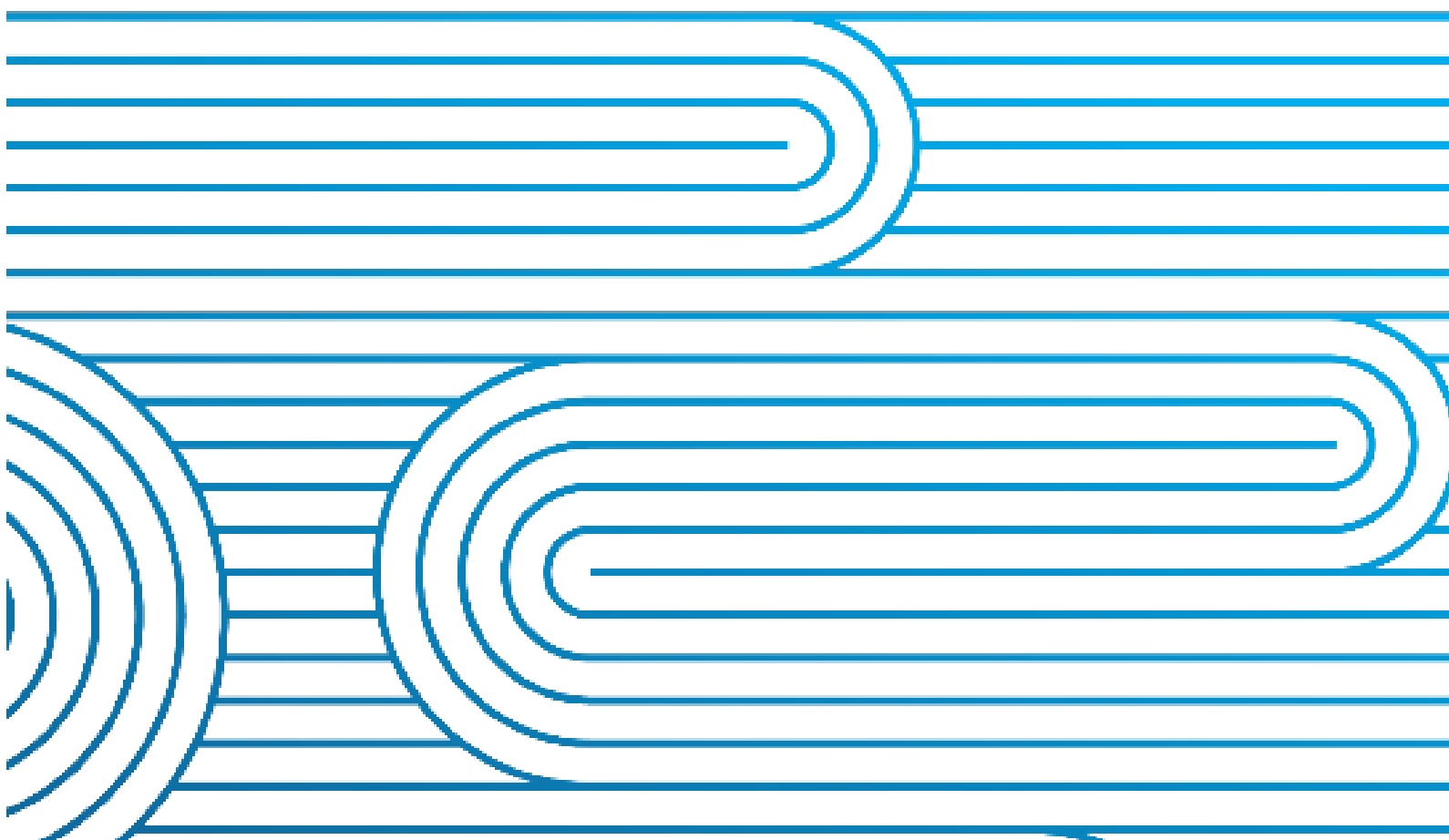


# Net Zero Grid Pathways 1

## Major Capex Project (Staged) updated

Attachment A: Compliance Requirements

Date: 22 September 2023



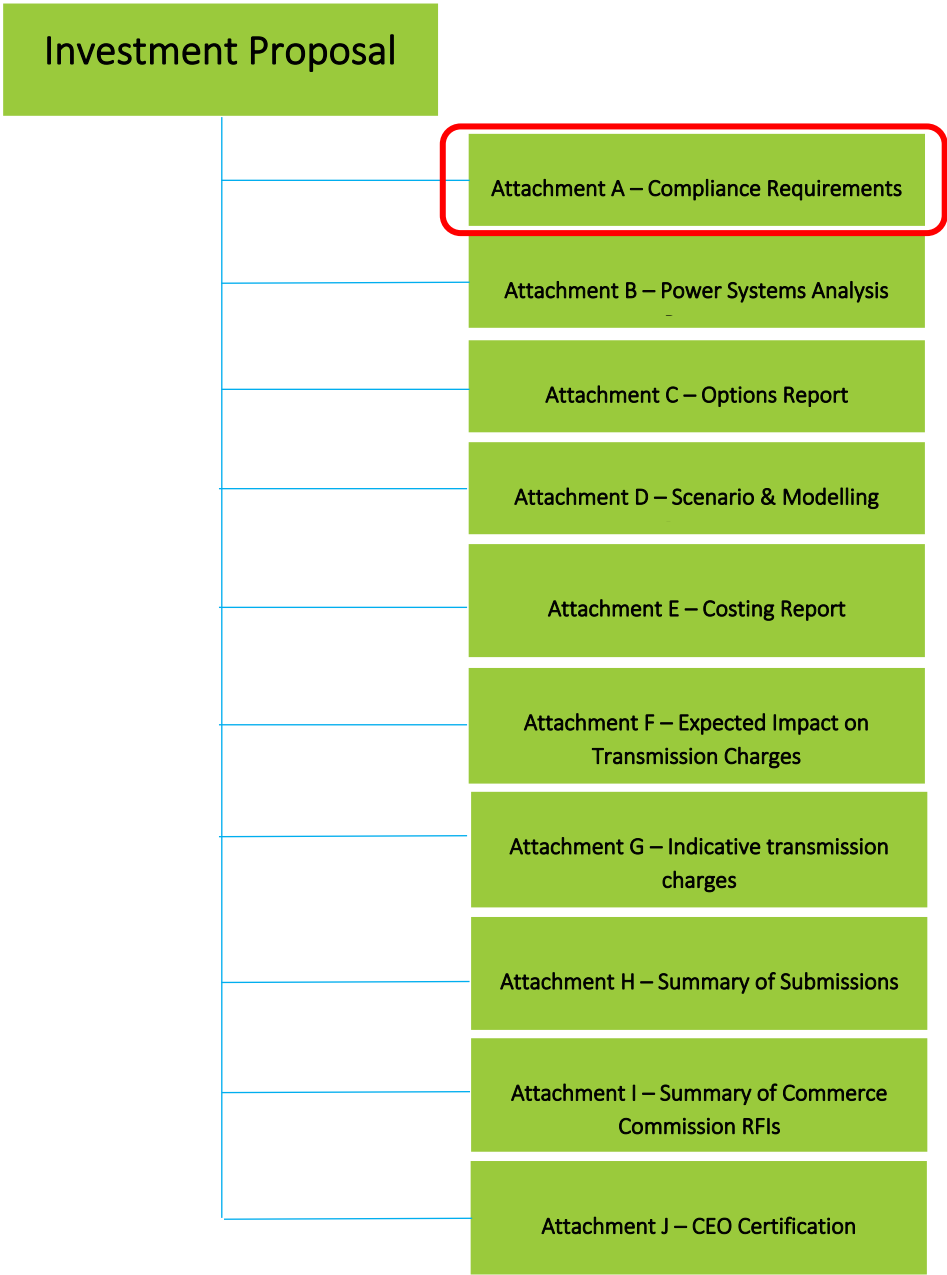
# Introduction

The Commerce Commission's *Transpower Capital Expenditure Input Methodology Determination 2012 (Capex IM)* contains a number of requirements for Transpower to comply with in preparing a major capex proposal, and requirements the Commerce Commission must follow in determining whether to approve the major capex proposal.

The purpose of this document is to satisfy the Commerce Commission that Transpower has met the compliance requirements as set out in the Capex IM.

It is one of the supporting attachments for our main report ('Net Zero Grid Pathways Stage 1 Major Capex Proposal') and should be read in conjunction with the rest of the major capex proposal.





**Current Capex IM (consolidated to 29 January 2020):**

[https://comcom.govt.nz/\\_data/assets/pdf\\_file/0026/88280/Transpower-capital-expenditure-input-methodology-determination-consolidated-29-January-2020.pdf](https://comcom.govt.nz/_data/assets/pdf_file/0026/88280/Transpower-capital-expenditure-input-methodology-determination-consolidated-29-January-2020.pdf)



# Information requirements for Major Capex Proposal

The Capex IM includes some specific requirements for major capex proposals. The tables below describe how this major capex proposal meets these requirements.

Clause	Requirement	Compliance
1.1.5(2), definition of “major capex project (staged)”	<i>major capex project (staged) means a major capex project consisting of two or more projects and includes any major capex project that is a continuation of an existing major capex project (staged);</i>	<p>Compliant.