



**SUBMISSION FROM THE GRID SECURITY COMMITTEE ON AN  
APPLICATION BY THE ELECTRICITY GOVERNANCE BOARD LIMITED  
FOR AUTHORISATION OF A RESTRICTIVE TRADE PRACTICE**

**1 MARCH 2002**

## **SUBMISSION FROM THE GRID SECURITY COMMITTEE ON AN APPLICATION BY THE ELECTRICITY GOVERNANCE BOARD LIMITED FOR AUTHORISATION OF A RESTRICTIVE TRADE PRACTICE**

- 1 This is a submission by the Grid Security Committee (**GSC**) on the Electricity Governance Board Limited's (**EGBL**) application (**Application**) for authorisation of a restrictive trade practice relating to a proposed arrangement in respect of the electricity industry.
- 2 The GSC is the governing body charged with administering the Multilateral Agreement on Common Quality Standards (**MACQS**).
- 3 This submission has been prepared on behalf of the GSC in relation to the work of the GSC. As such it does not necessarily reflect the views of individual members of the GSC, a number of whom have lodged submissions directly with the Commission recording their views on the Application.

### **Scope and nature of submissions**

- 4 The GSC's submission concerns only Part C (Common Quality) and the aspects of Part I of the Rulebook relating to common quality. To avoid doubt, this submission does not encompass any other aspect or Part of the Rulebook.
- 5 The GSC supports the authorisation of these Parts of the Rulebook.
- 6 Extensive efforts have been undertaken to consult and seek consensus among all stakeholders (including consumer groups) in the design of the provisions concerning common quality standards. As a result the GSC considers that a reasonable level of support has been attained among the stakeholders for the proposed common quality arrangements in Part C.
- 7 The GSC's submission is divided into the following parts:
  - A. Background to Part C
  - B. Overview of the new common quality arrangements
  - C. Approach to defining and designing the new common quality arrangements
  - D.. Common nature of services
  - E. Processes used in finalising the common quality standards
  - F. Proposals for ongoing evolution of rules
  - G. Exception to the proposal for a baseline approach.
  - H. Advantages of the proposed new common quality arrangements
  - I. Conclusions

## A. BACKGROUND TO PART C

- 8 The Application describes MACQS<sup>1</sup> and the functional nature of common quality elements of the electricity system<sup>2</sup>. This submission should be read in conjunction with those aspects of the Application.
- 9 In September 1997, in line with the government's policy on electricity grid security and its Statement of Corporate Intent, Transpower initiated a grid security policy (**GSP**) project to provide grid users with an opportunity to determine the levels of grid quality appropriate to them. The first stage of this project was the establishment of an Interim Grid Security Committee (**IGSC**) which had the task of developing a governance structure which would enable grid user participation in the establishment of common quality standards.
- 10 The IGSC established a self-regulatory regime under a multilateral contract known as MACQS (Multilateral Agreement on Common Quality Standards). The provisions of Part C evolved from the processes established by, and as part of, MACQS.
- 11 The governance arrangements in MACQS were the subject of an application for authorisation to the Commerce Commission made by Transpower on behalf of the industry in May 1999. The Commission granted an authorisation to the proposed arrangement noting that there were public benefits from the proposal in relation to lower transaction costs and improved security of supply likely to flow from the proposal and no competitive detriments (see Decision 369).
- 12 Following Decision 369, industry parties signed up as MACQS members thereby initiating the process by which the first GSC was elected. MACQS currently constitutes a multilateral agreement between the following persons:

BHP New Zealand Steel Limited

Meridian Energy Limited

Comalco Limited

Mighty River Power Limited

Contact Energy Limited

Natural Gas Corporation Limited

Genesis Power Limited

TrustPower Limited

Major Electricity Users Group

- 13 The GSC was established in 1999. Its membership consists of senior industry and consumer stakeholders who were appointed to ensure that:

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<sup>1</sup> See paragraphs 3.13 - 3.15 of the Application

<sup>2</sup> See paragraphs 14.15 – 14.22 of the Application

- there was wide industry participation to agree appropriate common quality standards;
- the required levels of security are able to be achieved;
- the new common quality standards evolve to meet industry needs; and
- relationships with key stakeholders and other industry governance arrangements are developed effectively.

