

Draft

Paper for

TRANSPORT WORKING GROUP

Part F: Plain English Guide and Examples

DRAFT

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PART F: PLAIN ENGLISH GUIDE

INTRODUCTION

On 7 December 2000, the Government announced a comprehensive policy package designed to deliver fairness and transparency to electricity consumers.

The Government Policy Statement (GPS) on electricity sets out in detail the Government's views on electricity industry governance and its objectives and expectations. The Policy Statement begins with a set of guiding principles and covers the establishment of an Electricity Governance Board. The Statement then sets out a work programme covering all sectors of the industry - wholesale, transmission, distribution and retail.

Underlying the policy statement is the Government's intention that change be driven and undertaken by industry participants. The industry has established the Electricity Governance Establishment Project (EGEP) to implement the GPS and develop rules governing wholesale, retail, security, transmission and distribution.

The Transport Working Group (TWG) was established to consider those aspects of transmission and distribution arrangements that need to be addressed in order to establish the Electricity Governance Board (EGB) in a manner consistent with the GPS.

As a part of its terms of reference, the TWG has discussed and agreed a set of rules with respect to:

- Agreeing the transmission services provided by Transpower to its customers*
- Agreeing a decision framework for transmission system expansion and replacement*
- Establishing transmission pricing methodologies*

The processes outlined in Part F cover only these three areas because they were considered the three key areas that had inhibited investment in transmission by Transpower and its customers to date. They do not cover other aspects of the contract for transmission services between Transpower and its customers.

These rules form Part F of the proposed industry rulebook and this guide provides an explanation of those rules.

Section I: Developing the service component of transmission contracts in order to facilitate decisions to enhance and replace transmission assets

The current contracting relationship between Transpower and its customers focuses primarily on the provision of assets (considered as inputs to service) rather than the service received (considered as service outputs). However, to obtain the most benefit from transmission, it is desirable to establish a service-based contracting relationship under which customers receive the range and level of transmission services they require and for which they are willing to pay. Describing attributes of electricity transmission in as explicit a manner as possible should assist Transpower customers in comparing transmission investment proposals with alternatives in the future.

Section I of Part F describes a one-off process to establish service-based contracts between Transpower and Transpower customers. Under the process specified, Transpower and Transpower customers agree a set of service definitions, service measures and service levels which describe the current services provided by Transpower to the customer. Service definitions and measures which are not a part of the current service, but which customers may want in the

future and Transpower agrees to provide, can be included. These are defined as new services and, for the purposes of the Section I process, can be included in service contracts but with an undefined service level.

Having established a service-based contracting relationship, Section I then describes how Transpower will publish a forward looking “Service Delivery Plan” setting out how much it will cost to continue meeting the contracted service levels. It looks ahead 10 years and includes a schedule of future investment requirements and their associated transmission charges. This is intended to facilitate decisions by Transpower customers on service/price trade-offs.

Transpower may also publish a Statement of Investment Opportunities, which sets out for the above investment requirements details of the options Transpower has considered, its preferred option, and the dates at which expenditure would be required.

The contracting arrangement established in Section I obliges Transpower to continue delivering the service levels agreed between Transpower and a customer, or determined by the Arbitral Tribunal, on an ongoing basis (albeit in a manner consistent with existing contracts) unless customers negotiate a change in their service levels. This means that transmission investments required to continue meeting those service levels, as advised in the Service Delivery Plan, will automatically proceed, and customers will be charged accordingly, unless customers commit to alternatives or successfully negotiate a reduction in their contracted service levels.

This incentivises Transpower customers to continually consider whether the contracted service levels remain appropriate and to explore alternatives. It also places an incentive on Transpower to minimise the cost of delivering the service levels because it is aware that its costs and investment proposals are continually subject to scrutiny.

Investments notified through the Statement of Investment Opportunities will receive 5 years (or other agreed period) ODV protection from demand reductions, but not technological obsolescence. Transpower may choose which investment requirements are included in the Statement of Investment Opportunities, but only those specified will receive the protection offered by this process. This allows Transpower and a customer to reach agreement outside the Part F process if they so wish.

Section I applies to Transpower only; it is assumed that future transmission providers will contract with transmission customers on the basis of provision of service. Publication of a Service Delivery Plan is not required of other transmission providers – it is left to the parties involved to decide how they will inform each other or plan ahead.

1. Introductory Rules

This rule summarises the contents of section I. It also provides for the situation where Transpower and customers have been through a process equivalent to that specified in rule 2 for determining service definitions and measures, prior to the rules coming into effect. In that case, once the rules are effective, Transpower and its customers vote to approve or reject the definitions and measures. If approved, the process specified in rule 2 is deemed to have been completed but, if rejected, the rule 2 process must be undertaken.

Rule 1 also contains the process for changing the rules in section I, and the fees payable by members.

2. Developing service definitions and service measures

Transpower must propose to its customers a set of service definitions and measures within 2 months of the rules coming into effect. This set is published by the Board, and any person may make a written submission within 20 business days of publication.

A working group is established to consider the set of definitions and measures, and submissions. The working group must comprise Transpower members, and members nominated by Transpower customers, with each group having equal voting rights. The Board nominates a

chairperson who acts as a mediator and does not vote. The working group is required to recommend a set of service definitions and measures which are meaningful to Transpower and its customers, are consistent with other rules and legally effective, and which include service definitions and measures which are already in Transpower's contracts with its customers, where those contracts have been notified to the working group.

The set of service definitions and measures recommended by the working group is then voted on by Transpower and its customers, who may only approve or reject the entire set. In the event of rejection, the same process is repeated, but with a new working group appointed. This must be completed within 2 months and, if the set of service definitions and measures is again rejected, it is referred to arbitration. In that event, the Board must publish that on its website.

The arbitral tribunal must be either the Board, or nominated by the Board, within 20 business days of the second rejection, and be published on its website. The arbitration process must be published within a further 10 business days, and submissions from Transpower and its customers sought. The Board must then publish the final arbitration process and reasons for its decision.

The arbitral tribunal determines the set of service definitions and measures in accordance with the principles set out in the second paragraph above, and must either accept the set recommended by Transpower, or the set recommended by a majority of the non-Transpower representatives on the working group.

The final set of service definitions and measures is published by the Board on its website within 5 business days of a final decision, together with reasons for the determination.

Figure 1 outlines the process described above.

