

TRANSPower NEW ZEALAND LIMITED

Transpower's Submission
to the Electricity Commission

Issues Paper – Survey of Market Performance
Market Design Review

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T R A N S P O W E R



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EXECUTIVE SUMMARY

1. Transpower's response to the Electricity Commission's (Commission) *Market Design Review Issues Paper – Survey of Market Performance* ("Issues Paper") is an input to the second stage of the Market Design Review four stage process – Identifying solutions.
2. Transpower's response gives full weight to the key assumptions that form the basis of the issues paper:
 - the 2006 Government decision that the current market framework should be retained, but that opportunities for improvements should be pursued
 - the Electricity Commission's caveat that it cannot guarantee the accuracy of information and analysis presented in the Issues Paper and that responsibility for omissions or errors cannot be accepted.
3. The Issues Paper contains an extensive assemblage of market performance data. However, if the aim of the Market Design review is to seek opportunities to improve the current market framework, then the Issues Paper is lacking both a basis for comparison to a counterfactual and adequate references to international comparisons.
4. Transpower believes that the conceptual model it presented to the Ministerial Enquiry¹ in March 2000 remains a valid representation of the elements of a successful electricity model and can be used as the counterfactual. The Ministerial Inquiry of 2000 identified a number of shortcomings in the market design of the time. To a large extent the main divergences between the New Zealand electricity market and the counterfactual continue to remain in 2007. The main areas where there divergence is most evident are:
 - risk management options
 - transmission alternatives
 - demandside participation
 - pricing of environmental externalities.
 - market information
5. Some of these issues have been addressed in the Issues Paper, and some key issues have been omitted. Transpower's response provides a comment on the scope of the issues paper.
6. The next stage of the Market Design Review is to identify a number of high priority issues for evaluation. Transpower believes these issues are:
 - risk management options
 - transmission alternatives

¹ The Ministerial Inquiry into the Electricity Industry – March 2000.

- capacity margin, noting optimal generation mix
 - availability of market information
 - demandside participation
7. Transpower is of the view that the Commission should identify a complete target market design model together with a clearly defined implementation plan. Anything less than a holistic approach will invite adhoc manipulation of isolated market features leading to sub optimal and unsatisfactory outcomes which will be inconsistent with the Governments GPS for the electricity industry.

1 INTRODUCTION

8. Transpower has reviewed the Commission's Market Design Review Issues Paper – Survey of Market Performance ("Issues Paper") and notes with the following key points:
 - the 2006 Government decision that the current market framework should be retained, but that opportunities for improvements should be pursued
 - the Electricity Commission's caveat that it cannot guarantee the accuracy of information and analysis presented in the Issues Paper and that responsibility for omissions or errors cannot be accepted.
9. Transpower's response to this Issues Paper is twofold. Firstly, we take a step back from the detail of the paper to consider an appropriate basis for the comparisons that are needed to define the issues and specification of opportunities in the current market design. Transpower's response includes a brief commentary on the elements that are appropriate to a full and integrated market design and those areas where the New Zealand market has failed to implement those particular components. Secondly, Transpower comments on the observations made in the paper or omissions from the paper, with particular attention given to those issues that affect, or are affected by, our core business of electricity transmission, including system operation.
10. Transpower's feedback is provided as an input to the second stage of the four stage process – Identifying solutions. Transpower assumes that the review will include further opportunities for stakeholder response to the options considered and any preferred solutions.

