

Transmission Advisory Group

Request for Information (RFI) for Investigation of
the Value of Unserved Energy

Prepared by The Electricity Commission

15 August 2008

Purpose of this paper

1. This paper provides an update on the planned Investigation of the Value of Unserved Energy. The intention of the Electricity Commission (Commission) to undertake the Investigation was discussed with the Transmission Advisory Group (TAG) on 17 May 2008 in reference to the paper: *Review of the Value of Lost Load*, 14 May 2008 (note that the terms 'Review' and 'Lost Load' have been substituted with 'Investigation' and 'Unserved Energy' respectively, to maintain consistency with the Electricity Governance Rules (Rules)).
2. This paper also seeks the views of TAG in relation to a Request for Information (RFI) for the Investigation (attached as Appendix 1).

Background

3. At the TAG meeting on 17 May 2008 Commission staff outlined an intention to review the current values and application of the Value of Lost Load (VoLL) under the existing Rules (TAG paper *Review of the Value of Lost Load*, 14 May 2008 refers)¹.
4. A number of issues were raised with the TAG at the 17 May meeting, and feedback from the meeting (in particular, feedback from TAG regarding the questions in the 14 May 2008 paper) was conveyed to the Electricity Commission Board (Board) on 10 June 2008 during a presentation on the planned project.
5. Following the Board's consideration of the nature and rationale for the planned project (Investigation), the Board:
 - a. **approved** stage one of the project – namely, the preparation of RFI documentation for the purposes of scoping the project and seeking expressions of interest from qualified parties (14 May 2008 TAG paper paragraph 1.5.4 refers); and
 - b. **noted** that the TAG will be asked to consider the work at key points, and that the Board will be advised of progress.

¹ For consistency with the Rules and to avoid potential ambiguity concerning the term VoLL (Australia, for example, uses VoLL for a different purpose than New Zealand's use of VoLL), the planned review is being undertaken as an Investigation into the Value of Unserved Energy.

6. Accordingly, views of the TAG concerning the RFI (Appendix 1) are now sought.
7. Issues discussed in the 17 May TAG meeting and a range of other issues have been covered at a high level within Section 2 of the RFI (“Services sought”), to provide an initial direction to potential tenderers regarding the full scope and objectives of the Investigation.
8. The RFI does not bind the Commission into any specific methodology or process for the Investigation, and is being released during the last week of August 2008.
9. It is expected that the scope of the Investigation will be further refined in light of responses to the RFI and prior to the development and release of the Request for Tender (RFT) documentation.
10. Specific views of the TAG (such as the need, identified in the 17 May TAG meeting, to consider the duration of unexpected interruptions to supply and other survey methodology issues, in the assessment of both direct and indirect costs) will be taken into account during the development of the RFT, and reflected in that documentation.
11. Feedback from TAG on the RFI will also be taken into account during the preparation of draft RFT.
12. The indicative timing for the RFI and the RFT processes are shown in Table 1 and Table 2.

Table 1 Indicative timetable for the RFI and the RFT process for Stage 1

Stages	Date
RFI responses close	September 2008
RFT documents for Stage 1 available from the Commission	September 2008
RFT Stage 1 responses close	October 2008
Stage 1 completed	December 2008

Table 2 Indicative timetable for the RFT process for Stages 2 and 3

Stages	Date
RFT documents Stages 2 and 3 available from the Commission	January 2009
RFT Stage 2 and 3 responses close	January 2009
Stage 2 completed	April 2009
Consultation on Stage 2 completed	May 2009
Stage 3 commences	May 2009

Summary

13. The Commission intends undertaking a contestable tender process for an Investigation into the Value of Unserved Energy, as currently defined and applied under the Electricity Governance Rules.
14. Request for Information documentation for the Investigation has been prepared and is attached as Appendix 1.
15. Further to discussion of the planned Investigation at the 17 May 2008 meeting of the TAG, feedback from the TAG is now sought on the RFI attached.

Attachments

16. The following item is attached to this paper:
 - a. Appendix 1. Request for Information for the Investigation of the Value of Unserved Energy.

Recommendations

It is recommended that the TAG:

- (a) **note** the content of this paper; and
- (b) **provide** their views on the issues raised in the RFI (Appendix 1) and on any additional issues that they consider should be addressed in the Investigation.

Appendix 1 Request for Information for the
Investigation of the Value of Unserved
Energy

Request for Information

Investigation of the Value of Unserved Energy

Prepared by Transmission

7 August 2008

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1. Background and purpose of this Request for Information

1.1 Purpose

1. The purpose of this Request for Information (RFI) is to:
 - a. seek expressions of interest and statements of capability from qualified potential tenderers to undertake an Investigation into the value of unserved energy, as it is used under the Electricity Governance Rules (Rules); and
 - b. elicit information from interested parties as to what they require from the Commission in order to appropriately tender for and undertake the Investigation.

