Retail Competition and Transmission Capacity Statement of Proposal: Submissions Analysis and Next Steps

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GAS INDUSTRY COMPANY LIMITED

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About Gas Industry Co.

Gas Industry Co was formed to be the co-regulator under the Gas Act.

Its role is to:

- recommend arrangements, including rules and regulations where appropriate, which improve:
  - the operation of gas markets;
  - access to infrastructure; and
  - consumer outcomes;
- administer, oversee compliance with, and review such arrangements; and
- report regularly to the Minister of Energy and Resources on the performance and present state of the New Zealand gas industry, and the achievement of the Government's policy objectives for the gas sector.

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Executive summary

Introduction

Gas Industry Co released a consultation paper *Retail Competition and Transmission Capacity: Statement of Proposal* (Statement of Proposal) in November 2010. The paper responded to concerns about reduced retail competition on Vector's North Pipeline. These concerns emerged following Vector's mid-2009 declaration that the Pipeline was constrained. In particular, large end users complained that, in the presence of a constraint, the commercial arrangements for use of Vector's pipelines were reducing the number of retailers able to offer gas supply.

Effect of commercial arrangements when a pipeline is constrained

When a pipeline is constrained, it has no capacity to accommodate new demand. But a physical constraint should not affect retailer competition to supply the existing end users—an existing end user's demand would not alter if it were supplied by a new retailer. However, on Vector's constrained North Pipeline, some retailers wishing to supply an existing end user have been unable to make an unconditional bid because they cannot secure the required capacity.

The reduced competition is an unintended consequence of the access arrangements on the North Pipeline. Under the Vector Transmission Code (VTC), the incumbent retailer is entitled to retain its transmission capacity ('grandfathering rights'). If Vector were to issue capacity to a new retailer the incumbent could use its freed-up transmission capacity to supply a new user and demand on the system would increase, thereby reducing the security of supply.

The 'grandfathering' arrangements were implemented at a time when the North Pipeline had no physical constraint. However, in the present circumstances the arrangements have the effect of reducing competition in the retail market. The Gas Act empowers Gas Industry Co to propose regulation or pursue the objectives set out in the Gas Act and the GPS. We consider the Vector arrangements to comflict with the objectives that include facilitation of competition in upstream and downstream gas markets by minimising barriers to access to essential infrastructure to the long-term benefit of end users.

The Statement of Proposal and submissions

Gas Industry Co examined the concerns about reduced competition. The result was the Statement of Proposal for new rules to facilitate competition in the retail gas market when transmission pipelines are constrained. The rules come into effect only when a pipeline is constrained and a large end user wishes to change retailer. They oblige the incumbent retailer to relinquish capacity so the pipeline owner can make it available to the new retailer.

Gas Industry Co received 11 submissions on the Statement of Proposal (one of which was made on behalf of five large end users). In summary, the proposal was opposed by pipeline owners and retailers (except Greymouth Gas), and supported by end users (and Greymouth Gas). The submissions are available on Gas Industry Co's website at http://www.gasindustry.co.nz/work-programme/transmission-pipeline-capacity.

This paper discusses the matters raised in submissions; conclusions are summarised below. Appendix C contains a detailed summary of submissions on the Statement of Proposal and Gas Industry Co's responses.

Quantification of the issues

This paper presents further evidence and quantitative analysis of the degree of retail competition on the North Pipeline. We engaged economic consultants Covec to undertake this further work. Covec's analysis confirmed end user claims that competition has lessened for large gas end users.

Covec's analysis estimates the deadweight losses arising from the reduced number of offers to be between $1.4 million and $4.1 million annually. Long-run transfers between end users and retailers are valued between $6.3 million and $14.7 million.

The analysis assessed the net benefits of the proposed intervention to be between $1.1 million and $3.2 million annually. If wealth transfers from retailers to end users are also included in the analysis, the net benefit of intervention increases to between $6.1 million and $14.9 million annually. (The total value of retail sales in the affected market is estimated at $75 million annually.) Covec's report is attached as Appendix A.

The competition problem in the context of longer-term issues

Gas Industry Co also acknowledges submitters' views that the short-term competition issue is symptomatic of longer-term issues and should be examined from that perspective. We have therefore taken a broader view of the problem; we look at it from the context of our work on the longer-term access arrangements to manage existing (and new) capacity.

In its submission, Vector reaffirms that at peak times the Rotowaro north section of the North Pipeline is operating at, or near, the limit of its physical capacity. New transmission capacity would alleviate the constraint; however, current industry processes give Gas Industry Co no confidence that such investment is likely in the near future. None of the submissions on the Statement of Proposal identified any likely investment, although submitters were of the view that demand would grow if more capacity was available.

Gas Industry Co agrees the need for investment in new capacity on the North Pipeline should be assessed, and proposes next steps in this regard. However, we also conclude that these longer-term issues will take time to resolve and should not preclude steps being taken to improve competition in the short term. Gas Industry Co has taken care to ensure that the new rules proposed in the Statement of Proposal would not undermine investment incentives or the ability of investors to finance investment.

Non-regulatory solutions

Submitters have also sought further opportunity to explore non-regulatory solutions to improve competition on the North Pipeline. However, although some time has passed since large end users began to complain of a reduction in competition, we are not aware of any non-regulatory solution being actively discussed within the industry. We accordingly propose next steps for a more active exploration of non-regulatory solutions.

We make this proposal on the basis that only a specific and timely solution would displace the proposal for new rules. We are mindful that large end users on the North Pipeline are facing reduced competition, a situation for which they seek an urgent solution.

Next steps

Gas Industry Co will now:

- continue working on the retail competition issue by:
  - providing a forum and facilitator for discussions on how competition for large gas users can be achieved by timely and effective non-regulated means
  - refining the proposed new rules to facilitate competition so they can be progressed if a timely and effective non-regulatory solution fails to emerge
- resume work on the longer-term issues by:
  - analysing further the options for access arrangements on Vector pipelines that will meet the objectives of the Gas Act 1992 and Government Policy Statement on Gas Governance (GPS)
  - arranging a discussion among industry participants and relevant agencies of the long-term issues related to new investment
- support both work streams by encouraging Vector to:
  - publish information on any pent-up demand for capacity (the 'capacity queues')disclose its security of supply standard, its projection of the frequency of interruptions necessary to maintain that standard, and the impact of these matters on the amount of reserved capacity it will sell
  - disclose details of why it was concerned the security of supply standard would be breached, including its expectations for future demand growth, and relevant system modelling work, including modelling assumptions
  - present future capacity disclosure information in a way that is transparent for industry participants.

Feedback

Although we do not ask for formal submissions on this paper, we welcome any feedback.

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1 Introduction

1.1 Purpose

In this paper Gas Industry Company Limited (Gas Industry Co) presents an analysis of submissions on our consultation document *Retail Competition and Transmission Capacity Statement of Proposal* (the Statement of Proposal).[1]

The paper also presents further analysis of the extent of the reduction in competition and the associated economic costs. Submitters thought these were matters requiring more evidence and we therefore obtained an independent expert assessment of them.

1.2 Overview of the Statement of Proposal

Issues on Vector's North Pipeline

Gas Industry Co released the Statement of Proposal in November 2010. The paper described issues arising on the North Pipeline since Vector announced in mid-2009 that the pipeline had reached its physical capacity limit.[2] Large end users seeking bids for their gas supply are reporting a significant reduction in the number of competitive bids. Only retailers holding enough pipeline capacity to supply an end user are able to make an unconditional offer.

The constraint means retailers wishing to compete may be unable to obtain the necessary pipeline capacity. This situation is of concern to Gas Industry Co because the facilitation of competitive markets is a principle of the Gas Act 1992 (Gas Act) and the April 2008 Government Policy Statement on Gas Governance (GPS).

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[1] The Statement of Proposal is available here: http://www.gasindustry.co.nz/sites/default/files/consultations/254/Retail_Competition_and_Transmission_Capacity_Statement_of_Proposal_154485.7.pdf

[2] In an industry presentation in September 2009 (01 Capacity Presentation (Hugh Driver–Sept 2009)), Vector concluded: '[a]t peak demand times Rotowaro North is operating at the margins of system capability, and reinforcement is required to provide additional physical capacity'. And, in an accompanying presentation (01 Capacity Presentation (S J Kirkman–Sept 2009)), it was noted, among other matters, that:

- 98 TJ/day reserved capacity could exceed the physical capacity of the North Pipeline
- Vector therefore can't accept all shippers' capacity requests
- requests for additional capacity will be queued:
  - first come, first served, where practicable
  - Vector will allocate capacity as it becomes available
  - requests will lapse after [2] months
  - large requests that cannot be met will not block smaller ones that can

Both presentations are available at https://www.oatis.co.nz/Ngc.Oatis.UI.Web.Internet/Common/Publications.aspx

Where Gas Industry Co recommends rules or regulations it must ensure it aligns with the objectives of the Gas Act and GPS.

Gas Act objectives

Section 43ZN of the Gas Act states that the principal objective of Gas Industry Co in recommending gas governance rules and regulations under s 43F is to:

> ...ensure that gas is delivered to existing and new customers in a safe, efficient, and reliable manner.

The other objectives are listed below:

- The facilitation and promotion of the ongoing supply of gas to meet New Zealand's energy needs, by providing access to essential infrastructure and competitive market arrangements
- Barriers to competition in the gas industry are minimised. Incentives for investment in gas processing facilities, transmission, and distribution are maintained or enhanced
- Delivered gas costs and prices are subject to sustained downward pressure
- Risks relating to security of supply, including transport arrangements, are properly and efficiently managed by all parties
- Consistency with the Government's gas safety regime is maintained.

GPS objectives

A further Government objective for Gas Industry Co is for it to take account of fairness and environmental sustainability in all its recommendations. To this end, and as stated by the GPS, the Government's objective for the entire gas industry is to:

> …ensure that gas is delivered to existing and new consumers in a safe, efficient, fair, reliable and environmentally sustainable manner.

Gas Industry Co must have regard to this objective when making any recommendations and report against it. Paragraph 12 of the GPS adds five additional objectives Gas Industry Co must also have regard to when making recommendations:

- energy and other resources used to deliver gas to consumers are used efficiently
- competition is facilitated in upstream and downstream gas markets by minimizing barriers to access to essential infrastructure to the long-term benefit of end users
- the full costs of producing and transporting gas are signalled to consumers
- the quality of gas services where those services include a trade-off between quality and price, as far as possible, reflect end users' preferences

- the gas sector contributes to the Government's climate change objectives as set out in the New Zealand Energy Strategy, or any other document the Associate Minister of Energy may specify from time to time, by minimising gas losses and promoting demand-side management and energy efficiency.

The GPS also identifies the specific outcomes for the gas industry against which Gas Industry Co must report. These are consistent with the objectives found under the Gas Act. The outcomes relevant to the retail competition issue include:

> Gas industry participants and new entrants are able to access … transmission pipelines… on reasonable terms and conditions.

The other relevant outcomes include:

> Gas governance arrangements are supported by appropriate compliance and dispute resolution processes.

Regulatory objective

When considering regulatory intervention Gas Industry Co finds it helpful to develop a concise statement of its objective for intervention. In the Statement of Proposal Gas Industry Co identified the following regulatory objecive for this work[3]:

> To ensure that, in the short term, end users who are able to be supplied by existing pipeline capacity are not prevented from having an effective choice of supplier. The solution should not compromise achieveing the Gas Act or GPS objectives in the longer term.

The 'capacity follows end user' option

In the Statement of Proposal, Gas Industry Co considered reasonably practicable options to minimise barriers to competition and to ensure the most efficient use of existing capacity. The preferred option was for transmission capacity to 'follow the end user'. The main feature of the option comes into effect when a large end user on a constrained pipeline changes retailer. When that happens, the 'old' retailer is required to relinquish capacity to the transmission system owner, who makes that capacity available to the 'new' retailer.

The Statement of Proposal concluded the preferred solution was best implemented by regulation in the form of Gas Governance (Constrained Transmission Pipeline) Rules (the Rules). The Rules would apply to all transmission pipelines, but would come into effect only when a pipeline or section of a pipeline becomes constrained and existing arrangements impede competition. The following process activates the 'capacity follows end user' provisions of the Rules.

1. A transmission system owner declines a request for new reserved capacity because it is concerned its security of supply standard might be breached.

[3] A complete explanation of the regulatory objective can be found in the Section 6.3, of the Statement of Proposal

2. The transmission system owner notifies Gas Industry Co it has declined a request for capacity.
3. Gas Industry Co declares part of a transmission system to be a constrained pipeline.

The system owner's notification to Gas Industry Co must state:

- why the transmission system owner is concerned the security of supply standard would be breached
- whether the transmission system owner believes the situation justifies declaring a pipeline constrained.

Gas Industry Co may declare a constrained pipeline only if satisfied of the following.

- The transmission system owner's concerns about security of supply on that part of the transmission system:
  - were reasonable
  - justified declining the request for new reserved capacity
  - are likely to continue to arise on that part of the transmission system.
- The transmission system owner's refusal of new reserved capacity is likely to reduce competition on the relevant part of the transmission system.

Before making a final decision on whether to declare a part of the transmission system to be a constrained pipeline, Gas Industry Co:

- must consider the information provided by the transmission system owner
- must be satisfied the information is accurate
- may consult on matters related to the security of supply
- may issue a provisional decision and consult on that decision.

We see the Rules being revoked or superseded when capacity arrangements are revised as part of a longer term revision.

1.3 Submissions received

Gas Industry Co received 11 submissions on the Statement of Proposal. The submitters were:

- Carter Holt Harvey Limited (CHH)
- Contact Energy Limited (Contact)
- Genesis Energy Limited (Genesis)

- Greymouth Gas Limited (Greymouth Gas)
- Major Gas Users Group (MGUG—Hale and Twomey and Aretê Consulting Limited on behalf of Fonterra Cooperative Limited, Carter Holt Harvey Limited, New Zealand Steel Limited, New Zealand Refining Company Limited, and Ballance Agri-Nutrients Limited)
- Maui Development Limited (MDL)
- Mighty River Power Limited (MRP)
- Nova Energy (Nova)
- PVL Proteins Limited (PVL)
- Total Utilities Management Group Ltd (TUMG)
- Vector Limited (Vector).

Nova Gas also presented a critique of the proposal it had commissioned from the Sapere Research Group (SRG).

In summary, many submitters supported Statement of Proposal. Those with concerns thought Gas Industry Co should have:

- tested whether a constraint on the North Pipeline actually exists
- provided more evidence for the reduction in competition
- provided a more robust cost-benefit analysis
- given greater weight to the 'real' issue, that is, expanding physical capacity and the potential need for investment in new capacity
- more fully explored non-regulatory solutions.

2 Evidence

In the Statement of Proposal we noted that 132 end users on the North Pipeline have annual demand over 10 terajoules. In the year after Vector announced the capacity constraint[4], 20 end users switched retailers; however, not all retailers who wished to bid for users' supply were able to do so. We concluded from all of the evidence available to Gas Industry Co that competitive activity had reduced.

Some submitters challenge the amount of evidence for the existence of an actual capacity constraint and the extent of the associated reduction in retail competition. Gas Industry Co accepts the need for an evidence-based approach. We also think it important to describe the problem by reference to the relevant statutory and GPS objectives; and to assess the nature and size of the problem by reference to expected outcomes given no regulatory action.

2.1 Determining the existence of the capacity constraint

Submitters' views

Several submitters question whether the physical situation on the North Pipeline justifies Vector no longer issuing capacity. These submitters assert that Vector is being unduly conservative in deciding how much capacity to issue. They suggest Gas Industry Co should begin its inquiries by determining whether or not a physical constraint exists, rather than solving the resulting problem of reduced competition.

Evidence of the extent of the capacity constraint

Gas Industry Co agrees that when transmission system owner declares it can no longer issue capacity because of a constrained pipeline, the industry should be able to test that decision.

Vector has declared it is unable, as a reasonable and prudent operator, to issue more capacity on the North Pipeline. It discloses some information about the Pipeline under the Gas (Information Disclosure) Regulations 1997 and has presented other information at industry forums (see Appendix B).

Gas Industry Co considers Vector needs to make more information publicly available. For example, at face value the information in the public domain would not necessarily suggest an emerging capacity constraint. A person reviewing Figures 1 and 2 (Appendix B) would, on the contrary, assume that

[4] Vector held an industry workshop on the North Pipeline constraint in September 2009, although we understand that shippers were made aware of the constraint several months earlier.

demand for capacity is reducing. Nor is there sufficient disclosed information for a suitably skilled engineer to make a full analysis of the capacity situation.

