

21 November 2007

Hon David Parker
Minister of Energy
Parliament Buildings
WELLINGTON

Dear Minister

Review of Reserve Energy Policy – Electricity Commission Recommendations

Background

The Government Policy Statement dated October 2006 (GPS) requires the Electricity Commission (Commission) to review the efficiency and effectiveness of the reserve energy regime and to make recommendations to you as Minister of Energy. As part of this review the GPS also required the Commission to engage an independent party to undertake an initial review and consult with stakeholders.

The purpose of this letter is to inform you about the process undertaken by the Commission to meet the requirements of the GPS and to make our recommendations about how security of electricity supply could be more efficiently and effectively managed.

The Commission's analysis and recommendations are detailed in the attachment to this letter. They include some suggestions about how the GPS could be amended to implement the recommendations. This letter summarises the process followed, the key conclusions and our recommendations.

Independent Review

Castalia Strategic Consultants was engaged in November 2006 to undertake the initial review of the Reserve Energy Policy. The process followed by Castalia included:

- Releasing an Issues Paper in December 2006 setting out the high-level issues and inviting stakeholder submissions;
- Conducting interviews with 22 stakeholders in January and February 2007 to facilitate information gathering;
- Releasing a Consultation Paper in March 2007 summarising the current reserve energy policy and suggesting a revised approach;

- Receiving written submissions from stakeholders and holding a public hearing in April 2007;
- Supplying a final report and recommendations to the Commission in May 2007.

The process was well managed and allowed several opportunities for stakeholders to provide input. However, several submitters noted that, at the same time as they were preparing submissions on the Reserve Energy Review, they were preparing submissions on the draft NZES. They felt that they were not able to provide the level of input to the review that they would have preferred and accordingly requested that the Commission consult further with stakeholders before finalising a recommendation to the Minister of Energy.

Electricity Commission Process

The Commission has considered the Castalia recommendations very carefully and taken some time to reach its final conclusions on the Review. The process has included:

- Considering the Castalia Report at its meetings in June, July, August and October 2007;
- Undertaking further detailed analysis during July and August to confirm one of the key recommendations (the Castalia Report included a recommendation that the Commission undertake this further detailed analysis before finalising its recommendations);
- Releasing a Consultation Paper in September 2007 summarising the further detailed analysis undertaken by the Commission and outlining its draft recommendations;
- Considering submissions and finalising its recommendations at a meeting in October 2007.

The Commission is conscious that these recommendations on the reserve energy policy are being made somewhat later than originally contemplated in the GPS and appreciates the additional time the Minister has provided in order to align the work with the NZES, to allow the additional detailed analysis recommended by Castalia and to provide for consultation on the analysis undertaken. This additional time has allowed the Commission to reach a robust conclusion and set of recommendations for the future of security of supply policy.

Recommendations

The Commission makes the following recommendations:

- ***Security of Supply Policy*** – The fundamental elements of the policy should be retained and the Commission should continue to monitor the security of supply

situation and, if needed, procure and dispatch reserve energy to ensure the security of supply standard is met.

- **Security Standard** – The “1-in-60 dry year” standard should be replaced by a “winter energy margin” of 17 percent for New Zealand (and 30 percent for the South Island). If forward projections lead the Commission to conclude that the “winter energy margin” will fall below the standard it should trigger the purchase of additional reserve energy.
- **Short-Term Security of Supply Monitoring** – The concept of a “Minzone” to monitor security of supply risks should be developed into a series of hydro storage guidelines reflecting different levels of security of supply risk. The series of guidelines should help to reduce popular perceptions that shortages are imminent if hydro storage levels approach the traditional “1-in-60” Minzone¹
- **Long-Term Security of Supply Monitoring** – The Commission should closely monitor new generation build and forecast security of supply outcomes over a five year timeframe in order to establish whether there is any potential for a systematic failure to provide adequate new capacity.
- **Dispatch of Reserve Energy** – The current arrangements for dispatch of reserve energy (currently only applying to the Whirinaki reserve station) should be retained pending the current review of the energy-only design of the wholesale electricity market.
- **Reserve Energy Levy** – The current levy arrangements should be retained because there are no alternative arrangements that that would produce a fairer or more efficient outcome.
- **Information on Security of Supply** – The Commission should undertake further work to improve market participant and public understanding of the security of supply policy.
- **Unexpected Supply Contingencies** – The Commission should further investigate short-term reserve energy options to cover possible unexpected security of supply contingencies. These options should include the possibility of re-locatable containerised diesel-fired generators.
- **Amendments to the GPS** – The GPS should be amended to focus on a security standard expressed in energy margin terms, generally remove operational detail², and incorporate the Commission’s recommendations.