</p> <p>The proposed investment (NZGP1.1) is a major capex project because the expenditure:</p> <ul style="list-style-type: none"> <li>• will be incurred to provide a net electricity market benefit;</li> <li>• is forecast to be capital expenditure in excess of the base capex threshold (\$20m); and</li> <li>• will not be incurred in relation to the base capex categories of expenditure.</li> </ul> <p>The proposed investment consists of two staging projects (NZGP1.1 and NZGP1.2).</p>
3.3.3(1)	<p><i>Transpower must submit a major capex proposal to the Commission when it seeks approval for-</i></p> <p>(a) <i>a major capex project that is not major capex projects (staged); or</i></p> <p>(b) <i>one or more staging projects of a major capex projects (staged).</i></p> <p><i>For the avoidance of doubt, any application by Transpower to the Commission for approval of subsequent stages of a major capex project (staged) must be made in a new major capex proposal.</i></p>	<p>Compliant.</p> <p>This major capex proposal seeks approval for the first stage of the proposed investment (NZGP1.1) – clause 3.3.3(1)(b) of the Capex IM.</p>

<p>3.3.3(2)</p>	<p>Where <b>Transpower</b> seeks approval of one or more <b>staging projects</b>-</p> <p>(a) the aggregate forecast <b>capital expenditure</b> and forecast <b>maximum recoverable costs</b> for all <b>staging projects</b> that comprise the <b>major capex project (staged)</b> must exceed the <b>base capex threshold</b>;</p> <p>(b) the forecast <b>capital expenditure</b> and forecast <b>maximum recoverable costs</b> for a <b>staging project</b> for which approval is sought need not exceed the <b>base capex threshold</b>.</p>	<p>Compliant.</p> <p>The forecast capital expenditure for NZGP1.1 is \$326.8m with a major capex allowance of \$393m. The forecast capital expenditure for the proposed investment is therefore greater than \$20m.</p>
<p>3.3.3(3)</p>	<p>A <b>major capex proposal</b> may be submitted at any time during a <b>regulatory period</b>.</p>	<p>Compliant.</p>