2 A BASIS FOR COMPARISON

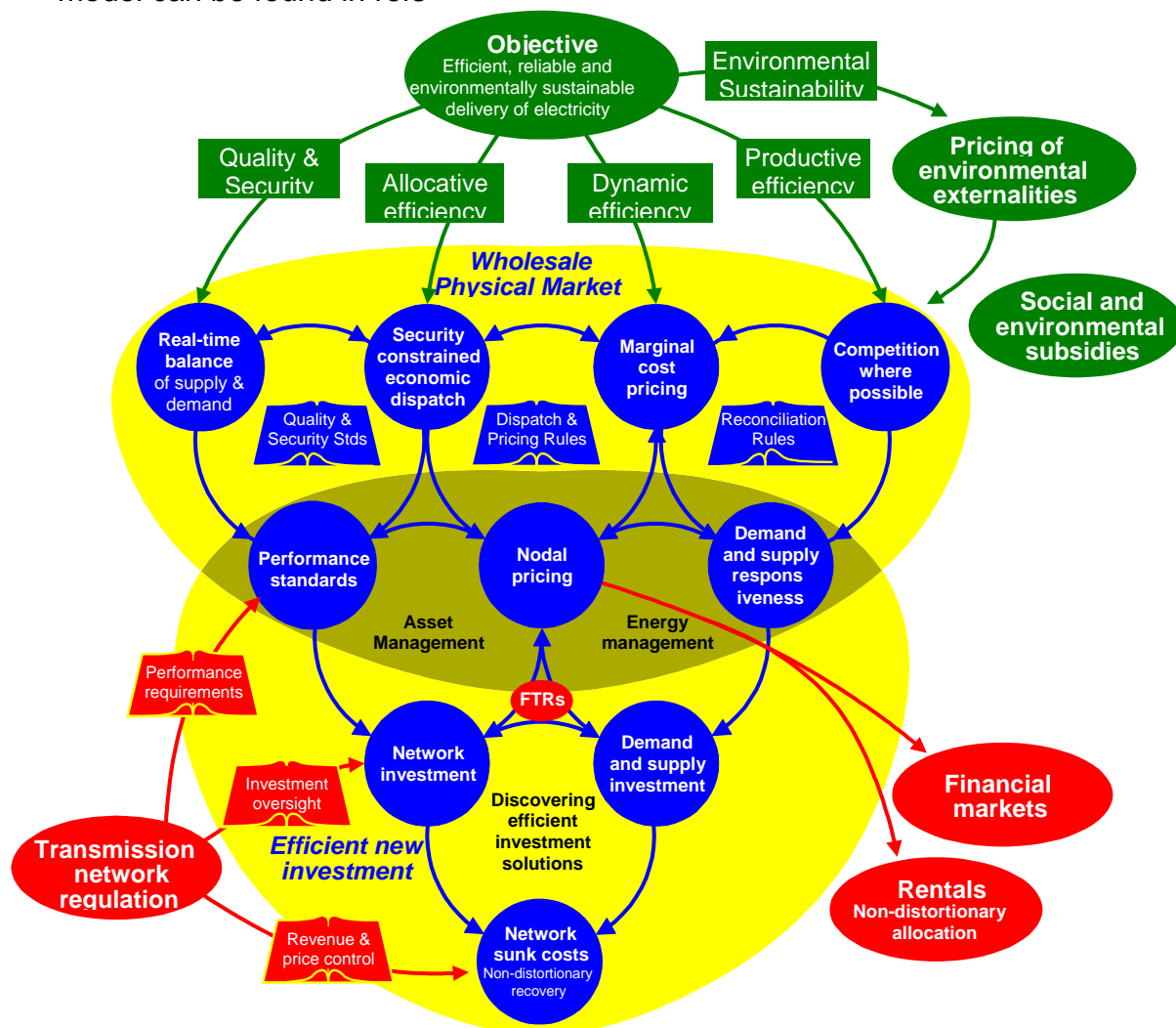
11. The authors of the Issues Paper should be congratulated for their extensive assemblage of market performance data. However, if the aim of the Market Design review is to seek opportunities to improve the current market framework, then the Issues Paper lacks several prerequisites necessary to enable the objectives of the review to be sensibly met.
12. Firstly, the review should provide a basis for comparison of performance. Some internal and international comparisons are made but these are generalised and only loosely tested for the New Zealand market environment. The consequence is that there can be no common basis for the issues identified in the consultations.
13. Secondly a common basis for testing the market design is necessary. A consequence of the baseless approach is that it is not readily possible to assign performance issues to particular features of the market or even to external issues. A case in point is the extensive presentation made to the Commission's consultation on market design in respect of pricing; more particularly price increases and pricing deviations. In this presentation, few

of the underlying issues were actually market design issues and it is a moot point as to whether the issues are within the EC's mandate.

14. A useful concept in these circumstances is that of the counterfactual. In the case of the wholesale market design Transpower believes that there is a readily extant counterfactual.