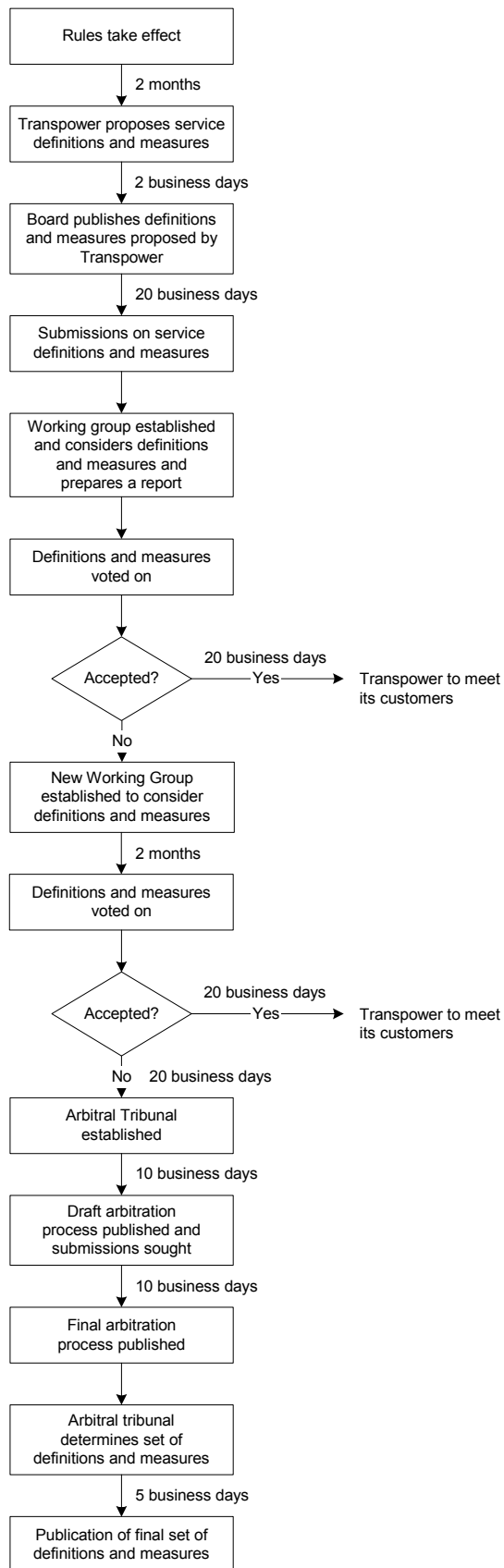


Figure 1: Section I Process for Service Definitions and Service Measures

3. Determining service definitions and service measures relevant to each Transpower Customer

Within 20 business days of a final set of service definitions and measures being determined, Transpower must meet with its customers (either individually, or in groups) to determine the service measures and levels that apply to each customer. If no agreement is reached within 20 business days of that meeting, Transpower customers determine the set of service definitions and measures which apply to them.

4. Specifying current service levels

Within 40 business days of determination of the set of service definitions and measures for each Transpower customer, Transpower must propose the service level relevant to each measure. It then meets with each customer or group of customers within 20 business days of the proposal to agree the levels for each customer.

If no agreement can be reached, the Board must appoint an arbitrator within 20 business days to determine the service levels. The Board must publish the arbitral tribunal on its website. Within a further 10 business days, the Board must publish the arbitration process on its website, and seek submissions from Transpower, and Transpower customers, on it. Those submissions are due within 5 business days. The final arbitration process must be published by the Board within 10 business days of publication of the draft process.

The service levels determined by the arbitral tribunal in each case must not be inconsistent with any levels specified in a written contract between Transpower and its customer. Where there is no written contract then the levels must be consistent with the behaviour and practice to date. The service levels are not expected to require Transpower to immediately after the decision invest in new or existing assets or alter fundamentally the manner in which it manages or operates the grid. The service levels so determined must be notified to the Board, with reasons, and the Board must immediately notify Transpower and its customers, with the reasons for the decision.

Service levels so determined are only effective where they are incorporated into a contract between Transpower and each of its customers.

Figure 2 outlines the process described above.

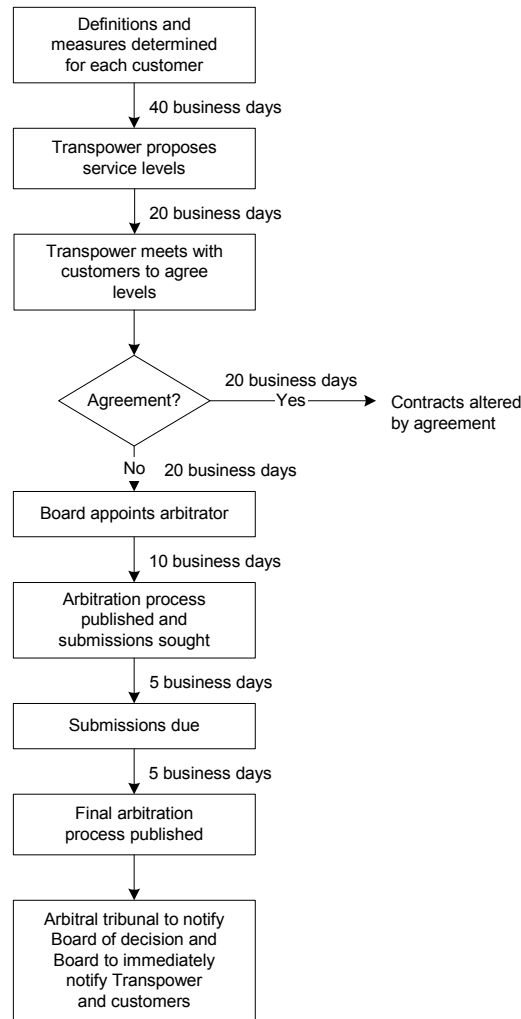


Figure 2: Section I Process for Setting Service Levels

5. Alterations to contracts

The service levels determined under rule 4 apply only as follows:

- where service definitions and measures have been determined or agreed, and there is a signed written contract between Transpower and a customer, and they have agreed that the levels apply; or
- where Transpower and a customer have agreed that Transpower's Posted Terms For Connection to Grid Assets apply, or by law the Posted Terms apply.

In all cases there must be an applicable confirmed pricing methodology for the service levels to have effect.

Where the service levels apply as above, Transpower and a customer must immediately (unless they agree to a later date) vary the contract between them to effect the final definitions, measures and levels, and the relevant price calculated in accordance with the confirmed pricing methodology.

Where service levels are not incorporated in a contract, they are not binding or enforceable against Transpower. Any information resulting from the process of specifying service levels cannot be used in any dispute between Transpower and a customer against the party who provided the information. Note that nothing in Section I limits the expiration, termination or variation of a contract between Transpower and a customer.

6. Transpower to develop service delivery plan

Each year Transpower must prepare and publish on its website a draft plan which specifies how it proposes to meet the agreed or determined service levels (even those not incorporated in contracts) over the next 10 years. The draft plan must contain the assumptions made by Transpower, identify the price of maintaining service levels, and identify where new investment is required to maintain them.

Where the need for new investment is identified, Transpower may provide in the plan a draft Statement of Investment Opportunities which specifies the investment options available and Transpower's preferred option and provide a cost estimate at each step of implementation of the preferred option, and an estimate of resulting transmission prices. Dates on which expenditure must be committed are also required unless other solutions have been agreed, or service levels no longer require the investment.

Transpower must seek feedback from customers and interested others on the draft plan and Statement, and have regard to comments received, but may determine the final plan itself. Transpower must publish the final plan on its website within 5 business days of finalising it and notify its customers of that.

Where Transpower commits to expenditure specified in the Statement on or after the date specified in its final service delivery plan, but over the next 5 years (or other period of time agreed between Transpower and the customer) demand for the service provided by the asset reduces, or the asset is not commissioned, this will not affect transmission prices. However, there may be other reductions in the value of the asset which should be reflected in the price, such as a lower cost modern equivalent to the asset.

Section II: Agreeing changes to existing services and supply of new services

One of the unique characteristics of transmission services is that they are provided through a network (or grid), where some services are for the benefit of individual customers only, while others are for the benefit of more than one party connected to the grid. This interconnectedness means that some changes in service agreed bilaterally between Transpower and a customer may have an effect on the service provided to another customer. This gives rise to a need for a process whereby all affected customers are considered in any decision to change services that affect them. .

Section II describes how transmission providers can seek changes in contracted services (by changing service levels for existing services or introducing new services or changes to conditions surrounding the services). It is specifically for multilateral situations and describes a voting process for deciding whether to proceed with the service change. Section II can be followed in bilateral situations where those affected do not agree.

The aim is to deliver electricity to consumers that reflect their preferences in terms of trade-offs between quality, service and price. If at least 75% vote in favour of the service change it may proceed. The 75% threshold is an attempt to balance free-riding (which occurs where a party who benefits from an investment refuses to pay for the investment on the basis that they think other parties will invest anyway) and hold-out (which occurs when a party refuses to agree on an issue, to the detriment of the common good) , both of which may create barriers to multi-party decision-making. Reducing this barrier is crucial to creating an environment where efficient new investment decisions can be made.

