

Peak demand information consultation paper

Prepared by the Electricity Commission
16 March 2007

Glossary of abbreviations and terms

Act	Electricity Act 1992
Benchmark agreement principles	Principles for benchmark agreements as set out in rule 4.2 of section II of part F of the Electricity Governance Rules 2003
Commission	Electricity Commission. The Commission is a Crown entity set up under the Electricity Act to oversee New Zealand's electricity industry and markets. It is governed by an executive chair and four other members
counterparties	designated transmission customers – categories of participants required to enter into transmission agreements with Transpower
GPS	Government Policy Statement (October 2006) on Electricity Governance
Minister	Minister of Energy
OIA	Official Information Act 1982
Pricing principles	Pricing principles as set out in rule 2 of section IV of part F of the Electricity Governance Rules
Proposed TPM	Transmission Pricing Methodology as proposed by Transpower on 22 June 2006
RCPD	Regional coincident peak demand
Regulations	Electricity Governance Regulations 2003
Rules	Electricity Governance Rules 2003
SCADA	Transpower's Supervisory Control and Data Acquisition system
TPM	Transmission Pricing Methodology
TPM consultation paper	Electricity Commission's consultation paper about Transpower's 22 June 2006 Transmission Pricing Methodology
Transpower	Transpower New Zealand Limited

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1. Introduction

1.1 Benchmark transmission agreements

1.1.1 The Electricity Commission (**Commission**) is required, under section II of part F of the Electricity Governance Rules 2003 (**Rules**)¹, to develop benchmark transmission agreements for the provision of transmission services.

1.1.2 The Commission is currently seeking drafting comments on the proposals arising out of the requirements identified above. Details can be found on the Commission's website as follows:

<http://www.electricitycommission.govt.nz/consultation/draftingcomments/view>

1.1.3 Following the consideration of drafting comments, the Commission will make a set of recommendations to the Minister of Energy (**Minister**). These recommendations will cover the benchmark agreement, interconnection rules, outage protocol rules, rules for the making of the connection code and other related changes to the Rules.

1.1.4 Included in the current proposals are service measures that Transpower New Zealand Limited (**Transpower**) will be expected to meet as a party to transmission agreements. These service measures are either enforceable or unenforceable, and may have corresponding service levels or may be for information only.

1.2 Transmission Pricing Methodology

1.2.1 Section IV of part F of the Rules requires the Commission to establish guidelines and a process for Transpower to develop a Transmission Pricing Methodology (**TPM**). The Commission is then required to check that the TPM developed by Transpower contains adequate information and conforms with the established guidelines, before publishing a draft TPM for consultation with participants.

1.2.2 The Commission has recently received submissions and cross-submissions on the TPM proposed by Transpower on 22 June 2006 (**Proposed TPM**)². Some submissions suggested that the Commission should introduce a requirement on Transpower to provide a peak demand signal if the Commission was to proceed

¹ All references to the Rules, unless otherwise stated, are to rules in part F of the Rules.

² The Proposed TPM, the Commission's "Transmission Pricing Methodology consultation paper" and Submissions and Cross-Submissions on these paper are available at:
<http://www.electricitycommission.govt.nz/opdev/transmis/tpm>

with the proposed regional coincident peak demand allocation method as set out in the Proposed TPM.

1.3 Purpose of this paper

- 1.3.1 The purpose of this paper is to set out the Commission's proposals for an 'information only' reporting service to be added to the proposed benchmark agreement. It is proposed that this service measure will require Transpower to provide counterparties with peak demand information region and should be based on the information Transpower currently collects through its Supervisory Control and Data Acquisition (**SCADA**) system.
- 1.3.2 After it receives and considers submissions on this paper, the Commission will consider whether to include the proposed peak demand service measure in the proposed benchmark agreement that the Commission will recommend to the Minister.
- 1.3.3 The Commission must comply with the conditions and processes that apply under section 172E and section 172F of the Electricity Act 1992 (**Act**) to the making of Electricity Governance Regulations 2003 (**Regulations**).
- 1.3.4 This paper satisfies the requirements of sections 172E and 172F of the Act for an assessment of the Commission's proposal against the criteria established in section 172E, and for the Commission to consult on that assessment.