14 The GSC's current membership is:

<b>Name</b>	<b>Representation</b>
Hon. D Caygill	Independent Chair
S Barrett, Chief Executive Contact Energy Limited	Elected by Generators
K Turner, Chief Executive Meridian Energy Limited	Elected by Generators
D Heffernan, Chief Executive Mighty River Power Limited	Elected by Generators
M Jackson, Chief Executive Genesis Power	Elected by Retailers
B Thompson, Chief Executive Transpower New Zealand Limited	Appointed by Transpower to represent Transmission Asset Owners
J Walsh, Chief Executive Delta Utility Services Limited	Appointed by Electricity Network Association to represent Distributors
G Riddell, Managing Director rbz Group Limited	Appointed by Major Electricity Users Group to represent industrial consumers
D Harmer, Policy Analyst Consumers' Institute	Appointed by Consumers Institute to represent domestic consumers

P Hendry, Director McKinlay Hendry Limited	Appointed by Chambers of Commerce to represent commercial consumers
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- 15 The GSC has appointed a Secretariat (Concept Consulting Group Ltd) to assist it to undertake its tasks. The Secretariat's role has included the provision of legal, commercial and technical advice in relation to the proposed common quality rules as well as facilitation of working groups and preparation of reports and papers on key issues.
- 16 The GSC is funded by Transpower on the basis that these funds will be repaid by common quality stakeholders when the project is operational.<sup>3</sup>
- 17 The GSC was originally intending to complete the project in the form of MACQS. However, when the industry elected to respond to the government's Policy Statement by establishing the Electricity Governance Establishment Committee (**EGEC**) to put in place a single rulebook to combine the rules of the NZEM, MARIA and MACQS (among other things), the GSC resolved to defer operationalising its proposed GSP framework and to instead develop the common quality rules under MACQS for inclusion in the process run by EGEC.

## **B. OVERVIEW OF THE NEW COMMON QUALITY ARRANGEMENTS**

- 18 The GSP framework is based on a multi-layered approach to specifying and delivering common quality standards. Within this framework the key elements are:
  - the System Operator's principal performance objectives which are the high level outcomes specified as performance targets for the System Operator, performance obligations for asset owners, and the ancillary service procurement and cost allocation arrangements set out in Part C of the Rulebook;
  - the Policy Statement and Procurement Plan which are relational non-binding documents setting how the System Operator intends to deliver its performance targets and procure ancillary services both prepared annually and agreed between the System Operator and the Board after extensive stakeholder consultation processes; and
  - the technical codes which contain more detailed obligations covering such areas as dispatch, emergency management and communications.

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<sup>3</sup> See Rule 1, Section III of Part I of the Rulebook

19 Part C is structured as follows:

Section	
I	Sets out the contents of Part C, the persons who are bound by its provisions, and arrangements for fee allocation.
II	Defines the objectives (called Principle Performance Objectives, <b>PPOs</b> ) expected of the System Operator in relation to real time co-ordination of available generation, transmission and distribution assets and demand to deliver common quality including its objectives in relation to frequency excursions and the prevention of cascade failure of the grid. It also includes provisions relating to the Policy Statement including the process by which it is agreed and what it is to contain.
III	Outlines the technical standards which must be met by asset owners (known as Asset Owner Performance Obligations, <b>AOPOs</b> ) together with provisions to enable asset owners to put in place equivalence arrangements (alternative means of compliance) or dispensations from full compliance.
IV	Provides for the procurement and cost allocation of ancillary services purchased and co-ordinated by the System Operator in meeting its PPOs. It includes provisions relating to the Procurement Plan including the process by which it is agreed and what it is to contain together with arrangements for putting in place alternative ancillary service arrangements.

20 The common quality aspects of Part I are as follows:

Section	
II	Provides for the GSC to continue for a 6 month period after the commencement date to advise the Board on the new common quality arrangements.