A resolution to proceed with a service change is binding on all parties.

The rules include an appeal process where, if any party believes a vote for a service change was not in the interests of consumers, that party may appeal to the EGB for the decision to be overturned. To be successful, the appellant must demonstrate to the EGB that there would be a net public benefit as a result of overturning the decision. Such appeals are only allowed if at least 25% of the votes were held by distributors who do not use the consultation process in the Model Distribution Contract and if the proposal has been voted on twice, with at least one year between the votes.

Although Transpower is currently the sole transmission provider in New Zealand, this may not be the case in the future. Section II therefore applies to other transmission providers and to services which substitute for transmission services where they are unable to gain the agreement through negotiations with all those affected by their proposed new service(s).

Note under rule 2 a service change proposal must come from a transmission provider, not from a customer. This is because section II is designed to facilitate customer decision making in response to an offer of a service change – such an offer must come from the provider of the service.

1. Introductory Rules

This rule summarises the contents of section II covering service changes, and specifies the process for changing the rules in section II.

2. Proposal for service change

Transmission providers, including Transpower, may propose a service change to the Board. The proposal must specify in detail the change, the nodes at which the change applies and the relevant service definition, measure and level at each node. The transmission provider must certify that other nodes will not be materially adversely affected or, if that is not the case, certify that those so affected support the change. The proposal must include the confirmed pricing methodology resulting from the change.

3. Establishing voting parties to agree service change

The transmission provider must also advise the Board of the names and addresses of the transmission purchasers who will receive the new or changed service, and how much those purchasers would pay in the 12 months following the introduction of the change.

Those who will receive the service change are eligible to vote, based on how much they will pay for the service change vis-à-vis the total cost of the transmission service after the change.

The Board must notify all transmission providers and purchasers within 10 business days of receiving the service change proposal, including the identity of eligible voters. It must publish that information on its website.

A transmission purchaser may appeal to the Rulings Panel within 5 business days of publication of the proposal, on the following grounds:

- if it believes it has been incorrectly included in, or omitted from, the list of purchasers affected by the service change;
- the service change cannot technically be provided to or received by that purchaser at the specified service level;
- the votes allocated to it were incorrect;
- the structure of the service change prejudices its voting rights on the proposal;
- the service change proposed is frivolous or vexatious.

The Rulings Panel notifies the Board of the appeal, which must then publish the timetable for determining the appeal. The Panel must rule on the appeal within 20 business days of receiving it, and must notify the relevant transmission purchaser and provider, and the Board, of its ruling

and reasons. The ruling may either require withdrawal of the service change proposal and comment on its inadequacies, or dismiss the appeal and approve the service change proposal. The Board must immediately publish both the ruling and reasons. Both the Board and the transmission provider must comply with the ruling.

A service change proposal must be put to a vote within 5 business days of publication, where there is no appeal, or within 5 business days of a ruling on an appeal, where the ruling allows the proposal to proceed.

At least 75% of votes must be in favour of the proposal in order for it to proceed. The outcome of the vote must be published by the Board within 1 business day of the vote, and transmission purchasers and providers notified accordingly. The outcome of the vote is binding, and the relevant transmission provider and purchaser must then do everything necessary to effect that. However, the time for appeal (1 month) must expire without an appeal being lodged before effecting the outcome of the vote. Where the resolution on the proposal is not passed, the service change proposal lapses.

4. Appeal against a decision regarding a service change

Any person can appeal to the Board against the outcome of the vote, whether the vote was passed or not. The appeal must be lodged within 1 month of the publication of the outcome of the vote, but will only be heard if at least 25% of those purchasers voting are distributors and had not adopted the procedure for service change in the model distribution contract published by the Board and, where the outcome of the vote is to not proceed with the change, the change had been proposed twice to the same group of purchasers without material change to either it or the pricing methodology, and the resolutions for each proposal were at least a year apart.

It is up to the Board to determine whether an appeal may proceed. It must do so within 10 business days of receiving the appeal, and then publish its determination and reasons. If an appeal proceeds, it must go through two steps; the Board first determines whether an arguable case exists, and second determines the case itself.

In the first step, within 20 business days of publication of the determination the appellant must make submissions to the Board that there is an arguable case that allowing the appeal would likely result in a net public benefit. Within 2 business days the Board must publish the submissions. The Board must then decide within 2 months whether there is an arguable case that allowing the appeal would likely result in a public benefit. It must publish that within 10 business days and notify transmission providers and purchasers accordingly. If it decides there is no arguable case, then the appeal is dismissed. If it decides there is, then it must take the appeal to the second step.

If the appeal goes to the second step, the Board must publish the timetable for the appeal within 10 business days and invite the appellant, transmission provider and purchasers eligible to vote, to make submissions. Within 3 months the Board must reach a decision on the appeal, based on the timing of the costs and benefits of the service change, how likely it is they will be achieved, and other matters it considers relevant.

Within 10 business days of making a decision the Board must publish its decision and its reasons, and notify transmission purchasers and providers accordingly.

Where the Board has either not allowed the appeal to proceed, or has later determined that there is no arguable case that allowing the appeal results in a public benefit, the original decision made by transmission purchasers to reject or accept the proposal stands. Rejected proposals lapse. Where the Board allows the appeal, then the original decision made by transmission purchasers is deemed to be reversed.

The relevant transmission provider and purchaser must do everything to effect the Board's decision. Where any service change allowed to proceed results in a change in the set of transmission service definitions and measures, then the Board must update the set.

Figure 3 outlines the process described above.

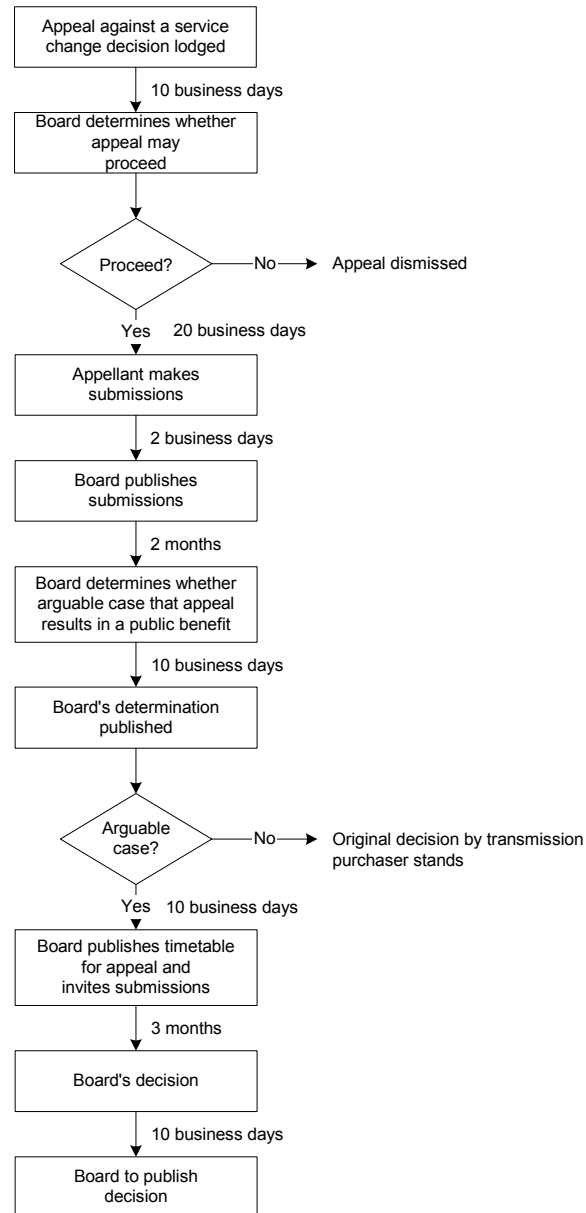


Figure 3: Section II Process for Appeal Against a Service Change Decision

Section III: Rules for pricing transmission services

Section III describes a procedure for establishing a pricing methodology for transmission services. The outcome is a confirmed pricing methodology – being a methodology confirmed by the Board as conforming with the principles and objectives for transmission pricing outlined in rule 2.3. Note, in the case of Transpower, the Commerce Act provides that the Minister of Energy may require the Commerce Commission to authorise Transpower's pricing methodology – this would override any pricing methodology confirmed by the Board under section III.