Nevertheless, it is a serious step for a pipeline owner to declare a pipeline constrained, and we have no reason to doubt that Vector did so with all due diligence. But we think it would have been better had Vector presented information in a form that conveyed the significant implications, and fully disclosed the data and assumptions underlying its analysis.

We are encouraging Vector to:

- publish information on any pent-up demand for capacity (the 'capacity queues')
- disclose its security of supply standard, its projection of the frequency of interruptions necessary to maintain that standard, and the impact of these matters on the amount of reserved capacity it will sell
- disclose details of the why it was concerned the security of supply standard would be breached, including its expectations for future demand growth, and relevant system modelling work, including modelling assumptions
- present future capacity disclosure information in a way that is transparent for industry participants.

Regardless of the above, the solution proposed in the Statement of Proposal requires Vector to provide information in relevant circumstances. The proposed Rules come into effect only if the pipeline owner has declined a request for capacity and Gas Industry Co declares a pipeline constrained. As a preliminary step, this would require the pipeline owner to provide the information to verify that assessment (refer to section 1.2).

2.2 Determining the extent of the reduction in retail competition

Differences in submitters' views

Most submitters accept that competition to supply existing end users has declined. End user submitters (CHH, MGUG, PVL, and TUMG) and Greymouth Gas believe the issue is significant. Pipeline owners and retailers (except Greymouth Gas) have a different view. They question whether the reduction of competition is significant enough to justify regulation. These submitters are especially concerned about the inherent infringement on 'property rights' involved in requiring capacity to 'follow the end user'. They believe such action ought not to be taken lightly, but consider the evidence Gas Industry Co presented was subjective and anecdotal.

Evidence of the extent of reduced competition

Gas Industry Co believes the empirical evidence establishes that end users are currently receiving fewer bids for their gas supply than previously. This reduced competition would be expected given current commercial arrangements in a situation where capacity is constrained. Submissions provided no other credible reason for the reduction in bids. Covec's work has now demonstrated that the effect is significant. (See further below).

We agree with submitters that there are examples of end users who have switched retailers since the constraint was announced. This confirms that some degree of competition exists; however, a consideration of options to improve competition may still be warranted. Gas Act and GPS objectives require Gas Industry Co to consider actions that minimise barriers to competition and that facilitate competition (for example, amending contractual arrangements that reduce competition). The relevant Gas Act objectives include:

- barriers to competition in the gas industry are minimised (s 43ZN(b)(ii))
- delivered gas costs and prices are subject to sustained downward pressure (s 43ZN(b)(iv)).

The GPS provides additional objectives including:

- facilitation and promotion of the ongoing supply of gas to meet New Zealand's energy needs, by providing access to essential infrastructure and competitive market arrangements
- barriers to competition in the gas industry are minimised to the long-term benefit of end-users.

We accept it is prudent to establish that the benefits of minimising the barriers to competition justify the costs of doing so. In assessing the potential effects of proposed regulation, Gas Industry Co prefers to take into account quantitative and qualitative net benefits, although we note quantifying the effects of regulation is sometimes not practical.

Gas Industry Co's view is that the available empirical evidence establishes competition has reduced because of the constraint. However, recognising the concerns raised by submitters, we asked economic consultants Covec to assess the evidence and to estimate the economic consequences of reduced competition.

Section 2.3 summarises the results of Covec's work. Their full report is provided in Appendix A.

Section 5.3 discusses the inherent infringement on 'property rights' involved in the proposed regulation.

2.3 Covec's analysis of the extent of the reduction in competition

Competitive activity

Covec analysed data from two major gas brokers on the number of unconditional offers of gas supply received by buyers between 2005 and 2010. Covec concludes from the evidence a statistically significant reduction in the level of competitive activity since the constraint was announced. This confirms the opinions of end users that in the presence of a constraint, commercial arrangements are proving a barrier to competition.

Economic cost of reduced competition

The promotion of competition as both Gas Act and GPS objectives suggests that it is considered important for its own sake. Although we do not consider it necessary to look beyond the outcome of improved competition (including by minimising barriers to entry), we have nevertheless asked Covec to estimate the scale of the problem.

To isolate the effect of reduced competition on market prices, a competition model is needed (rather than a simple observation of prices before and after the constraint). Covec used a calibrated Cournot model to model the welfare effects of fewer offers of supply for gas contracts after the North Pipeline was declared constrained. The outcomes of the Cournot model can be shown to be equivalent to outcomes in a situation where firms engage in price competition subject to capacity constraints.

The model allows a price change to be estimated as a function of the change in the average number of unconditional offers received per contract tendered. Covec's analysis estimates the deadweight losses arising from the reduced number of offers to be between $1.4 million and $4.1 million annually. Long-run transfers between end users and retailers are valued between $6.3 million and $14.7 million. (The total value of retail sales in the affected market is estimated at $75 million annually).

3 Assessing the need for new investment

In this section we respond to submitters' concerns that the scope of the Statement of Proposal should have considered the reduced competition issue in a wider context. In particular, submitters propose that the physical capacity situation and the need for investment require discussion.

3.1 Is physical capacity the 'real' issue?

Many submitters consider the competition issue is a symptom of a deeper or longer-term issue, which is ensuring that sufficient capacity is built to allow for growth in gas demand on the North Pipeline. Submitters disagree about whether the short-term issue of lessening of competition needs intervention, but there is broad consensus on this longer-term issue. For example, in its submission Carter Holt Harvey notes it is unable to seriously consider gas as an option to supply relatively large heat and electrical needs on its site because its supplier '…cannot make even a tentative commitment for increased future gas supply'. These submitters' view is that competition problems on the pipeline will be fully resolved only when physical capacity increases.

It is not uncommon for gas pipelines, internationally, to be operating at full capacity. Building additional capacity is sometimes uneconomic because the unmet demand is insufficient to justify the often 'lumpy' investment required to meet it. However, for an efficient transmission market, it is important that:

- the pipeline owner's security of supply standard is reasonable (the assets are being 'sweated' and the standard is not unduly lax), and that users understand the reliability of achieving that standard (that is the expected frequency of interruptions), and how it relates to the amount of reserved capacity available
- operating conditions on the pipelines, and the demand for pipeline capacity, are transparent so capacity constraints can be reasonably foreseen and verified
- the regulatory process to establish new capacity is clear
- the price of capacity is efficient

- the efficiency of related markets are not unduly affected by a constraint (in particular the wholesale and retail gas markets).

The Statement of Proposal was limited to considering the reduction in competition in the related retail gas market and did not cover the matters listed above. Gas Industry Co believes the short-term competition issue is an important matter, and the one most easily remedied; however, we are also concerned that the longer-term efficiency of the transmission market is improved.

We accept the proposed Rules will not increase the available capacity on the pipeline, so will not assist new users to access capacity; nor will the Rules solve other concerns with Vector's transmission access regime. We believe Gas Industry Co's continuing review of Vector's access arrangements is necessary, regardless of whether new investment is justified or not. [5] We also believe Gas Industry Co has a role in relation to facilitating new investment, as discussed below.

3.2 Gas Industry Co's role in investment decisions

Gas Industry Co's powers under the Gas Act

Some submitters note Gas Industry Co's power under the Gas Act to require investment in additional transmission capacity.

In section 1.5 of the Statement of Proposal, Gas Industry Co stated the following.

> It is accepted regulatory practice to allow utilities a reasonable return on 'prudent investments'. However, we note that New Zealand has no established approach to determining what a 'prudent investment' in pipeline capacity would be. In common with other investments, we would expect a prudent investment to comprise:
>
> - an assessment of overall market conditions (defining the market, and forecasting supply and demand conditions in that market);
> - identification of the investment opportunities (including new pipelines, compressors, and demand management); and
> - an assessment of the costs and benefits of the investment opportunities.
>
> Prudent investment must also operate within an administrative framework. Such a framework is likely to include:
>
> - an allocation of responsibilities between the pipeline company, the Commerce Commission, and Gas Industry Co;
> - consideration of input from the beneficiaries of pipeline services (who ultimately fund the investment through pipeline tariffs); and

[5] In January 2009 Gas Industry Co commissioned Creative Energy to write *Review of Vector Capacity Arrangements—A Research Paper* . The paper raised policy concerns with Vector's current capacity arrangements (the paper is available here http://www.gasindustry.co.nz/sites/default/files/publications/Vector_Capacity_Research_Paper_149282.2.pdf). Concerns with the arrangements included: their possible impediment to retail competition, possible capacity pricing inefficiency, and transparency and fairness of Vector processes (particularly given its conflicts of interest). More recent concerns relate to the new investment process and allocation of scarce capacity.

- an approval and review process.

Gas Industry Co is forming a view on what role we should have in relation to these matters.

Although nothing prevents Vector investing in new pipeline capacity, it has said there is too much regulatory uncertainty for it to do so.

The Gas Act provides for Gas Industry Co to recommend that regulations be introduced to require that new pipeline investment be made[6]. However, we currently have no related work underway.

Likelihood of investment in the short term

Given gas demand in the North Pipeline has been relatively static in recent years (see Appendix B), investment in new capacity may prove difficult to justify in the short term. Without information about pent-up demand (Vector's 'capacity queues'), and forecast demand, it is impossible to make a full assessment. Vector has set out some options for increasing the capacity of the Pipeline.[7] However, we are not aware of any proposals for investment in new capacity to serve the Auckland market and none were highlighted in submissions.

When a resource (such as transmission capacity) is scarce, the market price normally increases by a 'scarcity rent'. This rent signals the value the market puts on the resource, and the likely benefit of further investment. However, under current arrangements, the scarcity rent is invisible because prices to end users are confidential and individual retailers capture rents. Therefore Vector has no scarcity price signal to help it assess whether the investment in new capacity is justified.

Therefore, when considering options to deal with the consequences of a capacity constraint, we think it unwise to rely upon new pipeline capacity being built in the short to medium term. Investment is an important issue, but we think it cannot preclude consideration of the effect of a capacity constraint on competition.

Long-term issues

Arguably, new capacity is a significant issue not only for the gas industry but for the Auckland region and the economy as a whole. Gas Industry Co accordingly considers it a priority to build a better understanding of issues related to new investment in transmission capacity. We intend promoting discussion of these long-term issues among industry participants and relevant agencies, and discuss this further as part of our next steps (see section 6).

[6] Section 43F(2)(d) provides that regulations can be made for the purposes of requiring expansions, upgrades or service quality improvements to gas transmission pipelines including specifying how these will be paid for.
[7] Vector's September 2009 industry presentation (https://www.oatis.co.nz/Ngc.Oatis.UI.Web.Internet/Common/Publications.aspx, 02 Capacity Presentation (S J Kirkman - Sept 2009) set out three main options: pipeline looping ($80-200 million), additional compression ($20-30 million), or a combination of the two.

3.3 Retailers' role in investment decisions

Some submitters suggest the proposal would dampen incentives for transmission investment. SRG believes retailers are the most likely group of counterparties to underwrite such investment. But SRG predicts that under the proposed regulation investment will become less likely because:

- a larger and more disparate group would hold capacity contracts, so they are less likely to reach an agreement to underwrite the investment
- the certainty of securing capacity in future years is lost.

SRG seems to assume the proposal will result in large users holding capacity. However, the proposed Rules require the old retailer to relinquish capacity to the transmission system owner who makes it available to the new retailer. So capacity rights are likely to remain in the hands of retailers. (As now, nothing would stop end-users contracting directly to hold transmission capacity, but we would not expect that to happen.)

We agree retailers would not underwrite an investment unless they could contract for long-term rights to capacity, as they are currently able to do. The proposal would not alter that ability. A retailer could contract for capacity for a term matching the term of its contract with its end user.

The proposal does take from retailers the capacity rent they are currently capturing as holders of capacity entitlements. However, that rent may be acting as a disincentive to retailers taking any action—including supporting new investment—that would cause them to lose the rent. By removing the interest retailers have in retaining the status quo, the proposal favours investment.

We are therefore not persuaded that the proposal reduces the incentive to invest in new capacity. However, we do consider other issues might hinder potential investors, and we wish to fully explore these with industry participants and relevant agencies.

4 Non-regulatory solutions

In this section we respond to submitters' concerns that the Statement of Proposal should have given more weight to non-regulatory solutions. After analysing submissions, we agree it is worthwhile exploring these options; however, we are mindful that large end users on the North Pipeline are facing a situation for which they seek an urgent resolution. We are also mindful that before the current Gas Industry Co process, the industry (led by Vector) discussed the constraint issues, including the competition problem, and possible solutions, but no action resulted. Any non-regulatory approach to improving competition on constrained pipelines must be timely and effective in resolving issues for large end users.

4.1 Possible non-regulatory options

In the Statement of Proposal, Gas Industry Co concluded the only reasonably practicable non-regulatory solution was the Interruptible Power Stations option. This was considered achievable because it requires only the agreement of Vector and the North Pipeline power station owners and not widespread shipper support.[8] However, any of the options put forward in the Statement of Proposal could potentially be implemented as a non-regulatory solution. We have suggested how this could be done in Table 1.

Contact Energy also suggested several possible non-regulatory approaches. We have commented on these approaches in Appendix C (paragraphs 88 to 91). We consider only one ('transfer provisions in retail contracts') is likely to be timely and effective and have included it in Table 1.

In light of submissions, Gas Industry Co is offering the industry a further opportunity to specify and pursue a non-regulatory option. We will shortly convene an industry workshop for this purpose (see section 6).

[8] Under the Interruptible Power Stations option, Vector seeks to enter into contracts with shippers (most likely power stations) that allow it to interrupt supply in return for direct compensation. Vector can then issue a corresponding amount of 'new' capacity without breaching its RPO obligations. Vector may pass compensation costs on to the retailers holding the new capacity.

Table 1 Possible non-regulatory solutions

Option	Main features	Main requirements of implementing the option as a non-regulatory solution
Options proposed in the Statement of Proposal		
Permitted Demand	Retailers may hold as much Reserved Capacity as they wish. However, at large sites on a constrained pipeline, they may deliver gas only to a permitted level of demand. Retailers pay a new transmission charge for any deliveries above the permitted amount.	• Either through the VTC (or other agreements developed specifically for the purpose), a register of Permitted Sites on which the permitted level of demand applicable to that site would be recorded. It is possible that the switching registry could be adapted to include the necessary information. • The VTC would be changed to limit a retailer's reservation at a Permitted Site to the permitted level of demand.
Unlimited Premium Capacity	Retailers on a constrained pipeline may access as much additional capacity as they wish; however, they pay a premium price for that additional capacity.	• Vector would change its pricing methodology to introduce a Premium Capacity Reservation Fee, set at the marginal cost of expansion. • The VTC would be changed to introduce the Premium Capacity Reservation Fee.
Firm Unauthorised Overrun	Retailers on any Vector pipeline may meet new demand using Vector's unauthorised overrun service. Retailers pay Vector's standard overrun charges, but are not liable for any other charges, including damages.	• The VTC would be changed to clear up the current uncertainty over shipper liability for unauthorised overrun, ensuring that overrunning shippers are liable only for overrun changes.
Tradeable Power Station (PS) Capacity	Capacity supplied to power stations under supplementary agreements to long-term contracts may be traded on a constrained pipeline. Retailers may contract with a power station to purchase such capacity.	• Power station contracts and the VTC would be changed to allow for trading of supplementary agreement and long-term contract capacity when Vector declares a pipeline to be constrained.
Interruptible Power Stations (PS)	Vector seeks to enter into contracts with shippers (most likely power stations) that allow it to interrupt supply in return for direct compensation. Vector can then issue a corresponding amount of 'new' capacity without breaching its RPO obligations. Vector may pass compensation costs on to the retailers holding the new capacity.	• Vector negotiates interruptible arrangements with power station owners, allowing it to offer new capacity at a price that would compensate those owners for the interruption.
Liable Capacity	Vector issues unlimited new capacity. Retailers holding that capacity share liability for any curtailment damages payable by Vector.	• The VTC would be changed to introduce Liable Capacity.
Capacity Follows End User	A retailer who wins a contract to supply a large end user on a constrained pipeline receives a 'Reserved Capacity Increment'. Vector transfers this amount of capacity from	• The VTC would be changed to provide for an old retailer relinquishing capacity where a large end user selects a new supplier, and for the new supplier to be

Option	Main features	Main requirements of implementing the option as a non-regulatory solution
	the old retailer to the new retailer. If the old retailer held more than the Reserved Capacity Increment to supply the large end user, it relinquishes the difference to Vector.	issued capacity.
Demand Tariff	The Demand Tariff option replaces the Reserved Capacity regime on all Vector pipelines. Retailers are entitled to as much capacity as they require. They pay a tariff based on the demand during the system peak; that is, they are charged on the basis of actual demand rather than Reserved Capacity. However, at large sites on a constrained pipeline, retailers may deliver gas only to a permitted level of demand. Retailers pay a new transmission charge for any deliveries above the permitted amount.	• Vector would change its pricing methodology to introduce a Demand Tariff regime. • Extensive changes to the VTC would be required to allow for the introduction of Demand Tariffs.
Option proposed by Contact Energy		
Transfer provisions in retail contracts	End user contracts would contain a provision requiring its supplier to transfer an amount of capacity to another shipper, nominated by the end user, on termination.	• Standard wording for a provision to require the transfer of capacity would be developed and notified to large end users. • Some mean of committing retailer to include this provision in contracts they offer to large end users would need to be developed.