2.1 The counterfactual

15. In March 2000 Transpower presented a conceptual model that incorporated the elements of a successful electricity market. It is Transpower's view that this model remains valid in 2007 and is appropriate to applied as the counterfactual. The following diagram provides a conceptualised design for a wholesale market that has formed the basis for various market designs including PJM and the FERC Standard Market Design. The details of the model can be found in refs^{2 3}



² The Ministerial Inquiry into the Electricity Industry – March 2000.

³ Transpower submission to The Ministerial Inquiry into the Electricity Industry – March 2000

2.2 A Comparison of Markets

16. The Ministerial Inquiry of 2000⁴ identified a number of short comings in the market design of the time. To a large extent the main divergences between the New Zealand electricity market and the counterfactual remain today in 2007. The main areas of divergence are in the areas of:

- risk management options
- transmission alternatives
- demandside participation
- pricing of environmental externalities.
- market information

3 ISSUES RAISED IN THE PAPER

3.1 Data used for the analysis

17. A key observation Transpower wishes to make on the Issues Paper relates to the data used for the analysis, particularly the caveat that the Electricity Commission cannot guarantee the accuracy of information and analysis presented in the report and that responsibility for omissions or errors cannot be accepted. Where we feel the data presented is not robust, we have commented accordingly.
18. We observe that it is a possible indictment of the market design when the regulator is required to caveat its analysis of the market as it cannot guarantee the accuracy of the information available. A fundamental principle of efficient, competitive markets is the provision of good quality, timely data to all market participants.

3.2 Demandside participation

19. Transpower is encouraged to see that a section of the Issues Paper is devoted to demandside participation. A number of demandside participation issues in the present market design warrant close consideration.
20. One of the most notable features of the current market design is that, aside from ripple control the market is essentially a one-sided operation with supply side response only. Genuine demandside participation is long overdue. More market machinery needs to be established to enable this to occur, in particular a day ahead market and real time prices. These changes, together with improved metering and control technology, should enable a better response to price changes from larger commercial and industrial consumers. In order for residential and light commercial /

⁴ The Ministerial Inquiry into the Electricity Industry – March 2000.

industrial demandside participation to develop further, greater retail competition will also be needed.

21. Support for market enhancements to encourage improved demandside response has previously been limited in New Zealand. This may be partly due to the fact that the generator/retailers are effectively internally-hedged. There are also few commercial incentives for distributors to install improved metering and control equipment, and a lack of monitoring and links between actual consumption and the demand forecasts. Given the poor bid forecasts provided in the current wholesale market's pre-dispatch schedule, it is not easy for a small market player to enter and bid with any certainty.
22. Transpower is currently undertaking a South Island trial of a demandside participation arrangement, but neither this approach nor grid support contracts will enable greater demandside participation in the wholesale electricity market. The demandside initiatives being promoted at present, whilst important, are capacity markets, limited in time and location to the areas where transmission capacity has become critical. However, the information on actual demandside behaviour obtained from these capacity market arrangements should help to inform possible future improvements to the demandside of the electricity market in general.
23. Demandside participation initiatives and considerations have been narrowly focussed over recent years and have lacked the innovative drive of some of the overseas initiatives. There are a number of examples of innovative overseas demandside participation arrangements. For example, the US has run a trial in the Northwest, under the auspices of the Department of Energy. This trial achieved significant load response using technology installed in individual homes, with the ability for customers to set the price threshold on the system through the internet. Flex Your Power (California) is another effective Time of Use based demandside management scheme where consumers make their own decisions.

3.3 Energy adequacy / peak (capacity) adequacy

24. Transpower agrees with the Issues Paper's comment that New Zealand has more of an energy adequacy than a peak adequacy problem at the moment. However, growing demand and inadequate hydro storage may lead, in time, to the development of a dual problem of inadequate energy and inadequate capacity. The review of the market design should seek to ensure that the appropriate incentives or regulatory directions are in place to ensure that both of these issues are addressed. The following paragraphs discuss a number of the issues that must be considered in these areas.
25. The addition of a significant quantity of intermittent generation capacity could lead to a more rapid transition towards a peak constrained supply system as limited reliance can be placed on the intermittent generation being available at times of system peak. Additional firm generation capacity will be required to back up the variable nature of intermittent generation at

peak times. Slow starting thermals cannot perform this role unless they have sufficient warning to ramp up, and their high start up costs can be recovered. Consequently, system firming will tend to rely heavily on the availability of hydro generation. However, New Zealand's hydro system, with its limited storage, cannot be the sole solution in dry years – some additional fast starting thermal will be needed.

