



## **ELECTRICITY COMMISSION**

### **Consultation Paper**

# **Recommended approach and rule changes for initial Statement of Opportunities and interim Grid Reliability Standards**

**24 September 2004**

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## 1. BACKGROUND AND PURPOSE

1. The principal objective of the Electricity Commission (“Commission”) is to ensure that electricity is produced and delivered to all classes of consumers in an efficient, fair, reliable, and environmentally sustainable manner, and to promote and facilitate the efficient use of electricity.<sup>1</sup>
2. Electricity demand in some regions of the country is approaching the capacity of the transmission grid to connect that demand with generation. Significant investment is likely to be needed soon in either new transmission capacity, or in transmission alternatives.
3. Part F of the Electricity Governance Rules 2003 (“EGRs”) provides a process framework that culminates in the Commission either approving or not approving investment plans proposed by Transpower in a **Grid Upgrade Plan**.
4. The Part F framework provides for the Commission to publish and invite submissions on a **Statement of Opportunities**. The purpose of the **Statement of Opportunities** is to “enable identification of potential opportunities for efficient management of the grid including investment in upgrades and investment in transmission alternatives<sup>2</sup>”
5. There are three components to the **Statement of Opportunities**:
  - (i) the **grid reliability standards** – these set out a primary reliability standard that enables the reliability of the grid to be maintained during credible contingency events and secondary reliability standards for different regions that may differ from the primary standard<sup>3</sup>;
  - (ii) the **grid planning assumptions** – these provide a credible set of future scenarios and planning assumptions as an input to the power system analysis i.e. generation scenarios and demand forecasts; and
  - (iii) the power systems analysis – which is an analysis of the performance of the power system against the **grid planning assumptions** and **grid reliability standards**.
6. Following the **Statement of Opportunities**, Transpower will propose investments in a **Grid Upgrade Plan**. Once this has been done, the Commission reviews and approves investments that are justified on the basis of a **grid investment test** and the **grid reliability standards**. The **grid investment test** is essentially an economic test that allows grid