A 3 stage consultative process is used to ensure a high chance that the methodology does conform with the principles and objectives. At each stage, the transmission provider publishes a

“draft”, consults with stakeholders, considers the feedback, and publishes a final version. The transmission provider is not obliged to incorporate feedback, but the EGB in assessing a submitted methodology will consider whether the transmission provider had regard to the feedback received.

Firstly, the consultation process itself is developed. Then the design principles to be used for developing the methodology are derived. These may simply be the rule 2.3 principles and objectives, but may also include some more detailed principles interpreted from the original principles and other principles added for clarity or practical reasons.

Having determined a set of design principles, the transmission provider then develops a methodology to conform with the principles and objectives. The EGB assesses the methodology for conformance with the pricing principles and objectives and design principles.

The rules require transmission purchasers to pay transmission charges resulting from the application of a confirmed pricing methodology and which have been verified as correctly applied by an auditor.

1. Introductory Rules

This rule summarises the contents of section III covering the development of a pricing methodology for transmission services or services that substitute for transmission. It provides for the situation where Transpower has completed steps to developing pricing design process or principles prior to the rules coming into effect. In that case, the Board may deem the steps to have been taken under Part F of the rules. The Board must then notify Transpower of the timetable for completing the processes in section III, and must publish its decision deeming steps to have been taken under Part F, its reasons and the timetable.

Rule 1 also contains the process for changing the rules in section III.

Note that if the Commerce Commission makes an authorisation in respect of the pricing methodology to be applied by Transpower under the Commerce Act, such a methodology is a confirmed pricing methodology for the purposes of the Rules.

2. Developing a pricing methodology

Transmission providers providing a transmission service must submit a pricing methodology in the following situations:

- In Transpower’s case, within 9 months of the rules coming into force (subject to any steps completed prior to that which the Board has approved);
- Within 9 months of a notice requiring a review of its pricing methodology from purchasers who together pay at least 50% of that transmission provider’s revenue from transmission prices determined under that methodology;
- Where it wishes to change its methodology, but not within 2 years of its last confirmed pricing methodology unless the Board consents;
- Within 9 months of a pricing methodology determined by the Commerce Commission ceasing to apply.

A transmission provider may submit a new pricing methodology at any time, but not within 2 years of its last confirmed pricing methodology unless the Board consents.

A transmission provider with a confirmed pricing methodology must review its methodology at least once every 5 years, and report to the Board on whether the methodology conforms with the principles and objectives specified in section III. If the methodology does not so conform, the transmission provider must report to the Board specifying the changes it needs to make to ensure compliance, and also submit a reviewed pricing methodology that includes the changes specified in its report.

Pricing methodologies must achieve specified principles and objectives, taking into account practical considerations, transaction costs, and the desirability of certainty and consistency. If there is a conflict between principles and objectives, it should be resolved by satisfying electricity consumers requirements at the least cost consistent with sustainable development. The principles are (as listed in rule 2.3):

- Recover the full economic costs of the services provided;
- Connection costs must be allocated on a user-pay basis;
- Pricing of new investments should provide transmission purchasers with strong incentives to identify least cost options;
- Pricing for new entrants must provide clear locational signals;
- Sunk cost allocation should minimise distortion to production/consumption
- A variable element should be included which reflects the marginal costs of supply to provide an incentive to minimise network constraints.

The objectives are that the pricing must be transparent, reflect the cost of the service, facilitate efficiency in supply, delivery and use of electricity, as well as be an efficient use of the provider's resources.

3. Review of design process

Before preparing a pricing methodology, or at the same time, the transmission provider reports to the Board on the design process it will follow, and must publish this and invite submissions. Any person can make written submissions within 20 business days of publication of the design process. Submissions must be published by the transmission provider.

The transmission provider must have regard to the submissions and other relevant information and, within 10 business days, decide how it will revise its design process and submit it to the Board. The Board must consider and report to the transmission provider on whether the design process is sufficient to support robust conclusions, within 20 business days in the case of a new pricing methodology, and 10 business days in the case of a review of a pricing methodology.

The transmission provider then decides whether to revise its design process having regard to the comments received from the Board, and must report to the Board within 10 business days of receipt of the Board's comments explaining any changes and the reasons for them.

Within a further 5 business days the Board must publish its comments to the transmission provider and the transmission provider's report, and notify all transmission providers and purchasers that it has published those reports.

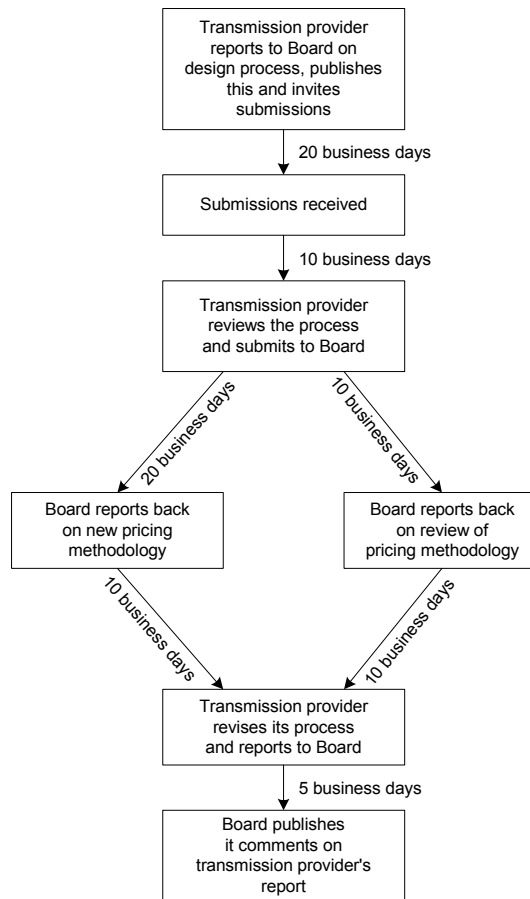


Figure 4: Section 3 Revision of Design Process

4. Review of design principles and further review of design process

Before or at the same time as submitting its new pricing methodology, the transmission provider must report to the Board on the design principles forming the basis of the methodology, and describing the design process it has followed. It must publish the process and principles, and invite submissions. Any person may make submissions within 20 business days of publication of the principles. The transmission provider must immediately publish those submissions.

The transmission provider must have regard to the submissions and other information it considers relevant, decide whether to revise the design principles and process, and submit revisions to the Board within 10 business days of the closing date for submissions. It must also provide the Board with sufficient information to enable the Board to adequately assess the design principles and process followed. If the Board believes there is insufficient information, it may decline to consider the report, and request the transmission provider to provide the information required.

No more than 30 business days later, but as soon as practical, the Board must decide whether the design principles and process followed are sufficiently robust, having regard to whether the transmission provider:

- consulted with others appropriately
- considered all relevant matters
- ignored irrelevant matters
- has taken a consistent approach
- made a reasonable decision in light of facts available to it

The Board may consider any other matters it thinks relevant. Once it has reached a view, it must advise the transmission provider, and give its reasons. The transmission provider must have regard to that, determine whether it will change any part of the design principles or process, and report to the Board on any changes made, and reasons and, if it wishes, seek further comment from the Board. Where no further comment is sought, the Board must publish its comments, and the transmission provider's response within 2 business days, and notify transmission providers and purchasers of that.