5 Other issues

In this section of the report we respond to issues that were common themes in the submissions. We also present further analysis of Gas Industry Co's proposed solution, which we have undertaken in response to issues raised.

5.1 Effect of the proposed rules on the allocation of scarce capacity

Nova Gas believes the proposal may weaken economically beneficial price signals. At present, we would expect the price of gas to existing large users on the constrained North Pipeline to consist of:

- input costs (for gas and transportation)
- capacity rent (representing the scarcity value of the capacity)
- a market power rent (in cases where the retailer has market power).

Under the proposal the price to existing large end users would include only the input costs. So the price signal indicating scarce capacity will be lost. Existing large users would therefore pay a price for gas that is less than its true economic cost (which would include the capacity rent). The result will be that the scarce resource (transmission capacity) is inefficiently rationed among the users. Nova suggests that the proposal remedies one market imperfection—reduced competition—by replacing it with another—price discrimination.

We agree the lower price applies only to existing large users and that supply to meet all marginal demand will be offered at a price including the capacity rent. Some existing uses of gas may not be economic at the true value of capacity (which includes the capacity rent). Therefore, the proposed solution would allow the inefficient uses to continue and block supply to new, potentially more efficient, uses.

This issue was recognised to some degree in the Statement of Proposal. In the evaluation of the Capacity Follows End User option, we noted (page 92):

> In pricing for a tender put out by a Large End User, a new retailer knows that, if it wins, it will be awarded capacity at the CRF [Capacity Reservation Fee]. The incumbent retailer knows that, if it loses the end user, it must rescind capacity at the CRF. In each case, the

opportunity cost of supplying the end user is—in relation to capacity—the CRF. Retailers will price on this basis and will not signal any capacity scarcity to these end users.

However, we accept that the Statement of Proposal might have given insufficient weight to the loss of the scarcity pricing signal to large end users. Covec have since considered this matter and, although accepting that prices to large end users are likely to decrease, consider that current prices are unlikely to be efficient. Covec conclude that, although the lower price might increase demand, it will not compromise efficient investment in new capacity.

5.2 Cost benefit analysis

Lack of a robust cost-benefit analysis

Most submitters considered Gas Industry Co had not adequately analysed the costs and benefits of the proposal. Submitter concerns included anecdotal rather than quantified evidence of the competition problem; lack of a robust cost-benefit analysis for all options; and assessment of the costs, but not the benefits, of the proposed option.

Covec analysis

In response to submissions about the cost-benefit analysis we commissioned Covec to analyse the economic costs arising from the reduction in competition, and the net benefit of the proposed intervention.

Covec estimates the net annual public benefit from intervention to be between $1.1 million and $3.2 million annually. The same calculation adding the wealth transfers from retailers to end users results in a net annual consumer benefit of between $6.1 million and $14.9 million. See Appendix A for Covec's full report.

5.3 Cancellation of contractual rights

The evaluation criterion in the Statement of Proposal

One evaluation criterion used in the Statement of Proposal was 'existing contractual rights', reflecting participants' concerns about the effect of the proposed rules on the 'grandfathering rights' currently enjoyed by shippers.[9] Of particular concern to some submitters was the low weighting given to this evaluation criterion. These submitters are strongly of the opinion that any action affecting contractual rights is not to be taken lightly, believing it creates regulatory uncertainty and undermines investment decisions.

The presumption against inferference with property rights

Gas Industry Co acknowledges the presumption against interference with property rights (including those rights granted by way of contract) and the requirement to interpret and apply the Gas Act and

[9] The 'existing contractual rights' criterion recognised that any solution should minimise effects on existing contractual rights by preserving the ability to enter into multi-year contracts, but without limiting the ability of end users to select their gas supplier.

GPS in the manner least intrusive on property rights and economic interests.[10] However, Gas Industry Co also recognises that the presumption against interference with property rights must be subject to the provisions of the Gas Act and not applied in isolation from it.[11]

The Gas Act empowers Gas Industry Co to propose regulation to pursue the objectives set out in the Gas Act and the GPS. The objectives include facilitation of competition in upstream and downstream gas markets by minimising barriers to access to essential infrastructure to the long-term benefit of end users.

Given the demonstrated effect that Vector's capacity arrangements have on retail competition when capacity is constrained, Gas Industry Co must balance pursuit of its statutory objectives against the costs associated with any course of action (including any infringement of property rights).

Vector's capacity arrangements were implemented at a time when the North Pipeline had no physical constraint. However, in the present circumstances the arrangements have the effect of reducing competition in the retail market. Gas Industry Co's statutory objectives require it to pursue a solution to this problem. The presumption against interference with property rights should not be applied in such a way as to frustrate pursuit of the statutory objectives, whether by regulatory or non-regulatory means.

Rights granted under the VTC

Gas Industry Co also notes that Vector's capacity arrangements and associated rights granted under the VTC are not an enduring, long-term contractual entitlement. Rather, they are subject to review (and possible removal/amendment) by Vector when the VTC expires, and is reconstituted, each year.

Gas Industry Co notes in particular the view expressed by Vector in September 2009 that 'grandfathering' of capacity entitlements should end.[12] Vector's proposal goes beyond that contemplated by the regulatory solution proposed by Gas Industry Co. The proposed Rules require an incumbent retailer to relinquish the capacity needed to supply an end user only if that end user wishes to be supplied by a new retailer. Gas Industry Co acknowledges that the Rules would result in the cancellation of certain short-term contractual entitlements. However, this aspect alone is not, in Gas Industry Co's view, sufficient justification for abandoning efforts to enhance competition.

5.4 Treatment of wealth transfers

In its submission on the Statement of Proposal Genesis raised the matter of wealth transfers (page 3):

[10] *Glogau v Land Transport Safety Authority* [1997] 3 NZLR 353 at 363, Gallen J said that 'where there is an ambiguity in the section as there is clearly in this case, it should be construed so as to avoid expropriation'.
[11] The Gas Governance (Insolvent Retailers) Regulations (Insolvency Regulations) are an example of how the terms of a contract have been overridden by regulation to achieve the objectives of Gas Act. To ensure the continuity of energy supply to all end users, the Insolvency Regulations prescribe a mechanism by which the customer contracts of an insolvent retailer are transferred to another retailer if the regulations are triggered. Regulation 9(2) of the Insolvency Regulations states that 'subclause [9](1) overrides anything to the contrary in the customer contract'. In other words, the end user contract will be transferred to the new retailer at the transfer time even if the end user contract terms do not permit assignment to another retailer.
[12] Vector – Presentation to Industry – September 2009.

> …GIC intervening to transfer rentals to consumers might be a legitimate option provided it does so in response to a market or regulatory failure and it is careful not to give short-term gains to consumers, or a subset of consumers, at the expense of overall long-term economic welfare. We note that the Gas Act does not provide a basis for favouring wealth transfers to consumers over economic efficiency.

The GPS objective for Gas Industry Co requires that 'competition is facilitated in upstream and downstream gas markets by minimising barriers to access to essential infrastructure to the long-term benefit of end-users'. We have considered the significance of the wording 'long-term benefit of end users'. In particular we considered whether a consumer benefit or a public benefit test should be applied in a cost-benefit analysis of the proposed regulation (that is, whether the benefits should include or exclude wealth transfers to end users).

There is no absolute rule as to whether benefits should include or exclude wealth transfers to end users in a cost-benefit analysis of proposed regulation. Their treatment depends on the circumstances of the proposed regulation and its purpose.

A cost-benefit analysis appropriately classes wealth transfers as a benefit to end users if:

- the purpose of regulation is to promote competition in circumstances where competition is limited
- the regulation being considered creates wealth transfers that are sustainable and are not of themselves conducive to inefficiencies.

The nature of the retail competition problem indicates a cost-benefit analysis of the proposed solution should include wealth transfers. In particular:

- end users wishing to change retailer are unable to do so if alternative retailers have no access to the pipeline
- the effect is reduced competition favouring incumbent retailers and limiting end users' choice of retailer
- removing the effect of the constraint would, or is likely to, promote competition by facilitating end user options to switch
- although the proposed Rules redistribute wealth in favour of the end user, competitive forces will determine exactly how the wealth transfer effects are distributed

Regardless, the Covec report identifies both net public benefits and net consumer benefits.

5.5 Gas Industry Co's mandate for dealing with the competition issue

Several submitters suggest the Commerce Commission, rather than Gas Industry Co, is the most appropriate body to deal with a competition issue.

We have kept in contact with the Commerce Commission on this issue. The Commerce Commission received several complaints about the reduction in competition on the North Pipeline. It considered whether any conduct by Vector, as the owner of the North Pipeline, or by retailers with capacity rights, was likely to breach the anti-competitive provisions of the Commerce Act 1986. The Commission's view was that further investigation of the matter was not warranted at the time. Rather, it believes Gas Industry Company is the relevant industry body to deal with the issue. If Gas Industry Co is unable to achieve a satisfactory resolution, the Commission may decide whether to investigate further.

Clearly the intention of the Gas Act is that the industry body should have a role in relation to competition issues. Section 43ZN objectives include:

- barriers to competition in the gas industry are minimised (s 43ZN(b)(ii)), and
- delivered gas costs and prices are subject to sustained downward pressure (s 43ZN(b)(iv)).

6 Conclusions and next steps

6.1 Conclusions

Gas Industry Co has fully considered submissions on the Statement of Proposal. We have further assessed end users' complaints of reduced competition to quantify the significance of the problem. We have also considered the wider context of the capacity constraint.

We conclude that Vector's capacity arrangements can be a barrier to competition when capacity is constrained. From its analysis, Covec concluded competition has lessened for large gas end users. The analysis assessed the net benefits of the proposed intervention to be between $1.1 million and $3.2 million annually. If wealth transfers from retailers to end users are also included in the analysis, the net benefit of intervention increases to between $6.1 million and $14.9 million annually. (The total value of retail sales in the affected market is estimated at $75 million annually.)

Gas Industry Co considers several actions are necessary, as discussed below.

Non-regulatory solutions

Gas Industry Co acknowledges submitters' views about giving more attention to non-regulatory solutions. We are persuaded that further efforts at obtaining an industry agreement are worthwhile. A non-regulatory solution is likely to require contract changes, most likely in the VTC. But, as explained in the Statement of Proposal, our level of participation in developing VTC-based solutions is limited. However, we will provide a forum and facilitator for discussions on how competition for large end users can be achieved by non-regulatory means. We will monitor whether the industry is able to make meaningful progress.

Investment in new capacity

The issue of investment in new capacity is significant. However, we think we must still consider the effect of a capacity constraint on retail competition. The important point is that it is unwise to rely upon new pipeline capacity being built in the short to medium term.

Gas Industry Co acknowledges that reaching a decision about new transmission capacity investment is a complex process. It requires considerable analysis and consultation to assess the need for investment and how it might occur. Such a process must also involve all industry participants including end users and government agencies.

Improving information

We encourage Vector to consider whether the degree of congestion on its pipelines can be communicated to the market in a simple way to provide better signalling. In particular, we encourage Vector to reassess how it presents its capacity disclosure information, and to publish information on any pent-up demand for capacity (the 'capacity queues'). We also think it is important Vector discloses its security of supply standard, its projection of the frequency of interruptions necessary to maintain that standard, and the impact of these matters on the amount of reserved capacity it will sell. That would allow parties buying firm capacity to assess the risk of interruption. They would also be able to understand how physical pipeline conditions are likely to impinge on the amount of reserved capacity Vector will sell.

6.2 Next steps

Gas Industry Co will now:

- continue working on the retail competition issue by:
  - providing a forum and facilitator for discussions on how competition for large gas users can be achieved by timely and effective non-regulated means
  - refining the proposed new rules to facilitate competition so they can be progressed if a timely and effective non-regulatory solution fails to emerge
- resume work on the longer-term issues by:
  - analysing further the options for access arrangements on Vector pipelines that will meet the objectives of the Gas Act and GPS
  - arranging a discussion among industry participants and relevant agencies of the long-term issues related to new investment
- seek to support both work streams by encouraging Vector to:
  - publish information on any pent-up demand for capacity (the 'capacity queues')
  - disclose its security of supply standard, its projection of the frequency of interruptions necessary to maintain that standard, and the impact of these matters on the amount of reserved capacity it will sell
  - disclose details of why it was concerned the security of supply standard would be breached, including its expectations for future demand growth, and relevant system modelling work, including modelling assumptions
  - present future capacity disclosure information in a way that is transparent for industry participants.

6.3 Feedback

Although we do not ask for formal submissions on this paper, we welcome any feedback.

Appendix A Covec report

covec

Report | 30 March 2011

Economic Analysis of North Pipeline Competition

Prepared for

Gas Industry Company Limited

economics | research | forecasting | public policy

Authorship
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We help organisations to solve problems and make decisions using our core skills of economics, forecasting, research and public policy.

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Executive Summary

In mid 2009, Vector's North Pipeline was declared to be constrained. Since that time, large end-users have reported lessened competition from gas retailers and Gas Industry Co has consulted on a proposed intervention. Labelled "capacity follows end-user" the proposal in fact operates by old retailers relinquishing capacity back to Vector, allowing the new retailer to secure rights to additional capacity to supply a new customer.

Having investigated the economic issues arising from this situation, we consider that

- there has definitely been a lessening of competition for large gas users; and
- the Gas Industry Co proposal will not compromise efficient investment in new capacity, though it is likely to increase demand.

The main reason we consider the proposal to be neutral with respect to new investment is that the pipeline owner will not be financially impacted by it. The pipeline owner does not currently receive any capacity rent. Instead, these rents flow to retailers.

We have investigated the scale of the competition problem by using a calibrated model of competition. The model relies on only limited information, particularly on changes in the number of unconditional offers received by large end-users.

We estimate that the competition problem is likely to have increased retail prices on the North Pipeline by between 9% and 22%, and consider this magnitude of price change to be material. Certainly these values are larger than one would use when hypothesising about small price increases.

To develop dollar-valued estimates of the net benefit of intervention, we deducted costs from gross benefits. In particular, we used estimates reported by Gas Industry Co to allow for the costs of intervention (both one-off costs and ongoing costs), which we offset against our estimate of the benefits of intervention.

Restricting attention to the first round efficiency effect (i.e. ignoring the value of the transfers) and using a discount rate of 8%[1] over a five year period gives an estimated **net annual benefit** from intervention of between $1.1m and $3.2m annually. The same calculation using both transfers and deadweight loss results in a total net annual benefit of between $6.1m and $14.9m.

We expect that there would also be indirect flow-on effects elsewhere in the economy, as these gas users expand production and/or pass on part of their cost savings to customers. Estimating the scale of such effects is complicated by the fact that several different industries are involved (dairy processing, glass and steel production and horticulture). The economic impact of lower input costs will vary across these sectors. A rough ballpark estimate, derived from value-added multipliers in (rather old) input-

[1] The Treasury, Public Sector Discount Rates. Available at http://www.treasury.govt.nz/publications/guidance/planning/costbenefitanalysis/

output tables, is that these indirect impacts could approximately double the initial benefits.

1 Background

Covec has been asked by Gas Industry Co to assess the economic effects of the commercial arrangements on Vector's North Pipeline, a gas transmission pipeline. Gas Industry Co is a special-purpose company, owned by gas industry participants, that was established to fulfil the role of the industry body under the Gas Act 1992. Gas Industry Co is responsible for developing and implementing arrangements that contribute to achieving the Government's aims of a competitive gas market that delivers fair and efficient gas prices.

In mid-2009 Vector declared the North Pipeline constrained (that is, near its physical capacity limit) and ceased issuing new capacity to the retailers supplying users on the Pipeline. Since the constraint was declared, large end users have reported reduced competition amongst retailers making offers for gas supply. The reduced competition appears to be an unintended consequence of the arrangements for allocating capacity in the presence of a constraint.