¹ The traditional Minzone indicates the level of hydro storage required at any point in time to avoid shortages if a repeat of the worst historical inflows occurs from that point on. Because there are now 75 years of inflow records the traditional Minzone is now effectively “1-in-75”

² The operational detail should be incorporated in the Commission’s published security of supply policy

The analysis undertaken by the Commission suggests that the proposed New Zealand "winter energy margin" of 17 percent will continue to provide a similar level of security as the existing "1-in-60 dry year" standard. However, the Commission considers that it is easier to calculate, easier to understand, easier to communicate, and will provide a clearer trigger for the purchase of reserve energy.

The recommendations are made against a background of the Commission finding that there is no evidence of any failure by the market to build new generation capacity in a timely manner to maintain security of supply and it is unlikely that the Commission will be required to acquire additional reserve energy. The Commission proposes to closely monitor new generation build and security of supply projections. If it reaches a different conclusion in the future and identifies the potential for systematic failure of the market to deliver, it will consider whether any different policy recommendations are warranted.

Unexpected Supply Contingencies

The finding that it is unlikely that the Commission will be required to acquire additional reserve generation or reserve demand for energy supply security suggests that there is little benefit in developing potentially complex reserve energy contracts and tendering processes or in acquiring pre-consented sites for reserve generation.

The Commission considers that the most likely eventuality requiring emergency capacity would be in response to an unexpected supply contingency such as a major extended power station or transmission line outage. Because such outages are unpredictable and the required location of any emergency capacity is similarly unpredictable, the most appropriate form of emergency capacity could be short-term contracts for demand response and/or re-locatable containerised diesel-fired generators.

The Commission therefore proposes to undertake further work on options and to develop contingency plans for an emergency response of this nature and intends to report back to you with progress on this work by June 2008.

Peak Capacity Adequacy

The Castalia Report and the Commission's review of the reserve energy policy have focussed on a security standard for energy capacity adequacy. The recommended "energy margin" represents an ability to supply electricity over time (while allowing for dry periods). Many international standards focus on peak capacity adequacy in order to assess the ability to supply peak electricity demand at a point in time. They focus on peak capacity adequacy because the nature of their supply systems determines that they are "peak constrained" rather than "energy constrained".

Historically, New Zealand has not had a peak capacity problem because of the dominance of hydro power stations with associated hydro storage. In other words

New Zealand has historically been "energy constrained". This situation is changing and is likely to continue to change as more intermittent generating plant, such as wind turbines, is added to the system.

Accordingly, the Commission has commenced monitoring peak capacity adequacy and has facilitated an industry working group to examine how winter peak electricity demands might be managed in the event of unexpected contingencies. However, there is no developed standard for peak capacity adequacy and this issue was considered outside the scope of this review of reserve energy policy.

The Commission has recognised the importance of developing a standard and has recently commissioned some work to investigate a standard for peak capacity margin. I would expect the Commission to be able to report back to you with clear recommendations by August 2008.

The wider review of the current market design also includes a consideration of how best to maintain incentives for generators (and the demand-side) to invest in short-term, flexible, back-up capacity (and demand reserve capacity).

Conclusion

If government accepts the Commission's recommendations to amend the reserve energy policy there are a number of consequential changes to the GPS that will be required. Commission staff will be made available to assist with this process as required.

In the meantime I would be happy to discuss the Commission's recommendations with you at your convenience.

Yours faithfully

A handwritten signature in black ink, appearing to read 'David Caygill', with a stylized flourish at the end.

David Caygill
Chair