26. In the Issues Paper, the peak capacity problem and the consequent increased likelihood of high spot prices leads to a discussion of the possible introduction of price caps or floors. However, this approach will lead to market distortions and the “missing money” problem, which refers to the fact that many generators in the merit order rely on periodic high prices, in addition to lower consistent spot prices, to enable them to recoup their long run marginal costs of generation (i.e. both capital and operating costs). Removing the peak by applying a price cap results in reduced returns to generators, which can render new investment no longer profitable. Where price caps have been introduced, for example in the United States, capacity payments are often implemented to replace the “missing money”.

3.4 Lower optimal mean year energy margin

27. The maintenance of real-time security of supply and supply/consumption co-ordination are the key operational roles of the system operator. There is no obligation for generators to offer plant, and the bids for load can vary greatly from the actual load taken. However, within those parameters the system operator must achieve an “n-1” level of security in real-time in a reasonable and prudent manner.
28. The Issues Paper refers to the Security of Supply Paper prepared by Castalia for the Electricity Commission, which advocates a lowered capacity margin in the form of an optimal mean year energy margin in the range 12 to 17 per cent, equivalent to a 1 in 20 dry year. The current standard is expressed as a 1 in 60 dry year⁵. The basis of this advice is an economic analysis that assumes the optimal level of security of supply is that which minimises the total combined cost of unserved energy and the mechanisms needed to secure supply when generation capacity is short. While reasonable on the face of it, any move to lower the capacity margin would require broad social and political agreement as well as a clear economic rationale.
29. Expressing the security of supply standard as a percentage of total annual demand results in a value for total consumption at risk of much less than 1 per cent, which gives the impression that the supply at risk is fairly

⁵ In reality the “Minzone” process currently uses all available hydraulic records back to 1932; therefore the actual standard is better expressed as a 1 in 75 years, and increasing each year. However this also substantially underestimates the standard, as “dry periods” that effect hydro generation have, in the past, been for periods of weeks, up to 3 to 4 months, not years. The statistical return periods for this short, sub year, historical, extremely low inflows have been well in excess of 1 in 100 year return periods. The extreme year 1932 has a one month low inflow return period in the order of 1 in 700 years.

insignificant. However, to put into perspective the actual impact when supply is threatened, 0.03 per cent and 0.1 per cent of total annual demand equate to 2000 to 3900 MWh a year, which could represent non-supply for all customers north of Huntly for 10 to 19 peak hours every winter.

30. Another factor that may lower the standard of security is the change to the market as a result of the variable reserves proposal. The proposal is that, in cases where there is an energy shortage, reserves will be used to cover this deficit. This will result in higher energy prices, which should trigger an appropriate market response. However, the social, economic and political impact of the reduced level of security while the market runs without adequate reserves also needs to be considered. Any market design considerations must give adequate consideration to the incentives provided by the market that are aligned with requirements for security placed on the System Operator.

3.5 Generation mix

31. The incentives that exist in the market by design, or lack thereof, will shape and deliver the future generation plant. The market design review needs to provide a careful and detailed consideration of the incentives that are driving current plant investment programmes to ensure that the mix of plant can deliver a secure, reliable and sustainable power system. There are a number of related issues that should be included in such considerations.
32. Both the “Medium term” and “Real-time” sections of the Issues Paper comment on the generation mix. The report focuses on hydro and thermal generation co-ordination and the correct deployment of each type of fuel in response to the prevailing conditions, e.g. dry years. However, with the introduction of additional quantities of intermittent renewable energy (and government support for this policy) it becomes more pertinent to consider whether or not the current generation portfolios contain the best mix of the different generation types. There is a strong need to co-ordinate renewable resources and firm generation capacity to counterbalance the increasingly intermittent nature of new generation. Transpower, as System Operator, increasingly faces changes to generation output up to, and including, real-time which require immediate remedy to ensure there is no impact on security of supply. The provision of more reliable forecasts of both generation capacity and load demand will assist in the management of the variability of intermittent generation output.
33. The variability of intermittent energy greatly increases the amount of operational planning effort required to maintain power system security in real time. In essence, the System Operator must plan two extreme scenarios - intermittent generation being available and near full capacity; and having a low or zero output. Each scenario has its own attendant reserves, frequency and voltage support issues.
34. With hydro stations’ flexibility reducing, due to the increasing need for hydro to run at full output to cover the base load, the system is reliant on fast start

thermal plant to accommodate changes in intermittent generation output and load variations. Currently there is limited fast start thermal plant available. Whirinaki power station requires some time to come on line to full output. For this reason, the system operator is reviewing whether or not Whirinaki should be advance dispatched in tight supply situations as part of its obligation to operate the system prudently.