III	<ul style="list-style-type: none"> <li>• Provides for the recovery of the GSP development costs from generators, purchasers, grid owners and distributors over a five year period;</li> <li>• Enables the preliminary decisions issued by Transpower in advance of the Rulebook becoming operational in relation to exemption from compliance with certain standards for existing connected assets to become formal dispensations under the Rulebook;</li> <li>• Contains an exemption for the GSC from liability to common quality stakeholders for its work in developing common quality rules; and</li> <li>• Provides for the granting to Transpower by the System Operator of local quality agreements where there are existing arrangements for voltage variations within a narrower band than the band proposed under the Rulebook.</li> </ul>
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21 The proposals in Parts C and I in the Rulebook implement the design of the GSP framework considered by the Commission in Decision 369. The move to the combined Rulebook has prompted certain changes to accommodate the wider subject matter of the new Rulebook. In particular:

- The governance arrangements in Part A, including allocation of votes on rule changes and arrangements for election of the Board proposed for the combined Rulebook, are significantly different from those considered by the Commission in its earlier decision.<sup>4</sup>
- The dispute resolution process is also different from that presently incorporated in MACQS.
- The requirement to implement the proposed standards by a series of bilateral security contracts has been replaced by a multilateral contract.
- The mechanism to achieve mandatory coverage of the standards has been changed from an obligation on network companies to require

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<sup>4</sup> The MACQS rule change process required a 9/10ths decision of the GSC, a body representative of all stakeholders, with the decision made following a draft and final determination decision making process. Members disagreeing with a GSC approved rule change could require a vote, with votes allocated 50/50 generators/consumers (with a default vote to retailers) and requirement for a 75% majority.

connected parties to have security contracts to a multilateral contract with provisions designed to procure comprehensive coverage; and

- The role of the Common Quality Coordinator (now known as the System Operator) in MACQS has been broadened to include the functions of NZEM Grid Operator, Scheduler and Dispatcher.

22 New arrangements have also been included in Part I to accommodate the transition to the new regime. These include arrangements to grandfather assets connected to the grid as at 1 December 2000.

### **C. APPROACH TO DEFINING AND DESIGNING THE NEW COMMON QUALITY ARRANGEMENTS**

23 The GSC adopted a baseline approach to transiting to the new regime whereby the common quality standards, in combination with the relevant sections of the Policy Statement, Procurement Plan and Technical Codes are designed to deliver existing quality levels.

24 The intent was to ensure that the new arrangements could be implemented with the existing levels of security assured. The System Operator and the industry would then be able to pursue development paths for the Policy Statement and the quality standards in the new governance framework with the certain knowledge that there was a defined and achievable starting point.

25 In finalising its common quality standards, the GSC adopted the following key principles for their design:

- only standards which are truly common and necessary for the achievement of real time common quality should be included in the common multilateral contract;
- other standards should be addressed wherever practical in bilateral or multilateral agreements with the System Operator or relevant asset owners (as appropriate);
- market mechanisms should be used wherever technology and transaction costs make this practical and efficient;
- until such time as markets are developed, the goal is to strive for transparent processes that encourage all potential providers to compete to supply the services required to meet agreed common standards at lowest possible cost;



- costs should be allocated efficiently and preferably to those that “cause” the need, enabling individuals or groups to see the costs they impose and make an efficient trade-off between the benefits obtained against the costs imposed, and providing incentives to lower costs through efficiencies and innovation;
- where it is not possible to identify individual “causers” then costs should be recovered in a manner which least distorts the market and minimises transaction costs.

#### **D. COMMON NATURE OF SERVICES**

- 26 The GSC is satisfied that the common quality rules in Part C relate only to matters which are truly “common”. This was one of the criteria which the GSC used in assessing its rule proposals. For example the GSC decided that while frequency is a common quality issue (because it is not practical that frequency can be maintained to different standards simultaneously through an interconnected AC network), other technical standards are not common, e.g. fault levels, as these have a local impact. Therefore no standards are specified for fault levels but frequency related PPOs, AOPOs and ancillary service arrangements for frequency keeping, instantaneous reserves and over frequency arming are all incorporated.
- 27 The GSC spent considerable time debating whether there should be a common set of standards for voltage. It concluded that the System Operator requires a range of voltage on the core grid in order to ensure it can avoid cascade failure of the grid but a separate voltage objective for the System Operator is not required. To ensure flexibility for the System Operator to co-ordinate the core grid, certain assets must be able to operate over prescribed voltage ranges. Therefore the Part C rules include certain voltage related AOPOs and ancillary services for voltage support.
- 28 Emergency management and restoration arrangements are also aspects of common quality that all grid users within the particular region benefit from, and hence there are objectives, standards and processes relating to these matters.

