

- 2.2.1 On 9 May 2008, Transpower submitted revised NAaN Proposals 1 and 2 to the Commission. The total amount sought for the proposals increased from \$521.2m (the amount sought in the 21 September 2007 NAaN Proposals) to \$589.9m.
- 2.2.2 The changes from the original 21 September 2007 Proposals included:
- (a) Proposal 1 approval cost increased from \$515m to \$577m. Changes to this approval cost included:
    - (i) a new IC transformer at PEN by 2009/2010;
    - (ii) an increase in the proposed tunnel cost; and
    - (iii) an increase in the exchange rate contingency; and
  - (b) Proposal 2 approval cost increased from \$6.2m to \$12.9m.
- 2.2.3 On 3 July 2008, the Commission received a letter from Transpower again revising the total amount sought for the proposals to \$466m (\$447m for Proposal 1 and \$19m for Proposal 2). This revision was based on Transpower's application of the approach to contingencies taken in the HVDC decision and identified reduced costs in several areas.

- 2.2.4 Currently the Commission believes there are still a number of issues with the revised proposals. The primary outstanding issues involve:
- (a) justification for the difference in timing between the agreed 2016 electrical need date and the proposed 2013 commissioning date;
  - (b) the value of possible Rodney generation as an alternative;
  - (c) Transpower's assumptions regarding the feasibility and costs of the High Temperature Conductor (HTC) alternative;
  - (d) the Vector augmentations modelled in the Grid Investment Test (GIT);
  - (e) the costs associated with the road-route alternative; and
  - (f) whether a single 600MVA cable circuit would mitigate the current exposure to outage of the OTA-HEN 220kV line.

- 2.2.5 The Commission's next steps for the revised proposals include:
- (a) review of further information when this is provided;
  - (b) further analysis of Rodney following recent receipt of information from Genesis;
  - (c) seeking independent advice regarding the HTC alternative; and
  - (d) discussion with Transpower and Vector on the other outstanding issues.

## 2.3 North Island Grid Upgrade Proposal (400 kV Auckland Grid Upgrade)

- 2.3.1 The Commission published its final decision to approve the North Island Grid Upgrade Proposal on 5 July 2007.
- 2.3.2 The North Island Grid Upgrade Proposal is currently under judicial review by the New Zealand High Court. The judicial review started Monday, 18 August 2008.

## 2.4 Wairakei Ring and Lower South Island Projects

- 2.4.1 In February 2008, a timeline (*February 2008 timetable*) for development and consideration of these two projects was proposed by Transpower and agreed to by the Commission.<sup>3</sup>

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<sup>3</sup> The Wairakei Ring and Lower South Island Projects *February 2008 Timetable* can be found on the Commission's website at: <http://www.electricitycommission.govt.nz/opdev/transmis/gup/lower-SI-Central-NI>.

- 2.4.2 In April 2008, Transpower wrote to the Commission providing an updated process and timeframe for consideration and approval of these proposals.
- 2.4.3 In May 2008, the Commission agreed to Transpower's revised timetable (*May 2008 Timetable*) which anticipated Transpower submitting the Wairakei Ring and Lower South Island proposals on 28 October 2008 and the Commission releasing a notice of intention in December 2008.<sup>4</sup>
- 2.4.4 Since TAG's meeting on 3 July 2008 (which included an update on these proposals) the Commission has received two updates from Transpower.
- 2.4.5 On 5 August 2008, the Commission received a letter from Transpower outlining the work being started in the Wairakei Ring regarding local stakeholders and community consultation. The consultation will occur in two stages:
- (a) the first stage is currently underway and involves briefings and/or letters to key local stakeholders. Transpower has produced a fact sheet which alerts the local community to the project and provides them with the high-level transmission options.
  - (b) the second stage will involve direct communication with the wider community including local landowners.
- 2.4.6 On 21 August 2008, the Commission received a letter from Transpower regarding these two proposals:
- (a) in respect of the Wairakei Ring project, Transpower provided a proposed updated timetable. Under this timetable, Transpower will submit its proposal to the Commission on 17 December 2008. This means it will be well into the New Year before a final decision on this project could be made. Before this, as provided for in the rules, Transpower will consult on its application of the GIT. Central to this will be Transpower's assumptions relating to possible adjustments to the market development scenarios. The Commission expects to have a substantive discussion with Transpower on these shortly; and
  - (b) in respect of the Lower South Island project, Transpower advised that it is still considering the detail of an updated timetable and it will revert to the Commission once this has been worked through.

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<sup>4</sup> The Wairakei Ring and Lower South Island Projects *May 2008 Timetable* can be found on the Commission's website at: <http://www.electricitycommission.govt.nz/opdev/transmis/gup/lower-SI-Central-NI> .

## 2.5 Southland Grid Upgrade

2.5.1 The Commission has had preliminary discussions with Transpower regarding assumptions for analysis of Grid Upgrades in Southland. Key aspects discussed included power factor assumed, revised demand projections and treatment of load diversity.

## 2.6 Small Reliability Investments

2.6.1 Transpower has advised the Commission that it plans to submit between 22-25 small reliability investment proposals in the near future. The Commission is committed to working closely with Transpower to ensure that these proposals are dealt with expeditiously and robustly within the requirements of the rules.

2.6.2 To date, the Commission has had preliminary discussions with Transpower regarding two of these proposals:

(a) Huapai Bus Security

- Preliminary discussions with Transpower suggest that this upgrade is unlikely to be needed.

(b) Taranaki 110 kV re-conductoring.