1.2 Background

The New Zealand electricity market and the Electricity Governance Rules

2. New Zealand's electricity industry components include generation, transmission, distribution, retail and consumption. With reforms beginning in the late 1980s, New Zealand created wholesale and retail markets for electricity in which customers have a choice of power suppliers, and electricity retailers buy their electricity in a competitive wholesale market. These arrangements are expected to bring the benefits of competition to the electricity sector: downward pressure on costs and prices, emphasis on customer choice and service, and technological innovation.
3. Following a period of price increases and a ministerial inquiry into the functioning of the industry, the Commission was established in September 2003 to oversee the industry and its markets. For background information on the way New Zealand's electricity markets operated under the self-regulatory regime prior to September 2003 see www.nzelectricity.co.nz

1.3 Role of the Commission

4. The Commission has responsibility for providing oversight and regulation of the electricity markets to ensure that they run fairly and efficiently. A primary

purpose of the Commission is to recommend market rules to the Minister of Energy and to enforce those rules. The current Rules are available at:

<http://www.electricitycommission.govt.nz/rulesandregs/rules>

5. The Commission draws its direction from the Electricity Act 1992 and subsequent amendments (available at: www.legislation.govt.nz) and from the Government Policy Statement (GPS) on electricity governance.
6. The GPS on electricity governance sets out the government's expectations of the Commission, including a detailed list of actions that the Commission is expected to accomplish. The GPS can be found at:
http://www.med.govt.nz/templates/ContentTopicSummary_21482.aspx.

Principal objective

7. The Commission's principal objective is to ensure that electricity is produced and delivered to all classes of consumers in an efficient, fair, reliable and environmentally sustainable manner. The Commission is also required to promote and facilitate the efficient use of electricity.
8. The Commission oversees and regulates the wholesale and retail markets by ensuring that:
 - a. electricity is generated and distributed in a reliable way;
 - b. a market for buying and selling electricity is administered efficiently; and
 - c. disputes that arise in the course of the operation of the system and the markets are managed effectively.

Commission's core workstreams

9. The Commission undertakes six core areas of work in meeting its objectives:
 - a. market operations;
 - b. policy and market design;
 - c. reserve energy;
 - d. transmission;
 - e. supply and demand modelling and forecasting; and

- f. electricity efficiency.

Purpose of Transmission workstream

10. Transmission infrastructure allows for the transfer of electricity between generation and consumption. It can also contribute to system reliability by allowing access to multiple sources of generation, and it contributes to efficient electricity market operation through the dispatch of least-cost generation.
11. Often, however, reliability and efficiency can also often be achieved through other means, such as demand reduction or better location and configuration of new generation. A key challenge for the Commission is therefore to determine the optimum investment in new transmission for the country without resorting to central planning and undue interference in the market.
12. Specifically, the Commission's Transmission work aims to ensure that the New Zealand electricity markets send the appropriate investment signals, so that investment is made by market participants in time to meet the national need for delivered electricity.

The value of unserved energy

13. The value of unserved energy in the context of the proposed Investigation refers to the economic value or values ascribed to a given amount of electricity consumption that is prevented or "lost" as a result of a failure of one or more elements of the generation or transmission infrastructure. It is therefore an economic cost attributed to such a failure.
14. Internationally, different terminology is often used in relation to unserved energy. For clarification in relation to the proposed Investigation, the following apply:
 - (a) "Value" refers to a financial cost (as distinct from an amount of energy); and
 - (b) "Unserved energy" refers to electricity that would have been delivered (consumed) had a transmission failure not occurred.
15. Unserved energy is sometimes used in the context of supply shortages. In such contexts, the focus is often on system (particularly generation) adequacy, in terms of expected imbalances between supply and demand. The current

Investigation however, focuses on system reliability, and in particular, on the economic impact of sudden generation and transmission equipment failures.

16. As a convention, the value of unserved energy is expressed as a financial amount for each MW/hr of energy (load) not delivered, or “lost”, and is often described as the Value of Lost Load (VoLL).
17. An important factor in the selection of appropriate values to represent the economic consequences of unserved energy is the intended use or uses to which the values will be put. In Australia for example, the Value of Lost Load (VoLL) is a price per MW/hr that is used as a price cap in the operation of the electricity market. Although different applications of VoLL may have some similarities (such as, for example, the application of VoLL in different markets to infrastructure investment decisions), the specific objectives and processes involved in those decisions will dictate the most appropriate approach to the establishment of the value of unserved energy as well as/or the way those values are factored into those decisions.
18. It is therefore important, for the purposes of the current Investigation, to emphasise the point that the Investigation is to focus on the value or values of unserved energy as they are used in the context of New Zealand’s Electricity Governance Rules.
19. Specifically, expected unserved energy is defined in part A of the Electricity Governance Rules:

“expected unserved energy” means a forecast of the aggregate amount by which the **demand** for **electricity** exceeds the **supply** of **electricity** at each **grid exit point** as a result of likely planned or unplanned outages of **primary transmission equipment**”.
20. The purpose of this value (or values) of unserved energy (and related values for sensitivity analysis) is to provide an estimate of the economic impact of planned and unplanned outages. As such, the value of unserved energy represents the expected value (and therefore the expected “cost” when value is foregone) of the unserved energy to affected customers for each MWh of unserved energy.
21. Further, because planned outages can normally be arranged so that supply and demand is managed so as to avoid or greatly reduce their impact (and therefore avoid or reduce the planned outage costs), the value of unserved energy, as applied under these Rules, should be chosen on the basis that it will be used to

represent the costs associated with *unplanned* outages of primary transmission equipment.