#### **E. PROCESSES USED IN FINALISING THE COMMON QUALITY STANDARDS**

- 29 It has taken the GSC two years to complete its proposals for new common quality rules based on existing levels of quality. Establishing the “baseline” in the absence of industry agreement to the existing arrangements has been difficult. Currently there is no single agreed comprehensive statement of common quality obligations. Instead these are contained partly in regulation,

partly in Transpower's contract suite entitled "Common Quality Obligations"<sup>5</sup>, partly in private correspondence between asset owners and Transpower, and partly in industry custom and practice. This had led to difficulties of both specification and enforcement.

30 In order to ensure appropriate buy-in to the proposed new arrangements, the GSC made extensive use of representative working groups to debate the issues including working groups on ancillary services, technical issues, contract structure and compliance. The proposals in Part C are the product of the reports of the following working groups in particular:

31 Ancillary Services Working Group who met 7 times between May 2000 and November 2000 to address the following terms of reference:

The Ancillary Services Working Group was required to:

- recommend the most appropriate procurement methodology for ancillary services:
- recommend the most appropriate methodology for the allocation of ancillary services costs;
- recommend how any change from the existing cost allocation process should be managed;
- assess the IGSC design of the ancillary services net purchase arrangements and the NERA proposal for an independent purchase agent and recommend the most appropriate way forward in the context of:
  - a desire by the industry to implement MACQS quickly and transfer the responsibility for setting quality of supply standards to the industry; and
  - what such a function would look like and whether implementing it now would achieve benefits for stakeholders compared to the existing design.
- make longer term proposals recognising the review provisions in MACQS; and
- prepare to term sheet stage these specific recommendations made for MACQS Chapter Three [Arrangements concerning ancillary services].

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<sup>5</sup> Previously known as "GOSP"

- 32 MACQS Technical Working Group who met 14 times between June 2000 and August 2001 to address the following terms of reference.

The Technical Working Group was required to:

- review the proposed PPOs, AOPOs and related technical standards alongside the proposed CQC Policy Statement; and
- recommend any changes necessary to ensure that, collectively, they will ensure the current levels of cost/quality on the grid are maintained.

Additional criteria for the working group are that:

- the design intent of the relational style contract with the CQC is preserved through high level output targets in the PPOs with the detailed means of achieving these set out in the Policy Statement;
- the balance between what is included in MACQS Chapter 2 [Asset Owner Performance Objectives and Technical Standards] and the Policy Statement being consistent with the desire to ensure:
  - CQC and investor certainty for planning purposes;
  - flexibility for ongoing innovation by the CQC and its contract counterparties; and
  - unnecessary industry compliance costs are not introduced through proposed AOPO and technical requirements

- 33 The GSC has two further working groups still in existence. The Frequency Standards Working Group (**FSWG**) and the Policy Statement and Procurement Working Group. The work of the Frequency Standards Working Group is described in paragraph 40-44 below. The Policy Statement and Procurement Plan Working Group is tasked with agreeing the initial Policy Statement and Procurement Plan with the System Operator for GSC approval and handover to the incoming EGB. On completion these documents will be incorporated into the new regime under special provisions in the transitional section of the Rulebook.

- 34 The reports, working papers and minutes of all Working Groups are available on the GSC website at [www.gsp.co.nz](http://www.gsp.co.nz).

## **F. PROPOSALS FOR ONGOING EVOLUTION OF RULES**

- 35 As noted above, the GSC resolved to take a baseline approach to the definition of the new common quality arrangements. This was done in anticipation that a number of suggestions for rule improvements could be addressed more

effectively under the multilateral arrangements of a combined Rulebook.