5. Confirmation of pricing methodology

The Board must notify all members of the Rulebook of a new or reviewed pricing methodology within 2 business days of receipt, including a copy of the methodology, and invite submissions from members. Within 2 business days it must also publish the methodology, and invite submissions from any person. The Board must determine whether a pricing methodology conforms to the principles and objectives for transmission pricing within 70 business days of receiving it.

Anyone may make a submission to the Board, within 40 business days of the Board's notice. Submissions must be limited to:

- whether the design process was sufficiently robust to support the transmission provider's conclusions. In particular, whether the transmission provider:
 - consulted with others appropriately
 - considered all relevant matters
 - ignored irrelevant matters
 - has taken a consistent approach
 - made a reasonable decision in light of facts available to it
- whether the pricing methodology is consistent with the design principles
- whether the pricing methodology is consistent with the principles and objectives set out in paragraph 2 above.

The Board must publish submissions within 2 business days of receipt.

The Board must also consider the above matters, and the submissions received, when assessing whether a pricing methodology conforms to the principles and objectives for transmission pricing, as well as any other matters it considers relevant. Transmission providers submitting a new methodology must provide the Board with sufficient information to enable the Board to make an informed assessment. If not, the Board may decline to consider the pricing methodology, and request additional information.

Once the Board has considered the methodology, it may either confirm the methodology as conforming to pricing objectives and principles, or refer it back to the transmission provider. In the latter case, the Board must provide its reasons to the transmission provider, and publish its decision and reasons within 10 business days. This process continues until the Board confirms the pricing methodology or the transmission provider notifies the Board that it no longer wishes to proceed.

If the transmission provider wishes to make minor changes to its pricing methodology, it must advise the Board, and the Board may agree that the amended methodology need not go through the process specified in the Rules for review of the design process and principles. However, the amended methodology must comply with the requirements of rule 5 covering conformance with the principles and objectives for transmission pricing.

If Transpower has submitted a pricing methodology, but there are differences between the Board and Transpower on whether the methodology conforms to the principles and objectives for transmission pricing, the Minister responsible for the Electricity Act may recommend to the

Governor-General that an authorisation be made under the Commerce Act. Until then, Transpower and the Board must continue with the processes in rule 5.

6. Application of confirmed pricing methodology

The transmission provider must prepare customer specific prices within 20 business days of the Board confirming the pricing methodology, with sufficient detail on algorithms and input information to enable audit. Within that timeframe the transmission provider and Board must agree to an auditor to verify the correct application of the methodology. If an auditor cannot be agreed, the auditor will be a person nominated by the President of the Institute of Chartered Accountants. The transmission provider meets the auditor's costs.

The Board determines the scope of the audit, in consultation with the transmission provider. An auditor is then engaged to audit the application of the methodology. The auditor must have sufficient information to draw a reasonable conclusion, and may request additional information from the transmission provider which the transmission provider must comply with.

The auditor then reports to the transmission provider on whether the application of the methodology has any errors which will have a material impact on prices. Within 20 business days of that, the transmission provider must respond to the auditor outlining what it has done to correct any error identified. Within 5 business days of receiving that, the auditor must report to the Board certifying either that the transmission provider has correctly applied the confirmed pricing methodology, or that material errors remain, and the Board must publish that report within 5 business days.

7. Calculation and review of customer-specific prices

The transmission provider is to notify its customers of their transmission prices under the new methodology within 10 business days of receiving a report from the auditor that there were not material errors in its methodology. Transmission purchasers may notify the transmission provider of any errors in calculation within 10 business days of receiving their prices, which the transmission provider must respond to within a further 10 business days, either correcting the errors or identifying its reasons for believing that the prices are correct. If prices are unable to be agreed, then either party can appeal to the Rulings Panel, but only on the grounds that an error has been made in calculation, and not that the confirmed pricing methodology is incorrect, or has been applied incorrectly. A decision of the Rulings Panel is binding.

8. Enforcement of transmission charges

The validity of a confirmed pricing methodology cannot be challenged, nor its application where the auditor has reported no material errors, and transmission purchasers must pay the price for the relevant service accordingly.

This does not affect any other rights which transmission purchasers might have to challenge transmission prices.

Part F Transmission Investment Case Studies

	Case 1: Bay of Plenty Constraint
Background	<p>The example developed in this case study concerns the supply of transmission services to industrial plant (timber processing) situated at Kawerau in the Bay of Plenty. The transmission system supplying Kawerau is drawn in a stylised manner in the appendix to this paper.</p> <p>The example assumes that when the regional load is high and local generation is low, the circuit from Atiamuri to Whakamaru may at times be constrained to well below its capacity rating. By constraining the circuit to below its capacity, the System Operator creates a transmission margin sufficient to other parallel circuits being overloaded if one should fail (a contingent event).</p> <p>The approach adopted by the System Operator in this example would accord with the procedures set out in the draft Policy Statement¹. The Policy Statement anticipates the System Operator applying temporary constraints to the SPD² model to maintain sufficient reserve transmission capacity when asset availability or capacity is temporarily changed.</p> <p>In this example, the customers at Kawerau and the wider Bay of Plenty region are assumed to be concerned at the effect on nodal energy prices from the temporary constraints within SPD. For instance, the constraints may result in one generator being in a position to set very high nodal prices. The example assumes that high prices result in a significant avoidable price signal to large consumers and retailers exposed to the nodal price volatility and hence seeking a solution to the relieve the risk of future constraints.</p>
Service Definitions for current service	Not applicable -no service definitions are intended to influence nodal prices
Service Levels for current service	Not applicable -no service definitions are intended to influence nodal prices
Statement of investment opportunities included in service delivery plan (Section I)	<p>Not included as current service level can be maintained without additional investment.</p> <p>Note: it is possible that the Service Delivery plan will include investment within its 10 year framework if it is considered that it is needed to meet the defined service. However this investment may be made in say year 5 which would not relieve the customers immediate concerns regarding high nodal prices.</p>
<p>Service change proposed, not in relation to any existing service level (Section II)</p> <p>Alternative non-transmission solutions</p>	<p>A. Transpower proposes to upgrade the Wairakei ring circuits at an approximate cost of \$1 million.</p> <p>B. Industrial Customer offers load for inter-trip.</p> <p>C. ECOGEN offer to build biomass generation. Require 10 cents/kWh power purchase agreement.</p> <p>D. Energy Hedge contract plus FTR purchased to reduce exposure to price volatility.</p> <p><i>Note:</i> <i>ECOGEN could try to obtain the deferred cost of transmission investment by seeking to gain revenue through Section II process. However in this case they have decided to cover their revenue through an energy charge.</i></p>

¹ Policy Statement is the document which outlines how the System Operator will meet its PPO.

² SPD is the Scheduling, Pricing and Dispatch model used by the System Operator to manage the interconnected electricity system.