22. Most transmission outages that cause loss of supply are from failure of transmission equipment and can usually be repaired within an hour or two. Sometimes outages can be longer when High Impact Low Probability (HILP) events occur, such as when a number of transmission towers, substation equipment or underground cables fail simultaneously. However, these events are relatively rare and so usually do not have much impact on investment decision making.

The current values of unserved energy

23. Currently the value of unserved energy is specified in the Rules to be the value or values of unserved energy published by the Electricity Commission Board (Board) for this purpose from time to time or, if no such value or values is published by the Board, \$20,000/MWh.
24. In addition, the Rules currently specify that for the purposes of sensitivity analysis relating to Board decisions that take the value of unserved energy into account, the value(s) of unserved energy must be those value(s) published by the Board, or, if no such value(s) are published, \$10,000/MWh and \$30,000/MWh.

Application of the value of unserved energy under the Rules

Evaluation of investment proposals

25. Under section III of part F of the Rules the Commission may approve transmission investments proposed by Transpower (the national electricity grid owner and operator). A formal test that is applied to these investment proposals (the Grid Investment Test (GIT)) is incorporated into the Rules to allow for the identification of reliability benefits arising from investment proposals. The value of unserved energy is a parameter that is used by the Commission in its evaluation of such proposals.
26. Under the Rules investment proposals can be either “economic investments” or “reliability investments”. In either case, the proposed investment must satisfy the GIT (rules 13 and 14 of section III refer).

27. The essence of the GIT is set out in clause 4 of the GIT. In summary, for an investment that is necessary to meet the *N-1* safety net that is set out in clause 4.2 of the grid reliability standards, a proposed investment must maximise the expected net market benefit or minimise the expected net market cost compared with a number of alternative projects, and the conclusion must be sufficiently robust having regard to any sensitivity analysis carried out (clause 4.1 of the GIT). In practice, this clause applies to the group of reliability investments necessary to ensure the grid achieves the *N – 1* reliability.
28. For all other investments (those reliability investments that are not necessary to meet the *N-1* safety net and all economic investments) the investment must maximise the expected net market benefit compared with a number of other alternatives, the expected net market benefit must be greater than zero, and the conclusion must be sufficiently robust having regard to the sensitivity analysis carried out (clause 4.2 of the GIT).
29. The market benefits and cost must be determined for each proposed investment or alternative under each “market development scenario” for the future, and compared with the benefits and costs for the relevant market development scenario under the “base case”.¹ The base case must be reasonable having regard to a number of factors including the value of unserved energy.
30. Consideration of the amount (and therefore economic cost) of expected unserved energy under various investment options is often a key focus when trading off different transmission and non-transmission investment options.

Transmission Agreements

31. The value of unserved energy is also relevant to transmission agreements concluded between Transpower and designated transmission customers under section II of part F of the Rules.
32. The default value of unserved energy specified in the GIT must be used when evaluating the cost of reliability of a specific grid injection point (GIP) or grid exit point (GXP).
33. However, rule 5.5 of section II of part F provides for Transpower or a designated transmission customer to apply to the Board for approval to use a different value of unserved energy than that specified in the Rules (for example,

¹ Clause 5 of the GIT.

in relation to the application of grid reliability standards at a specific grid injection point or grid exit point). Such an application might be made, for instance, to reflect different values placed on grid reliability in specific circumstances, and so there is some flexibility in the current application of unserved energy by the Rules.

Origin of current values of unserved energy

34. The current value of unserved energy and related values for sensitivity analysis came into force within the Rules, in December 2004, and were chosen on the basis of work undertaken for the Commission by Frontier Economics in 2004, and on studies by the Centre for Advanced Engineering (CAE) in Auckland in 1992 and 2004. These studies are available at: [insert link to CAE and Frontier studies].
35. In addition to the above studies, selection of the current value (and related default sensitivity analysis values) took into account a number of international studies on unserved energy, as well as submissions received by the Commission through consultation with industry in New Zealand.
36. Submissions indicated a wide range of views on what the appropriate value of unserved energy should be. Industrial groups and submitters with urban customers favoured a higher value, while submitters with rural customers favoured a lower value. There was general support for a central value for unserved energy, although different views on this were put forward.²
37. Some of the comments in submissions included or related to:
 - (a) the choice of a single value per MWhr of unserved energy in preference to potentially more representative multiple values of lost load (reflecting the view that not every MWh of unserved energy will have the same value);
 - (b) the relationship between the value of unserved energy and the value of security of supply (specifically, the cost of undispached energy); and
 - (c) the potential value of broadening the assessment of unserved energy to include the total costs of disruption rather than just the direct costs associated with the duration of the outage.