As a result of the concerns about reduced competition, Gas Industry Co issued a consultation paper Retail Competition and Transmission Capacity Statement of Proposal.[2] Some submitters challenged the amount of evidence Gas Industry Co presented for the extent of the reduction in retail competition and sought a more robust cost-benefit analysis. In response, Gas Industry Co asked Covec to undertake the current analysis.

In this report, we address two main issues. Our primary focus is to use industry data to estimate the economic value changes that are likely to occur under the Gas Industry Co proposal.

Additionally, we consider some of the main objections to the proposal because they have some bearing on the selection of indicators of economic value, and on the merits of the proposal more generally. In particular, the following questions are of interest:

- Is this really a lessening of competition?
- Would the proposal eliminate economically useful price signals?
- How should we regard the "transfers" of value from retailers to end-users that would arise under the proposed intervention?

It will be convenient to address the first two of these questions first, in the following subsections. The treatment of transfers will then be discussed alongside the modelling issues and results, in section 2.

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[2] The consultation paper is available on Gas Industry Co's website: http://www.gasindustry.co.nz/sites/default/files/u180/Retail_Competition_and_Transmission_Capacity_Statement_of_Proposal_FINAL_154485.7.pdf

1.1 Lessening of Competition

The terms and conditions of access to Vector's North Pipeline are governed by the Vector Transmission Code, which among other things provides that shippers (retailers) have the right to reserve as much capacity in a year as they had in the previous year. This is known as 'grandfathering'.

The combination of grandfathering and a constrained pipeline has the effect of making it more difficult for retailers to expand their operations. For example, an aggressive retailer with access to gas could not attract a large user's business unless it already had spare pipeline transmission capacity rights. Incumbent retailers, with capacity rights sufficient to serve their own customers, have limited incentive to relinquish those rights to a competitive rival.[3]

In our view, this is unambiguously a lessening of competition. Before the pipeline became constrained, there was more intense competition between retailers seeking to supply large customers than is currently possible. Irrespective of how it occurred (eg as an unintended consequence of the commercial arrangements when a physical limit is encountered), the *effect* is clearly to reduce the intensity of competition.

One way to reverse this lessening of competition was outlined in the Statement of Proposal. It involves requiring the old retailer (the one losing the customer) to relinquish the capacity to Vector, who then re-issues some or all of it (at the new retailer's election) to the new retailer. Under this arrangement, any retailer with gas could make an unconditional supply offer, because it would be confident that transmission capacity would be available to allow it to supply the end-user.

In addition to addressing this particular competition issue, the industry faces some medium to long-term issues over the timing and scale of investment in new capacity, and the contracting mechanisms required to support such investment. During consultation, Gas Industry Co has acknowledged that these are important issues but argued that there is nevertheless still a need to consider a response to the competition problem.

We agree with that position. Provided the proposed intervention does not make future capacity investment more difficult or less likely, there is no reason to delay. In other words, it is necessary to assess the risk of unintended consequences arising from the Gas Industry Co proposal.

1.2 Risk Assessment of Gas Industry Co Proposal

Two such risks associated with the proposed intervention have been suggested in consultation.

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[3] Some transfers might occur if a retailer acquired some additional demand and was able to buy "spare" rights from a rival.

- End-users might not face an efficient price signal; and

- Reassigning rights might compromise efficient investment in new capacity.

We address these individually.

1.2.1 Distortion of Efficient Price Signals

It has been argued (correctly in our view) that the proposed intervention will result in lower end-user prices. This will stimulate demand, which is arguably the opposite of what is desirable at a time when pipeline capacity is scarce.[4] In particular, any capacity rent that would otherwise arise from the constraint will not be paid by end-users. We agree with this general proposition, but also note that the current situation (without the proposed intervention) is already quite different from one with ideally efficient end-user pricing.

In a situation of constrained transmission capacity, gas needs to be rationed in some way. In broad terms, rationing can be quantity-based or price-based. Economists generally prefer price-based rationing because it is consistent with allocative efficiency: under price-based rationing, gas flows to those that value it most highly.

Some quantity-based rationing is occurring now however, because new large users can no longer be connected no matter how high a price they might be willing to pay. Another form of quantity-based allocation, also occurring currently but in respect of existing large users, arises from term contracts and the grandfathering process. Both of these factors insulate existing large users from prices that would clear the market today.

There are other reasons to doubt that today's pricing to large end-users is allocatively efficient for a constrained pipeline. Retailers operate at a separate functional layer, buying transmission services from the pipeline and on-selling it to end-users. An efficient price for constrained transmission capacity would reflect the forward looking marginal cost of capacity.[5] This will increase as spare capacity is eroded and eventually be high enough to bring forth new capacity.[6] By contrast, the price increases resulting from the situation identified by Gas Industry Co occur as a result of lessened competition. They may be higher or lower than the prices that reflect efficient forward-looking costs of new capacity.

If removing these high price signals is judged to be a detriment, that assessment must relate to some combination of the following effects:

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[4] These points were made by Genesis Energy and Nova Energy

[5] An alternative definition of could be "the price that results in total demand equal to available capacity". Given that there is still capacity to add organic residential demand, current pricing is not efficient in this sense.

[6] Note that the pipeline owner would look to the post-expansion prices and revenues when assessing investment. The pre-expansion price that contains the capacity rent is part of the information set that would be used to infer or predict post-expansion prices and revenues.

- A tension over which users gain access to the remaining capacity (large users compared with organic growth in residential demand); and

- Advancement of the time at which no further capacity can possibly be found using the existing asset without extra investment.

To explain the first of these points, it might be considered desirable to maintain high prices for large users if that throttled back their usage and allowed more residential users to take gas supply. We see no obvious reason to favour one user type over another, so the first of these points does not appear decisive regarding whether large users face high or low prices.

The second point is based on the fact that lower end-user pricing generally will stimulate overall demand growth. Even if residential users can still be added for a year or two, the point at which this can no longer occur will arrive sooner under low pricing than high pricing. Again, one's view on how detrimental this is depends in part on any preferences for the interests of one user group over another.

In summary, we agree that prices to end-users will fall and that this will have an effect on overall usage. It is less obvious to us that this is clearly detrimental. In any event, there is a natural physical limit on the size of this effect.

1.2.2 Investment in New Capacity

Several submitters have argued that Gas Industry Co should either switch its focus to the difficult issues associated with stimulating new capacity or at least recognise that its proposal for reassigning capacity rights might compromise efficient new investment.[7]

We consider it important to examine whether the proposed intervention would make new investment less likely. To do so, let us assume away two significant issues for a moment:

- Assume there is sufficient demand to warrant capacity expansion; and

- Assume that there are no other hurdles to such expansion (e.g. related to the Commerce Commission's processes).

We note that at the present time (i.e. without the proposed intervention), the pipeline owner does not enjoy a capacity rent. Whatever rents are being secured accrue instead to the retailers. The Gas Industry Co proposal will eliminate capacity rents, but doing so will not cut revenues for the pipeline owner. From the perspective of the pipeline owner, there is no material change. Since the pipeline owner's flow of funds is unaffected, its ability to finance investment is also unaffected.

Secondly, since retailers are securing rents under the status quo, and these will be reduced or eliminated by new investment, retailers might rationally prefer investment

[7] Genesis Energy, Maui Developments Ltd, Nova Energy, Contact Energy and SRG for Nova.

to not occur.[8] In other words, the status quo does not seem particularly conducive to retailers assisting with the financing or underwriting of new investment.

We also disagree with the view expressed by the Nova Gas consultant Sapere Research Group (SRG) that the proposal will lead to end users as well as retailers holding capacity entitlements, and that this more diffuse group will be less able to agree on a capacity extension project. One reason we disagree is that under the Gas Industry Co proposal capacity rights are likely to remain in the hands of retailers. Additionally however, to the extent that end-users do contract directly for transmission capacity, any disadvantage arising from there being a larger number of capacity holders will be offset to some extent by their greater ability to commit to an investment in new capacity. Unlike retailers, end-users do not have the risk that another gas retailer will take part of their business.

More fundamentally, if the SRG argument could be substantiated, there is a relatively simple way around it. The proposed regulations could be rescinded once retailers have agreed to under-write new capacity. This would restore any existing incentive and ability for retailers to commit, and add a further incentive namely that these rules (which they apparently dislike) would disappear.

For these reasons, we do not believe that the proposal would undermine investment incentives.

[8] Whether this is so for any retailer will depend on a trade-off between status-quo rents and the expected financial impact of being able to pursue more customers after the pipeline is expanded. Retailers will likely vary in their evaluation of this trade-off.

2 Modelling

If demand is growing, then a physical supply constraint will lead to higher prices. This in itself is not economically inefficient, particularly in the short run when new capacity cannot be added easily. However, the constraint declaration on the North Pipeline, *combined* with the grandfathering of capacity rights, makes it more difficult for retailers to compete for supply contracts on the pipeline. Under these conditions, it is not possible for all retailers to make unconditional offers of supply and this is expected to reduce the number of offers made for any given contract. Our analysis attempts to estimate the welfare effects of higher gas prices on the North Pipeline due to reduced competition after it was declared constrained.

2.1 Model Framework

There is evidence that, after the pipeline was declared constrained, the number of unconditional offers of supply received by buyers for contracts tendered reduced. Total Utilities Management Group and Energy Select, two major gas brokers, have supplied us with information on the number of unconditional quotes received by retailers to supply gas by year which is summarised in the table below (with the full dataset in the appendix).

We focus only on unconditional offers in part because they are fully credible from the buyer's perspective. It is worth noting also that we have no need for the prices contained in these offers: our model only requires the number of offers.

Table 1: Unconditional quotes received by TUMG and Energy Select

Year	Clients	Quotes Received per Client		
		Minimum	Maximum	Average
2005	8	3	6	4.75
2006	6	4	6	4.83
2007	5	2	6	5.00
2008	5	3	6	4.40
2009	9	3	7	5.44
2010	8	2	6	3.25

It should be noted that there is considerable variation beneath the reported average number of quotes in each year. Some end-users have experienced much greater reductions in the number of unconditional quotes than others (the raw data is reported in Appendix 2).

The average number of quotes in 2010 is lower than the previous years but it is possible that this change might just reflect random variation. We investigated that issue by using t-tests to assess whether the lower 2010 value is statistically significant. Four, two sample t-tests assuming equal variances have been undertaken with the results in the table below (the full results are shown in the appendix). As the constraint was declared during 2009, we have ignored the quotes received in this year.

Table 2: P-values for two sample t-tests

t-tests of 2010 vs,	p-value
2008	0.2376
2007-08	0.0762*
2006-08	0.0234**
2005-08	0.0079***

The ‘p-values’ reported above are the lowest significance levels at which one would reject the hypothesis that the number of unconditional quotes in 2010 is equal to the number on other time periods. In this table, * indicates significance at 10% level, ** indicates significance at 5% level, and *** indicates significance at the 1% level. The results indicate that the lower number of unconditional offers in 2010 is statistically significantly different (at reasonable significance levels) on all comparisons except 2008 alone.

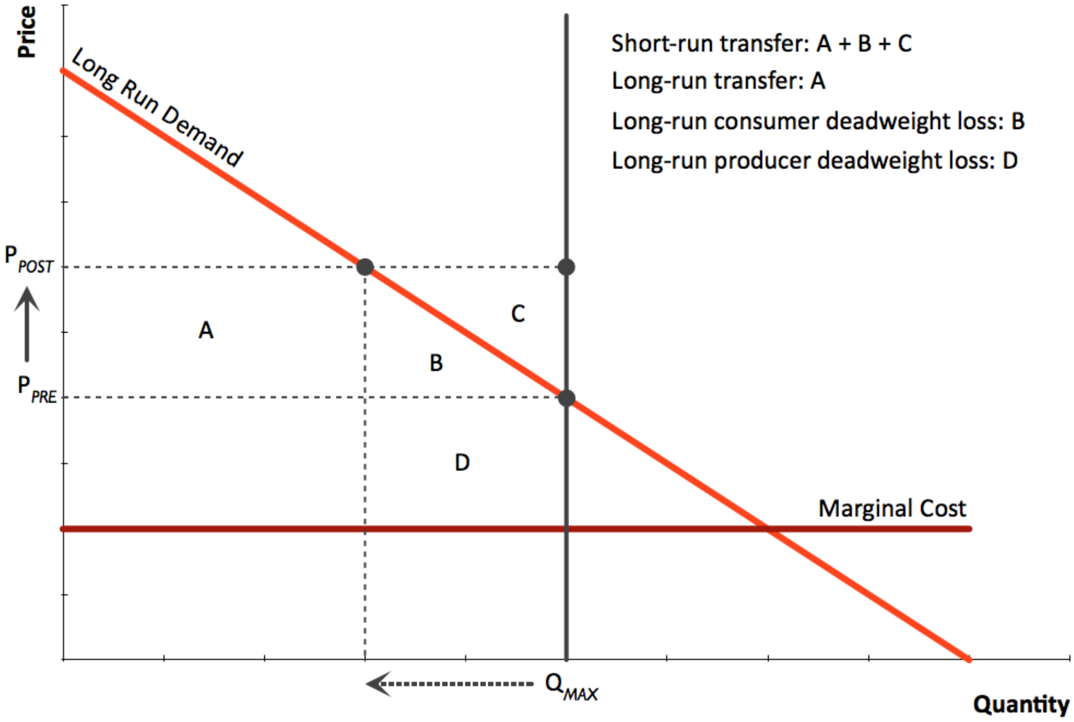
Of the eight clients in 2010, seven of them had received quotes in 2005-08. In five of these cases the number of quotes received dropped by at least 50%. Of the nine clients in 2009, six of them had received quotes in 2005-07 and in each case they received at least the same number of quotes in 2009 as they had previously.

It is a basic principle of many economic models of competition that a reduction in the number of competitors leads to higher prices, everything else being equal. Therefore, as a result of reduced effective competition for supply contracts due to the grandfathering rules, we expect that consumers of gas will face higher prices. These price increases will be over and above any price increases that would have occurred simply due to demand increases in the presence of the physical constraint.

The economic welfare effects of such price increases caused by a reduction in competition depend on the response of buyers to higher prices. In the short run, consumers may be unable to adjust their rate of gas consumption, with the end result being a simple transfer of welfare from gas consumers to retailers. Over longer periods of time, consumers will adjust to higher prices by consuming less gas, everything else equal. This will lessen the transfer but introduce allocative (deadweight) losses as quantity reduces.

This is illustrated in Figure 1. Quantity is constrained to be no greater than Q_{MAX}. A price increase from P_{PRE} to P_{POST} occurs due to a reduction in competition. In the short run, demand is unresponsive to price changes and quantity remains at Q_{MAX}. This results in a welfare transfer from consumers to producers represented by the area A + B + C in the figure. In the long run, demand becomes sensitive to price changes and the quantity demanded reduces in response to the higher price. As demand adjusts over time, the transfer reduces to area A, while the total deadweight loss is represented by area B + D. Note that in this long-run situation, the pipeline is not physically constrained. If demand was to grow, shifting the demand curve further to the right, more demand might be served, but the price would not fall under lessened competition.

Figure 1: Short- and long-run effects of a price increase caused by a reduction in competition, in the presence of a capacity constraint.



It is difficult to isolate the effect of reduced competition from other factors causing changes in market prices. Therefore, rather than simply using observed prices before and after the constraint was declared, we used a competition model to estimate the effects. In particular, we used a calibrated Cournot model to estimate the welfare effects of reductions of the number of offers of supply for gas contracts after the North Pipeline was declared constrained.

The Cournot model assumes firms compete by offering quantities of supply, and the price received by all firms is the price that clears the market given the quantities chosen. While firms do not often directly compete by offering quantities, it can be shown that outcomes in the Cournot model are equivalent to outcomes in a situation where firms engage in price competition subject to capacity constraints. The Cournot model also has the advantages that it is simple, well-understood, and can be calibrated to produce quantitative welfare results with relatively little data. Therefore, in our view the Cournot model provides a very useful framework for estimating the welfare effects of the North Pipeline constraint.

The model enables us to estimate a price change as a function of the change in the average number of unconditional offers received per contract tendered. For a given price change, we estimate two sets of welfare results, as illustrated in Figure 1. The 'short run' effect is an estimate of the transfer between consumers and producers, assuming quantity is unchanged (area A + B + C). The 'long run' effect is broken down into a transfer between consumers and producers (area A), a consumer deadweight loss (area B) and a producer deadweight loss (area D).

2.1.1 Deadweight Loss and Economic Transfers

The deadweight loss represents the value of trade not undertaken as a result of the commercial arrangements when capacity is constrained. This is universally regarded by economists as a welfare loss.