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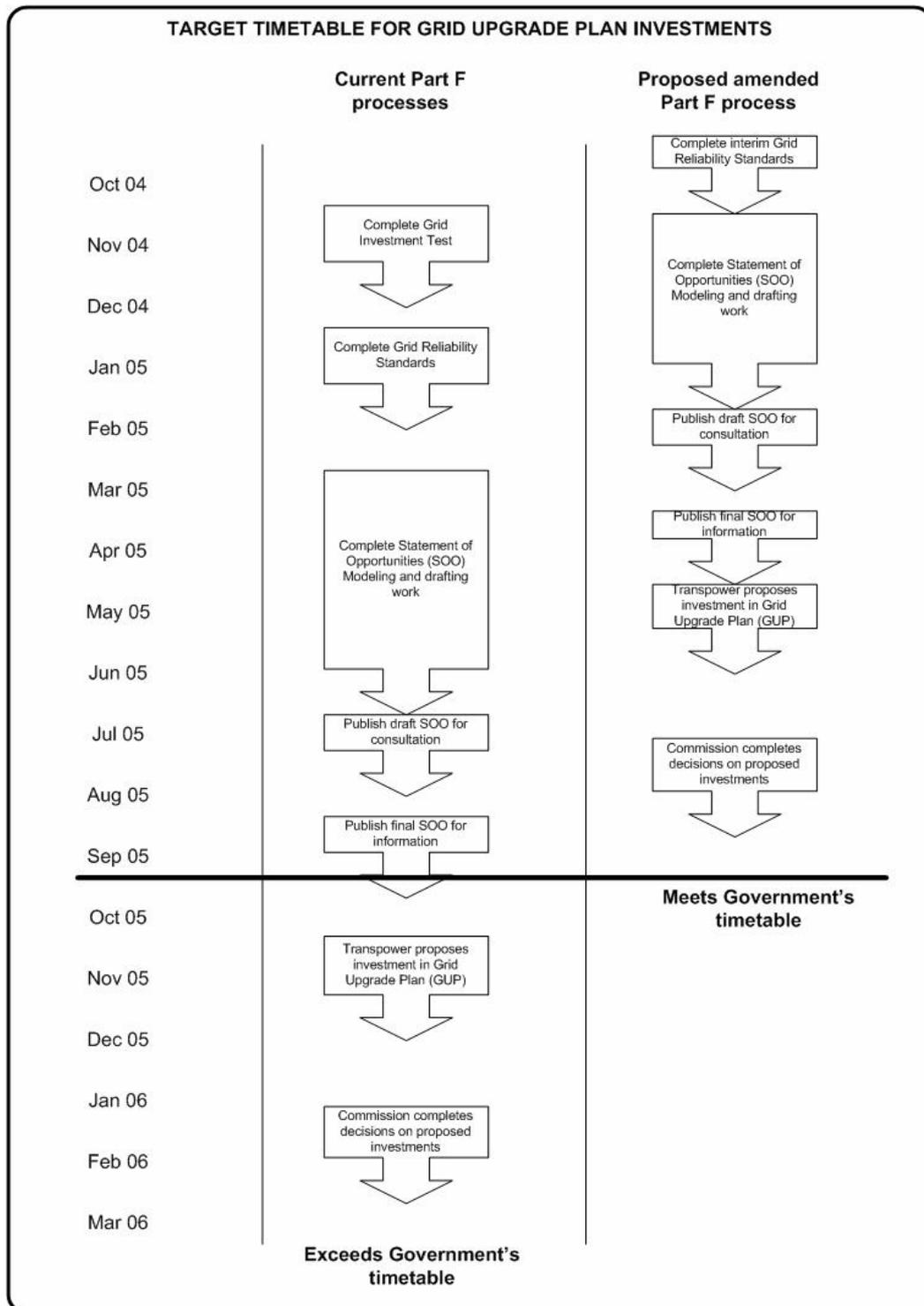
<sup>1</sup> The principal objective of the Commission is amended under the Electricity and Gas Industries Bill, which will amend the Electricity Act 1992.

<sup>2</sup> Rule 9.1.2 of Section III of Part F

<sup>3</sup> Rule 4.4.1 of Section III of Part F

investment proposals to be approved when they maximise net benefits to parties who produce, distribute and consume electricity.

7. Large economic costs could be incurred by the New Zealand economy if a decision about transmission investment or alternatives is not made in a timely manner. Through the Government Policy Statement, the Government will set a tight target timetable, which would require the Commission to grant initial approval, or not approve, the investments proposed in the **Grid Upgrade Plan** by September 2005. The Commission agrees that this timeframe is appropriate.



8. As the diagram above demonstrates, the existing process framework in Part F will not realistically allow the desired timetable to be delivered (Column A). Therefore, for the first, or **initial Statement of Opportunities**, some small changes are proposed to enable the timeframes to be met (Column B).
9. When working backwards from the target timeframe, if a decision about the investment in the **Grid Upgrade Plan** is to be made by September 2005, the **Statement of Opportunities** needs to be finalised by the beginning of May 2005. This means that a draft **Statement of Opportunities** needs to be published by the beginning of March 2005.
10. This would allow the information in the **Statement of Opportunities** to be available to all participants early enough for them to have an opportunity to develop options for transmission alternatives before Transpower proposes the **Grid Upgrade Plan**, whilst still meeting the Government's timetable.
11. The purpose of this paper is to propose minor changes to the EGRs, simply to provide for a special process for the first, or **initial Statement of Opportunities** only.
12. The Transmission Advisory Group was advised of the above situation relating to the proposed rule change. On the basis of this advice, the majority of the group endorsed the need for the Commission to adopt a compressed approach for the **initial Statement of Opportunities**. The group acknowledged the importance of providing a **Statement of Opportunities** sufficiently in advance of the first **Grid Upgrade Plan** even if some aspects were simplified. One member expressed a different view, believing that the basis of the inputs proposed, specifically the nature of the interim grid reliability standards, would compromise the analysis and content of the Initial SOO to the extent that it would not fulfil the purpose intended.