² <http://www.electricitycommission.govt.nz/pdfs/opdev/transmis/pdfsconsultation/GIT-final-comments-explan-paper.pdf>

Issues to consider within the Investigation

38. In selecting the current values of unserved energy following consultation in 2004, the Commission took many factors into account, including that:
 - (a) submissions indicated a diversity of views on the choice and application of the value of unserved energy; and
 - (b) the Commission would gain further insight into the appropriateness of the values through its experience with the initial Statement of Opportunities (SOO), published in July 2005, and the application of the GIT to investment proposals considered in the first years of the operation of the Rules.
39. The current Investigation should therefore incorporate this insight into the proposed Investigation methodology.
40. The Investigation would also usefully consider societal and technological changes that have occurred since an initial CAE study in 1992 (which underpinned CAE work for the Commission on unserved energy in 2004).
41. Another issue that should be considered by the Investigation is whether a common grid reliability standard (as indicated by the determination of a core grid under clause 3 of schedule F3A of section III of part F of the Rules) implies a common economic standard and, as a consequence of this, a common value of unserved energy.
42. In this regard, research evidence suggests large differences in the value of unserved energy exist between rural and urban grid users. For example, recently the Victorian Essential Services Commission agreed to use of a figure of A\$62,000/MWh for unserved energy in the Melbourne CBD when approving a reliability upgrade proposed by the distribution company Citipower.³
43. The current Investigation also provides an opportunity for the issue of indexing the value of unserved energy for inflation (which 'deflates' the value in real terms) to be considered.
44. The Investigation is also consistent with the Commission's ongoing responsibility to ensure that the GIT appropriately captures the economic costs and benefits of proposed grid investments.

³ Essential Services Commission of Victoria 2008, *Final Decision CBD Security of Supply*, February.

45. In this regard, the Commission should, when carrying out the proposed Investigation, have regard to the objectives of developing the GIT set out in rule 6.3 of section III of part F of the Rules. Those principles are:

6.3 Objectives of the grid investment test

The **Board** must have regard to the following objectives in developing, and in any subsequent review of, the **grid investment test**:

- 6.3.1 promoting economic efficiency (including energy efficiency) in transmission and wholesale electricity market;
 - 6.3.2 as far as practicable reflecting the interests of end use customers in ensuring a reliable transmission system having regard to the cost to end use customers;
 - 6.3.3 reflect a reasonable economic assessment of the balance between different levels of reliability and the expected value of energy at risk;
 - 6.3.4 enabling selection of transmission upgrade options that maximise the total net benefits to those who produce, distribute and consume electricity after taking into account **transmission alternatives**;
 - 6.3.5 promoting certainty for investment in transmission, generation and **transmission alternatives** and **investment contracts**;
 - 6.3.6 facilitating outcomes acceptable to **Transpower** and **designated transmission customers**.
46. With these objectives in mind, the Investigation should provide the Board with specialist advice on:
- (a) the appropriateness of the default value of unserved energy and related sensitivity analysis values as specified in the Rules, with regard to the objectives of the GIT, as set out in rule 6.3; and
 - (b) whether it may be desirable for the Commission to publish another value of unserved energy and related sensitivity analysis values.
47. While it is expected that recommendations arising of the Investigation could be limited to identifying whether it is desirable to publish another value and related sensitivity analysis values, the emphasis of the Investigation will be on the use of the value of unserved energy in the context of the GIT, and so other recommendations may be made. For example, changes to the approach to sensitivity analysis might also be recommended.

48. It is also possible that the Investigation could inform market design and the peak generation adequacy work. This is because the value of unserved energy relates to a concern about generation capacity adequacy that could have similar non-supply cost characteristics to unplanned outages (because of the similar sudden nature of peak adequacy outages - unlike energy shortages).
49. The successful tenderer will be required to provide, within the Investigation report, comprehensive supporting evidence for its conclusions.
50. Tendering requirements will specify that the Investigation will be conducted and reported to the Commission in finalised form in time for any recommendations arising from it to be presented to the Board by end June 2009.

Key objectives of the Request for Information

Inform potential tenderers of the Investigation

51. The RFI is intended to provide suitably qualified potential tenderers with an overview of the nature and scope of the Investigation, for the purposes of eliciting expressions of interest and indications of the information required of the Commission for the purposes of the Request for Tender (RFT) process.

Gauge interest and capability of potential tenderers

52. It is expected that suitably qualified potential tenderers will, in response to this RFI, provide expressions of interest to the Commission regarding the Investigation, and in doing so, will also provide the Commission with an initial indication of their relevant experience and capabilities to carry out the Investigation.