In addition, the proposed intervention will transfer some value from gas retailers to gas buyers (equal to the areas labelled A, B and C in the above diagram). This transfer does not arise from additional trade; it is caused by a change in the price of gas.

In some regimes, transfers that benefit end-users are regarded as a benefit. In the case of gas, the Government Policy Statement (GPS)[9] includes the following statement (at 12(b)):

> Competition is facilitated in upstream and downstream gas markets by minimising barriers to access to essential infrastructure to the long-term benefit of end users.

The reference to the long-term benefit of end-users indicates that, provided the intervention does not compromise long-term goals, benefits delivered to end-users such as through lower prices, are considered an advantage. We have discussed the proviso in section 1.2.2 above, and formed the view that the Gas Industry Co proposal will not compromise efficient investment. Consequently, there is a reasonable case for including transfers to end-users as a benefit of the proposed intervention.

It could be argued that the transfers are being illegitimately confiscated from retailers, who should therefore be compensated for that loss. The economic case for such an argument seems weak, for two reasons.

- Under effective competition, the transfer would occur anyway. Those components of wealth only accrue to retailers as a consequence of lessened competition.

- The argument relies on a non-neutral treatment of transfers in which preference is given to the status quo, irrespective of other attributes of the status quo. Applied generally, it would prevent regulatory interventions under the total welfare standard because these invariably also have a transfer effect.

2.1.2 Cost of Intervention

To implement the Gas Industry Co proposal, regulation is required. Consequently, there will be implementation costs associated with regulation. Gas Industry Co, in their 'Retail Competition and Transmission Capacity: Statement of Proposal', estimate the cost of establishing the rules, declaring the constrained pipeline and ongoing costs relating to the tenders.[10] In what follows, we will offset these costs against the estimated benefit of the intervention.

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[9] http://www.med.govt.nz/templates/MultipageDocumentTOC____34497.aspx

[10] Retail Competition and Transmission Capacity: Statement of Proposal. GIC 12 Nov 2010, pg 46

2.2 Model Calibration

We have calibrated a generic Cournot model using actual market data. Full details of how this was done are given in Appendix 1. The key data required to calibrate the model and generate the welfare results are:

- Price elasticity of demand.
- Market price immediately before the constraint was declared.
- Market quantity immediately before the constraint was declared.
- Average number of offers per contract before and after the constraint was declared.

Each of these was estimated as follows.

Demand elasticity: The price elasticity of demand for natural gas was obtained from estimates by the International Monetary Fund (IMF)[11]. The average of the two long-run elasticities over the period 1918-2004 is used. The long run price elasticities are -0.45 and -0.48 giving an average of -0.465. The short run price elasticities over the same period are -0.01 and 0.006.

Pre constraint market price: The pre constraint price, for raw natural gas was estimated from the winning offers received by two major gas supply brokers, Total Utilities Management Group and Energy Select. There are other factors that are also considered when accepting an offer, but a competitive price is necessary. The winning offers had a moderate range of prices per Gigajoule (GJ) of delivered gas, typically from $5.80 to $6.20 with some slightly higher. An average value of $6.00/GJ was selected.

Pre constraint market quantity: We have obtained the total throughput for time-of-use (TOU) users on the North Pipeline from Jan 2009 to Jan 2011 from Vector via Gas Industry Company. The monthly throughput is shown in the figure below. The total throughput for 2009 was 12,644TJ (slightly higher than the 12,246TJ in 2010)[12].

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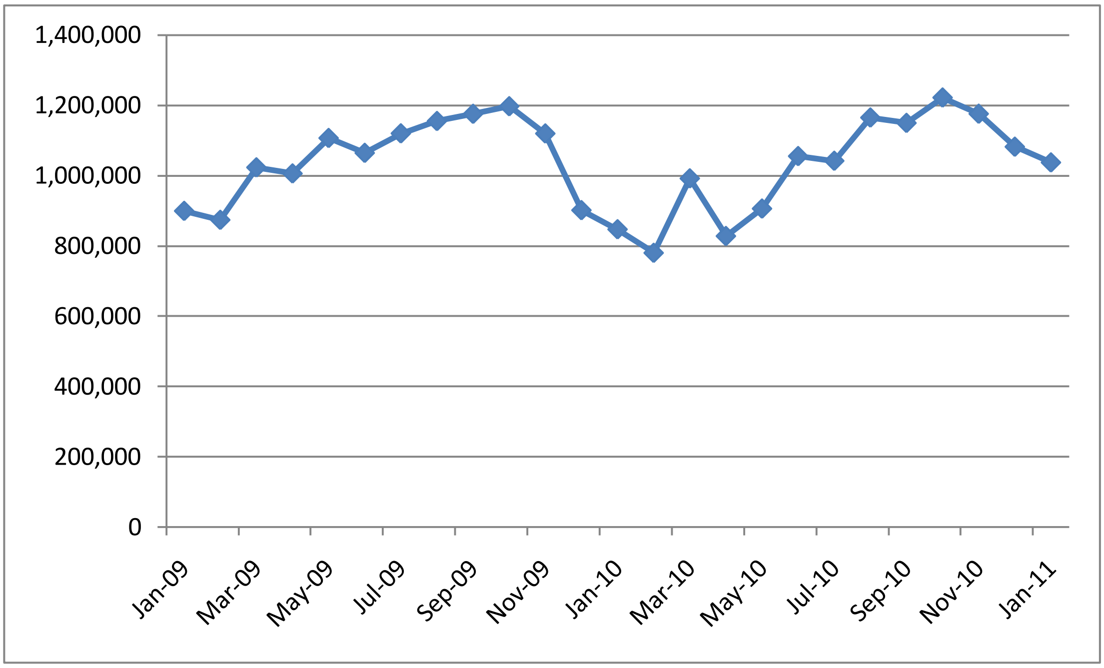
[11] A Simultaneous Equations Model for World Crude Oil and Natural Gas Markets. Noureddine Krichene. IMF Working Paper. February 2005. Table 2, pg 12.

[12] These throughputs exclude quantities used by electricity generators because such end-users would not benefit from the proposal during the life of their long term supply contracts.

Figure 2: Monthly throughput for time-of-use users on the North Pipeline (GJ)



Average number of offers: As described above, we estimated pre and post constraint average offers from information supplied by the two major gas supply brokers, Total Utilities Management Group and Energy Select. The brokers provided information on the number of unconditional quotes received by retailers to supply gas by year. The average number of unconditional quotes received in 2005-08 is 4.75 and in 2010 the average is 3.25. We will use 4 and 5 for the pre constraint average offers and 3 and 4 for the average post constraint offers.

2.3 Results

The Cournot model allows us to estimate that the competition problem is likely to have increased retail prices by between 9% and 22%. The short-run and long-run effects of this price increase are shown in the table below.

Table 3: Results of Cournot model with changes in the number of gas supply offers

	Price Change (%)	
Initial N \ Final N	3	4
4	14%	N/A
5	22%	9%
	Short Run Transfer ($m p.a.)	
Initial N \ Final N	3	4
4	$10.2	N/A
5	$16.3	$6.5
	Long Run Transfer ($m p.a.)	
Initial N \ Final N	3	4
4	$9.6	N/A
5	$14.7	$6.3
	Long Run Deadweight Loss ($m p.a.)	
Initial N \ Final N	3	4
4	$2.9	N/A
5	$4.1	$1.4

The total long-run deadweight loss as a result of the commercial arrangements when capacity is constrained is estimated to between $1.4m and $4.1m annually. This is the pure efficiency gain associated with the Gas Industry Co Proposal. In addition, there will be direct benefits to end-users of between $6.3m and $14.7m annually, and further downstream benefits in markets supplied by large gas users, as these users pass through some cost savings to their own customers. We would expect competition to force large gas users to pass some of this transfer through to their customers, who will in turn spend some of their extra revenue. In this way the transfer will generate additional economic value as it ripples out through the wider economy.

Gas Industry Co has estimated the cost of establishing the Governance Gas Rules at $100,000, the cost of declaring the constrained pipeline at $70,000 and ongoing costs at $700 per tender.[13] Gas Industry Co has assumed 70 tenders per year to give an annual cost of $49,000. This gives a one-off cost of $170,000 and ongoing costs of $49,000 per year.

If the Governance Gas Rules result in the pre constraint level of competition then the net benefit of the rules is the avoided loss of welfare less the costs of regulation. Restricting attention to the first round efficiency effect (i.e. ignoring the value of the transfers) and using a discount rate of 8%[14] over a five year period gives an estimated net benefit between $1.1m to $3.2m annually. The same calculation using both transfers and deadweight loss results in a total net benefit of between $6.1m and $14.9m annually.

[13] Retail Competition and Transmission Capacity: Statement of Proposal. GIC 12 Nov 2010, pg 46

[14] The Treasury, Public Sector Discount Rates. Available at http://www.treasury.govt.nz/publications/guidance/planning/costbenefitanalysis/

2.4 Indirect Impacts

The estimates reported above are long-run values arising within the retail gas market only. There may also be other, indirect benefits arising from the proposed intervention. These could occur either in other parts of the gas industry, or in the industries that end-users supply.

In the gas industry, some retailers will benefit from intervention by being able to sell more gas, while others will lose as a consequence of being exposed to greater price pressure. Upstream from retailers, the proposed intervention may have the effect of allowing some additional tranches of relatively low-cost gas onto the market. That, in turn, would help to support exploration incentives by increasing investor confidence regarding market access. Of course there are many influences on exploration incentives, and we would not expect this effect to be particularly large.

Gas users that would benefit from this intervention include dairy processing plants, electricity generators, steel and glass manufacturers and hothouse vegetable growers. For all such users, the proposed intervention will reduce the variable cost of gas, potentially by around 20%. Firms compete on the basis of variable costs, so we would expect some drop in the output prices of large gas users. Price setting in the relevant output markets is quite complex however, depending on factors such as the range of variable costs across competing firms, technologies used and any other constraints on production. Without a detailed analysis of each such industry, it is not possible to estimate the size of any price effects.

However what can be said is that competition will force large gas users to pass on some of the benefits of lower gas prices, to their own customers. This will either reduce basic input costs throughout the New Zealand economy (in the case of electricity generators) or make New Zealand exporters more competitive, or both. Moreover, as the benefit of lower gas prices are passed on to customers of gas users, new cycles of spending will be initiated by those receiving lower prices. In this way, the effects are expected to ripple outwards from the gas sector, through customers of the gas sector, their customer and the wider economy.

A very broad brush indication of the scale of these effects can be gained from the value added multipliers for the relevant industries. We caution that these are 2001 values and may be biased upwards. The values range from 2.0 for horticulture to 8.9 for dairy processing, though most are in the range from 2 to 3.3. These values suggest that about the same level of benefit that accrues directly to gas users also accrues elsewhere in the economy. So a very broad brush estimate of total economic value would be to double the value received by gas users themselves.

3 Conclusion

In mid 2009, Vector's northern pipeline was declared to be constrained. Since that time, large end-users have reported lessened competition from gas retailers and Gas Industry Co has consulted on a proposed intervention.

Having investigated the economic issues arising from this situation, we consider that

- there has definitely been a lessening of competition for large gas users; and
- the Gas Industry Co proposal will not compromise efficient investment in new capacity, though it is likely to increase demand.

The scale of the competition problem has been investigated using a calibrated model of competition. The model relies on only limited information, particularly on changes in the number of unconditional offers received by large end-users. The model is likely to understate the scale of the problem because it is restricted to the volumes drawn by the largest users.

With these caveats, the following results can be stated. First, restricting attention to the first round efficiency effect (i.e. ignoring the value of the transfers) and using a discount rate of 8%[15] over a five year period gives an estimated net benefit (after the costs of intervention) between $1.1m to $3.2m annually. The same calculation using both transfers and deadweight loss results in a total net benefit of between $6.1m and $14.9m.

We consider these estimates to be at the lower end of the reasonable range because they ignore the indirect impacts, which are likely to be beneficial in upstream parts of the gas industry, in the markets supplied by large gas users, and in the wider economy as a consequence of further rounds of spending. A ballpark estimate of this effect is that the indirect economic impacts could be about as large as the direct benefits to gas purchasers.

[15] The Treasury, Public Sector Discount Rates. Available at http://www.treasury.govt.nz/publications/guidance/planning/costbenefitanalysis/

Appendix 1: Cournot Model Calibration

We assume linear market demand of the form

$$P = a - bQ$$

where P is the market price, Q is the market quantity, and a and b are parameters to be calibrated.

In the Cournot model, there are N firms and firm i's profit is:

$$\pi_i = (P(Q) - c_i)q_i$$

where $P(Q)$ is the market price given the total quantity supplied by all firms, c_i is firm i's marginal cost, and $Q = \sum_{i=1}^{N} q_i$.

Firm i chooses q_i to maximise its profit, giving the first-order condition

$$\frac{\partial \pi_i}{\partial q_i} = P(Q) - c_i + \frac{\partial P(Q)}{\partial q_i} q_i = 0.$$

With linear demand, this becomes

$$a - bQ - c_i - bq_i = 0.$$

We assume the N firms are symmetric, with identical costs (so $c_i = c$ for all i) and choosing identical quantities in equilibrium. The equilibrium quantity q^* chosen by each firm is therefore given by

$$a - bNq^* - c - bq^* = 0$$

which gives

$$q^* = \frac{a - c}{(N+1)b}.$$

The equilibrium market quantity and price are:

$$Q^* = \frac{N}{N+1} \times \frac{a - c}{b}$$

and

$$P^* = \frac{a + Nc}{N+1}$$

The model can be used to estimate how prices change when N changes. Let us define N_{PRE} and N_{POST} as the average number of supply offers before and after the constraint and P_{PRE} and P_{POST} as the corresponding prices. To quantify the change in price following the change in N, we need estimates of the two values of N and the demand and cost parameters a and c.

We do not have data to permit estimation of a or c in the gas market directly, but estimates of the pre constraint price, P_{PRE} and quantity, Q_{PRE} and the price elasticity of demand for gas are available. At a given point on a linear demand curve, price elasticity of demand is given by

$$\varepsilon = \frac{dQ}{dP} \times \frac{P}{Q} = -\frac{1}{b} \times \frac{P}{Q}.$$

Substituting $Q = (a - P)/b$, we get

$$\varepsilon = -\frac{P}{a - P}$$

or

$$a = P(1 - 1/\varepsilon).$$

Assuming that the estimated elasticity of demand applies at the pre-constraint equilibrium price P_{PRE}, we have

$$\hat{a} = P_{PRE}(1 - 1/\varepsilon)$$

We can therefore estimate $\hat{a}$ from P_{PRE} and ε.

The equilibrium market price equation can be rewritten as:

$$P_{PRE} = \frac{P_{PRE}(1 - 1/\varepsilon) + N_{PRE}c}{N_{PRE} + 1}$$

or

$$P_{PRE} = \frac{N_{PRE}c}{N_{PRE} + 1/\varepsilon}.$$

Rearranging this equation to make c the subject gives:

$$c = \frac{P_{PRE}(N_{PRE} + 1/\varepsilon)}{N_{PRE}}$$

We therefore estimate c from P_{PRE}, N_{PRE} and ε.