- 36 The role of the EGB in this regard is clearly set out in Part A of the new Rulebook. Thus, the Board's duties in Part A, Section II, Rule 1.2 include the general obligation to: "ensure that real time transmission system security services are provided at the standards required by grid users" and Rule 1.25 provides a specific obligation to: "prepare and implement an annual plan for the development of common quality and security standards". These duties are supported by the obligation of the System Operator in its annual policy statement to specify: "how policy might be formulated and implemented in the future" (Rule 7.1.4, Section II, Part C).
- 37 The GSC is tasked with advising the EGB on a common quality development plan during the transition period<sup>6</sup>. The GSC Secretariat has been asked to prepare an initial common quality development plan for handover to the incoming EGB. It is anticipated that the new common quality arrangements will be subject to continuous on-going improvements.

#### **G. EXCEPTION TO THE PROPOSAL FOR A BASELINE APPROACH**

- 38 One of the most difficult issues the GSC had to address in defining a set of common quality standards was the appropriate level for under-frequency. For many years Transpower has operated to a minimum level for frequency of 45Hz. However this standard is more suitable for hydro generators and is not suitable for the owners of modern thermal plants who have indicated that if the frequency were to drop to this level, severe damage to their plant could occur.
- 39 The GSC was aware that this was an issue which had been in dispute in the industry for a number of years, so it included a transitional set of standards roughly reflecting the existing (disputed) standards and formed a specific new working group to develop new standards.
- 40 The FSWG commissioned an independent study of modern thermal generation technologies and established that current under-frequency arrangements were not consistent with thermal plant, and in particular, more efficient thermal technologies. This study identified cost savings in the range of \$3-20 million from raising the minimum standard.
- 41 The GSC therefore recommended an immediate change to the under-frequency standards adopted by Transpower and the development of a new standard for inclusion in the combined Rulebook before it becomes operational. The GSC

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<sup>6</sup> See Rule 6.2.3, Section II of Part I

understands Transpower is currently in the progress of implementing some of the FSWG's recommendations through changes to the coordination policy which forms part of Transpower's "Common Quality Obligations" document.

42 In formulating its recommendations the FSWG has undertaken both informal and then formal consultation on behalf of the GSC on its proposals amongst all stakeholders. It presented its recommendations to the Grid Security Committee on 28<sup>th</sup> February 2002.

43 In summary, the FSWG has recommended that:

- The System Operator's PPO be amended to provide for frequency fluctuations from 47 to 52Hz (not 45 to 55Hz as presently).
- This objective is subject to the proviso that frequency will be able to fall momentarily to 45 hertz in the South Island until the EGB determines there are net public benefits in the higher standard of 47Hz.
- The AOPOs be amended for generators to provide a requirement for them to stay connected at all times above 47.5Hz and for varying time limits when the frequency is between 47.5 and 47Hz.
- Until the EGB determines to raise the South Island minimum frequency above 45Hz, South Island generators will be required to operate down to 45Hz.
- The System Operator is authorised to grant dispensations to generators from meeting these AOPOS if the generator applying for the dispensation agrees to meet reserve costs in accordance with a prescribed formula.
- Technical Code B on Emergencies be amended to provide that distributors and direct connect loads must install automatic under frequency load shedding systems (**AUFLS**) on their networks which enable the disconnection of two blocks of demand (of at least 16% of the total pre-event demand) when the frequency falls from the designated frequency for the designated time periods.
- Exemptions from the AUFLS obligations may be granted by the EGB where it is satisfied that the cost of providing the facility or its equivalent is greater than the expected cost of the second AUFLS block.

44 The FSWG's report and proposed rule changes are available to the

Commission if required.

- 45 The GSC decided at its meeting of 28<sup>th</sup> February to forward the proposed rule changes to EGEN for inclusion in the new Rulebook. The GSC believes that the benefits from the adoption of these proposals in relation to improved grid security are significant. Accordingly, the GSC has recommended to EGEN that the amended rules be included in the version of the Rulebook which goes to the industry prior to the referendum being held.
- 46 The GSC believes that as a result of the extensive consultation it has undertaken on the proposed new standards, their adoption will not be controversial. It also believes there are no detriments from its proposals and there are positive public benefits.