## 2. PROPOSAL<sup>4</sup>

13. In order to achieve the target timetable for publication, the Commission proposes to make a minor change to the content of the **initial Statement of Opportunities**.
14. The Commission proposes that the **initial Statement of Opportunities** will use a set of simplified, or **interim grid reliability standards**, based largely on the n-1 transmission asset standards currently used by Transpower.

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<sup>4</sup> Note that this is a statement of proposal under s 172F(2) of the Electricity and Gas Industries Bill, prepared for the purpose of consultation.

15. The **interim grid reliability standards** would contain substantially the same information as that required for the **grid reliability standards** developed under rule 4 of Section III of Part F, but that the interim standards will not include the level of supporting information required under rule 4.4.1.3 of Section III of Part F. This would enable the work on the **initial Statement of Opportunities** to be started some four months earlier, as shown in Column B, above.
16. **Key Point: Interim grid reliability standards** will be used only for the purposes of the **initial Statement of Opportunities**. The development of the full **grid reliability standards** under the existing Part F will continue to the existing timetable, and will be completed in time to be used when assessing investments in the **Grid Upgrade Plan**.
17. The **interim grid reliability standards** used for the **initial Statement of Opportunities** will be different to those used in applying the **grid investment test** to the **Grid Upgrade Plan**. This is not problematic because the transmission assets represented in the **Statement of Opportunities** are only indicative and are not approved investments.
18. In addition to the changes required for the preparation of the **initial Statement of Opportunities**, some minor changes to cross references and rule headings in Part A and Part F are also recommended.
19. Details of the proposed rule changes can be found in Appendix One.

### 3. OTHER OPTIONS

20. The Electricity and Gas Industries Bill ("Bill") will amend the Electricity Act 1992 ("Act").<sup>5</sup> Under the proposed s 172F(1) of the Bill, the Commission must seek to identify all reasonably practicable options for the achieving of the objective of the proposed rule. It must then assess those options in accordance with that section. The Commission has identified two options: maintain the status quo (ie no changes to the EGRs) and a modified part F for an **initial Statement of Opportunities**. Only the second option meets the objective of the proposed rule change, which is to meet the target timescales in the Government Policy Statement while giving due consideration to the processes envisaged in the EGRs. Accordingly, the Commission considers that there are no other reasonably practicable options for the achieving of the objective of the proposed rule.
21. Appendix Two sets out the costs and benefits assessment of the status quo compared with the proposed rule change.
22. Under the proposed new s172F (1) of the Bill, the Commission is required to ensure that the objective of the rule is unlikely to be satisfactorily

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<sup>5</sup> This paper has been prepared to comply with the requirements of the Bill in anticipation that the Bill will pass into law after the release of this paper but before the proposed rule change is completed.

achieved by any reasonably practicable means other than the making of the rule (for example by education, information or voluntary compliance). The Commission considers that the proposed rule change is the only way to satisfactorily achieve the objective of the proposed rule.

#### **4. ANALYSIS AGAINST ELECTRICITY COMMISSION OBJECTIVES AND OUTCOMES**

23. Under the proposed new s172X of the Act, the Commission is required, in formulating recommendations for rules, to give effect to its principal objectives and specific outcomes, and its Government Policy Statement objectives and outcomes.
24. Appendix Three contains details of the consideration of the proposal against the Commission's objectives and outcomes.

#### **5. CONSULTATION**

25. The Commission invites submissions on the proposal in this paper, to be delivered to the Commission by **5pm 29 October 2004**.
26. The Commission is looking for specific feedback in answer to the following questions:
  - (i) Do stakeholders consider there are any additional material benefits or detriments in allowing for the development of ***interim grid reliability standards*** for use in an ***initial Statement of Opportunities***?
  - (ii) Do stakeholders consider there are any issues or concerns with the drafting of the changes as proposed by in this paper?
27. Please note that because of the integrated nature of the processes under Part F, submissions received after this date may not be able to be considered by the Commission.
28. The Commission's preference is to receive submissions in electronic form (Microsoft Word format and pdf) and to receive one hard copy of the electronic version.
29. The electronic version should be emailed with the phrase "Submission on SOO rule change" in the subject header to: [info@electricitycommission.govt.nz](mailto:info@electricitycommission.govt.nz), and the hard copy of the submission should be posted to the address below.