Finally the estimates of $\hat{a}$ and c are used to calculate P_{POST}:

$$P_{POST} = \frac{\hat{a} + N_{POST}c}{N_{POST} + 1}.$$

To translate these price changes into welfare effects, we also need an estimate of the demand slope parameter b. Again using the formula for elasticity of demand for linear demand, we have

$$b = -\frac{1}{\varepsilon} \times \frac{P}{Q}.$$

As above, we have a demand elasticity estimate, and have the assumed P_{PRE}. Assuming the elasticity applies at P_{PRE}, and given an estimate of the corresponding quantity Q_{PRE}, we estimate b as

$$\hat{b} = -\frac{1}{\varepsilon} \times \frac{P_{PRE}}{Q_{PRE}}.$$

Appendix 2: T-Tests

Table 4: Number of unconditional quotes received by client and year

Client	2005	2006	2007	2008	2009	2010
1	5					6
2	5					2
3	5			5		
4	5					
5	4					
6	6				6	
7	5				6	
8	3					
9		6				3
10		5				
11		5			7	
12		5			7	
13		4			4	
14		4				
15			6			2
16			2			
17			5			2
18			6		6	
19			6			2
20				3		
21				3		
22				6		6
23				5		
24					5	
25					5	
26					3	
27						3

Table 5: 2010 vs 2008 two sample t-test assuming equal variances

Statistic	Variable 1	Variable 2
Mean	3.25	4.4
Variance	3.071429	1.8
Observations	8	5
Pooled Variance	2.609091	
Hypothesized Mean Difference	0	
df	11	
t Stat	-1.24885	
P(T<=t) one-tail	0.118821	
t Critical one-tail	1.795885	
P(T<=t) two-tail	0.237642	
t Critical two-tail	2.200985	

Table 6: 2010 vs 2007-08 two sample t-test assuming equal variances

Statistic	Variable 1	Variable 2
Mean	3.25	4.7
Variance	3.071429	2.233333
Observations	8	10
Pooled Variance	2.6	
Hypothesized Mean Difference	0	
df	16	
t Stat	-1.89579	
P(T<=t) one-tail	0.038099	
t Critical one-tail	1.745884	
P(T<=t) two-tail	0.076198	
t Critical two-tail	2.119905	

Table 7: 2010 vs 2006-08 two sample t-test assuming equal variances

Statistic	Variable 1	Variable 2
Mean	3.25	4.75
Variance	3.071429	1.533333
Observations	8	16
Pooled Variance	2.022727	
Hypothesized Mean Difference	0	
df	22	
t Stat	-2.43569	
P(T<=t) one-tail	0.011711	
t Critical one-tail	1.717144	
P(T<=t) two-tail	0.023422	
t Critical two-tail	2.073873	

Table 8: 2010 vs 2005-08 two sample t-test assuming equal variances

Statistic	Variable 1	Variable 2
Mean	3.25	4.75
Variance	3.071429	1.23913
Observations	8	24
Pooled Variance	1.666667	
Hypothesized Mean Difference	0	
df	30	
t Stat	-2.84605	
P(T<=t) one-tail	0.003954	
t Critical one-tail	1.697261	
P(T<=t) two-tail	0.007907	
t Critical two-tail	2.042272	

Appendix B Public information on demand

One source of public information on gas demand is the peak week quantity information Vector is required to publish by the Gas (Information Disclosure) Regulations 1997. By aggregating information from several years of disclosures a picture of gas demand on the North Pipeline can be built up. Table 2 was compiled in this way. Figure 1 is a graph of the aggregate data.

Table 2 Disclosed peak week demand for North Pipeline

Delivery Point	**Peak week demand in GJs for week ending:**				
	25-Jun-06	24-Jun-07	1-Jun-08	7-Jul-08	19-Jul-09
Tuakau	3024	3371	3587	2762	2049
Harrisville	12833	11610	10639	12127	11977
Pukekohe	1093	1062	954	1011	1099
Kingseat	56	58	48	55	55
Glenbrook	36725	41433	63236	48659	38481
Papakura	50578	134802	97936	132036	113257
Rama Rama	984	685	736	749	635
Drury	8279	7208	6196	5752	5427
Hunua	3987	3738	2583	2520	2502
Alfriston	819	633	310	510	521
Flat Bush	10102	9324	9354	9733	8936
Otahuhu B power station	459009	449509	451518	394188	418556
Westfield	228479	116925	134874	123467	121996
Southdown power station	142344	260389	263799	247903	139389
Bruce McClaren	5913	8095	6274	7205	6779
Henderson	34595	28911	20352	34018	32157
Waitoki	2718	2600	2619	2785	2757
Warkworth	4117	3314	4867	5157	5637
Wellsford	20	29	62	86	79
Maungaturoto	0	105	8612	0	300
Marsden	46177	46961	46675	37068	45214
Oakleigh	0	0	0	0	1
Whangarei	4960	5056	4316	3625	3316
Kauri	5981	6157	0	7935	8801
Total	**1062793**	**1141975**	**1139547**	**1079351**	**969921**

Source: http://www.vector.co.nz/corporate/disclosures/gas/gas-pipeline-capacity

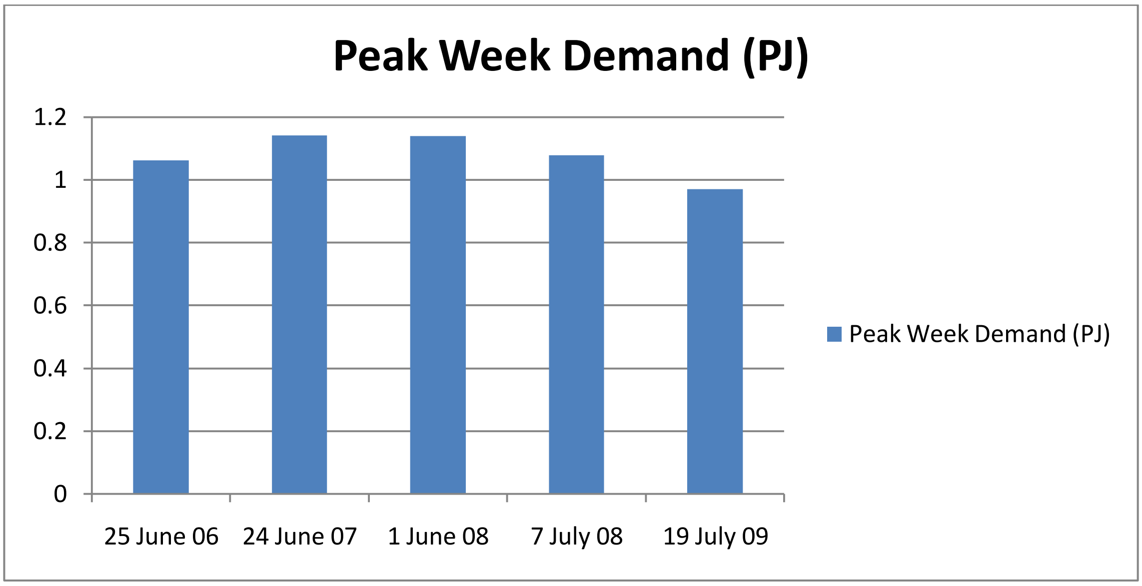


Figure 1 Peak Week Demand on North Pipeline

Although these numbers are backward looking, at face value they do not suggest an emerging capacity problem. Yet in 2009 Vector declared that the North Pipeline was constrained.

In explanation of its decision not to issue further capacity, Vector presented additional information on North Pipeline demand at industry forums. This information is available on the OATIS website: (https://www.oatis.co.nz/Ngc.Oatis.UI.Web.Internet/Common/Publications.aspx). It includes the information presented in Figures 2-6. Examination of these figures provides some insight into Vector's declaration of a constraint.

Figure 2 indicates that although overall demand has declined, the pattern of that demand has changed in a way that places more strain on the pipeline. In particular, demand at the far end of the North Pipeline (north of Henderson) has increased.

Figure 3 shows a large component of capacity is 'unused generation' capacity. This is firm capacity held by power station owners, which they are entitled to use at any time. So, although Figure 2 shows a decline in power station demand, this would be expected to reverse in a 'dry year'.

Figure 4 indicates that in 2009 shippers held a quantity of reserved capacity close to their peak demand. There is no indication that capacity is being 'hoarded'. However, Figure 5 shows that for the year beginning 1 October 2009, provisional requests for capacity in the Greater Auckland area were markedly higher than capacity reserved in the previous year. Perhaps shippers had heard that capacity had become constrained and were 'pitching high' in case provisional capacity requests were scaled back.

Figure 6 shows that, in aggregate, shippers were building up their reserved capacity on the North Pipeline towards the end of the 2008/09 gas year, at a time when demand was falling. Perhaps shippers were maximising the amount of capacity that would be 'grandfathered', that is, the amount of capacity they would be entitled to reserve in the next gas year, beginning 1 October 2009.

The behaviour of shippers appears to be rational, given the capacity constraint.

Vector clarified the treatment of capacity for the 2010/11 year in a document entitled *Obtaining and Managing Reserved Capacity for, and during 2010-11*[13]. Among other matters, it advised of the introduction of capacity queues from 1 October 2010. Shippers wishing to reserve more capacity at a particular delivery point must lodge a request on the Open Access Transmission Information System (OATIS). Vector may decline the request if it considers it to be 'speculative'.

Vector has not made any public disclosure about the capacity queues although this is a vital indicator of the amount and location of pent-up demand.

[13] Available under 'Transmission Capacity' at https://www.oatis.co.nz/Ngc.Oatis.UI.Web.Internet/Common/Publications.aspx

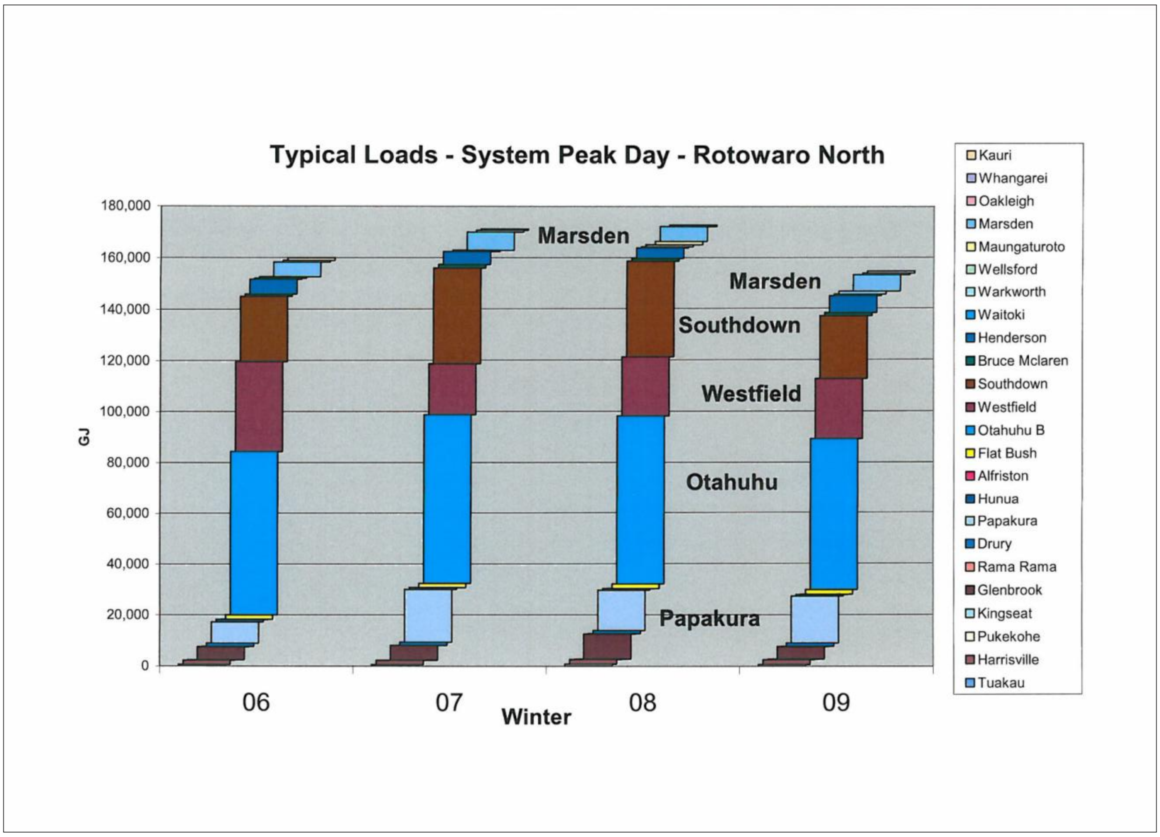


Figure 2 September 2009 presentation 'Rotowaro North Physical Capacity Constraint', page 9

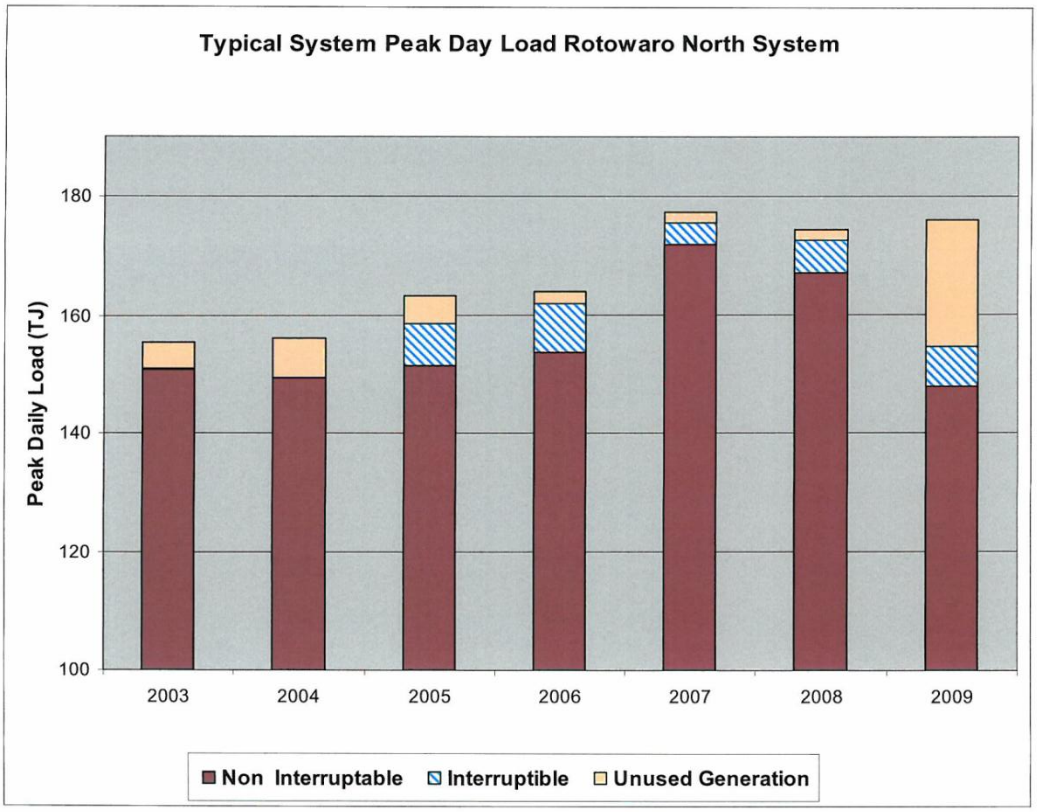


Figure 3 September 2009 presentation 'Rotowaro North Physical Capacity Constraint', page 10

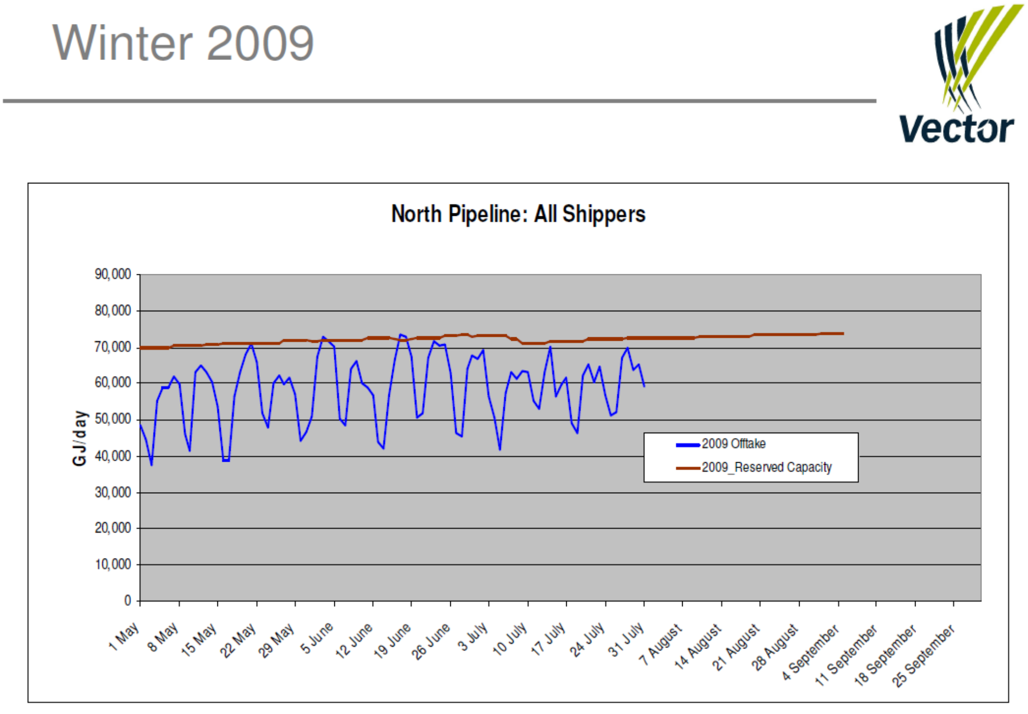


Figure 4 September 2009 presentation 'North Pipeline Capacity Constraint', page 4