1.4 Structure of this paper

- 1.4.1 The structure of this paper is as follows.
- (a) Section 2 provides interested parties with background information on the relevant elements of the Proposed TPM and benchmark agreement;
 - (b) Section 3 sets out the Commission's statement of proposal, and undertakes the necessary 172F analysis;
 - (c) Section 4 sets out the questions for submitters; and
 - (d) Section 5 sets out the format for submissions.

1.5 Submissions

- 1.5.1 The Commission invites submissions on this paper, including responses to the specific questions in the Section 4. Please provide reasoning and, where appropriate, analysis, to support your views.

- 1.5.2 Rule 4.4.2 of section II requires that the Commission must allow at least 15 business days for consultation on the benchmark agreement. As the peak demand information measure is a new proposal for the benchmark agreement, the Commission considers it must comply with rule 4.4.2. The Commission considers that, as this proposal is not overly complex and the timeline for recommendation of the benchmark agreement to the Minister is tight, 15 business days is an appropriate consultation period for this proposal.
- 1.5.3 The Commission should receive written submissions on this paper no later than **5.00pm on 10 April 2007**. Please note that submissions received after this deadline may not be considered.
- 1.5.4 The Commission's preference is to receive submissions in electronic form (Microsoft Word). It is not necessary for parties submitting to send the Commission hard copies of their submissions, unless it is not possible to send electronic copies. Submissions in electronic form should be emailed with "Peak demand information" in the subject header. Submissions should be sent to:
- Email: info@electricitycommission.govt.nz
Jenny Walton
Electricity Commission
Level 7, ASB Bank Tower
2 Hunter Street
PO Box 10041, WELLINGTON
Tel: 0-4-460 8860
Fax: 0-4-460 8879
- 1.5.5 The Commission will acknowledge receipt of all submissions by email. Please contact Jenny Walton at the Commission if you do not receive electronic acknowledgement of your submission within two business days.
- 1.5.6 In order to foster an informed and transparent process, the Commission intends to publish all submissions received on its website (www.electricitycommission.govt.nz).
- 1.5.7 Submitters should indicate any documents attached in support of their submission in a covering letter. Any information that is provided to the Commission on a confidential basis should be clearly indicated. Submitters should note that the contents of submissions on this paper provided to the Commission will be among the information the Commission holds which is subject to public release under the Official Information Act 1982 (**OIA**). If the Commission receives a request for the release of information contained in a submission, it will be required to consider the release of the submission, in whole

or in part, in terms of the criteria set out in the OIA. This would be done in consultation with the submitter. The Commission can withhold official information in certain circumstances. The grounds for the Commission withholding official information are set out in the OIA. Any decision by the Commission to withhold information is subject to review by the Ombudsman

- 1.5.8 In order to test all information contained in submissions as fully as possible in a transparent manner, the Commission discourages requests for non-disclosure of submissions, in whole or in part. Notwithstanding this, if it is necessary to include confidential information in a submission, the confidential information should be clearly identified, and preferably contained in an appendix to the submission. Submitters should provide the Commission both confidential and public versions of their submissions, in both electronic and hard copy forms. The responsibility for ensuring that confidential information is not included in a public version of a submission rests entirely with the party making the submission.

2. Background

2.1 Regional coincident peak demand

2.1.1 The Proposed TPM allocates interconnection charges based on a regional coincident peak demand (**RCPD**). Details of the RCPD allocation methodology, including the definition of regions and the number of periods, are set out in the Proposed TPM and the Commission's Transmission Pricing Methodology consultation paper (**TPM consultation paper**).

2.1.2 The RCPD allocation method allocates the interconnection charge according to an offtake customer's contribution to the regional coincident peak. Therefore, the RCPD method incentivises directly connected parties to respond to regional peak demand, particularly within the upper North Island and upper South Island. Parties are strongly incentivised to minimise their contributions to peak load as this will reduce the allocation of interconnection charges they receive.