Gather input from tenderers regarding the Investigation

53. Potential tenderers are invited, in response to this RFI, to make submissions to the Commission on any or matters that they consider relevant to the Investigation, including but not limited to:
 - (a) How they consider the Investigation should proceed;
 - (b) What specific issues should be considered in the Investigation;
 - (c) How the RFT should be carried out; and

- (d) What specific information they require in the RFT documentation to facilitate the Investigation and/or the tendering process.

Key objectives of the Investigation

- 54. The objectives of the Investigation are to evaluate the 'fitness-for-purpose' of the current value(s) of unserved energy under the Rules and to provide advice on any recommended revisions to these value(s) or its application under the Rules.
- 55. These objectives will be specified in more detail within the RFT documentation, and will take into account responses received during the RFI process.

2. Scope of the Investigation (services sought)

Review the current value(s) of unserved energy and its application under the Electricity Governance Rules

Selection and application of the value of unserved energy internationally

56. The Investigation is to review and report, within the Stage 1 deliverable, on both the origin/selection of and the application of values for unserved energy in countries with energy market characteristics of relevance to the New Zealand context.

Nature and operation of regulation of other electricity markets

57. The Investigation is to include, within the Stage 1 deliverable, a discussion of the regulatory environment in each of the countries described, including comment on, with respect to each of the electricity markets described, the nature and operation of the regulatory environment of those markets, and on the extent to which the selection and/or application of values for unserved energy in those markets may be of relevance to the current Investigation.

Objectives associated with value(s) of unserved energy and its application under the Rules

Achievement of the Commission's over-arching and specific objectives associated with the selection of an appropriate value(s) for unserved energy in this context

58. The Investigation is to consider the Commission's over-arching and specific objectives associated with the selection of values for unserved energy in the New Zealand electricity market, and report within the Stage 1 deliverable, on the way in which the recommendations of the Investigation regarding the proposed selection of a value or values for unserved energy can be expected to contribute to the achievement of these objectives.

Specifically, the Investigation is to review and report on:

- (a) Factors considered relevant to the choice of the value(s) of unserved energy in the New Zealand context and the Electricity Governance Rules.
- (b) The types of impact that various different situations regarding these relevant factors or combinations of factors (for example different outage durations or rates) might be expected to have on the appropriateness of

the value(s) of unserved energy, given the objectives associated with its use by the Commission (such as the outcomes associated with its use).

- (c) The appropriateness of the way in which the value(s) of unserved energy are applied under the existing Rules, and the appropriateness of the current value(s) themselves in this context.
- (d) The nature of any potential improvements to the way that the value(s) or unserved energy is used in New Zealand under the existing Rules or any potential changes to the value(s) of unserved energy given this context.
- (e) With respect to (and further to) any potential changes to the current value(s) of unserved energy or its use under the existing Rules, the most suitable value(s) of unserved energy in this context.

Additional considerations

59. In addition to the issues in (a) to (e) above, issues that may be taken into account for the purposes of the Investigation, include, but are not limited to the following:
- a. Methods for establishing the values of unserved energy vary widely;
 - b. Values of unserved energy themselves differ between countries;
 - c. The differences between energy shortages and outages, security, adequacy, reliability, and capacity;
 - d. The perspectives to be considered in the Investigation and how different perspectives should be taken into account, if at all;
 - e. The intended analytical approach and methods to be used once the research data is obtained, and specifically, how the data that is to be gathered will be combined for the development of recommendations;
 - f. Whether single or multiple values of unserved energy (excluding sensitivity analysis) should be used;
 - g. How accepted non-linearities and dependencies relating to the value of unserved energy should be factored into the chosen value(s) for unserved energy or its application;

- h. Whether the choice of the values of unserved energy or its use should be dependent on or differentiate between the causes of an outage (for example, a random event due to a storm versus a cascading event due to overloading), and if so, what the basis for this differentiation should be;
- i. What outage timescales should be considered;
- j. What other variables or factors (for example, outage size, area affected, number of people affected, load type and amount, duration of outage, groups affected, time of day, location) should the Investigation take into account, and how should these variables be taken into account; and
- k. Should the value(s) of unserved energy or the way it is used in the Rules change over time? If so, in what way and in response to what? Specifically, what factors or events (for example the GRS or the degree to which the use of the values for unserved energy achieve the intended purpose over time) might be significant enough to create a need to reassess the value(s) of unserved energy or the way it is used in the future?

Stages of the Investigation

Three stages and two tenders

60. Tenders will be awarded separately prior to each of Stages 1 and 2 of the Investigation. Stages 2 and Stage 3 of the Investigation will be tendered and awarded as a single tender prior to Stage 2.
61. It is expected that the successful tenderer for Stage 1 will also tender for Stages 2 and 3 of the Investigation.
62. The closing date for the RFI is 19 September 2008.
63. The closing date for the RFT for Stage 1 of the Investigation is 31 October 2008.