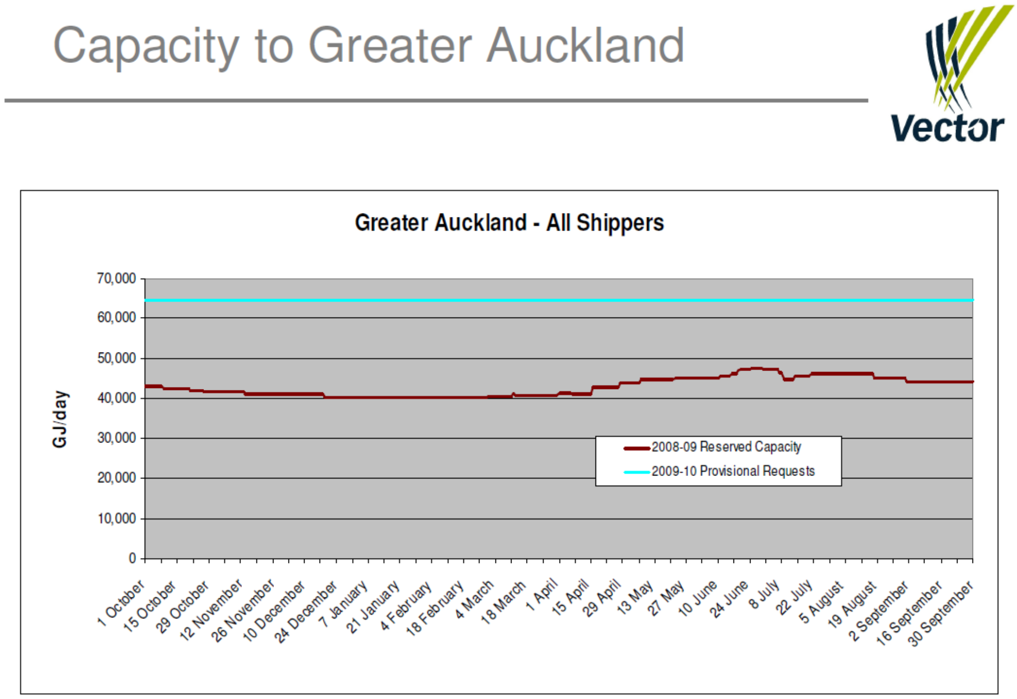


Figure 5 March 2010 presentation 'North Pipeline Winter 2010 & Beyond', page 7

Reserved Capacity Utilisation (Winter 2009)

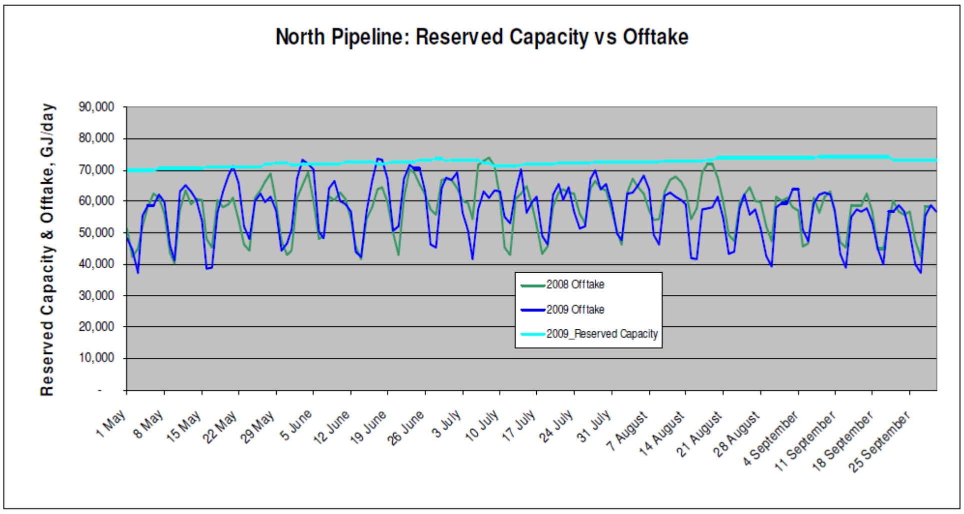


Figure 6 March 2010 presentation 'North Pipeline Winter 2010 & Beyond', page 12

Appendix C Gas Industry Co response to individual submissions

Submitter	General comments	Gas Industry Co response
Carter Holt Harvey	CHH has been reviewing energy supply at one site and been unable to seriously consider gas as a primary energy source. Its gas supplier is unable to make even a tentative commitment for increased future gas supply. A high degree of effort should be put into the long-term supply issue. However, the short-term issue of retail competition also needs to be satisfactorily resolved. Generally agrees with the proposal.	1. We agree an assessment is needed of whether further investment in new capacity on the North Pipeline is justified. Gas Industry Co is considering its role in that matter. 2. We also believe our continuing review of Vector's access arrangements is necessary, regardless of whether or not new investment is justified. 3. However matters progress, we consider it will be at least several years before additional capacity is available and a new access arrangement is in place. It is therefore necessary to consider what policy response is appropriate to deal with the reduction in retail competition when capacity is constrained.
Contact Energy	The assessment of the problem lacks robustness. Gas Industry Co appears to confuse physical and commercial issues with an unsubstantiated 'competition issue'. Gas Industry Co must go beyond 'reasonable inquiries' of Vector to ensure the estimates of constraints on physical capacity are accurate. This assessment is pivotal in identifying the nature and likely duration of any constraint that may or may not exist. Any short-term solution needs to have a very clear benefit and be aligned with likely medium-term solutions to justify the intervention.	4. Analyses of competition inevitably require consideration of commercial and physical factors. End users have complained about reduction of competition and reaffirmed that in their submissions. A mechanism has been identified by which competition can be expected to be reduced: it arises from the way the commercial arrangements operate when Vector is unwilling to sell more capacity. 5. Vector's decision to sell no more capacity is linked to the physical limitations of the pipeline. Vector has presented its finding to industry seminars and, although the industry questions whether Vector is being overly cautious (there have been no curtailments of firm capacity to date), we think it is accepted that at peak times the pipeline is operating close to its capacity limit. 6. The reduction of competition is the only issue under consideration in the Statement of Proposal. Whether the pipeline is constrained and, if so, whether new investment

Submitter	General comments	Gas Industry Co response
		is justified, are important questions that need to be answered. However, the Statement of Proposal focuses on the immediate issue of reduced competition. See points 1, 2, and 3. Our proposal will allow for an examination of whether declaring a pipeline to be a 'constrained pipeline' is justified or not. If it is not justified, the 'Capacity Follows End User' arrangements would not apply. 7. We consider promotion of competition to be important for its own sake. However, we agree that the costs and benefits of intervention to achieve this outcome need to be assessed. Alignment with the longer-term solution would be helpful, but is not essential.
Genesis Energy	Gas Industry Co has not presented a sufficient and compelling case for the proposal. In particular, Gas Industry Co has not: • determined whether a market failure or regulatory failure exists • assessed an appropriate range of options • prepared a quantitative cost-benefit analysis despite being required to under the Gas Act. Genesis does not think there is a clear case that capacity arrangements are a problem. Gas Industry Co's proposed solution may transfer capacity rentals from gas shippers to incumbent large users. Such a wealth transfer is unlikely to further Gas Industry Co's statutory objectives, may weaken economically beneficial price signals, exacerbate potential problems with investment incentives, and worsen the position of potential new gas users. To the extent there is a market or regulatory failure, this is most likely related to flaws or gaps in the regulation of monopoly gas transmission services. The Commerce Commission's regulation of gas transmission services may be overly deterring investment in new capacity; and/or the collective regulatory regime for gas transmission services may fail to adequately address governance issues. If Gas Industry Co were able to substantiate the potential failures, its range of options would also include intervening to alter	8. We consider the market failure has been clearly identified and there is sufficient evidence it is real. The Statement of Proposal explains why competition for existing end users has been lessened, and why the current supplier of an existing end user has an increased degree of market power (that is, greater ability to independently set the price). Lessened competition and increased market power are market failures resulting in inefficient allocation of resources. 9. The scope of the Statement of Proposal is limited to dealing with a market failure arising from a pipeline becoming constrained. The additional options Genesis refers to relate to wider issues, such as whether there is adequate separation of the pipeline owner and its trading affiliate and whether new pipeline capacity should be constructed. 10. Section 43N(1)(b) of the Gas Act does require that options are assessed by considering 'the benefits and costs of each option'. However, doing such an assessment quantitatively will not always be possible. For example, section 9.5 of the Statement of Proposal explains the way confidential retail prices limit the potential to reliably predict the value of efficiency gains. Nonetheless, the Covec report (Appendix A) applies an economic model to provide an estimate of

Submitter	General comments	Gas Industry Co response
	transmission code governance arrangements, improving separation between Vector transmission and Vector wholesale, waiting for the Commerce Commission to fully implement its regulatory regime under Part 4A of the Commerce Act 1986, or requiring Vector to invest in additional transmission capacity (as the Act empowers it to). Genesis does not advocate any of these interventions at present; but once Gas Industry Co has developed a better understanding of any underlying market or regulatory failure, these options should be assessed.	the net benefit of intervention. 11. We agree the proposed solution would transfer capacity rents from gas shippers to incumbent large users. We also agree the proposed solution will reduce gas prices and that this may increase demand for gas. However we note it is transmission capacity that is scarce, rather than gas itself. We do not believe the proposed solution would exacerbate potential problems with investment incentives (see point 75), and note that supply to potential new gas users ultimately depends on capacity expansion.
Greymouth Gas	Concerned Gas Industry Co has not adhered to its commitment to form a working group to deliver a contract-based solution. The proposed timeframe for a regulatory solution of June 2011 is unacceptable. Why has Gas Industry Co not yet begun work on a solution to increase physical capacity, which it has identified as the only real solution? Such a solution can be progressed in tandem with current initiatives. Vector's ability to meet all requests for Reserved Capacity in the 2010/11 gas year is misleading as a statement of the problem. Vector has confirmed it cannot guarantee approval of a capacity request. The industry should consider the short-term capacity issue solved (with regard to switching) only when Vector can guarantee Reserved Capacity will be made available for existing end users regardless of supplier. The statement that Vector considers the North Pipeline can accommodate organic growth is misleading because it masks the short-term effect on the non-commercial market. It is simplistic for Gas Industry Co to conclude a degree of competition exists. Any retailer wishing to service a customer in Auckland is unable to do so without the required Reserved Capacity. Greymouth Gas has lost $14 million as a result of the capacity restraint.	12. At the time of the September 2010 industry workshop on Vector access issues, Gas Industry Co had hoped it would be able to work with industry participants to develop a change to the VTC that would avoid the need for regulation. Subsequent legal advice persuaded us this was inadvisable, given our role in considering VTC change appeals. This situation was explained in section 8.1 of the Statement of Proposal, under the heading 'Non-regulatory solutions'. However, to the extent we can, we will support the efforts of industry participants to avoid regulation. 13. We consider the timeframe for a regulatory solution was optimistic. It did not allow for further enquiry and possible delays when the draft rules are discussed with the industry at workshops. 14. We agree that the current commercial arrangements will cause a reduction in competition when Vector is unwilling to sell capacity. 15. In regard to increasing physical capacity, see points 1, 2, and 3. 16. Vector has said at industry meetings that the North Pipeline can accommodate organic growth (residential and small commercial demand), at the historic trend of 1.5-1.9% per year through to 2015. But we agree it is difficult to reconcile this with a refusal to sell more capacity. 17. There is no case we know of where only one retailer has bid to supply an end user, so we do not think it is simplistic

Submitter	General comments	Gas Industry Co response
		to conclude a degree of competition exists.
Major Gas User Group	Submission made on behalf of Fonterra Cooperative Ltd, Carter Holt Harvey Ltd, New Zealand Steel Ltd, New Zealand Refining Company Ltd, and Ballance Agri-Nutrients Ltd. Competition is negatively affected by current capacity allocation arrangements on the North Pipeline. Regulation is appropriate and 'Capacity Follows End User' is the best short-term option to restore competition. Although the Statement of Proposal addresses the immediate deterioration in retail competition, the longer-term work on Vector's access arrangements and physical constraints should proceed with an equal sense of urgency. The proposed short-term solution is supported because it should not influence the outcome of the longer-term work.	18. We agree competition is negatively affected by current capacity arrangements. However, a change to those arrangements in the VTC could be an acceptable alternative to regulation. 19. We note the Major Gas User Group's view on the importance of the longer-term work.
Maui Development Ltd	The health of the market for gas in the Auckland area is of ultimate concern to MDL because it affects gas transmission demand through the Maui Pipeline. For this reason, MDL is concerned about factors affecting competition and demand in the Auckland region. MDL is equally concerned that the solutions considered take account of the need to encourage further investment and move towards good international gas practice. However MDL is concerned Gas Industry Co is advocating regulation even though: • little hard evidence is presented to support the conclusion regulation is necessary • the costs of regulation appear to be under-estimated • the regulation proposed appears to apply to the Maui Pipeline, but its form is inappropriate and unworkable for the Common Carriage regime used by the Maui Pipeline. MDL believes that if an industry-negotiated solution is not possible, Gas Industry Co needs to: • provide sufficient evidence of an anti-competitive situation on Vector's North Pipeline to justify regulation	20. Regarding new pipeline investment, see points 1 and 6. 21. We acknowledge MDL's preference for an industry-negotiated solution, and its concern that regulation needs to be justified. 22. Regarding application of the proposed rules to the Maui Pipeline, the rules would only apply to a pipeline where a capacity constraint had the effect of reducing competition. We agree this should not occur on a common carriage pipeline. This could be considered in more detailed when draft rules are workshopped with the industry. 23. We note MDL's view on the importance of fully utilising the available capacity. 24. We consider that the cost estimates were reasonable.

Submitter	General comments	Gas Industry Co response
	• consider other means to fully utilise the available capacity of this pipeline • consider carefully whether any regulations it recommends can validly apply to other pipelines, such as the Maui Pipeline, and if not restrict their scope accordingly.	
Mighty River Power	Gas Industry Co is addressing the symptoms of the problems on the North Pipeline rather than the root cause. Gas Industry Co should be proposing a review of the VTC with a view to introducing a new arrangement for the annual allocation of capacity. This would include addressing Gas Industry Co's concerns with the current grandfathering arrangements, which it has indicated have largely created the problem on the North Pipeline. MRP's view is that the current request process should continue as it is within the VTC at the moment. Where capacity requests exceed the available capacity retailers should have to justify their requests and Vector (or some independent third party) required to assess and allocate the available capacity. Although that affects retailers' contractual rights and includes a role Vector may be reluctant to undertake, the same is true for Gas Industry Co's proposal.	25. We agree the competition issue is not the root cause of the capacity constraint. 26. We are continuing to consider the longer-term issues. 27. MRP's proposal that capacity requests should be justified suggests MRP believes some retailers are strategically hoarding capacity. If capacity is being hoarded, MRP's proposal would provide some respite from the competition issue, but would not resolve it in the longer-term. Gas Industry Co's proposal would both resolve the competition issue and remove any incentive for strategic hoarding of capacity.
Nova Energy		
PVL Proteins	End users on the North Pipeline have suffered a significant reduction in competition because of the current capacity constraints. Companies such as PVL have had reduced competitive gas offers and have been unable to take advantage of the 'best' offer because of lack of capacity. This results in significant economic rents being extracted by shippers/retailers with 'Grandfathered' reserved capacity. The 'capacity follows end user' proposal goes a long way to resolving the competitive constraint in the short term. However, the proposal is unclear on how it will deal with existing users who wish to grow beyond the minimal incremental volumes put forward by Vector. This needs to be clarified. The only way to fully resolve the competitive issue is to increase capacity. Until then economic rents will continue being extracted.	28. It is helpful to have an end user re-affirm that competition has reduced. 29. Our proposal deals only with competition for existing demand. The proposal does not materially change the position of existing users wishing to grow (or new users wishing to obtain supply). Such users will be able to receive increased quantities of gas only at off-peak times, or where capacity is freed up. The proposal will reduce the incentive to hoard capacity, and this may free up some limited capacity for such users. 30. We agree economic rents will exist as long as capacity is constrained.