Clause	Requirement	Compliance
3.3.4(a)	The <b>Commission</b> may reject a <b>major capex proposal</b> where- (a) <b>Transpower</b> has not complied with the requirements specified in clause 3.3.1;	See below.
3.3.1(1), (2)	(1) <b>Transpower</b> must notify the <b>Commission</b> of its intention to plan a <b>major capex project</b> that may become a <b>proposed investment</b> . (2) <b>Transpower's</b> notification under subclause (1) must include the following detail about the <b>major capex project</b> if it is planned to be a <b>major capex project (staged)</b> - (a) all the proposed <b>staging projects</b> being planned; and (b) if it is a continuation of an existing <b>major capex project (staged)</b> , all related previously approved <b>staging projects</b> and whether those <b>staging projects</b> have been completed.	Compliant. We notified the Commission of our intention to plan the proposed investment on 23 July 2021 <sup>1</sup> .
3.3.1(3)-(8)	(3) The <b>Commission</b> and <b>Transpower</b> must, in the two-month period following a notification, under subclause (1) use reasonable endeavours to agree in respect of that <b>major capex project</b> - (a) a consultation programme for a <b>transmission investment</b> or <b>non-transmission solution</b> , in accordance with clause 8.1.3; (b) an approach to ensure appropriate consideration of <b>non-transmission solutions</b> to meet the <b>investment need</b> giving rise to the <b>major capex project</b> in accordance with clause 8.1.3; (c) an <b>application submission date</b> ; and	Compliant. Transpower and the Commission agreed the clause 3.3.1(3) matters on 24 August 2021 (following the Commission's letter to Transpower of 13 August 2021). <sup>2</sup> Information about the consultation programme, approach to considering non-transmission solutions, application submission date and approval timeframe is published on Transpower's website at <a href="https://www.transpower.co.nz/NZGP">https://www.transpower.co.nz/NZGP</a> .

<sup>1</sup> [Transpower's intention to plan a major capex project \(staged\) - 23 July 2021](#)

<sup>2</sup> [Letter of response to Commerce Commission on NZGP preliminary matters and timeframes - 24 August 2021](#)

	<p><i>(d) an approval timeframe.</i></p> <p><i>(4) Where the <b>Commission</b> and <b>Transpower</b> have not agreed on each of the matters in subclause (3) within the two month period following a notification under subclause (1), the <b>Commission</b> must, after considering the views expressed by <b>Transpower</b>, specify those matters that have not been agreed within two weeks of the expiry of the two month period.</i></p> <p><i>(5) The consultation programme referred to in subclause (3)(a) may also include any consultation processes that the <b>Commission</b> intends to follow.</i></p> <p><i>(6) The <b>Commission</b> and <b>Transpower</b> must publish the matters agreed under subclause (3) or specified under subclause (4) as soon as reasonably practicable.</i></p> <p><i>(7) The <b>Commission</b> and <b>Transpower</b> must regularly review whether the matters published under subclause (6) (or published in amended form under subclause (8)) remain appropriate and reasonable and the <b>Commission</b> may, after considering <b>Transpower's</b> views, amend any of those matters to ensure that they remain appropriate and reasonable.</i></p> <p><i>(8) Where the <b>Commission</b> materially amends any of the matters under subclause (7), the <b>Commission</b> and <b>Transpower</b> must publish the amended matters or a summary of them as soon as reasonably practicable.</i></p>	
3.3.1(9)	<p><i><b>Transpower</b> must consult interested persons in accordance with the published consultation programme and follow the published approach for consideration of <b>non-transmission solutions</b>.</i></p>	<p>Compliant.</p> <p>Information about the consultation programme and approach to considering non-transmission solutions is published on Transpower's website at <a href="https://www.transpower.co.nz/NZGP">https://www.transpower.co.nz/NZGP</a>.</p> <p>Please refer to:</p> <ul style="list-style-type: none"> <li>• Sections 3.2 and 3.3;<sup>3</sup></li> <li>• Attachment H: Stakeholder Consultation Summary.</li> </ul>

<sup>3</sup> Unless stated otherwise, references to Sections are to Sections of the major capex proposal (i.e. not the Attachments).



3.3.4(b)	The <b>Commission</b> may reject a <b>major capex proposal</b> where- (b) the <b>major capex proposal</b> does not comply with clause 7.4.1.	See below.
7.4.1(1)(a)	A <b>major capex proposal</b> must- (a) comply with Schedule G; and	See below.
7.4.1(1)(b)	A <b>major capex proposal</b> must- (b) contain the certificates specified in clause 9.2.1 [Chief Executive's certification].	Compliant. Please refer to Attachment J: CEO Certification. An updated certificate is provided as at September 2023.
7.4.1(2)	The number of <b>investment options</b> contained in a <b>major capex proposal</b> must be appropriate given the magnitude of the estimated expenditure and the complexity of the <b>investment need</b> associated with the <b>proposed investment</b> .	We consider this major capex proposal complies with this requirement. We considered a large number of investment components as part of our long-list consultation that were appropriate to consider to meet the investment need. The long-list components were reduced to short-list components, following which we developed 18 investment options to which we applied the investment test. Please refer to: <ul style="list-style-type: none"> <li>• Section 4;</li> <li>• Attachment C: Options Report, Section 3.</li> </ul>
7.4.1(3)	With respect to each <b>investment option</b> described in such a proposal, the- (a) specificity of information; and (b) rigour and comprehensiveness of the analysis, must be commensurate with the estimated expenditure and complexity of that option.	We consider this major capex proposal complies with this requirement. Please refer to: <ul style="list-style-type: none"> <li>• Sections 4 and 5;</li> <li>• Attachment C: Options Report</li> <li>• Attachment B: Power Systems Analysis Report;</li> <li>• Attachment D: Scenario &amp; Modelling Report, Section 3</li> <li>• Attachment E: Costing Report.</li> </ul>