Stage 1

Planning, conceptual analysis, research

64. Stage 1 of the Investigation will commence in November 2008 and be completed no later than 19 December 2008.

Deliverable

65. The primary deliverable in Stage 1 of the Investigation will be an Issues paper addressing the Issues for consideration during Stage 1. As a minimum, this discussion should relate to:
 - (a) the type of analytical approaches or methods that might be appropriate for Stage 2 of the Investigation, and the reasons why those approaches or methods might be appropriate;
 - (b) the type of analytical approaches or methods that might be appropriate for the identification of indirect costs associated with unplanned outages;
 - (c) the variables or factors (for example, outage size, area affected, number of people affected, load type and amount, duration of outage, groups affected, time of day, location) that might usefully be taken into account in Stage 2 of the Investigation, and:

- (i) the reasons why these variables might usefully be taken into account; and
 - (ii) the type of analytical approach or methods that might be appropriate and for taking the variables identified in Stage 1 into account in Stage 2.
- (d) the extent to which different customer groups (including, as a minimum, residential, commercial, agricultural, and large industrial customer groups) might be expected to incur different economic costs as a result of unplanned outages;
- (e) the expected relationships between the timing of unplanned outages (day of the week and time of day) and the expected economic costs of those outages; and
- (f) the expected relationships between the duration of unplanned outages and the expected economic costs of those outages.

Stage 2

Research, analysis, interviews

66. Stage 2 (the research and analysis phase) is to commence in February 2009 and is to be completed no later than 10 April 2009.
67. During Stage 2 the successful tenderer will be expected to undertake research, including survey-based research and in-person interviews, into the issues being considered by the Investigation and to report to the Commission on their findings.

Deliverables

68. The first deliverable in Stage 2 will be a draft Report to the Commission on the findings of the Investigation. The Commission expects to consult on the draft report.
69. The second deliverable will be a set of draft Guidelines on the interpretation and use of the value of unserved energy for use by industry and other stakeholders.

Stage 3

Additional analysis, finalising Report

70. During Stage 3 the successful tenderer will be expected to liaise with the Commission, and if required, undertake additional research for the purposes of finalising the Investigation Report.

Deliverable

71. The primary deliverable in Stage 3 will be a final Report to the Commission on the findings of the Investigation, taking into account submissions received, to be completed no later than 19 June 2009.

3. The RFI process

72. This RFI is set out as follows:

- (a) Sections 1 to 3 – Body of the RFI;
- (b) Appendix 1 – Respondent Profile and Capability Statement;
- (c) Appendix 2 – Respondent Feedback Form.

73. The body of this RFI (sections 1 to 3) outlines the nature of the Investigation of the Value of Unserved Energy and the process that the Commission will follow in inviting interested parties to proceed to the RFT stage for the Investigation, and completing the tender process.

74. Appendix 1 sets out key requirements associated with the Commission's receipt of expressions of interest for the Investigation and response to this RFI.

75. Appendix 2 provides for information to be requested from the Commission by interested parties in order to assist those parties with any tender they may submit for the proposed Investigation.

Timing

76. The indicative timetable for this RFI and the RFT process for Stage 1 is as shown in Table 1:

Table 1 Indicative timetable for the RFI and the RFT process for Stage 1

Stages	Date
RFI documents available from the Commission	22 August 2008
RFI responses close	19 September 2008
Evaluation of RFI responses completed	26 September 2008
Invitations to proceed to RFT stage issued	30 September 2008
RFT documents for Stage 1 available from the Commission	30 September 2008
RFT Stage 1 responses close	31 October 2008
Evaluation of RFT responses completed	7 November 2008
Tender awarded for Stage 1	11 November 2008
Stage 1 completed	19 December 2008

77. The indicative timetable for the RFT process for Stages 2 and 3 is shown in Table 2:

Table 2 Indicative timetable for the RFT process for Stages 2 and 3

Stages	Date
RFT documents Stages 2 and 3 available from the Commission	15 January 2009
RFT Stage 2 and 3 responses close	30 January 2009
Tender awarded for Stages 2 and 3	9 February 2009
Stage 2 completed	10 April 2009
Consultation on Stage 2 completed	8 May 2009
Stage 3 commences	15 May 2009
Stage 3 completed	19 June 2009

Documentation and response process

Form of responses

78. You must submit four (4) hard copies of your response to this RFI and place these in appropriately marked envelopes.
79. The response form contained in Appendix 1 must be completed and included with your response.
80. Completed responses to this RFI must be enclosed in a sealed and clearly marked envelope and addressed to:

“Investigation of the Value of Unserved Energy”

Maree McGregor
 Electricity Commission
 Level 7, ASB Tower
 2 Hunter Street
 Wellington

81. Your response must be placed in the tender box located at the Commission’s main reception desk, Level 7, ASB Tower, 2 Hunter Street, Wellington by 4 pm

on [date] August 2008. **Note:** Responses sent by facsimile/email will not be accepted.

