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# POWER PLAY

NEW ZEALAND'S NATIONAL GRID INFRASTRUCTURE IS IN NEED OF SIGNIFICANT UPGRADE. CAN IT BE ACHIEVED IN THE CHALLENGING AND COMPLEX REGULATORY ENVIRONMENT IT FACES?

It's 7 o'clock in the morning. New Zealand wakes up and goes to work, and demand for electricity quickly rises. System co-ordinators respond by dispatching more of the offered generation from power stations across the country. At 11am, a major industrial plant advises that it needs to reduce its demand for electricity significantly for a short period and then restore it back to full load. Again, system operators respond, minimising impact on electricity flows across the grid. At 2pm, high winds take out three towers at Molesworth Station. Field crews are instantly dispatched to survey the scene and repair damage.

These events are associated with providing secure and reliable delivery of electrical energy from generators to consumers through New Zealand's National Grid, 24 hours a day, 7 days a week. Yet the fact is that we all tend to take electricity for granted. We expect our lights to flick on and our fridges to work. We only consider the main vehicle for electricity transmission when, in an idle moment while crossing the desert road, we comment on the architectural qualities of the majestic towers that gracefully adorn the central plateau. Few of us make the connection.

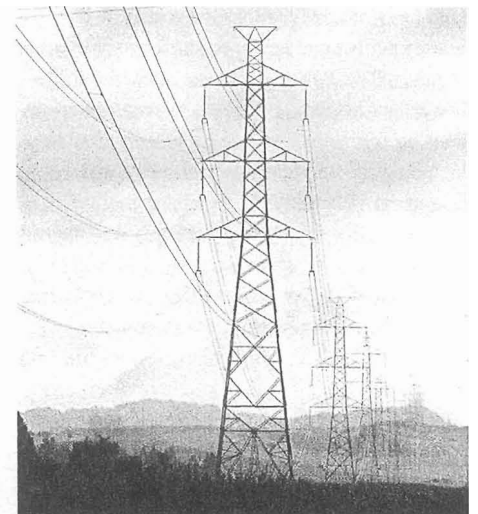
Even fewer of us consider the need for investment in the national grid. Like it or not, Auckland is the fastest growing region in New Zealand. Every day its population increases by an

average of 49 people, and 21 additional houses are constructed. Nelson and Tauranga are in hot in pursuit. All this requires electricity too.

New Zealand's national grid needs upgrading. This article presents an introduction to the reasons for the upgrade, and explores the key challenges ahead of Transpower in implementing this upgrade in the complex regulatory environment it faces.

## OWNER AND OPERATOR OF THE NATIONAL GRID

Transpower New Zealand Limited, a State Owned Enterprise, is the owner and operator of New Zealand's national grid. It owns and operates the assets, the towers, the lines and substations that are required to transmit high voltage electricity (most of which is generated at remote locations) throughout the country to the main load centres. It is also the System Operator, responsible for coordinating and managing the transmission of electricity across the grid. Transpower sits at the centre of New Zealand's electricity industry. It provides the essential link between energy generators, the distribution companies and large direct supply customers. It is also responsible for ensuring that there is sufficient investment in the grid to provide security of supply into the future.





## INVESTMENT IN THE GRID

The need for security of supply lies at the heart of the management of the national grid. Our grid is currently doing a good job and has sufficient capacity to meet current requirements. However, as demand for energy continues to grow, the grid will not be able to meet future demand and maintain security of supply without significant investment. A reliable, modern national grid is a key infrastructure asset to underpin New Zealand's economic growth aspirations.

Therefore, Transpower is planning a major investment programme of grid enhancement to address: strong growth in electricity demand over the last 5 years and projected growth over the next 40 years; the need to facilitate connection to the grid of diverse sources of energy generation; and the ageing of the existing grid assets. Investigation work suggests moving to a higher voltage for the core grid in a staged fashion - the higher the voltage of transmission lines the greater their capacity to carry electrical energy. For the most heavily loaded parts of the national grid, the need is for new or upgraded lines in place within just a few years. Among the range of projects planned is the need to resolve supply constraints into Auckland by 2010. The first major project is the establishment of a new 400kV transmission line between Whakamaru (Taupo) and Otahuhu (Auckland).

## SIGNIFICANT CHALLENGES AHEAD

This project represents a major investment and major infrastructure development. Its cost, size and cross-boundary characteristics make this the largest new infrastructure project contemplated in New Zealand for a long time. It will face significant environmental, property and political challenges and risks as it progresses through the complex and challenging regulatory environment ahead.