7.5.1(1)(a)	<p><i>All major capex proposals and listed project applications must include-</i></p> <p>(a) <i>a description of the benefits the proposed expenditure is expected to deliver to <b>Transpower’s</b> customers;</i></p>	<p>Compliant.</p> <p>Please refer to:</p> <ul style="list-style-type: none"> <li>• Section 1 and 2;</li> <li>• Attachment D: Scenario &amp; Modelling Report, Section 3.3.</li> </ul>
7.5.1(1)(b)	<p><i>All major capex proposals and listed project applications must include-</i></p> <p>(b) <i>to the extent reasonably possible, a quantitative estimate of the benefits the proposed expenditure is expected to deliver to <b>Transpower’s</b> customers; and</i></p>	<p>Compliant.</p> <p>Please refer to:</p> <ul style="list-style-type: none"> <li>• Attachment C: Options Report, section 4.4;</li> <li>• Attachment D: Scenario &amp; Modelling Report, Section 3.3.</li> </ul>
7.5.1(1)(c)	<p><i>All major capex proposals and listed project applications must include-</i></p> <p>(c) <i>an estimate of the expected increase in <b>Transpower’s</b> transmission charges due to the proposed expenditure, including estimated increases in transmission charges-</i></p> <p>(i) <i>per kilowatt of demand;</i></p> <p>(ii) <i>per kilowatt hours of energy supplied; and</i></p> <p>(iii) <i>for each affected grid exit point and grid injection point.</i></p>	<p>Compliant.</p> <p>The proposed investment will comprise at least two benefit-based investments, whose covered costs will be recovered through benefit-based charges.</p> <p>Please refer to:</p> <ul style="list-style-type: none"> <li>• Attachment F: Expected impact on transmission charges.</li> <li>• Attachment G: Indicative Transmission Charges</li> </ul>

Clause	Requirement	Compliance
G1	For the purpose of clause 7.4.1(1)(a)- <i>a <b>major capex proposal</b> must include the information listed or described in this schedule;</i>	See below.
G2	<i>explanation of the need for investment, including-</i> <ul style="list-style-type: none"> <li><i>(a) information on its nature, extent, location and timing;</i></li> <li><i>(b) commentary as to how the <b>investment need</b> is consistent with the most recent <b>integrated transmission plan</b>; and</i></li> <li><i>(a) a summary of consultation participants' views on the <b>investment need</b> and how <b>Transpower</b> had regard to those views and if not, why not.</i></li> </ul>	Compliant. Please refer to: <ul style="list-style-type: none"> <li>• Section 2;</li> <li>• Attachment B: Power Systems Analysis Report;</li> <li>• Attachment C: Options Report, Section 2.2;</li> <li>• Attachment H: Stakeholder Consultation Summary, Section 2.1.</li> </ul>
G3	<i>(1) detailed description of each <b>demand and generation scenario variation</b>, including-</i> <ul style="list-style-type: none"> <li><i>(a) an explanation of the major variations between the <b>demand and generation scenario variation</b> and the related original <b>demand and generation scenario</b>;</i></li> <li><i>(b) the rationale for the variations; and</i></li> <li><i>(c) a summary of consultation participants' views on them;</i></li> </ul> <i>(2) in respect of each <b>relevant demand and generation scenario-</b></i> <ul style="list-style-type: none"> <li><i>(a) the relative weighting of each scenario; and</i></li> <li><i>(c) where that weighting was determined by <b>Transpower</b>, the methodology used to determine it.</i></li> </ul>	Compliant. We have used demand and generation scenario variations (i.e. reasonable variations to the EDGS 2019). Please refer to: <ul style="list-style-type: none"> <li>• Section 2.4.1</li> <li>• Attachment C: Options Report, Section 4.1;</li> <li>• Attachment D: Scenario and Modelling Report, Sections 2.2 to 2.4;</li> <li>• Attachment H: Stakeholder Consultation Summary, Section 2.3.</li> </ul>
G4(1)	<i>In relation to each <b>investment option</b> contained in the <b>major capex proposal-</b></i> <ul style="list-style-type: none"> <li><i>(b) (1) description of the <b>investment option</b>;</i></li> </ul>	Compliant. Please refer to: <ul style="list-style-type: none"> <li>• Section 4;</li> </ul>