35. The change in the gas supply profile is likely to affect security in the energy/electricity market. Increased gas industry inflexibility of supply to gas fired generation will have a major effect on the electricity sector to respond to rapid demand changes and/or intermittent generation, or generator plant failure.

3.6 Retail issues

36. The retail market does not directly affect Transpower's business and therefore we provide no comment on this area of analysis. However, Transpower notes that some of the analysis in the Issues Paper suggests that the observed retail performance may be less of a market design issue and more of a competition issue.

4 ISSUES MISSING FROM THE PAPER

4.1 Risk management options

37. The New Zealand market has always lacked appropriate risk management instruments. The present institutional structure with a heavy reliance on vertical integration of retail and generation is a direct consequence of this lack of risk management capacity. It is a matter of some urgency that the market design review and subsequent actions address these issues. A key element of risk management for a wholesale electricity market is a rentals-based locational hedge market, which would provide an ability to quantify and hedge against risk, without distorting the investment signals of a nodal market. It can contain three stages:
- *Pre-allocation of rentals.* This is currently done by Transpower in association with its charging for transmission services. The allocation is essentially a value transfer and should be performed in a way that does not distort nodal prices. If the locational price signal were distorted downwards, the effect would be to encourage more remote generation investment and hence increase the need for transmission. Pre-allocation of rentals on its own will never provide a good hedge product, because the design of the allocation regime cannot take account of individual market participants' energy hedge positions
 - *Trading.* This can include the trading of any pre-allocations. It is this stage of the process that enables a locational hedge market price to be determined, which would allow participants to create more balanced energy and locational hedge portfolios

- *Post-allocation of net positions.* This stage is again a pure value transfer
38. The critical element of an effective hedge is the trading, which creates the need to have a post-allocation of net positions. Pre-allocation of rentals is entirely discretionary - however, for this to enable a locational hedge market to function, the allocation must be in the form of something that is tradable.
39. The brief of the Hedge Market Design Steering Group (HMDSG) was to provide advice to the Electricity Commission on the development and implementation of a transparent and liquid electricity hedge market. The HMDSG's proposal of Locational Rental Allocation (LRA) achieves only the pre-allocation of rentals stage of the process. It is merely a mechanism to pay back transmission constraint rentals to those experiencing increased costs as a result of the rentals (payments being in proportion to their generation). Although this reduces the "risk" for participants' income streams, it dampens the signals for investment. This in turn leads to a reduction in the perceived need for additional transmission/generation, thereby increasing the security risk for the market in general. Risk management is an essential part of a successful market. Choosing not to implement such a risk management option will erode the overall value of the market and its core functionality.
40. Risk management requires a level playing field. Vertical integration of generation and retailing creates a number of advantages for the vertically integrated companies (gentailers) over other non-integrated participants. Primarily, the presence of the gentailers is perceived to contribute to the reduction in incentives for non-integrated retailers or generators to enter the market, particularly in areas where there are transmission constraints. Potential non-integrated retailers and generators cannot self-hedge for energy or location in the same way that gentailers can in order to reduce risk. The supply of residual energy hedges available to them is limited and the cost and terms of these energy hedges are less favourable than those supplied by generators to their own retail businesses.
41. Other risk management options should be considered, and one that is not included in the Issues Paper but which is common in North America (PJM, New York and Ontario), is a day ahead commitment market. This tool requires a generator that wishes to operate in real time to provide offers and, in turn, those generators that are subsequently deemed "eligible to offer" receive guarantees of cost recovery for real time, whether they did in fact offer or not. This is similar to using a two-part offer which includes side payments to guarantee that generators are financially whole when dispatched.