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30. Your submission may be made publicly available on the Commission's website. Submitters should indicate any documents attached in support of the submission in a covering letter, and indicate clearly any confidential information provided to the Commission.
31. All information provided to the Commission is subject to the Official Information Act 1982.

## APPENDIX ONE – DETAILED RULE DRAFTING

32. The following section outlines the proposed rule changes to the EGRs.

33. Amend Rule 4.2 of Section III of Part F as follows:

### 4.2 Purpose of grid reliability standards

4.2.1 The purpose of the **grid reliability standards** is to provide a basis for:

4.2.1.1 the **Board** to **publish statements of opportunities** (other than the **initial Statement of Opportunities**);

4.2.1.2 **Transpower** to prepare **Grid Upgrade Plans**;

4.2.1.3 other parties to appraise opportunities for transmission investments and **transmission alternatives**.

34. Amend Rule 9.1 of Section III of Part F as follows:

### 9. Statements of opportunities

#### 9.1 Purpose and content of statements of opportunities

9.1.1 The **statements of opportunities** are to:

9.1.1.1 set out the **grid reliability standards**, or, in the case of the **initial Statement of Opportunities**, the **interim grid reliability standards** prepared by the Board under rule 9.1.3;

9.1.1.2 set out the **grid planning assumptions**; and

9.1.1.3 include an analysis of the performance of the power system against the **grid planning assumptions** and **grid reliability standards**.

9.1.2 The purpose of the **statements of opportunities** is to enable identification of potential opportunities for efficient management of the **grid** including investment in upgrades and investment in **transmission alternatives**.

9.1.3 The **interim grid reliability standards** must contain:

9.1.3.1 an interim primary reliability standard that enables the reliability of the **grid** to be maintained during credible contingency events; and

9.1.3.2 other interim reliability standards that may differ from the interim primary reliability standard to reflect differing circumstances in different regions supplied by the **grid**.

35. Amend Rule 9.7 of Section III of Part F as follows:

**9.7 Board to consider submissions and ~~make recommendations to Minister~~ finalise and publish Statement of Opportunities**

Within 20 **business days** of the **submission expiry date** (or such longer period as the **Minister** may allow), the **Board** must complete its consideration of all submissions it receives on a draft **Statement of Opportunities** and finalise and **publish** the **Statement of Opportunities**.

36. Amend Rule 17.1 of Section III of Part F as follows:

**17. Consequence of approval of grid investment or expenditure**

**17.1 Recovery of investment costs by Transpower**

Approved costs incurred by **Transpower** in relation to an approved economic or reliability investment, or interim **grid** expenditure approved under rule 16, (irrespective of when they were incurred) are recoverable by **Transpower** from **designated transmission customers** on the basis of the **transmission pricing methodology** and are to be paid by **designated transmission customers** accordingly.

37. Amend Part A defined terms as follows:

“**grid reliability standards**” means standards for reliability of the grid developed in accordance with rule ~~34~~ of section III of part F, including variations;

“**Statement of Opportunities**” means a **Statement of Opportunities** for transmission and **transmission alternatives** under section ~~IV~~III of part F;

38. Insert new defined term into Part A after “initial estimate” and before “injection” as follows:

“**initial Statement of Opportunities**” means the first **Statement of Opportunities** prepared and **published** by the Board under section III of part F;

39. Insert new defined terms into Part A after “interim dispensation” and before “intermittent generating station” as follows:

“**interim grid reliability standards**” means interim standards for reliability of the **grid** prepared by the Board for the purpose of the **initial Statement of Opportunities** under rule 9.1, section III of part F;

## APPENDIX TWO – ASSESSMENT OF COSTS AND BENEFITS

### OBJECTIVE

40. The Commission has considered two options for meeting the process envisaged in Part F while ensuring that it is carried out in a fair, effective and timely manner:
- (1) complete the production of the **Statement of Opportunities** while maintaining the linkages and serial nature of the Part F processes (i.e. the status quo); or
  - (2) proceed with a rule change to allow for a compressed process to occur with the introduction of *interim* **grid reliability standards** and an *initial* **Statement of Opportunities**.