		<ul style="list-style-type: none"> <li>Attachment C: Options Report, Section 3.</li> </ul>
G4(2)	<p><i>In relation to each <b>investment option</b> contained in the <b>major capex proposal</b>-</i></p> <p><i>(2) <b>net electricity market benefit</b> of each <b>investment option</b> under each <b>relevant demand and generation scenario</b>;</i></p>	<p>Compliant.</p> <ul style="list-style-type: none"> <li>Please refer to Attachment C: Options Report, Section 4.4.</li> </ul>
G4(3)	<p><i>In relation to each <b>investment option</b> contained in the <b>major capex proposal</b>-</i></p> <p><i>(3) in respect of each <b>investment option</b>, quantum of-</i></p> <p><i>(a) each <b>electricity market benefit or cost element</b>;</i></p> <p><i>(b) each <b>project cost</b>;</i></p> <p><i>(c) aggregate <b>electricity market benefit or cost element</b>; and</i></p> <p><i>(d) the <b>P50</b>,</i></p> <p><i>used to calculate each <b>net electricity market benefit</b>;</i></p>	<p>Compliant.</p> <p>Please refer to:</p> <ul style="list-style-type: none"> <li>Attachment C: Options Report, Section 4.4;</li> <li>Attachment D: Scenario &amp; Modelling Report, Section 3.3;</li> <li>Attachment E: Costing Report</li> </ul>
G4(4)	<p><i>In relation to each <b>investment option</b> contained in the <b>major capex proposal</b>-</i></p> <p><i>(4) methodology used to determine the quantum of all information provided pursuant to subclause (3), including details commensurate with the estimated <b>capital expenditure</b> and complexity of the <b>investment option</b> of any-</i></p> <p><i>(a) internal and external benchmarking and how the results were applied;</i></p> <p><i>(b) relevant existing or proposed supply or procurement processes;</i></p> <p><i>(c) modelling tools or techniques; and</i></p> <p><i>key publications and data sources;</i></p>	<p>Compliant.</p> <p>Please refer to:</p> <ul style="list-style-type: none"> <li>Section 5.1;</li> <li>Attachment C: Options Report, Section 4.4;</li> <li>Attachment D: Scenario &amp; Modelling Report;</li> <li>Attachment E: Costing Report.</li> </ul>
G4(5)	<p><i>In relation to each <b>investment option</b> contained in the <b>major capex proposal</b>-</i></p> <p><i>(5) key assumptions used to determine the <b>net electricity market benefit</b> of each <b>investment option</b>, including-</i></p>	<p>Compliant.</p> <p>Please refer to Attachment C: Options Report, Section 3.2.</p>

	<p>(a) <b>discount rate</b>;</p> <p>(b) <b>calculation period</b>; and</p> <p>(d) <b>cost per megawatt hour used to determine the value of expected unserved energy</b>; and</p>	
G4(6)	<p>In relation to each <b>investment option</b> contained in the <b>major capex proposal</b>-</p> <p>(c) (6) <b>expected net market benefit</b> of each <b>investment option</b>.</p>	<p>Compliant.</p> <p>Please refer to:</p> <ul style="list-style-type: none"> <li>Sections 1.5 and 5.2;</li> <li>Attachment C: Options Report, Section 4.3 and 4.4.</li> </ul>
G5(1)	<p>(1) <b>identification of the proposed investment</b> and, where the <b>proposed investment</b> is a <b>major capex project (staged)</b>, provide-</p> <p>(a) <b>a description of all the proposed staging projects of the major capex project (staged)</b>;</p> <p>(b) <b>full details of each staging project for which approval is being sought</b>;</p> <p>(c) <b>reasons for the proposed staging, including the extent to which splitting the major capex project (staged) into stages has the potential to reduce the timing, scope or cost uncertainties of the major capex project</b>; and</p> <p><b>the estimated project costs, proposed major capex project outputs and planned timing of each staging project for which approval is being sought</b>;</p>	<p>Compliant.</p> <p>Please refer to:</p> <ul style="list-style-type: none"> <li>Sections 1 and 5.2.2;</li> <li>Attachment C: Options Report, Section 4.4;</li> <li>Attachment E: Costing Report.</li> </ul>
G5(2)	<p>(2) <b>detailed description of the components of the major capex project or staging projects, including at least-</b></p> <p>(a) <b>identification of the extent to which the major capex project or each staging project includes a transmission investment or a non-transmission solution</b>;</p> <p>(b) <b>a summary of requirements for completion of the major capex project or each staging project, such as property or property right acquisition, resource management approvals, asset purchases, asset construction and site remediation</b>;</p>	<p>Compliant.</p> <p>Requirements (e), (f) and (i) are not applicable to this major capex proposal as the staging projects (NZGP1.1 and NZGP1.2) do not include any non-transmission solutions.</p> <p>Please refer to:</p> <ul style="list-style-type: none"> <li>Sections 1 and 5.2.2;</li> <li>Attachment B: Power System Analysis Report;</li> <li>Attachment C: Options Report, Section 3;</li> </ul>

	<p>(c) any proposed <b>major capex allowance</b> for the <b>major capex project</b> or each <b>staging project</b>, which must be the <b>P50</b>, of <b>capital expenditure</b> and the estimated probability distribution of the <b>P50</b>;</p> <p>(d) where a <b>major capex allowance</b> is applicable, the <b>commissioning date assumption</b> and rationale for it;</p> <p>(e) any proposed <b>maximum recoverable costs</b>;</p> <p>(f) where <b>maximum recoverable costs</b> are applicable, the <b>completion date assumption</b> and rationale for it;</p> <p>(g) the <b>major capex incentive rate</b> where a different rate to the default rate of 15% is proposed and the rationale for it;</p> <p>(h) all relevant supporting technical information and costing information;</p> <p>(i) where the <b>major capex project</b> or a <b>staging project</b> includes a <b>non-transmission solution</b>-</p> <p>(i) the proposed <b>recovery scheme</b>; and</p> <p>(ii) an explanation of the relationship between any proposed <b>major capex allowance</b> and any proposed <b>maximum recoverable costs</b> for that <b>non-transmission solution</b>; and</p> <p>(d) proposed <b>approval expiry date</b> and rationale for it;</p>	<ul style="list-style-type: none"> <li>• Attachment D: Scenario &amp; Modelling Report;</li> <li>• Attachment E: Costing Report.</li> </ul>
G5(3), (4)	<p>(3) detailed description of the rationale for the <b>proposed investment</b>;</p> <p>(j) (4) summary of the key evidence that supports the rationales such as contracts, reports, memos, financial or other data, results of modelling exercises, customer documentation and letters, and statements from <b>directors</b>;</p>	<p>Compliant.</p> <p>The proposed investment is required to enable the efficient dispatch of new generation and a reliable supply for future demand growth over the interconnected grid.</p> <p>Please refer to:</p> <ul style="list-style-type: none"> <li>• Sections 1 and 2;</li> <li>• Attachment B: Power Systems Analysis Report;</li> <li>• Attachment H: Stakeholder Consultation Summary, Section 2.</li> </ul>