Pricing set for service change (Section III)	<p>A. \$XM capital investment to be recovered through bilateral contracts between Transpower and those wishing the investment to proceed.</p> <p>B. \$YYYK annual fee invoiced monthly for Z years to be to Horizon and major industrials.</p> <p>C. Bilateral arrangement no Section III requirement</p> <p>D. Bilateral arrangement no Section III requirement</p>
Voting arrangements on service change (Section II)	<p>A. As there is no change to the existing service Transpower could offer its solution on a bilateral to those wishing to pay without the need for a section II vote. If there are potential free riders a Section II vote could be taken however it may be difficult for Transpower to determine the beneficiaries and allocate votes as assumptions of nodal price paths would be required.</p> <p>B. Horizon and major industrials to vote.</p> <p>C. Bilateral arrangement no Section II requirement</p> <p>D. Bilateral arrangement no Section II requirement</p> <p><i>Note:</i> <i>The sequence in which solutions are put forward will be important. It will be the responsibility of the solution providers to submit their proposals to a vote in sufficient time to enable it to be considered against other solutions. Competing proposals will require separate votes and so the sequencing will be critical. Once the vote has been concluded the solution agreed will be implemented and the provider will be paid.</i></p>
<p>Contract variations assuming votes accept service change.</p> <p>1. Current service</p> <p>2. Service change</p>	<p>If Option A is chosen and Transpower bilaterally contracts with willing parties no changes to the existing contract are required and the new service is defined in separate bilateral agreements. The Existing contract and the separate bilateral may be combined for those parties agreeing to pay for the investment. The future Service Delivery Plans will need to meet the combined service levels.</p> <p>If Option A is chosen and a vote has to be taken , Transpower's existing contract would be varied to include the new service defined and priced in accordance with the solution put to the vote. Future Service Delivery Plans would include the requirement to meet the new service. Transpower would therefore combine its existing obligations and the new obligations into a combined service contract for the customers.</p> <p>If Option B is chosen the existing contracts with Transpower would remain unaltered as the existing service levels would still be required. An additional contract would be written between the Inter-trip provider and those paying for and/or affected by the new service. The contract would need to deal with liabilities and obligations. The customers would need to combine the existing Transpower contract obligations with those gained under the additional contract with the Inter-trip provider, to determine their overall level of service.</p> <p>If Option C or D is chosen the bilateral contracts would define the Terms and Conditions. There would be no change to the existing contract with Transpower.</p>
Issues raised	<p>How will the obligations and liabilities for providing local quality arrangements be covered?</p> <p>If Option A is chosen the new investment would have to meet the AOPs to enable the System Operator to meet its PPO. Transpower would be expected to have arranged this prior to making the offer to customers under Section II.</p>

If Option B is chosen the Inter-trip provider will have to meet AOPs in order for the System Operator to meet its PPO. The System Operator will be required to use the inter-trip rather than reducing line ratings to allow for a security margin. Should the inter-trip fail to operate, isolation of other load would be required to avoid overload of the circuits. Liabilities and contingency arrangements for inter-trip failure would need to be addressed and currently failures to meet AOPs would be dealt with under the Rules with the associated liability caps defined in the Rules.

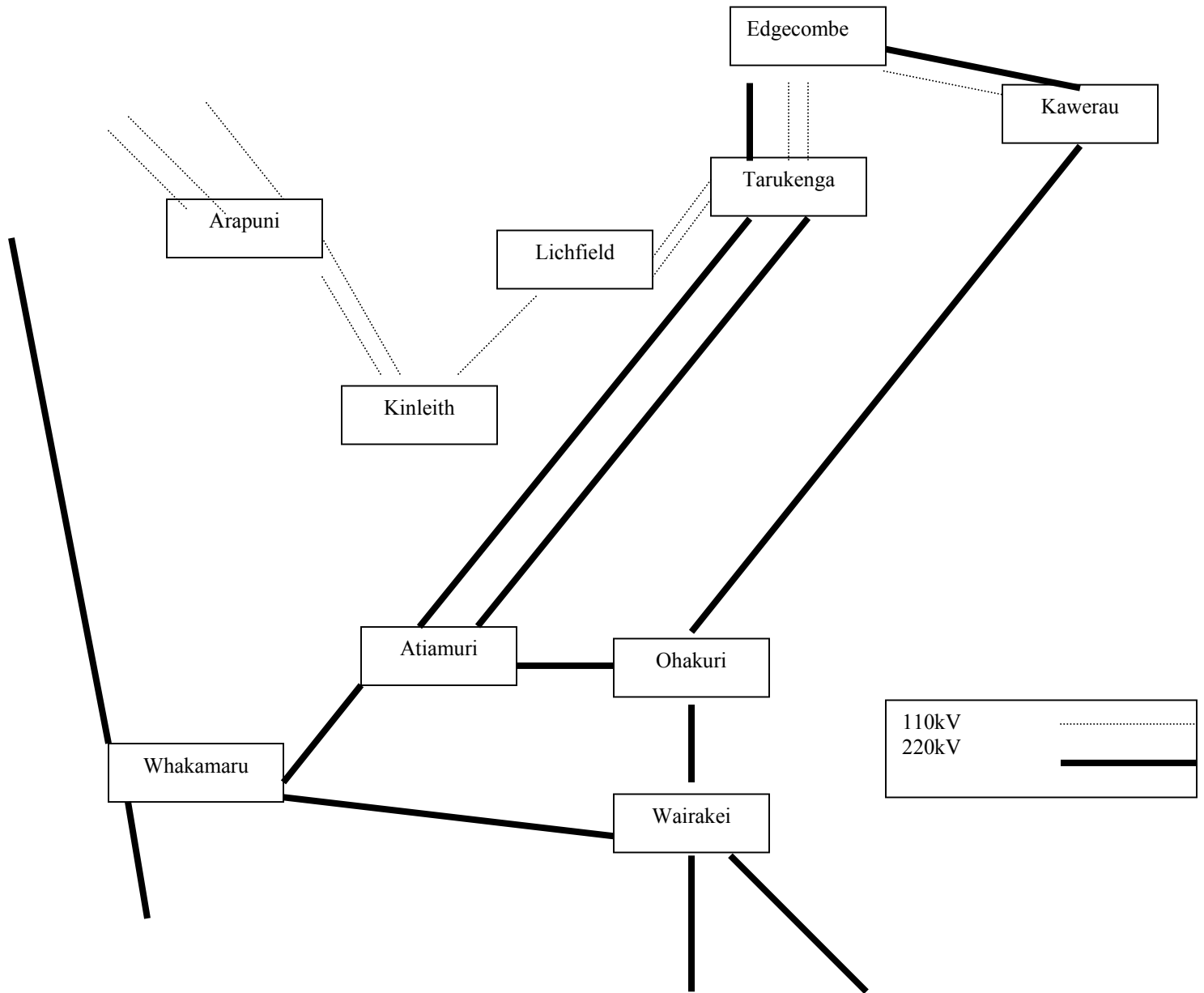
Options C and D have no issues for the System Operator in terms of adjustments to security margins. However, if additional ancillary services are required under any option the System Operator would have to purchase these to meet its PPO.

Should the voting allocation include end user customers for service changes that may impact on nodal prices.

Note:

To avoid a perception that Transpower could delay the System Operator authorisation of a transmission substitute to gain advantage for its proposal, the vote in Section II could be subject to System Operator approval being gained. This could be defined in the proposal put to the vote rather than in the Rules. (Explain)