82. You should ensure your response is placed in the tender box before the closing date and time. The Commission retains the right to consider or not consider late responses at its sole discretion.

Communication about the Request for Information

83. All communication with the Commission concerning this RFI must be directed to the Commission's representative for this RFI. The contact person is:

Ross Hill
Electricity Commission
Level 7, ASB Tower
2 Hunter Street
Wellington

Email: ross.hill@electricitycommission.govt.nz
Ph + 64 4 460 8843

84. You must not make contact with any other person at the Commission regarding this response without the express written authorisation of Ross Hill. Failure to comply with the above may result in your response being disqualified.

Questions and clarifications about the Request for Information

85. Questions and requests for clarification and/or information regarding this RFI must be received in writing (email) before [date] August 2008. All questions must be emailed to the Commission's representative. The Commission may circulate such questions, and its response to those questions, to other applicants (or prospective applicants, as the case may be) as the Commission sees fit.
86. Those questions and responses (if any) can be found through the following link: [insert website link if applicable]

Notice of invitation to tender

87. When the Commission has considered responses to this RFI the Commission will provide written notice to all respondents indicating whether they are invited

to proceed to RFT stage. Each notice will be sent to the address provided by the applicants in their RFI response.

88. The Commission is under no obligation to invite any respondent to proceed to RFT stage, and it will choose do so at its discretion.

Terms and conditions/Evaluation of acceptance/Information required

Investigations and reliance on information

89. You must examine this RFI and carry out all other investigations you consider necessary (including in respect of information provided by the Commission in relation to this RFI) before submitting your response.
90. The Commission does not accept any liability for any error, omission or mis-description in this RFI, or any associated documents.

Costs and expenses

91. The Commission is not responsible for any expense incurred by you in the preparation of your response, or for any other costs or expenses incurred by you responding to this RFI.

Confidentiality

92. If you wish to issue a media release or engage in any other publicity about this RFI, you must obtain the prior written consent of the Commission.
93. The Commission will treat the content of your response as confidential, but you should also be aware that the Commission is subject to the Official Information Act 1982 and may be required to release information supplied in your response in accordance with that Act, or as otherwise required by law.

Further information about you

94. You acknowledge (including for the purposes of the Privacy Act 1993) that submission of a response by you constitutes authority by you for the Commission to request further information on your financial status, past performance, and/or relationship with customers and suppliers from sources other than that supplied in your response, at the Commission's discretion.

Interpretation of this RFI

95. If you are in doubt as to the meaning of any part of this RFI, you must set out in your response the interpretation and any assumptions you used.

Rights reserved

96. Notwithstanding anything else in this RFI, the Commission reserves the right to:

- a. change any date in this RFI process (for example, extend or shorten any applicable timeframes);
- b. consider, or decline to consider, any response that does not conform with the requirements of this RFI;
- c. vary or amend any of the requirements, criteria, terms or conditions relating to participation in this RFI or the evaluation of responses submitted;
- d. exclude any persons from the RFI process for any legal reason;
- e. suspend or cancel this RFI, and the RFI process, at any time by written or oral notice;
- f. liaise or negotiate with any potential respondent (whether or not that person is an respondent) in relation to the services related to this RFI at any time without disclosing this to, or involving or doing the same with, any other respondent (whether before, during or after this RFI process);
- g. seek clarification on terms with any respondent(s);
- h. not give any reason for any variation, suspension or cancellation of this RFI and the RFI process;
- i. waive any irregularities or informalities in the RFI process; and
- j. create, and enter into, any type and number of agreements for the Commission's requirements on such terms and in such form as the Commission thinks fit, with any person(s), whether or not that person or those persons responded to this RFI.

Canvassing

97. Any applicant who indirectly or directly canvasses any Board member, officer, employee or adviser of the Commission other than the Commission's contact person outlined in clause [above], concerning any aspect of this RFI process, may in the Commission's discretion be disqualified.

Conflict of interest

98. Where any respondent (if an individual) is also an employee of the Commission, or (if a company) has an association, such as shareholding, directorship or agreed employment with an employee or officer of the Commission that could give rise to, in the Commission's sole opinion, a conflict of interest in relation to this RFI, the Commission reserves the right to not proceed with evaluating the response received.
99. All respondents will be required to disclose any actual or perceived conflict of interest as a requirement of this RFI.

Liability limitation

100. No contract or other legal obligations shall arise between the Commission and any respondent out of, or in relation to, this RFI process. The Commission and its agents or advisers will not be liable in contract or tort (including negligence) or in any other way, for any direct or indirect damage, loss or cost incurred by any respondent or other person in respect of this RFI process.