G5(5)	(5) commentary as to how consistent the <b>proposed investment</b> is with the most recent <b>integrated transmission plan</b> , and if not, why not;	Compliant. <ul style="list-style-type: none"> <li>Please refer to Attachment C: Options Report, Section 2.2.</li> </ul>
G5(6), (7)	(6) identification of anything associated with the <b>proposed investment</b> falling under any of clauses D4(1)(a) to D4(1)(g) that did not meet the definition of <b>electricity market benefit or cost element</b> only by virtue of its being unlikely to affect the <b>net electricity market benefit</b> to an appreciable degree;  (7) description of considerations, assumptions and calculations used to determine that something falling under any of clauses D4(1)(a) to D4(1)(g) did not meet the definition of <b>electricity market benefit or cost element</b> by virtue of its being unlikely to affect the <b>net electricity market benefit</b> to an appreciable degree;	Not applicable
G5(8)-(10)	(8) outcome of <b>sensitivity analysis</b> ; (9) description of the methodology applied in undertaking <b>sensitivity analysis</b> ; (10) explanation as to how robust to <b>sensitivity analysis</b> the <b>proposed investment</b> is;	Compliant. The proposed investment is reasonably robust to sensitivity analysis. Please refer to: <ul style="list-style-type: none"> <li>Section 5.3;</li> <li>Attachment C: Options Report, Sections 4.2.10, 4.4.2 and 4.4.3.</li> </ul>
G5(11)	(11) reasons for any selection of a- (a) <b>discount rate</b> other than 7%; and (b) <b>calculation period</b> other than 20 years;  cost per megawatt hour determined using paragraph (b) of the definition of <b>value of expected unserved energy</b> ;	Compliant. Please refer to Attachment C: Options Report, Section 4.2.
G5(12)	(c) (12) a description as to how consistent with <b>good electricity industry practice</b> the <b>proposed investment</b> is;	Compliant. <ul style="list-style-type: none"> <li>Please refer to Section 2.3.3.</li> </ul>
G5(13)	(13) rationale for determining that the <b>proposed investment</b> may satisfy the <b>investment test</b> by reference to each subclause and paragraph of that test; and	Compliant. More detail about how the proposed investment satisfies the investment test is provided below.

G5(14)	<i>(14) a plan for monitoring costs, <b>project</b> milestones and deliverables that reflects the best information available to <b>Transpower</b>.</i>	Compliant. Please refer to Attachment E: Costing Report, Section 3.
G6(1)-(4)	<p><i>In relation to the <b>major capex project</b> or, each <b>staging project</b> for which <b>Transpower</b> seeks approval-</i></p> <p><i>(1) the <b>major capex project outputs</b> that are proposed;</i></p> <p><i>(2) the quantum of each proposed <b>major capex project output</b>;</i></p> <p><i>(3) the rationale for the proposed <b>major capex project outputs</b>, including-</i></p> <p><i>(a) description of key factors and key assumptions relevant to their determination including the uncertainty associated with each such factor or assumption; and</i></p> <p><i>(b) explanation of the extent to which the quantum of each proposed <b>major capex project output</b> reflects:</i></p> <p><i>(i) the assets to be <b>commissioned</b>;</i></p> <p><i>(ii) the forecast changes to the functional capability of the <b>grid</b>;</i></p> <p><i>(iii) the quantum of forecast <b>electricity market benefit or cost elements</b> directly related to the <b>supply of electricity transmission services</b>; and</i></p> <p><i>(iv) in respect of a <b>non-transmission solution</b>, any service provided by a third party;</i></p> <p><i>(4) explanation of the relationship between the proposed <b>major capex allowance</b> and the quantum of each <b>major capex project output</b> that is proposed including the sensitivity of the quantum of each <b>major capex project output</b> that is proposed to changes in the proposed <b>major capex allowance</b>, including commentary in terms of increases or decrease in the scope of the <b>project</b>;</i></p>	Compliant. There is no flexibility in the quantum of the grid outputs. The grid outputs will either be provided (for a cost up to the <b>major capex allowance</b> ) or they will not. Please refer to: <ul style="list-style-type: none"> <li>• Sections 1 and 2;</li> <li>• Attachment B: Power Systems Analysis Report;</li> <li>• Attachment C: Options Report, Section 4;</li> <li>• Attachment E: Costing Report, Section 2.</li> </ul>
G6(5)	<i>In relation to the <b>major capex project</b> or, each <b>staging project</b> for which <b>Transpower</b> seeks approval-</i>	Compliant. <ul style="list-style-type: none"> <li>• Please refer to Attachment E: Costing Report, Section 3.</li> </ul>