4.2 Transmission alternatives

42. The Issues Paper states that transmission investment is not within the scope of the review, although the Commission recognises that investment in additional transmission capacity can be a substitute for new generation

capacity, particularly at the regional level. However, this can only ever be true in the short term. Regionally, transmission may enable the spreading or sharing of generation but, eventually, load growth will lead to a shortage of available energy. Transmission can therefore solve regional supply problems but cannot solve the national supply problem. Transmission can never substitute for either separate island or New Zealand-wide capacity deficit.

43. The probable reasoning for the review placing transmission investment outside its scope is the current market development assessment process. At present, it is only after the generation specific siting scenarios have been evaluated that transmission options are able to be assessed by the Grid Investment Test (GIT). However, getting the generation to market in the most economic way requires the most effective combination of generation and transmission. At present, transmission investment strongly depends on the market design, as it is the market design that drives the signals for generation investment, and it is generation investment that subsequently drives the need for transmission investment. To exclude transmission from the scope of the report removes the ability of transmission investors to evaluate the drivers of demand for their services.
44. However, Transpower strongly believes that the links between generator and transmission investment are critical to the evaluation of future investment options. Consequently, it feels that the process for evaluating market driven scenarios needs to be re-addressed. Once a need has been identified for investment, the options proposed for evaluation should be joint generation and transmission solutions. By not following this co-dependent model, there are risks that a generator may not get its product to market if generation is considered first, while, conversely, considering transmission first may lead to stranded assets. The two aspects of investment must be considered as one investment; otherwise a sub-optimal service will result.

4.3 Publicly available information

45. Providing better information close to real time for decision making would help address a number of the issues discussed in the Issues Paper.
46. Vertical integration of generation and retailing reduces both market and data transparency. It is transparency that fuels a successful and competitive market.
47. The discussion should focus on the information that would most benefit the operation of the market, who should supply the information, and, if the information is for the benefit of the market as a whole, how the costs of setting up the data access retrieval and sharing processes should be allocated

4.4 Price paid for electricity

48. The majority of the wholesale market design analysis is based on spot prices, and, focuses particularly on times of high spot prices. However, it should be born in mind that at any point in time around only a small percentage of electricity is purchased on the spot market (anecdotal estimates would suggest less than 10 per cent). Although high spot prices are important signals for investment, they do not necessarily have a major impact on the prices that participants pay for their power.

4.5 Frequency keeping and Automatic Generation Control (AGC)

49. The Issues Paper provides some interesting analysis of frequency keeping procurement costs and highlights the issue caused by the increased amounts of variable output generation in the generation mix.
50. Increased variability in combined load and variable generation output will result in greater demands on frequency keeping stations to meet frequency quality targets.
51. Increased demand on frequency keeping stations can be mitigated in a number of ways:
- frequency quality targets can be changed (e.g. the legal requirement to minimise time error can be relaxed or removed which would make frequency keeping easier)
 - the frequency of generation re-dispatch can be increased from every five minutes to a shorter dispatch period
 - the performance requirements for frequency keeping stations can be increased (e.g. minimum required ramp rate). This may lead to a reduction in the number of stations able to provide frequency keeping
 - a redesign of the ancillary service market to introduce AGC (sometimes referred to as Automatic Frequency Control). This is implemented in many other countries
 - a market redesign to fully integrate the instantaneous reserves and frequency keeping markets as part of the market/tools, rather than these services continuing to be separately procured

52. However, whether these changes are adopted or not, it will still be necessary to perform a review of normal frequency, the requirements of the system for frequency keeping, and performance levels. The issues associated with the frequency keeping market should continue to be addressed by the Common Quality Advisory Group (CQAG).

4.6 Pricing of environmental externalities

53. The draft New Zealand Energy Strategy (draft NZES) is a key government initiative that promotes significant behavioural changes in various parts of the New Zealand economy, including the electricity sector. The main thrust of the draft NZES is to reduce New Zealand's carbon "footprint". In the

electricity sector the Strategy proposes that all new generation be renewable energy, except where to do this would negatively affect security of supply.

54. The concept of pricing environmental externalities, inherent in the draft NZES, is laudable and should form part of the development of the market design going forward. However, the suggestion by the draft NZES that generation in real-time should be selected on the basis of minimising carbon emissions is not practical or economically optimal. Transpower refuted this idea when making its submission on the draft NZES report and wishes to reiterate the point here. The market model, in its current and enhanced states, optimises generation based on price.
55. In order to incorporate the cost of carbon in the objective function of the market model, this would need to be done as part of the input into price, possibly in the form of tax or a market-determined price of carbon. This would mean that the costs created by carbon use would be factored into the overall optimal price, but it would not mean that the model would be optimised based on the cost of carbon use alone.