Annex I: Stylised transmission grid supplying Kawerau



	Case 2: Taranaki Constraint
Background	<p>During dry winter conditions North-South energy transfer increases as South Island hydro is conserved by market pricing mechanisms. A constraint arises in the Taranaki region which reduces the ability of the 220KV network to transfer maximum available generation southwards. The constraint is caused by the security margin applied to the 220KV circuits by the System Operator to ensure the 110KV circuit between Hawera and Waverley does not breach its ratings under a 220KV contingent event (fault).</p> <p>In the past Transpower has split the system at Hawera to avoid the need for the constraint to be applied, however this has the effect of lowering the security level at Hawera and Waverley to n.</p> <p>An alternative solution is to invest in an inductive reactor which will limit the energy transfer through the 110KV network thereby removing the need to apply a security margin on the 220KV circuits. This solution does not affect local security levels.</p>
Service Definitions for current service	<p>1. Security at Hawera and Waverley</p> <p>Note that Transpower's preparation of its Service Delivery Plan will be driven by customers' service definitions and its own internal System Adequacy Guideline.</p> <p><i>(Customers are not contracting for this so Transpower does not have to do anything to meet the System Adequacy Guideline from the customers' perspective – this is an input decision of Transpower's only)</i></p>
Service Levels for current service	<p>Security at Hawera and Waverley – n-1 design level.</p> <p>Note that there is no grid point to point capacity service available to generators which could otherwise fund investments to ensure that the constraint does not bind.</p>
Statement of investment opportunities included in service delivery plan (Section I)	<p>To ensure Transpower achieves the local point of connection service level of n-1 security at Hawera and Waverley investment in a solution to the dry year constraint risk is needed. The inductive reactor is therefore included in Transpower's Service Delivery Plan at \$600,000 capital investment to be included in ODV and charged in the Interconnection rate. 5-Year ODV protection to be provided to Transpower. Customers can comment on the assumptions in the Service Delivery Plan but the investment required to maintain the current service level is Transpower's decision.</p> <p>The additional Transmission charges will be made in accordance with the Transpower pricing methodology for Section I new investments.</p> <p><i>Note</i> <i>It may be possible for Transpower to recover the costs of investments over the 5 year ODV protection period if the threat of stranding after that period is real.. The extent of the Commerce Commission price regulation controls on Transpower will have a significant impact on the operation of this element of Part F.</i></p>
Alternative non-transmission solutions	<p>An alternative proposed by a local generator, Trustpower, is an offer to reduce injection in to 110KV circuits when the constraint binds. This solution is sometimes called a "generator run back" scheme.</p> <p>A. The "generator run back" solution could be offered to Contact Energy and SPL, the generators who have generation affected by the 220 kV constraint.</p>

	<p>B. Transpower could be offered the generation run back solution as an alternative to the inductive reactor. Transpower may be unable to contract for this type of solution, however, as it could be defined as an energy contract and may be difficult for them to cover liabilities.</p> <p>C. The generator run back solution could be offered to the parties identified by the Transpower methodology who will pay the charges for the investment.</p>
Pricing set for service change (Section III)	<p>A. XX cents per kWh for generation lost due to the run back operation proposed to be charged to Contact Energy and SPL (there may be other adversely affected parties).</p> <p>B. YY cents per kWh for generation lost due to the run back operation offered to Transpower (if this was accepted Transpower would recover the cost under the pricing methodology which would have been used to recover the cost of the inductive reactor)</p> <p>C. ZZ cents per kWh for generation lost due to the run back operation.</p>
Voting arrangements on service change (Section II)	<p>A. No vote is applicable as the offer is an arrangement Transpower, Contract Energy and SPL which is outside of the Rules.</p> <p>B. No vote required as the offer is a bilateral with Transpower</p> <p>C. All parties expected to pay plus Powerco as an affected party are included in the vote. – 75% vote required to secure the option.</p>
Contract variations assuming votes accept service change. 3. Current service 4. Service change	<p>Current service requirements on Transpower reduced to avoid the need for investment in the reactor.</p> <p>Local generator contracted to provide run back under defined conditions.</p>
Issues raised	No issues for System Operator or Part C as the circuit ratings do not change and PPOs are not affected.

	Case 3: Irrigation Area
Background	<p>The current connection to the transmission network is via a 20MVA transformer. There is a 15MW run of river hydro station which is embedded in the local distribution network. The load is predominantly rural and mainly irrigation supplies to horticulture.</p> <p>As the load has grown and is forecast to continue growing Transpower has included investment in a second 20MVA transformer in the service delivery plan. It concludes that the investment is required to allow it to continue to meet its current service level commitments.</p> <p>The local lines company believes it can keep down transmission charges by arguing that the investment in a second transformer is not needed as the embedded hydro can cover for the increased load.</p>
Service Definitions for current service	<ol style="list-style-type: none"> 1. Meet Offtake Demand 2. Security 3. Reliability
Service Levels for current service	<ol style="list-style-type: none"> 1. 20 MW 2. n 3. X unplanned and Y planned interruptions per year
Statement of investment opportunities included in service delivery plan (Section I)	A. The second transformer investment is included in Transpower's Service Delivery Plan. The line company made representations to challenge the assumptions in the development of the plan but Transpower retained the view that the investment was needed.
Alternative non-transmission solution	B. The lines company proposes that embedded hydro is adequate to maintain existing service levels and that no new investment is required.
Service change proposed	<p>Investment opportunity A selected by Transpower after consultation with the lines company - No service change proposed but investment is required to meet the agreed offtake demand , security and reliability service levels.</p> <p>Option B conditionally accepted by Transpower after consultation with the lines company- Transpower maintains that the current services levels cannot be supported by embedded hydro generation as a substitution for transmission capacity, and that a service level reduction is to be notified under section II of the Rules. Transpower would revert to investment opportunity A if the service level reduction was rejected.</p>
Pricing set for service change (Section III)	<p>Investment opportunity A selected by Transpower after consultation with the lines company – no service change required but Transpower allocates new investment costs to the lines company.</p> <p>Option B accepted by Transpower after consultation with the lines company- confirmed pricing methodology notified for the service change.</p>
Voting arrangements on service change (Section II)	As the lines company is the affected party contracted to Transpower for the current service levels no other parties are considered in the vote under Section II. There is an obligation under Part F for the lines company to consult with its customers when proposing a reduction in service from Transpower.
Contract variations assuming votes accept service change.	Assuming the lines company proceeds with the service change, Transpower's current service levels would be amended to cover a fixed load and the lines

<p>5. Current service</p> <p>6. Service change</p>	<p>company would take on the responsibility for making up any future requirements for load growth. The lines company may contract with the generator for guaranteed availability or they may take the risk and not contract for the load growth on the assumption that the generator would generate as it would be in the position to set a high marginal price when the existing transmission became constrained.</p> <p>Future Service Delivery Plans would only cover the fixed load levels for the point of supply and not allow for any load growth.</p>
<p>Issues raised</p>	<p>The System Operator would have to be certain it could meet the PPOs under the new arrangements and may have to contract with the embedded generator for provision of ancillary services such as voltage support. The generator would have to meet the AOPOs set under the Rules for its role as a transmission substitute.</p> <p>This case study assumes the lines company is the contracted party for the current transmission service. If this position changes and Transpower contracts with retailers the situation would change. If the local retailer also owned the embedded generator and had a large share of the local retail base it could make the same decision as the lines company to reduce the current level of service but in this case Transpower would not be able to appeal as under the Rules 25% of the votes have to be with a distribution lines company.</p>

	Case 4: West Coast Load – Section I Solution
Background	<p>The West Coast region is supplied over 110 kV and 66 kV transmission circuits with a 110/66 kV interconnecting transformer located at Inangahua. Static capacitors are installed at Greymouth to improve network voltage in the region.</p> <p>Transmission capacity is augmented by local regional generation at Kumara (10 MW) and Arnold (3 MW).</p> <p>Load forecasts indicate that the West Coast load will exceed the combined capacity of local generation and the n-1 capacity of the grid from 2002. A number of parties have expressed an interest in constructing primary processing plants in the region but there is inadequate capacity in the transmission system to supply these developments. There is a need to enhance transmission capacity or to find alternative solutions to serve the load growth in the region. Transmission upgrades are costly and may not be the most economically efficient solution.</p>
Service Definitions for current services	<p>Security – n-1 design level Meet Oftake Demand</p> <p>(It is assumed that Westpower and Buller Electricity both contract for the ‘meet offtake demand’ capacity service).</p>
Service Levels for current service	<p>32 MW capacity at n-1 design security level (excluding embedded generation) Voltage range 110 kV +/- 10%, 66 kV +/-5%</p>
Statement of investment opportunities included in service delivery plan (Section I)	<p>A. Upgrade the capacity of the 110 kV line from Kikiwa to Inangahua. Upgrade the voltage of the Inangahua to Dobson line from 66 kV to 110 kV. Upgrade the capacity of the 220/110 kV interconnectors at Kikiwa</p>
Alternative non-transmission solution (Section I)	<p>B. New 10 MW hydro generator at Dobson – offsets the need for transmission reinforcement for up to 10 years</p>
No Service change proposed (Section II)	<p>Investment opportunity A selected by Transpower after consultation with West Coast customers - no service change proposed, but new investment required to maintain the agreed security level and power quality levels.</p> <p>Investment opportunity B selected by Transpower after consultation with West Coast customers – No service change proposed, but Transpower contracts bilaterally with Dobson generator for supply of capacity in excess of that which can be supplied through Transpower’s transmission system. <i>(does this create legal difficulties for Transpower ?- no Transpower is contracting for capacity not energy)</i></p>
Pricing set for service change (Section III)	No service change proposed
Voting arrangements on service change (Section II)	No service change proposed
Contract variations assuming votes accept service change. 1. Current service 2. Service change	Investment opportunity A selected by Transpower after consultation with West Coast customers – Transpower allocates new investment costs to the benefiting customers according to the confirmed pricing methodology under the agreed connection contract.