	<i>(5) description of factors that may affect <b>Transpower’s</b> ability to achieve each <b>major capex project output</b> that is proposed, including identification of each factor, with reasons, as within or outside <b>Transpower’s</b> control; and</i>	
<b>G6(6)</b>	<i>In relation to the <b>major capex project</b> or, each <b>staging project</b> for which <b>Transpower</b> seeks approval-  (6) in the case of a <b>non-transmission solution</b>, a description of the <b>transmission investment</b> it avoids in terms of both assets and expected costs avoided.</i>	Not applicable
<b>G7</b>	<i>In respect of consultation, the specified information is a description as to how the consultation programme referred to in clause 3.3.1(9) was followed, including-</i>  <ul style="list-style-type: none"> <li><i>(a) a list of the relevant consultation steps and confirmation by <b>Transpower</b> that each occurred;</i></li> <li><i>(b) a list of respondents to the consultation;</i></li> <li><i>(c) a description of all issues raised by interested persons in response to <b>Transpower’s</b> intended <b>major capex proposal</b>;</i></li> <li><i>(d) a summary of the arguments raised in respect of each issue to which paragraph (c) applies; and</i></li> <li><i>(e) in respect of the issues to which paragraph (c) applies, an explanation as to whether the <b>major capex proposal</b> accommodates the arguments referred to in paragraph (d); and</i> <ul style="list-style-type: none"> <li><i>(i) if so, how; and</i></li> </ul> </li> </ul> <i>if not, why not.</i>	Compliant. Please refer to: <ul style="list-style-type: none"> <li>• Section 1.6.5;</li> <li>• Attachment H: Stakeholder Consultation Summary.</li> </ul>
<b>G8</b>	<i>In respect of <b>non-transmission solutions</b>, a description as to how the requirements of Schedule I Division 2 were met, including-</i>  <ul style="list-style-type: none"> <li><i>(a) summary of the process followed to identify and assess <b>non-transmission solutions</b>;</i></li> </ul>	Compliant. More detail about compliance with the relevant Schedule I requirements is provided below. Please refer to: <ul style="list-style-type: none"> <li>• Section 3.3;</li> </ul>

	<p>(b) description of <b>non-transmission solutions</b> suitable to meet the relevant <b>investment need</b> identified either by <b>Transpower</b> or by consultation participants;</p> <p>(c) explanation as to how the <b>non-transmission solutions</b> to which paragraph (b) applies were taken into account when determining the <b>investment options</b> and applying the <b>investment test</b>; and</p> <p>(ii) description and justification of how any assets that would be <b>commissioned</b> by <b>Transpower</b> form part of the <b>non-transmission solution</b>.</p>	<ul style="list-style-type: none"> <li>• Attachment C: Options Report, Section 3;</li> <li>• Attachment H: Stakeholder Consultation Summary, Section 2.</li> </ul>
G9	<p>(d) Any additional supporting material <b>Transpower</b> reasonably considers is relevant to the decision of the <b>Commission</b> under clause 3.3.5.</p>	<ul style="list-style-type: none"> <li>• We consider that we have included all relevant information in the major capex proposal.</li> </ul>

Clause	Requirement	Compliance
I5(1)-(3)	<p>(1) <i>The approach to enabling consideration of whether one or more <b>non-transmission solution</b> may meet an <b>investment need</b> must take into account-</i></p> <ul style="list-style-type: none"> <li>(a) <i>the size and nature of the <b>investment need</b>; and</i></li> <li>(b) <i>the likelihood that one or more <b>non-transmission solutions</b> could reasonably meet it.</i></li> </ul> <p>(2) <i>The approach must enable the-</i></p> <ul style="list-style-type: none"> <li>(a) <i>reasonable information needs of interested persons, including potential proponents of <b>non-transmission solutions</b> to be met; and</i></li> <li>(b) <i>views of interested persons, including potential proponents of <b>non-transmission solutions</b> to be expressed and taken into account.</i></li> </ul> <p>(3) <i>As a minimum, the approach must include the requirements that-</i></p> <ul style="list-style-type: none"> <li>(a) <i>when consulting on an <b>investment need</b>, <b>Transpower</b> must-</i> <ul style="list-style-type: none"> <li>(i) <i>invite interested persons to provide views or information relevant to possible <b>non-transmission solutions</b> to meet that need; and</i></li> <li>(ii) <i>provide sufficient information to enable interested persons, including potential proponents of <b>non-transmission solutions</b> to propose <b>non-transmission solutions</b>; and</i></li> </ul> </li> <li>(b) <i><b>Transpower</b> need not seek proposals for <b>non-transmission solutions</b> from interested persons prior to the initial consultations on its long list of <b>investment options</b>, but must take those views and information on or relevant to possible <b>non-transmission solutions</b> into account to the extent they have been provided prior to or during the period in which the</i></li> </ul>	<p>We consider we have complied with these requirements.</p> <p>We issued a high level RFI for non-transmission solutions (NTSs) with our long-list consultation and received some responses. However, interest from proponents was mostly limited to supporting the overall concept of NTS, rather than offering specific projects or technologies to replace or defer transmission options.</p> <p>Please refer to:</p> <ul style="list-style-type: none"> <li>• Section 3.3;</li> <li>• Attachment H: Stakeholder Consultation Summary, Section 2.</li> </ul>