2.2 TPM submissions and cross-submissions

2.2.1 A number of parties submitted that, given the proposed RCPD allocation methodology, it would be desirable and appropriate to have peak demand information available in real time, and that this information be broken down by region.

2.3 Benchmark agreement reporting requirements

2.3.1 The proposed benchmark agreement, as currently drafted, will establish a number of reporting requirements on Transpower. These reporting requirements will establish a set of information that Transpower is required to provide to designated transmission customers.

2.3.2 The Commission considers that the information requirements on Transpower in the proposed benchmark agreement and information desired in TPM submissions are closely aligned.

2.3.3 The Commission's proposal, as set out below, is to include an additional information-only service measure in the proposed benchmark agreement.

3. Analysis

3.1.1 This section sets out the Commission's statement of the proposal and its assessment of that proposal in accordance with sections 172E and F of the Act.

3.1.2 The Commission has also considered whether the proposal meets the benchmark agreement principles in rule 4.2 of section II of part F, and the pricing principles in rule 2 of section IV of part F. The Commission has also considered the requirements of the Act and the provisions of the GPS.

3.2 Statement of proposal

3.2.1 In the proposed benchmark agreement, the Commission proposes that Transpower be required to provide basic peak demand information.

3.2.2 This peak demand information would need to be available by region and should be based on the information Transpower currently collects through its SCADA system.

3.2.3 The Commission also proposes that Transpower provide only a basic level service that conveys peak demand information. The Commission proposes that the service measure would be for information only and be required to be provided to counterparties. The Commission notes that this information will be valuable to offtake customers, but has not limited the proposed reporting requirement to these parties as there appears to be no need to make such information confidential.

3.2.4 The Commission would include this requirement in clause 37 of the proposed benchmark agreement, if it considers the proposal is still appropriate following consultation. A placeholder has been included in the proposed benchmark agreement published on 16 March 2007 so that interested parties may provide drafting comments.

3.2.5 The Commission proposes the following draft clause for inclusion in 37.2 of the benchmark agreement:

"37.2 Real time signal of demand by region from SCADA

Transpower must, as soon as possible, provide to the Customer information on the Regional Demand (as defined in the Transmission Pricing Methodology) for each Half Hour in each region that the Customer has a Point of Connection, derived from SCADA."

3.3 The Commission objectives

3.3.1 The Commission considers that the sets of objectives that relate to this proposal are:

- (a) the Commission's principal objectives (section 172N(1) a and b) and specific outcomes (section 172N(2) a to g) set out in section **172N of the Act**;
- (b) the **Government Policy Statement on Electricity Governance** October 2006 (**GPS**);
- (c) rule 4.2 of section II – **principles for benchmark agreements**; and
- (d) rule 2 of section IV – **pricing principles**.

3.3.2 However, the Commission considers that there is significant overlap between these objectives and that the extent to which the objectives are relevant to the proposal differs.

3.3.3 The Commission considers that the following objectives are particularly relevant to and affected by the proposal:

- (a) specific outcome (d) – this requires the Commission to maintain incentives for demand side management;
- (b) benchmark agreement principle 4.2.2 – this requires that benchmark agreements “reflect the interest of end use customers”;
- (c) benchmark agreement principle 4.2.3 – this requires that benchmark agreements “reflect the reasonable requirements of designated transmission customers at the grid injection points and grid exit points, and the ability of Transpower to meet those requirements”;
- (d) benchmark agreement principle 4.2.4 – this requires that benchmark agreements reflect the differing needs of different classes of designated transmission customers; and
- (e) pricing principle 2.5 – this requires that the “the overall pricing structure should include a variable element that reflects the marginal costs of supply in order to provide an incentive to minimise network constraints”

3.3.4 While the Act, GPS, rule 4.2 of section II, and rule 2 of section IV all include other principles, the Commission does not consider that these are as relevant to this proposal or it considers that they are captured by one of the relevant objectives set out above.