#### **H. ADVANTAGES OF THE PROPOSED NEW COMMON QUALITY ARRANGEMENTS**

- 47 The GSC considers that the advantages of the proposed new common quality arrangements against the status quo are as follows:

##### **(a) Involvement of grid users**

- 48 The GSC believes that moving away from a regime where standards are mandated centrally to one where grid users are more involved in the quality of supply decisions will result in better informed decisions and more appropriate levels of quality. An example of such enhanced quality of supply decisions is the work of the Frequency Standards Working Group which is discussed in paragraphs 40-44 above.

##### **(b) Improved specifications, monitoring and enforcement of standards.**

- 49 The new common quality arrangements clearly document the obligations of all common quality stakeholders in a transparent way. Specific information disclosure provisions, enhanced accountability and improved enforcement arrangements are included in the new Rulebook. This will mean on an on-going basis, that the System Operator will have enhanced information with which to co-ordinate and plan for the delivery of the desired levels of quality and security in real time. There is also likely to be significantly reduced transaction costs as a result of the certainty and contractual obligations.

##### **(c) The new market mechanisms introduced.**

- 50 The new common quality arrangements contain mechanisms to encourage the progressive replacement, or at least augmentation of the standards, by market

mechanisms where appropriate.

- 51 For example, the new rules remove the 0.95 power factor requirement traditionally required by Transpower for equipment at grid offtake connections. This previously mandated requirement has been replaced by the establishment of new arrangements to procure voltage support services. These are more market based and will therefore encourage more efficient outcomes through enhanced competition in the pricing of voltage support services.
- 52 It should be noted that the movement to market mechanisms needs to be a progressive or evolutionary movement. This is because it is not always practicable to immediately move to market arrangements. AOPOs are effectively mandated ancillary services required to be supplied by asset owners. These arise because it is not yet technically possible or cost effective to create markets for these forms of ancillary services. By necessity AOPOs are asset specific and hence involve an element of bias between classes of assets. However Part C will provide for individual asset owners to enter equivalence arrangements or alternative ancillary services arrangements or gain dispensations for technical non-compliance. This, in effect, is a partial solution to the lack of a market arrangement. These new provisions should ensure that unnecessary costs are not incurred through not having to mandate the same performance from all assets. They also encourage innovation by providing a mechanism for alternative (“equivalent”) approaches to rule compliance to be approved within the multilateral framework.

**(d) Improved cost allocations.**

- 53 In relation to ancillary service cost allocations, changes to the current arrangements have been included in Part C where it was feasible to implement them readily and where the implementation costs were low and were outweighed by potential benefits in terms of improved price signalling and future cost reduction.

**(e) Enhanced accountability for System Operator role.**

- 54 Transpower is the owner and operator of the core transmission grid. It has two roles in relation to the grid: as asset owner it provides a connection and transportation service for grid users, and as System Operator it co-ordinates the operation of the grid in real time. The new common quality arrangements clearly separate the functions of the System Operator from those of the transmission asset owner. This will enhance the transparency of Transpower’s management of its dual role.

## I. CONCLUSION

55 In conclusion, the GSC records its commitment to the implementation of the new quality and security regime. It is keen to achieve implementation as quickly as possible and believes implementation will mean on an ongoing basis that:

- grid users will set common quality standards, including quality/cost tradeoffs, and agree ancillary services trading and settlement arrangements through agreed multilateral governance arrangements;
- grid users will take responsibility for the consequences of their decisions in setting quality standards;
- quality of supply standards will be achieved at least overall cost through a robust contract structure;
- where quality can be attributed to individual customers (and is therefore not common), it will be subject to specific commercial arrangements;
- there will be no need for a single entity to mandate quality standards centrally;
- quality of supply standards and grid operation will be more transparent and without bias;
- performance of parties in respect of standards will be set out in contract and subject to effective compliance arrangements.

56 The GSC would be pleased to assist the Commission in relation to any matters arising from this initial submission.

A handwritten signature in black ink, reading "David Coyne". The signature is written in a cursive, flowing style with a period at the end.

Chair

Grid Security Committee