	<p><i>long list is developed, including pro-actively engaging with the parties providing them, where appropriate; and</i></p> <p><i>(c) when consulting on its long list of <b>investment options</b>, <b>Transpower</b> must-</i></p> <p><i>(i) include potential <b>non-transmission solutions</b> in its list of <b>investment options</b>; and</i></p> <p><i>(ii) invite interested potential proponents of <b>non-transmission solutions</b> to provide information or proposals on <b>non-transmission solutions</b>; and</i></p> <p><i>(d) when developing the short list of <b>investment options</b> that includes a <b>non-transmission solution</b>, <b>Transpower</b> must invite proponents of <b>non-transmission solutions</b> to provide comprehensive proposals in respect of their <b>non-transmission solution(s)</b>.</i></p>	
<p><b>15(4), (5)</b></p>	<p><i>(4) The invitations described in subclauses (3)(c) and (3)(d) must grant interested persons and proponents of <b>non-transmission solutions</b> 6 weeks to respond, subject to subclause (5).</i></p> <p><i>(5) For the purpose of subclause (4), the approach may specify a longer or shorter period where appropriate in light of the factors specified in subclause (1).</i></p>	<p>We complied with these requirements for our long list consultation. The long list consultation document was published on 20 August 2021 and was open for submissions until 1 October 2021.</p>

# Application of Investment Test

Clause G5(13) requires a major capex proposal to include Transpower’s rationale for determining that the proposed investment may satisfy the investment test in Schedule D Division of the Capex IM, by reference to each subclause and paragraph of the test. The table below describes how the proposed investment in this proposal satisfies the investment test.

Clause	Requirement	Compliance
D1(1)	(1) The <b>investment test</b> is satisfied in respect of a <b>proposed investment</b> if the <b>proposed investment</b> is an <b>investment option</b> that-	
D1(1)(a)	(a) is sufficiently robust under <b>sensitivity analysis</b> ;	Compliant. The proposed investment is reasonably robust under sensitivity analysis. Please refer to: <ul style="list-style-type: none"> <li>Section 5.3;</li> <li>Attachment C: Options Report, Sections 4.2.10 4.4.2 and 4.4.3.</li> </ul>
D1(1)(b)	(b) has a positive <b>expected net electricity market benefit</b> unless it is designed to meet an <b>investment need</b> the satisfaction of which is necessary to meet the deterministic limb of the <b>grid reliability standards</b> ; and	Compliant. The proposed investment (Option 14) has a positive expected net electricity market benefit of \$145m compared to the base case. Please refer to: <ul style="list-style-type: none"> <li>Section 5.2;</li> <li>Attachment C: Options Report, Section 4.4.</li> </ul>
D1(1)(c)	(c) has- <ul style="list-style-type: none"> <li>(i) the highest <b>expected net electricity market benefit</b>, where only quantified <b>electricity market benefit or cost elements</b> are considered; or</li> <li>(ii) the highest <b>expected net electricity market benefit</b> including a qualitative assessment to take into account</li> </ul>	Compliant. The proposed investment (Option 14) has: <ul style="list-style-type: none"> <li>similar expected net electricity market benefit to the option with the highest expected net electricity market benefit (Option 12); and</li> </ul>

	<p><i>the contribution of associated unquantified <b>electricity market benefit or cost elements</b>, if the <b>proposed investment</b> has a similar <b>expected net electricity market benefit</b> to the <b>investment option</b> with the highest <b>expected net electricity market benefit</b> where only quantified <b>electricity market benefit or cost elements</b> are taken into account.</i></p>	<ul style="list-style-type: none"> <li>• higher unquantified benefits than Option 12 and all other similar options due to the extra flexibility Option 14 provides.</li> </ul> <p>Please refer to:</p> <ul style="list-style-type: none"> <li>• Section 5.2;</li> <li>• Attachment C: Options Report, Section 4.4 and 5.0.</li> </ul>
D1(2)	(2) For the purpose of subclause (1)(c)(ii)-	
D1(2)(a)	<p>(a) a similar <b>expected net electricity market benefit</b> is one where the difference in quantum, subject to subclause (3), is 10% or less of the aggregate <b>project costs</b> of the <b>investment option</b> to which the <b>proposed investment</b> is compared; and</p>	<p>The difference in the quantum of expected net electricity market benefit between the proposed investment (Option 14) and the option with the highest expected net electricity market benefit (Option 12) is \$36m, which is less than 10% of the aggregate project costs of Option 12 (\$451m).</p> <p>Please refer to:</p> <ul style="list-style-type: none"> <li>• Section 5.2;</li> <li>• Attachment C: Options Report, Section 4.4.</li> </ul>
D1(2)(b)	<p>(b) an <b>electricity market benefit or cost element</b> may be treated as unquantified where-</p> <p>(i) the cost of calculating its quantum in accordance with clause D6(4) is likely to be disproportionately large relative to the quantum; or</p> <p>(ii) its expected value cannot be calculated in accordance with clause D6(4) with an appropriate level of certainty due to the extent of uncertainties in underlying assumptions or calculation approaches.</p>	<p>The unquantified benefits relate to one of our potential Stage 2 projects for the Wairakei Ring which would improve reliability of supply to Bay of Plenty electricity consumers. This remains an unquantified benefit in this Stage 1 analysis, but will be quantified for Stage 2 analysis.</p> <p>We consider the expected value of these benefits cannot be calculated with an appropriate level of certainty due to the extent of uncertainties in underlying assumptions or calculation approach.</p> <p>Please refer to:</p> <ul style="list-style-type: none"> <li>• Sections 5.2 and 5.3;</li> <li>• Attachment C: Options Report, Section 4.4.</li> </ul>
D1(3)	(3) For the purpose of subclause (2)(a), the <b>Commission</b> may, at its discretion, adopt an alternative percentage to 10% as proposed by <b>Transpower</b> .	Not applicable.

