



TRANSPOWER

Keeping the energy flowing

LOWER WAITAKI VALLEY RELIABILITY STAKEHOLDER FORUM II

Venue: Café on Queen, Waimate

Date: 17 December 2009 from 9.30am

Agenda

Introduction and Welcome – Andrew Tombs

Overview of technical analysis (short list of options) and the information used in the analysis

Closing summary Graham Clark – Network Waitaki

Questions and Answers raised during the meeting

John Clarke

Q: What is the importance of having a double line to Oamaru? Does it relate to the security of Oamaru supply?

ANS: Yes it does provide security of supply to Oamaru and it is the way the network is configured at the moment. If you lose one line you still have supply.

Kim Bannon

Q: Is the forecast taking growth of factories in other industries into account?

ANS: The forecast does not take step change growth of factories in other industries into account, only those that are included in the Covec forecast. However there is an underlying growth rate which is included. For the 2009 forecast, some GXP loads are actually lower than forecast and some GXP loads are higher. The overall impact has been for these variations to net each other out.

Q: Will the cost of upgrade or new line be recovered from all New Zealanders or just local electricity consumers?

ANS: Where the asset is classified as 'Interconnection', the cost will be recovered from all New Zealand electricity users.

Q: What cost is used to calculate costs for loss of load? Is it a standard figure or a calculated one?

ANS: Standard figure based on national average and it is accepted by Electricity Commission.

Q: Option 1 cost \$27 M. Does this include all stages or just first stage?

ANS: Yes, this is for all stages and it is the Net Present Value up to 2029.



Q: Is it a general policy that consumers pay for an upgrade? Do North Island consumers also pay for it? Recoup cost from all New Zealanders?

ANS: Yes, generally if a certain consumer has direct benefit from the upgrade they'll pay for it, but if it is too hard to identify who benefited from the upgrade eg an 'Interconnection asset', everyone pays for the upgrade.

Q: You have mentioned that these lines were built in 1920s. At some point a line was taken out. Will you be charging the cost of building the 2nd line to consumers for something that was previously there but subsequently removed?

ANS: When the line was taken out we lost the rights to the line and if we have to put the line back, it will be a cost to all New Zealanders. Back in the 80s no one expected this growth.

David Strang

Q: We are talking about unplanned outages up to this point. What about planned outages for maintenance. It takes approximately 4-6 days for a maintenance window for each line. Is there a high risk of outage during this period?

ANS: Maintenance will not be carried out if the load exceeds the capacity of the remaining circuit. If we get to a point where we can't do maintenance without cutting off load, then the costs of unserved energy will rapidly mount up and justify an upgrade or a new line.

Q: For load shedding, please clarify who makes the decision on which load to shed?

ANS: The distribution company will need to decide which load to shed.

Q: Referring to the lowest cost option, who pays for the costs of lost load?

ANS: Depending on the contract between distributors, suppliers and customers, the cost of lost load will be costs to the customers, distributors and /or the energy supplier.

Q: You are proposing to tighten conductors and run them hotter. Would it shorten the life of the conductor?

ANS: The conductors would still be well within their rated tension.

Q: Has SPS been factored into economic cost consideration?

ANS: The cost of the unserved energy and a cost to implement a special protection scheme have been factored in.

Q: Can we put heavier conductor on the same tower?

ANS: It is likely that replacement conductor will require some tower strengthening, some work on tower foundations and possibly some tower replacement.

Option 2: Second line TIM-STU

Q: Will you still have a busbar at Glenavy under option 2?

ANS: Yes, by 2014 under the current option.



Q: Why is it built by 2014 and not 2020?

ANS: The bus is required to reduce voltage problems caused by supplying a large load following a circuit outage. This problem does not occur early in the base option because when you have a circuit outage under that option, you will shed some load at the same time.

Option 3: Line Livingston - Oamaru

Q: Is there a concern in paralleling 220 kV? Is there a reduction in getting power to Christchurch?