## COMMUNICATING THE NEED FOR INVESTMENT

The imperative for a 400kV-transmission line must be firmly established. Transpower cannot

assume that the case for the upgrade is widely understood and accepted. Significant emphasis will be placed on raising community awareness of the role of the national grid, particularly its place in supporting the national economy, and on an understanding of the need for investment.

## WORKING WITHIN THE RESOURCE MANAGEMENT ACT

Devolved environmental decision making under the RMA certainly presents significant challenges to a project of this size. While there are certainly sound reasons for the devolution of decision making to local authorities, this model will not necessarily guarantee a high quality decision or a sound workable process for a major project of national importance, spanning multiple local authority boundaries, with a national community of interest.

From a *process* perspective, the prospect of dealing with multiple council officers, lodging several separate notices of requirement, multiple hearings, decisions and appeals is somewhat daunting. Capacity of individual local authorities is also at issue, in terms of available resources, the varying policies and objectives in place, and the information they have access to.

From an *outcome* perspective, a robust and consistent decision is highly desirable. Assessment of the environmental effects of Transpower's proposals by multiple authorities could introduce significant inconsistency in approach, specifically in the application of the Act's fundamental principles, in the consideration of the trade-off between national importance and local costs (particularly with only sections 6 and 7 of the RMA to guide them), and in the identification of mitigation measures that could ultimately be attached to the designation as conditions.

All these matters present significant risks to Transpower, councils and communities in terms of project delays and increased costs, with no current mechanism to minimise these risks, given that even the existing "Call In" provisions are not currently available to requiring authorities pursuing a designation.

Complete overhaul of the RMA is not necessary.

However, legislative amendments and other non legislative initiatives would help to ensure that this project can be successfully implemented within the RMA's existing framework. The current RMA review is certainly timely, as is the progression of some of the initiatives arising from the Government's response to the recommendations made by the Ministerial Panel on Business Compliance Costs, including proposals to introduce a more comprehensive councillor accreditations scheme.

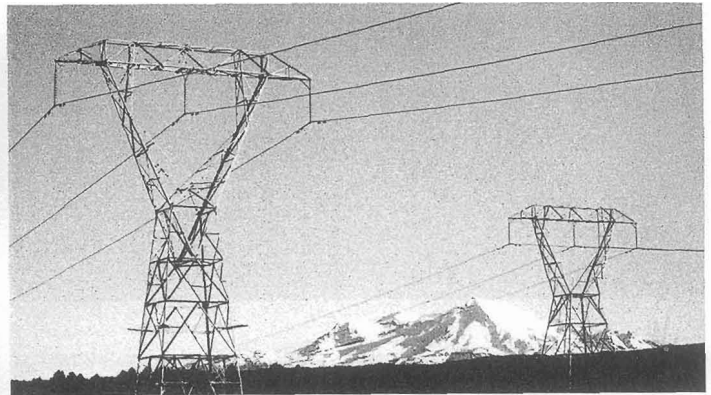
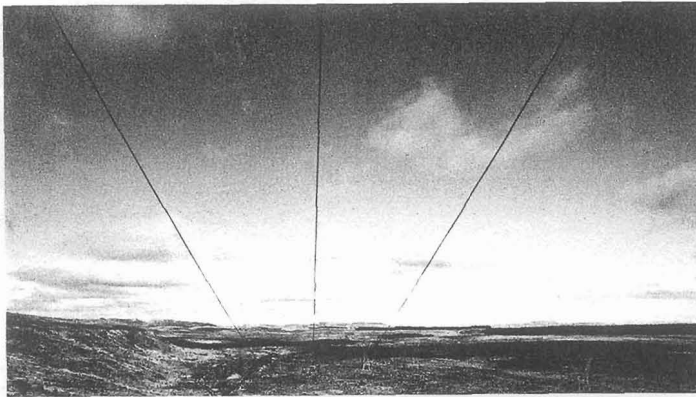
A single focussed and robust process for the assessment of the relevant issues associated with major projects is at the heart of Transpower's call for change. Certainty of process is vital. The RMA review must deliver a clear process for the identification of a major project, and for the selection and application of an appropriate decision making process that should be used that delivers consistent, coordinated, robust outcomes, is cost effective, practical, and is cognisant of local authority capacity. The review also needs to eliminate the need to completely re-hear an application on appeal.