Governing law

101. This RFI is governed by New Zealand law, under the non-exclusive jurisdiction of the New Zealand Courts.

3.1 Evaluation of responses and invitation to tender

Evaluation of Responses

102. Factors that may be taken into account by the Commission when evaluating responses include, but are not necessarily limited to:
- a. specific capability to support the identified technical skill requirements;
 - b. conformity with the Commission's requirements, as set out in this RFI;
 - c. respondent's experience and track record in any comparable projects;
 - d. capability of delivering the work as outlined in this RFI;
 - e. ability to meet tight timeframes;
 - f. any actual or perceived conflict of interest; and
 - g. any other factor deemed appropriate by the Commission.

103. These criteria are intended as guidance only so that you may assess the suitability of your response. The criteria are not in any particular order, are not exhaustive and will not necessarily be accorded equal weight or any weight at all.

Verification and credit check

104. The respondent acknowledges the Commission, or its nominated representative, may:

- a. verify with any other person any information included in your response or disclosed to the Commission in connection with your response; and
- b. carry out a credit check on the respondent or any such key personnel.

105. The Commission is not obliged to contact referees provided by you and may seek further information on any issue from sources other than the referees provided, including the execution of a credit check. The Commission may also take into account knowledge it already has regarding you or your personnel.

Post-Response discussions, presentations and negotiations

106. Following submission of responses, the Commission:

- a. may ask one or more respondents to meet with the Commission and make a formal presentation of their response(s);
- b. may enter into discussions and negotiations with any respondent; and
- c. will not be obliged to enter into discussion with you regarding the progress of the response process.

3.2 Information required from applicants

Invitation to tender and instructions for responses

107. Please indicate within your response, any information that you consider may be of relevance to the Commission's evaluation of responses and subsequent invitations to tender for one or more stages of the Investigation.

108. The Commission is under no obligation to invite any respondent to proceed to RFT stage, and it will choose do so at its discretion.

109. You are required to answer each question in this section. Questions in Appendix 1 are numbered. You must use this numbering system in your response and respond in the same sequence. Where a question is not relevant to your response then you must indicate 'N/A' or 'Not Applicable' against the respective question number in your response. If the question invites you to comment and you do not choose to, then you must indicate 'No Comment' against the respective question number in your response.
110. **Note:** To avoid assumptions or a lack of clarity by answering too briefly, be sure to give fully supported responses—attachments may be included.
111. The response form (Appendix 1) must be completed, signed and returned along with your responses to questions.
112. Any partial compliance or non-compliance with requirements must be clearly described in your response.

3.3 Form of response

A. Executive summary

- A.1 Please complete the Applicant's profile form provided in Appendix 1.*
- A.2 Demonstrate an understanding of the requirements of this RFI.*
- A.3 Outline your experience in undertaking work as described in this RFI.*

B. Capability

- B.1 How many staff are employed and have practical experience in the work as outlined in this RFI?*
- B.2 How many staff are currently available to undertake the Investigation as described*
- B.3 What is your organisation's capability to complete a project of this scale within the timeline outlined in this RFI? What do you consider is a reasonable timeframe for the Investigation as outlined in this RFI, also accounting for proposed time?*
- B.4 Where is your business activity, as it relates to the completion of the Investigation as outlined in this RFI, located – that is, in which city or cities?*

B.5 Do you have a proven implementation/project management methodology that is applicable to the Investigation as outlined in this RFI? If so, please describe this.

B.6 What other services relevant to the Investigation as outlined in this RFI do you provide?

C. Technical

C.1 Please indicate your ability, with respect to the technical issues indicated in this RFI, to undertake the Investigation as outlined in this RFI.

Appendix 1 Respondent Profile and Capability Statement

1	Legal name of applicant:		
2	Trading name (if any):		
4	Principle contact name:		
	Position:		
	Address:		
	Phone:	Fax:	
	E-mail:		
5	GST Number: (if applicable)		
6	Applicant profile		
6a	Legal status	Limited liability company Yes/No	No (Specify)
6b	Country of residence/ incorporation	New Zealand Yes/No	No (Specify)
6c	Identity of owners/ controllers	Owners: Country of residence:	
6d	Principal banker:	Name and branch:	
6e	Liability insurers	Insurer(s) name(s): Types and \$ cover held:	
6f	Lawyer	Name of law firm: Contact person: Phone: Fax:	
6g	Resources assigned to, or back-up for, managing the RFI.	Manager assigned: Name of back-up contact: Number of other persons assigned to the RFI: For each subcontracted part: – Names of sub-contractor: – Part sub-contracted:	
6i	If any parts of the proposed work are to be subcontracted or assigned.		

Statement of capability to undertake the Investigation as outlined in this RFI

7. Please indicate your capability to undertake the Investigation, as outlined in this RFI. Supporting documentation may be attached to your response and must be clearly labelled as such.

Appendix 2 Information requested of the Commission

Information requested of the Commission

8. Please indicate below any information you require of the Commission in order to appropriately tender for and undertake the Investigation. Supporting documentation for the purposes of this request may be attached to your response and must be clearly labelled as such.