3.4 Statement of Reasons

3.4.1 The Commission considers that the proposal, while relating to the RCPD allocation methodology in the Proposed TPM, should be included in the benchmark agreement. The proposal requires Transpower to provide all counterparties with a basic level of peak demand information, which will improve the effectiveness of the RCPD allocation methodology.

3.4.2 The Commission considers that the proposal balances the differing requirements of counterparties (ie some parties may not be will to pay for an improved reliability and or accuracy) with the desire to encourage peak demand response. The Commission also considers that the proposal is a cost-effective solution.

3.5 Reasonably practicable alternatives

3.5.1 The Commission considers that there are two reasonable practicable alternatives to the proposal set out above. These are to:

- (a) include no requirement on Transpower to provide peak demand information (**the status quo**); and
- (b) require Transpower to provide a system where the availability and or accuracy of peak demand information is delivered to a higher standard (**additional services alternative**). This alternative may also be enforceable using an appropriate service level.

3.6 Assessment of the proposal

3.6.1 This section discusses the costs and benefits of the proposal and the reasonably practicable alternatives, and the extent to which the relevant objectives would be promoted or achieved.

Cost benefit analysis

3.6.2 The Commission considers that the benefits from improved response to peak demand and flexibility to negotiate for additional services are not able to be practicably or accurately quantified. This is because the Commission cannot predict the increased level of demand response and does not know how many parties would seek additional services.

3.6.3 The Commission considers that it is not practicable to quantify costs set out below as this would require Transpower to design, at a high level, the system for providing the peak demand signal and seek information from third parties.

Additionally, the Commission notes that as there are no corresponding benefits to compare the costs against.

Benefit – improved response to peak demand

- 3.6.4 Relative to the status quo, the proposal and the additional services alternative will enable counterparties to respond more effectively to the peak demand information. This is because the proposal and additional services alternative provide counterparties with information on peak demand, which allows counterparties to effectively manage their exposure to the interconnection charge by reducing their contributions during peak times. This outcome is the aim of the RCPD allocation methodology under the Proposed TPM.
- 3.6.5 The peak demand information would be based on net demand at grid exit points within a region and would also facilitate increased contributions of any generation embedded with load beyond the grid exit point to effectively reduce regional peaks.
- 3.6.6 The additional services alternative will provide counterparties with more reliable and accurate information, and possible avenues to enforce this reliability and accuracy. The Commission considers that the additional response to peak demand from this alternative will not be significant. Parties who would gain greatest benefit from the high service levels can negotiate with Transpower to enhance the proposal. The Commission also has concerns that the costs of this alternative may be relatively high (this is discussed below). If this is the case, counterparties may instead be better off relying on their own estimates if peak demand information is occasionally unavailable.

Benefit – flexibility

- 3.6.7 The status quo allows counterparties the greatest flexibility as each party is able to negotiate with Transpower for the provision of peak demand information in real time.
- 3.6.8 The proposal, while being less flexible than the status quo, provides only a basic level of peak demand information. The Commission considers that this additional flexibility will be insignificant as counterparties have expressed a strong interest in having a peak demand signal. If counterparties want further reliability or accuracy then they have the flexibility to negotiate for additional services with Transpower.
- 3.6.9 The additional services alternative provides counterparties with little flexibility as a requirement in the benchmark agreement would determine the level of service

offered. The cost associated with this service would also be incurred by customers regardless of their desire for the additional services.