### COSTS AND BENEFITS OF OPTIONS AVAILABLE

#### **OPTION ONE – “STATUS QUO”**

41. In this option, there are no changes to the EGRs.
42. Based on the dependencies in the EGRs for the **grid investment test**, the **grid reliability standards** and the **grid planning assumptions**, and the amount of modelling and drafting work required to complete the power systems analysis, this would result in a timetable where the draft **Statement of Opportunities** is published for consultation in about August 2005.
43. The consequences of this are:
- (i) The industry may not have sufficient time to use the **Statement of Opportunities** to analyse options for transmission alternatives;
  - (ii) The delayed **Grid Upgrade Plan** would be unlikely to be completed until about March 2006, resulting in delays to investments and potential for a continued reduction in grid reliability (with the flow on costs to industry and consumers).

#### *Potential Costs*

44. The potential costs of this are:
- (i) Regulatory uncertainty prior to the publication of investment decisions, and
  - (ii) Increased costs incurred by the industry as a whole as a result of possible reductions in grid reliability in the absence of necessary investment.

- (iii) Reduced time and opportunity for alternatives to be considered.

#### *Quantification*

- 45. The Commission has undertaken initial analysis to attempt to quantify the potential impact on the industry, referred to in (ii) above, of a delay in the **Grid Upgrade Plan**.

- (i) Value of Lost Load

An indication of the potential costs can be gauged from assessing the value of lost load that would be incurred as demand increases in a region, given a fixed maximum capacity.

If, as is argued by the grid asset owner, timing for transmission upgrades to the lines servicing the Auckland/North Isthmus and northern half of the South Island is very tight, an assumption can be made that if the Part F development processes go ahead as planned, the upgrades will be built "just in time" – ie non-supply will begin to occur in the following year if the upgrades are not done.

A delay in transmission build to the following year (or at least into the next winter) would expose the transmission system to growth in demand of around 2.5% percent in both the Auckland/North Isthmus and northern half of the South Island (as an indicative figure).

The resultant cost in terms of lost load is estimated at between \$22.9 million and \$35.8 million for a delay of a year, assuming a cost of nonsupply of \$20,000 per MWh.

- (ii) Delay in New Generation

Uncertainty resulting from delays may also result in new generation assets being postponed. This may result in more expensive generation being used than would otherwise be the case if new generation were built earlier.

Indicative figures of the potential size of the costs involved are that a 100MW base load plant has the potential to displace around \$22 million in generation costs per annum from a plant operating with an estimated marginal cost of \$31.50 per Mwh.

- (iii) Total Cost of a Six Month Delay in **Grid Upgrade Plan**

The result of this initial analysis undertaken by the Commission suggests that a *six month delay* in the **Grid Upgrade Plan** (if the investments in the Plan are deemed to be required) from September 2005 to March 2006, may result in a cost impact to the industry in the region of \$22.5M to \$29M (i.e. half the annual figures referred to above).

*Potential Benefits*

46. The Commission finds it difficult to identify any net benefits in this approach.

**OPTION TWO – “MODIFIED PART F FOR INITIAL STATEMENT OF OPPORTUNITIES”**

47. In this option:

- (i) a set of simpler or **interim grid reliability standards** are used; and
- (ii) a minor amendment to the EGRs is made providing for special processes for the **initial Statement of Opportunities**. The changes would allow for **interim grid reliability standards** to be developed and used in the **initial Statement of Opportunities**.

*Potential Costs*

- (i) The abbreviated process used to produce the **Statement of Opportunities** in this way may put pressure on short term decision making both by the Commission, and by the industry.