ANS: There is a reduction under some circumstances, but not to any significant extent.

Q: Referring to the 105 MW on the line TIM-STU. What does it refer to?

ANS: This refers to the capacity of the proposed upgraded circuit.

Q: Do you need to upgrade the Waitaki interconnectors? Why don't you install them at Livingstone instead?

ANS: The cost of upgrading Livingstone is high; there are a lot of works to do and it would cost an estimated \$25 M (compared with an estimated cost less than \$10 M for Waitaki).

Option 4: Advanced upgrade

Q: What is the future prospective of this option?

ANS: This system is designed to provide n-1 level security.

Q: Why is there a big cost difference between advanced upgrade and basic upgrade?

ANS: There are more costs involved in re-conductoring, using larger conductors.

Q: Which option is the most future-proofed against unexpected load growth?

ANS: It depends on where future load growth occurs. There is no clearly superior option in terms of future-proofing.

Q: So if we are looking at it strategically, are Option 1 costs covered by all of the New Zealanders while Options 2, 3 and 4 by people who will be benefited from the investment?

ANS: No. All New Zealand electricity users pay for the interconnection assets once the costs are justified. However the different options are composed of a mix of interconnection and connection assets.

Q: Referring to the graph of economic cost, how much cost of lost load on the basic upgrade option will there need to be to justify costs for a new line?

ANS: The difference in capital cost between the basic upgrade and the lowest-cost full n-1 option is presently about \$32M.

Q: Is it important for stakeholders to send information to Transpower?

ANS: Yes.



John Clarke

Q: Two years ago there was maintenance carried out on Waitaki. How practical is it to do it now without tripping?

ANS: Presently there is enough capacity to carry out maintenance without load shedding. To deal with the risk of the remaining circuit tripping while one circuit is out of service, a backup plan is developed. This may include alternative supply routes and/or retaining the ability to rapidly return the circuit under maintenance to operation. Doing upgrades requires a lot of collaboration.

Q: You have mentioned a new GXP at St Andrews, will its reliability be the same as Studholme?

ANS: Yes, it will be. In the last 3 options, new load at St Andrews has n-1 transmission security.

Q: If there will be a line from TIM to STU, is there an option to build it up to St Andrews first?

ANS: There are no reasons why it can't be done but it will not give n-1 to STU.

Q: Will any of this change if we have generation around Stonewall? Oamaru seems to be a centre of load growth.

ANS: It will definitely make a difference, but we need to frame it and get an investment proposal to go forward, based on existing and committed infrastructure.

Q: Can the proposed 220/110 kV interconnectors for LIV be placed at OAM?

ANS: Yes the final arrangement has not yet been determined. The cost of the 220 kV line would be higher than the cost of a 110kV line though.

Q: Would the 220 kV option provide more future proofing for OAM?

ANS: Yes, if it has greater capacity than the alternative 110 kV option.

Q: If you build a 220 kV line from Livingston to Oamaru, would it be a monopole?

ANS: I'm not sure; it depends on the terrain, the cost and other factors. This detail has not been investigated.

Q: What in your opinion would be the best engineering solution, if the money matter was put aside.

ANS: Each option has its strengths, and there is no obvious preference from an engineering point of view.

Q: Would it not be best to get firm and robust supply if money were not the issue?

ANS: Yes. It would be best to get a firm and robust supply whether or not money is the issue.



TRANSPOWER

Keeping the energy flowing

Q: Looks like the choice is between Option 2 and Option 3. Which one is the best one in your opinion without looking at the costs?

ANS: We are not here to discuss our favourite option but the best option for everyone as a whole to go forward.

Q: Would future generation in the area have anything to do with these lines?

ANS: There is a potential for future generation to be connected to these lines. Right now there are no firm proposals and we are only considering existing and committed generation at the moment.

Q: Would small wind farms be an option?

ANS: No, we are talking about load growth from 60 MW to 200 MW, and wind farms do not usually solve transmission issues as wind is not always blowing.