Cost – development and operating costs

- 3.6.10 The status quo has no development and operating costs.
- 3.6.11 However, the proposal would provide information that is easily derived. A similar signal is already provided through the internet by the system operator and Transpower has indicated that it would be straight forward to present this as information from the grid owner for counterparties. The Commission considers that the development and operating costs of the proposal are, therefore, small.
- 3.6.12 The additional services alternative is likely to involve the development of a more complex and robust system. While it would be anticipated that Transpower would apply normal practices to validate measurements, SCADA information is required for operational purposes, is not normally duplicated, and not intended for revenue purposes. Transpower has indicated that it is possible to provide higher accuracy transducers and redundant communications links to improve reliability, but that these improvements would require significant investment and the system would be more costly to maintain and operate. The Commission, therefore, considers that the development and operating costs of this alternative are likely to be significantly greater than the proposal and status quo.
- 3.6.13 If counterparties do choose to negotiate for additional services, over the proposed level of services, then those parties will incur the associated cost. The Commission considers that this is efficient.

Cost benefit analysis conclusion

- 3.6.14 The Commission considers that the proposal provides a net benefit when compared against the status quo and additional services alternative.
- 3.6.15 The Commission considers that the proposal improves peak demand response and that it outweighs the lower development and operating costs and increased flexibility of the status quo. The Commission considers that the additional development and maintenance costs of the proposal are not significant. Similarly the Commission considers that benefits from flexibility will be limited.
- 3.6.16 The Commission considers that the proposal will have lower maintenance and operating costs and offers greater flexibility to counterparties than the additional services alternative. The additional services benefit may provide more peak demand response, but the Commission considers this additional response will not be significant.

Assessment against the Commission's objectives

Specific outcome (d) – maintain demand side incentives

- 3.6.17 The Commission considers that the additional services alternative best meets this objective, but demand response from the proposal would not be significantly lower.

Benchmark agreement principle 4.2.2 – reflect interests of end use customers

- 3.6.18 The Commission considers that the proposal efficiently balances the cost of providing a peak demand signal and the strength of the incentive to reduce peak demand, and that this balance provides a least cost solution.

Benchmark agreement principle 4.2.3 – balance between counterparties and Transpower interests

- 3.6.19 The Commission considers that the proposal balances counterparties' and Transpower's interests by requiring Transpower to provide a basic level of peak demand information.
- 3.6.20 Counterparties want enough information to allow them to respond to peak demand, but minimal redundancy in the service providing the information (this redundancy would have an additional cost). The Commission, therefore, considers the proposal reflects counterparties interests.
- 3.6.21 The Commission considers that the proposal does place a significant burden on Transpower to provide the information. Therefore, Transpower's interests are maintained.

Benchmark agreement principle 4.2.4 – reflects different needs of different counterparties

- 3.6.22 The Commission considers that the flexibility of the proposal will allow those parties that value a more reliable and or accurate peak demand signal to negotiate for that service, whereas those that do not want this additional service do not incur the cost of it.

Pricing principle 2.5 – pricing structure should provide incentives to minimise constraints

- 3.6.23 The proposal provides information to counterparties that will assist in the response to the RCPD allocation methodology. The Commission notes that the requirement to provide a more reliable and or accurate system may not significantly change the response to peak demand signals.

3.7 Conclusion

- 3.7.1 The Commission considers that, on the basis of the analysis above, the proposal that Transpower provide a basic peak demand signal is the preferred option.

4. Questions for submitters

4.1.1 While submitters may comment on any aspect of the Commission's proposal, the Commission is interested in submitters' views on the following questions.

Question 1

(a) Do submitters agree that the objectives identified by the Commission are relevant to the proposal? If not, which objective is not relevant to the proposal and does this change the outcome of the analysis?

(b) Do submitters consider that the objective identified by the Commission do not cover all relevant objectives? If not, what objective(s) has been excluded and would its consideration change the outcome of the analysis?

Question 2

Do submitters agree with the reasonably practicable alternatives identified? If not, what additional alternatives should be considered?

Question 3

Do submitters agree with the cost benefit analysis undertaken by the Commission? In not, why is the analysis incorrect?

Question 4

Do submitters agree with the Commission's assessment of the proposal and alternatives against the objectives? In not, why is the assessment incorrect?

Question 5

Do submitters consider that the draft service measure accurately conveys the proposal? In not, how would submitters change the draft service measure?

5. Format for submissions

Question	Response	Comments
1.		
2.		
3.		
4.		