However, in reality, this impact is negligible in the long run because both the **grid investment test** and the **grid reliability standards** will be used to assess investments as part of the **Grid Upgrade Plan**. This will filter out any uneconomic investments, or any investments which are not required in order to maintain a minimum standard of grid reliability.

- (ii) Note that there is no material impact on the industry since it is the Commission that is required to publish the **Statement of Opportunities** and this approach will not make a material difference to the actual content of the **Statement of Opportunities**.

*Potential Benefits*

- (i) Allows the Commission to achieve the target timeframe and avoid the possible costs of \$22.5M to \$29M which may be incurred by the industry as a result of delaying the decision on the **Grid Upgrade Plan**.
- (ii) Creates more time to consider alternatives which may enable net savings to consumers.

*Weighing Costs and Benefits*

48. Any additional costs incurred as a result of preparing an **initial Statement of Opportunities** would be offset by the benefits of facilitating investment in a more timely fashion.

### APPENDIX THREE – Consideration against Commission’s objectives

Objectives	Response
<b>Act Objectives:</b> Under s172N, as amended by the Bill, the principal objectives of the Commission are:	
<ul style="list-style-type: none"> <li>to ensure that electricity is produced and delivered to all classes of consumers in an efficient, fair, reliable, and environmentally sustainable manner; and</li> <li>to promote and facilitate the efficient use of electricity</li> </ul>	<p>The production of the <b>Statement of Opportunities</b> is an important step in the process for the <b>Grid Upgrade Plan</b>. Any delays in the <b>Grid Upgrade Plan</b> have an impact on ensuring electricity is delivered in a reliable manner.</p> <p>In addition, any delays in appropriate investment incur the flow on costs which tend to be associated with reductions in grid reliability.</p>
<b>GPS Objectives</b> Under the GPS, the Commission’s objectives and outcomes are as follows:	
<ul style="list-style-type: none"> <li>energy and other resources are used efficiently</li> </ul>	
<ul style="list-style-type: none"> <li>risks (including price risks) relating to security of supply are properly and efficiently managed</li> </ul>	
<ul style="list-style-type: none"> <li>barriers to competition in electricity are minimised for the long-term benefit of end-users</li> </ul>	<p>The production of the <b>Statement of Opportunities</b> sufficiently in advance of any consultation on the <b>Grid Upgrade Plan</b> allows proponents of transmission alternatives the maximum possible time to develop potential proposals.</p>
<ul style="list-style-type: none"> <li>incentives for investment in generation, transmission, lines, energy efficiency, and demand-side management are maintained or enhanced and do not discriminate between public and private</li> </ul>	<p>The proposal, and subsequent consideration by the Board, of the <b>Grid Upgrade Plan</b> has the potential to include a consideration of feasible transmission alternatives, such as local/distributed generation and demand side initiatives. (Rules 13.3.2.2, 13.3.3.3, 13.3.3.4, and 14.3.2.2 of Section III of Part F)</p>

Objectives	Response
investment	The production of the <b>Statement of Opportunities</b> will provide the relevant information to assist proponents of transmission alternatives to develop potential proposals.
<ul style="list-style-type: none"> <li>the full costs of producing and transporting each additional unit of electricity are signalled</li> </ul>	
<ul style="list-style-type: none"> <li>delivered electricity costs and prices are subject to sustained downward pressure;</li> </ul>	
<ul style="list-style-type: none"> <li>the electricity sector contributes to achieving the Government’s climate change objectives by minimising unnecessary hydro spill, efficiently managing transmission and distribution losses and constraints, promoting demand-side management and energy efficiency, and removing barriers to investment in new generation technologies, renewables and distributed generation.</li> </ul>	<p>The proposal, and subsequent consideration by the Board, of the <b>Grid Upgrade Plan</b> has the potential to include a consideration of feasible transmission alternatives, such as local/distributed generation and demand side initiatives.</p> <p>The production of the <b>Statement of Opportunities</b> will provide the relevant information to assist proponents of transmission alternatives to develop potential proposals.</p>