	<p>Investment opportunity B selected by Transpower after consultation with West Coast customers –</p> <p>Transpower allocates the costs of the capacity supplied by the Dobson generator to the benefiting customers according to the confirmed pricing methodology under the agreed connection contract.</p>
Issues raised	<p>If investment opportunity A is chosen Transpower may want to secure revenue protection for a period exceeding 5 years given the threat of ODV writedowns from future generation proposals. It is possible that West Coast customers may not wish to commit to investment opportunity A, B or any other alternative investment. In this case the customers may propose a service level reduction through Section II.</p>

	Case 4: West Coast Load –Section II Solution
Background	<p>The West Coast region is supplied over 110 kV and 66 kV transmission circuits with a 110/66 kV interconnecting transformer located at Inangahua. Static capacitors are installed at Greymouth to improve network voltage in the region.</p> <p>Transmission capacity is augmented by local regional generation at Kumara (10 MW) and Arnold (3 MW).</p> <p>Load forecasts indicate that the West Coast load will exceed the combined capacity of local generation and the n-1 capacity of the grid from 2002. A number of parties have expressed an interest in constructing primary processing plants in the region but there is inadequate capacity in the transmission system to supply these developments. There is a need to enhance transmission capacity or to find alternative solutions to serve the load growth in the region. Transmission upgrades are costly and may not be the most economically efficient solution.</p>
Service Definitions for current services	<p>Security – n-1 design level</p> <p>Capacity Installed at a Point of Service</p> <p>(It is assumed that WestPower and Buller Electricity both contract for the fixed capacity service).</p>
Service Levels for current service	<p>32 MW capacity at n-1 design security level (excluding embedded generation)</p> <p>Voltage range 110 kV +/- 10%, 66 kV +/-5%</p>
Statement of investment opportunities included in service delivery plan (Section I)	<p>A. Upgrade the capacity of the 110 kV line from Kikiwa to Inangahua (\$10 m)</p> <p>Upgrade the voltage of the Inangahua to Dobson line from 66 kV to 110 kV.(\$3 m)</p> <p>Upgrade the capacity of the 220/110 kV interconnectors at Kikiwa (\$2 m)</p>
Alternative non-transmission solution (Section I)	<p>B. New 10 MW generator at Dobson – offsets the need for transmission reinforcement for up to 10 years</p>
Service change proposed (Section II)	<p>Investment opportunity A selected by West Coast customers –</p> <p>Service change proposed through direct contracts with Westpower and Buller Electricity. If no agreement can be reached, Transpower can give notice of an upgrade proposal under Section II.</p> <p>Investment opportunity B selected by West Coast customers –</p> <p>Westpower and Buller Electricity are required to contract with the Dobson generator for supply capacity in excess of that which can be supplied through Transpower's transmission system.</p>
Pricing set for service change (Section III)	<p>Investment opportunity A selected by West Coast customers –</p>

	<p>\$15 m capital investment to be recovered through new investment charges from Westpower and Buller Electricity according to the confirmed pricing methodology.</p> <p>Investment opportunity B selected by West Coast customers –</p> <p>Dobson generator charges WestPower and Buller Electricity for the cost of additional capacity according to its pricing methodology (as confirmed through section III).</p>
Voting arrangements on service change (Section II)	Westpower and Buller to be allocated votes based on the ratio of their total connection charges.
<p>Contract variations assuming votes accept service change.</p> <ol style="list-style-type: none"> 1. Current service 2. Service change 	<p>Investment opportunity A selected by West Coast customers –</p> <p>Service change contract used for recovery of new investment capital, charges according to the confirmed pricing methodology.</p> <p>Investment opportunity B selected by West Coast customers –</p> <p>Some changes in agreed service definitions and levels may be required as a result of the use of generation as a substitute form of transmission.</p>
Issues raised	<p>If investment opportunity B is chosen:</p> <ul style="list-style-type: none"> • Customers will require agreement with local generators to provide a specified capacity when required (such agreements currently exist between lines companies and embedded generators) • Delivery of some services e.g. agreed voltage range, becomes a shared responsibility between Transpower and the owners of the local generation. The performance of the local generators in this respect would be determined through a local quality agreement with the System Operator. <p>If the majority of votes do not support the service change by either investment opportunity A or B, Transpower would need to use Section II to reduce agreed security, reliability and quality service levels</p>

	Case 5: Auckland Cross Isthmus Transmission - Section I Solution (Excluding Central Auckland Load)
Background	<p>The entire north isthmus region north of Henderson, including Hepburn Rd, is supplied through 220 kV and 110 kV transmission circuits from Otahuhu. There is no generation in the region.</p> <p>Load forecasts indicate that the north isthmus load will exceed the n-1 capacity of the grid in the near future.</p>
Service Definitions for current services	<p>Security – n-1 design level Meet Oftake Demand</p> <p>(It is assumed that UnitedNetworks, Vector, Northpower and Top Energy contract for the ‘meet offtake demand ‘ capacity service).</p>
Service Levels for current service	220 kV design security level of n-1 Henderson, Albany and Marsden
Current Regional Capacity Limit	Regional capacity of 780 MW at n-1 design security level.
Statement of investment opportunities included in service delivery plan (Section I)	<p>The Service Delivery Plan includes the following options to maintain the regional security level at n-1:</p> <p>A. Upgrade capacity of existing transmission system through west Auckland (\$200m)</p> <p>B. Construct a new cross-isthmus connection from Albany to Otahuhu (\$300m)</p>
Alternative non-transmission solution (Section I)	C. Possible new generation north of Albany (but no viable proposals put forward to date)
No Service change proposed (Section II)	No service change proposed, but significant new investment required to maintain agreed power quality levels <i>(and possibly availability of grid assets according to Good Industry Practice – NB – customers are not contracting for achieving of the system adequacy guideline)</i>
Pricing set for service change (Section III)	No service change proposed
Voting arrangements on service change (Section II)	No service change proposed
Contract variations assuming votes accept service change. 1. Current service 2. Service change	<p>Investment opportunity A or B selected by Transpower after consultation with north isthmus customers –</p> <p>Transpower allocates new investment costs to benefiting customers according to the confirmed pricing methodology.</p> <p>Investment opportunity C –</p> <p>It is unlikely that investment opportunity C would eventuate, the cost of reticulating gas supplies into the area makes the generation uneconomic compared to transmission solutions.</p> <p>No Investment Opportunity Selected –</p> <p>If a major customer disagreed with all identified investment opportunity options, Transpower could seek</p>

	to reduce service levels under section II.
Issues raised	Transpower would want to secure revenue protection for a period exceeding 5 years given the scale of new capital investment required to maintain current service levels (subject to customer agreement).