It should also deliver a more useful mechanism for importing central government guidance on matters of national importance into the decision making process, including the importance of energy infrastructure, and the implementation of the government's sustainable development objectives. This could be either through improved processes for the development and implementation of national policy, or a whole of government statement that carries additional weight.

In the absence of legislative change, Transpower will need to pursue every opportunity to coordinate council processes, and its communication with councils. Joint hearings will be central to the success of the project, as will the establishment of council forums as a conduit to effective communication.

## BUILDING EFFECTIVE RELATIONSHIPS

To make this work, effective co-operation and communication between Transpower and local



government and their communities will be vital. In addition to lodging separate notices of requirement, and coordinating the notification, hearings and appeal processes, there are significant challenges in the pre application work to be undertaken to determine the appropriate route for a transmission line potentially 200 kilometres long. This includes: information discovery, ensuring adequate assessment of alternatives, considering Part II of the RMA, assessing environmental effects and consulting with a wide range of stakeholders. Poorly managed, this could fuel the fire in the call for a return to national development legislation.

Understandably, objectives will differ. Transpower clearly seeks to ensure sufficient investment in the national grid to provide New Zealand with security of electricity supply, and to do this in a manner that has regard for the environment. Local government will focus on supporting the interests and well being of local communities, which means promoting, economic development, employment and a healthy environment. It will seek a genuine case for the project, to minimise local impact, and to maximise Transpower's contribution towards community initiatives.

These objectives are not mutually exclusive. The challenge facing Transpower and local government is to work together to foster a commitment to understanding the need for investment, and to adopt a common approach to the process, from initial investigative stages through to co-ordinated hearings and appeals.

### ADDRESSING THE GOVERNMENT'S SUSTAINABLE DEVELOPMENT OBJECTIVES

The Government's "Sustainable Development Programme of Action" requires electricity to be delivered in an efficient, fair, reliable and environmentally sustainable manner to all classes of consumer. The programme of action also stipulates that energy use in New Zealand must become

progressively more efficient, and less wasteful, renewable sources of energy must be developed and maximised, and consumers must have a secure supply of electricity.

To achieve these goals, the methods that are consistently identified have an emphasis on energy efficiency and demand side management. Transpower's challenge is to effectively communicate the way in which investment in the national grid also supports the Government's goals for the electricity/energy sector.

### WORKING WITH THE ELECTRICITY COMMISSION

Transpower is also required to work with the Electricity Commission to ensure that risks to security of supply are appropriately addressed in proposed investment plans. Ultimately, Transpower's obligation is to provide transmission services at the standard of quality and security agreed with grid users or required by the Electricity Commission, acting as the agent for the collective interests of grid users and end consumers. Therefore, Transpower will be required to formerly submit its grid upgrade plans for approval by the Commission, and have these plans judged by grid reliability standards, and grid investment tests.

These standards and tests are still to be formulated by the Commission. However, it is highly likely that Transpower will be required to provide details of alternative investment options, including potentially non-transmission options in its grid upgrade plans. While the Electricity Commission will ultimately play an important function in the management of the energy industry, given that the details of these grid investment tests are still to be formulated, it also adds potential for delay and overlap with the RMA processes, particularly in the level of scrutiny over alternative sites routes and methods. Transpower will have to work closely with the Commission in the formulation of the grid investment tests to ensure these potential conflicts are identified and managed.

### CONCLUSION

In order to ensure security of electricity supply, New Zealand's National Grid infrastructure is in need of significant upgrade. First up is a new transmission line between Whakamaru and Otahuhu. As a major investment in infrastructure, its costs and size makes it the largest new infrastructure project contemplated in New Zealand for a long time, and poses significant challenges for Transpower in a complex environmental regulatory environment.

Communicating the need for investment will be vital, as will the coordination of the processes associated with investigations and route selection, consultation, decision making and appeal. It will be essential for Transpower and local government to foster a climate of effective communication, understanding, and co-operation. RMA amendments would also be more than helpful, particularly in the form of a single, workable and robust process for the assessment of relevant issues, a more effective mechanism for importing central government guidance on matters of national importance into the decision making process, and focussed appeal rights.

The need to consider the Government's sustainable development objectives and satisfying the grid investment tests imposed by the Electricity Commission add additional challenges.

Whether or not all these challenges can be met and the project implemented will depend upon the ability of all the players to understand the complex regulatory environment that has been created and to work effectively to upgrade the grid in a manner that is efficient, cost effective, and produces environmentally sound outcomes.

### REFERENCES

"Sustainable Development for New Zealand, Programme of Action". Department of Prime Minister and Cabinet, January 2003.