4.7 Compliance design

56. For the market to work as designed there need to be appropriate incentives for compliance. Regulatory and technical non-compliance places some participants at a disadvantage, as those not performing their responsibilities in the market may secure some advantage from their non-performance.
57. In the current market framework there is no real disincentive for non-compliance. Although obligations are placed on asset owners in the EGRs; non-performance to these standards is not punished. Technical compliance is often only highlighted when mistakes are made apparent as a result of a breach or when plant does not behave as was anticipated. The responsibility for compliance rests with the asset owners, but the policing has shifted to the system operator which is not where it should lie. In Transpower's view, generators should police their own compliance standards and not rely on the system operator to do this for them. To achieve this, there is a need to upskill those participants with technical compliance requirements and provide substantial financial incentives to comply. A compliance project⁶, which should help to achieve this, is currently under way.

4.8 Technical issues

58. In reviewing the performance paper a number of issues of a technical nature were apparent. These will need to be examined in the future investigations of the market design.

⁶ Electricity Market Compliance Framework Review

Future investment

59. When referring to future investment, the report states that “even with the deferral of projects by one and two years, it appears that, if they did proceed, security margins would rise through the foreseeable future.” This is an important point, yet it seems to be strongly caveated. This may be due to the quality of data available for the analysis, but it would be worthwhile to evaluate this further to substantiate the claim. The system operator is responsible for creating the System Security Forecast (SSF), which provides a technical evaluation of current power system limits and the probability of exceeding them. The SSF does not therefore determine the location and needs of future generation, but it would seem natural to use this level of detailed analysis to investigate such proposals once they have been determined.

Simultaneous optimisation

60. A key point to note is that the current method of simultaneous optimisation is adopted because it selects the lowest cost solution. Other options allow for arbitrage, which can affect prices directly or indirectly.

New markets

61. In addition to markets for energy and instantaneous reserves (IR), there is a potential for a voltage market for reactive voltage support.

Who owns the load?

62. The capability of demandside to respond to market signals is reduced by current industry arrangements. The parties capable of responding generally do not get the benefits of doing so⁷.
63. If a distributor is offering Interruptible Load (IL) as IR, its incentives do not necessarily align with the interests of the market as a whole. In times of high prices, a distributor could keep IL in place in order to earn substantial unregulated income at the expense of risk generators, and risk generators could be constrained back due to the high cost of their IR reserve offers. On the other hand, if a distributor was to control its load in order to manage its demand peaks (as encouraged by the transmission pricing methodology), this would remove its IL offers from the market. This could exacerbate security problems, as IL frees up generation for energy rather than reserves and also allows all risk units to run.
64. Interruptible load can be also be used at times of high prices to reduce demand and hence price bringing benefits to end consumers. However, there is no incentive to do so as distributors do not see energy prices and generator/retailers have arranged their generation and retail portfolios to avoid exposure to high energy prices.

⁷ There are notable exceptions: Orion Networks demand management arrangements have been in effect for a number of years.

65. There would be benefits to consumers if IL (and other demandside response capability) was used to minimise the overall cost (energy prices, reserves, transmission charges) to end consumers. This could be achieved by placing an obligation on distributors and retailers within the Rules.

5 CURRENT EC WORK PROGRAMS AND CONSULTATION DOCUMENTS

66. Of the current Electricity Commission work programs and consultation documents the following affect the market design framework:

- Electricity hedge market development
- Transmission hedge market development
- Variable reserves consultation
- Demandside bidding and forecasting
- Demand forecasting methodology for Security of Supply
- South Island demandside participation trial
- Castalia Review of the Electricity Security of Supply Policy
- Strategic wind project
- Normal frequency band
- Generation scenario review

67. The issues covered by each of these workstreams are discussed in the relevant subjects in sections 2, 3 and 4 of this report.

6 HIGH PRIORITY IN NEXT STAGE OF REVIEW

68. Transpower believes the high priority issues for the next stage of the review are:

- risk management options
- transmission alternatives
- capacity margin, noting optimal generation mix
- availability of market information
- demandside participation