Submitter	General comments	Gas Industry Co response
Total Utilities Management Group	TUMG supports 100% the proposed 'Follow the End User' model. It has evidence proving this issue is now significantly retarding competition in the TOU part of the natural gas market. Certain existing suppliers have a vested interest in retaining the 'grandfathering' provisions in the VTC. Other suppliers are clearly being penalised by these anti-competitive clauses. Some suppliers are being forced by circumstances to refuse to hand over booked capacity relating to a given TOU site to an incoming retailer—release of capacity would not be reciprocated by their competitors in parallel circumstances. Until resolved, this issue will preclude any new gas retailers entering the market whatever the quantity and price of gas they have available. As a compromise medium-term solution, couldn't Gas Industry Co facilitate agreement on the basis of: • half the booked capacity of a TOU site being allocated to the incoming retailer and • the remainder staying with the existing retailer owing to the portfolio-related arguments of some parties.	31. It is helpful to have an energy broker re-affirm that competition has reduced. 32. We agree existing suppliers have a vested interest in retaining the status-quo. However, it does not follow the status-quo is wrong. All commercial arrangements confer benefits, which beneficiaries value and protect. The issue here is whether competition has been lessened by the arrangements and whether the proposed solution will improve competition (including lessening barriers to entry), and ideally deliver net economic benefits. 33. We agree there are no economic reasons for existing retailers to relinquish capacity voluntarily. 34. Although the competition issue might preclude new gas retailers entering the market, we have not been provided with any evidence the competition issue has prevented cheaper gas getting to market. (Providing the wholesale market is effective, retailers should always be able to source the cheapest gas.) 35. We acknowledge the 'half the booked capacity' suggestion, but we believe our recommended solution takes account of the portfolio arguments.
Vector	Gas Industry Co has not provided sufficient evidence of a problem impeding Gas Act and GPS objectives; nor has its assessed quantitatively the costs and benefits of the options. It would therefore be inappropriate to provide detailed comments on the evaluation criteria. Submissions claiming reduced competition were mainly subjective and anecdotal; the evidence that is provided suggests competition is continuing. Vector is unaware of any requests for shipper trades of capacity, which would be expected if capacity were genuinely valued and being sought. Gas Industry Co has failed to follow 'good regulatory' process contained within the Gas Act. It has not assessed all reasonably practicable options and the costs and benefits of each. The CBA assesses only costs, not benefits, of the preferred option.	36. We agree obtaining further evidence of the problem would be beneficial. 37. We agree retailers wanting capacity should seek capacity on the secondary market. However, we think the absence of such activity probably indicates a lack of confidence in secondary market rather than the absence of a problem. It also seems unlikely that, when capacity is constrained, it would be available on the secondary market in the quantity and for the duration sufficient to meet end users' needs. The lack of trading may just reflect retailers' pragmatic understanding of this. Whatever the cause of the lack of trading, we are confident it does not imply that all retailers have sufficient capacity to compete for end users. 38. Gas Industry Co believes it has identified the reasonably

Submitter	General comments	Gas Industry Co response
	Vector is also concerned the current process risks: • the proposed Rules being disallowed because they would be challengeable by the Regulations Review Committee for impinging on and taking priority over contractual rights • Gas Industry Co being deemed to have pre-determined the outcome in hearing an appeal in relation to a 'rule-conforming' VTC change request. Gas Industry Co should instead consider an incremental approach to increasing the efficiency of current arrangements while considering the long-term development of access arrangements for the industry. This approach is based on creating the transparency and incentives necessary to encourage secondary trading of capacity between shippers.	practicable options, and considered their costs and benefits. Subject to obtaining a timely outcome, we will continue to support the efforts of industry participants to avoid regulation. . 39. The Covec report (Appendix A) provides a further assessment of the benefits of the proposal. 40. Gas Industry Co acknowledges Vector's concerns about the process. We have considered these risks. 41. We consider our recommended approach is well aligned with Vector's suggestion we should '… consider an incremental approach to increasing the efficiency of current arrangements'. The recommended approach is one of the options that can be implemented with least disruption to current arrangements, and can easily be curtailed when a longer-term solution is introduced or integrated into it, whichever is appropriate.

Submitter	Submitter response to question 1 Do you agree with our description of the retail competition problem?	Gas Industry Co response
Carter Holt Harvey	Agrees with description of the retail competition, but notes this is the short-term result of the longer-term issues of pipeline capacity.	42. We agree the proposal deals only with the competition issue.
Contact Energy	No. Gas Industry Co has chosen to identify its concerns in relation to the North Pipeline as caused by a 'competition issue', but that implies actions and behaviours in the market not supported by the SOP. Gas Industry Co has taken Vector's information on capacity constraints at face value without ensuring it is up to date, relevant, and applicable. Also, all capacity requests were met in the 2010-11 gas year. It is not clear what the market failure is that Gas Industry Co is attempting to solve. Contact would expect evidence and support for what the 'competition issue' is, and how Gas Industry Co has discussed it with the appropriate bodies (for example, the Commerce Commission). However, the SOP offers no information as to what the Commerce Commission thought was relevant in terms of competition law, and provides only anecdotal information about competitive aspects of switching and tenders for gas supply, which appears to contradict the Gas Industry Co's conclusions. In the SOP, Gas Industry Co makes comments wholly unacceptable to Contact: 'For reasons related to the Commerce Act 1986 (Commerce Act), parties to the VTC may not wish to acknowledge some of those arrangements might be damaging competition'. (p.10) No evidence is produced to support this conclusion and it should be immediately and unreservedly withdrawn by Gas Industry Co. A similar comment is made on p.13, which should also be withdrawn.	43. The Statement of Proposal explains why competition for major end user loads would be expected to decline under current commercial arrangements when Vector will not sell additional capacity. We are not aware that we 'imply actions and behaviours not supported by the SOP', and are not clear what this means. 44. We agree we have taken Vector's declaration of the capacity constraints at face value. We considered an inquiry into whether Vector was unduly conservative in restricting the issue of capacity would be difficult and time consuming. We therefore gave priority to dealing with the reduction of competition. 45. We consider the market failure we are attempting to solve is clear (see point 7). 46. We consider the Statement of Proposal clearly describes the competition issue. 47. Regarding the Commerce Commission, we are aware it has received several complaints about the reduction in competition on the North Pipeline. We understand the Commission considered whether any conduct by Vector, as the owner of the North Pipeline, or by retailers with existing capacity rights, were likely to breach the anti-competitive provisions of the Commerce Act 1986 (the Act). The Commission reached the view that further investigation or consideration of the matter was not warranted at the time. Rather, the Commission considers Gas Industry Company is the relevant industry body that in this instance should deal with the capacity constraint issues on the North Pipeline. Should Gas Industry Co be unable to achieve a satisfactory resolution, the Commission will consider whether further investigation of the matter is

Submitter	Submitter response to question 1 Do you agree with our description of the retail competition problem?	Gas Industry Co response
		warranted. 48. We agree obtaining further evidence of the problem would be beneficial. The Covec report (Appendix A) provides further analysis. 49. We acknowledge Contact's concern over suggestions in the Statement of Proposal that parties to the VTC may not wish to acknowledge some of those arrangements are potentially damaging competition. We believe a frank description of all the factors that might be influencing behaviour is appropriate.
Genesis Energy		
Greymouth Gas	Agrees with aspects of the description, but disagrees with some specific points. The paper should add context to demonstrate that tagging capacity to large end users is one of three short-term issues. The other two are: • effect on switching residential load and non-Allocation Group 1 & 2 customers, together with an assessment of Vector overrun charges • new gas supply for new businesses. The potential that these could also be short-term issues should not be discounted.	50. We acknowledge Greymouth Gas's concerns on these wider issues. However, the reduction of competition to supply large end users is the only issue under consideration in the Statement of Proposal.
Major Gas User Group	The description is a good overview of the short-term issues. However, clearly there is an anti-competition issue to be urgently resolved. The ability to restrict, and the practice of restricting, competitor access to key gas transport infrastructure no longer needed to supply an existing user should be seen as undermining the principles of open access and a direct contradiction of the objectives of the Gas Act and GPS. The confidentiality of supplier/retailer contracts has often hampered direct examples/proof of this situation.	51. We agree the effect of current commercial arrangements is to limit competition. We have no reason to suppose there was any anti-competitive intent; the current situation is an unintended consequence of commercial arrangements in the context of a constrained pipeline. 52. We agree access to confidential information has hampered investigations. We agree that obtaining further evidence of the problem would be beneficial. While the Covec report (Appendix A) provides additional analysis relative to the current investigation, access to information is potentially a

Submitter	Submitter response to question 1 Do you agree with our description of the retail competition problem?	Gas Industry Co response
		problem in several of Gas Industry Co's work streams, and we are discussing with the Ministry of Economic Development how Gas Industry Co can obtain the information it needs to allow it to provide robust advice to the Minister on these matters.
Maui Development Ltd	Yes, as far as it goes. MDL believes a much more substantial case needs to be made to justify regulation.	53. We note MDL's concern.
Mighty River Power	Mighty River Power agrees this issue could affect the competitive nature of the gas market, but is not convinced the effect is significant, nor that it requires the proposed set of Rules. Gas Industry Co's Statement of Proposal tends to support this view—it has identified that switching of large end users on the North Pipeline is in line with the transmission system as a whole. GIC has concluded the only reason retailers are not tendering for certain customers is lack of available capacity despite being advised there are many reasons why a retailer may decide not to tender for a gas supply.	54. We agree obtaining further evidence of the problem would be beneficial. The Covec report (Appendix A) provides further analysis. 55. We are convinced that rivalry between retailers on the North Pipeline has reduced and believe the most likely cause is the capacity constraint. We have not been offered any convincing reasons why another cause is likely.
Nova Energy	No. The 'retail competition problem' is inadequately described. The paper does not examine the effect of transmission capacity constraints on new end users or on suppliers (new or existing). This is a fundamental weakness in the problem definition. The paper deals with symptoms of the problem rather than the root cause, which is a shortage of physical capacity. Addressing the symptoms only will lead to unintended consequences and inefficient allocation of capacity. The issue of new end users acquiring capacity needs to be resolved to support the economic principle of scarce resources being allocated to the highest value uses regardless of the use being an existing use or a new use. Without consideration of new users, possible solutions are likely to conflict with the objectives of the Gas Act and GPS.	56. We agree the proposal deals only with the competition issue (see points 1, 2, and 3). 57. We agree the proposal does not ensure capacity will be allocated to the highest value use but note this is also true of the current arrangements.

Submitter	Submitter response to question 1 Do you agree with our description of the retail competition problem?	Gas Industry Co response
PVL Proteins	To a degree yes. Competition is reduced, but more significantly than represented. PVL Proteins is a large end user who went to market earlier this year and was presented with only two offers not subject to capacity availability. Capacity issues meant it was unable to take the best offer; the incumbent shipper made it clear it valued the capacity and would under no circumstances transfer it to another supplier. PVL did change suppliers but at a significant premium (18%) over the best offer.	58. It is helpful to have an end user confirm the problem and present additional evidence of it. Gas Industry Co took care to provide a balanced view of the problem in the Statement of Proposal. We acknowledge the problem may be a significant effect on individual users, but we presented the case in the context of the market as a whole, where the effect on the aggregate level of switching appeared insignificant. PVL's submission confirms switching is possible, even under the capacity constraint, so some level of competition undoubtedly exists. 59. In relation to low prices offered to end users, as noted in the Statement of Proposal, some retailers believe others may be submitting low bids to dramatise the issue. They believe these other retailers are submitting low bids they know are unacceptable because they are made 'subject to the availability of transmission capacity'. We accept this assertion warrants further investigation. However, the fact that an issue has been dramatised does not mean the issue is not real.
Total Utilities Management Group	No comment.	
Vector	No comment.	

Submitter	Submitter response to question 2 Do you agree with the economic analysis?	Gas Industry Co response
Carter Holt Harvey	Generally agrees with the analysis. It likely there is unused capacity n the constrained North Pipeline that could be used effectively, and that the present 'owners' of this unused capacity have a significant competitive advantage over other potential gas suppliers.	60. The proposal should remove any incentive for retailers to buy capacity they do not need, which may result in some spare capacity being freed up.
Contact Energy	No. The economic analysis of, and discussions about, efficiency impacts are unsupported, and are largely a series of judgemental statements. Gas Industry Co's analysis should focus on quantitative assessments of the efficiency of the current arrangements to identify potential improvements—once a problem has been appropriately defined. The Gas Act and the GPS clearly focus on efficiency.	61. We agree obtaining further evidence of the problem would be beneficial.
Genesis Energy	No comment.	
Greymouth Gas	No comment.	
Major Gas User Group	The economic theory and analysis look reasonable.	
Maui Development Ltd	The situation is more complex than shown. A lot of the incentive to hold guaranteed capacity is the size of overrun fees and the relatively low cost of holding guaranteed capacity.	62. Gas Industry Co agrees the relatively low cost of capacity makes it cheaper for a retailer to hold more capacity than it needs. However, retailers may wish to hold more capacity than they immediately need for several reasons. This should not be a problem if the market to supply end users is competitive. Competition would provide cost pressure on retailers, which would discourage poor capacity management. 63. Regarding overrun fees, we consider that in an unconstrained market the higher the overrun fee, the higher the level of firm reservations is likely to be (so as to minimise the overall transportation cost). In a constrained market, we agree with MDL that higher reservations are likely. This is because the retailers will wish to hold as much of the constrained resource at the posted price (that is, free

Submitter	Submitter response to question 2 Do you agree with the economic analysis?	Gas Industry Co response
		of 'scarcity rent') as possible, so as to maximise their ability to sell gas and obtain scarcity rents. Indeed, this incentive to hoard capacity is closely connected to our analysis of the competition problem. Although the size on the overrun fee may contribute to hoarding we believe it is a minor factor.
Mighty River Power	No. The analysis is too theoretical and is being applied in a 'market' that is not a perfectly competitive market.	64. We agree the market is too small to be perfectly competitive, but believe more can be done to improve competition. Reduced competition arises from the commercial arrangements in place, not the smallness of the market.
Nova Energy	No. *Section 4.2 The competitive model of the gas market* The price of posted-terms capacity is not fixed as stated in the paper, but is fixed only for a 12-month period. Retailers, who act as aggregators of capacity, may re-price the posted-terms capacity to end users or other aggregators of capacity and may trade it as they wish. In contrast, supplementary transmission agreements restrict the transfer or trade of capacity. They account for up to 65% of North Pipeline capacity, so the effect is significant, constraining trading in a way that ensures capacity flows to those who value it the highest. Evidence in the report supports the proposition that competition is occurring. Contrary to the analysis in section 4.2, Nova's experience is that pipeline capacity has a value that is at least the posted terms price; and end users (new or existing) can procure transmission capacity separately or bundled into delivered supply. *Section 4.3 The franchise model of the gas market* The liquidity of the secondary capacity trading market is low for several reasons, including that 65-70% of capacity is tied up in contracts that prohibit its trading. The conclusion that retailers are in effect able to supply only their existing customers is incorrect. Evidence shows existing customers can switch retailers and new consumers can receive supply if they agree commercial terms with a retailer.	65. The amount of capacity secured under long-term supplementary transmission agreements has been a factor in the market for many years. We agree that making this capacity tradable (at least in a constrained pipeline situation) might increase secondary market liquidity. However, it does not follow that competition would increase as a result. The holders of long-term capacity (generally the power stations) might not wish to release it, or might release it only to their own trading affiliates. 66. We agree there is evidence of some competition, but this does not mean the level of competition has not reduced. 67. We agree the current situation is not as severe as the franchise model would suggest. The franchise model was a representation of what the market would be like if no spare capacity was available, and existing retailers felt compelled (for reputational reasons) to remain faithful to their existing customers. We accept the current position is not as extreme as this. 68. We acknowledge the role of retailers as aggregators and providers of interruptible contracts is significant under the current commercial arrangements. 69. We accept that neither the competitive model nor the franchise model fully describes the market behaviour. Our proposition is that the behaviour has shifted closer to that

Submitter	Submitter response to question 2 Do you agree with the economic analysis?	Gas Industry Co response
	The role of retailers as aggregators in ensuring capacity is allocated to the highest value use, and developing new commercial arrangements (such as interruptible supply) in response to consumer demand is not considered by the consultation document; if it is, the importance of that role is underestimated. It is incorrect to use the franchise model to represent the current position because it assumes: • each franchisee effectively has a monopoly over its customers; • there is no competitive tension; and • a franchisee must supply a consumer. The reality is different as shown in section 3 of the report.	expected under the franchise model.
PVL Proteins	The reliance on neoclassical economic theory is sound. Changing allocation methods will not improve supply—therefore the only effective method to increase competition is to unconstrain supply and thus remove barriers to entry for new end users. Therefore, the sooner the real issue is resolved the better. Waiting until 2012 for a plan is far too long.	70. We agree competition will improve if the constraint is overcome. However, even if a new capacity investment is justified, it will be at least three years before that capacity is available for sale. It is therefore prudent to plan for a continuing constraint and to remove barriers to competition.
Total Utilities Management Group	No comment.	
Vector	No comment.	

Submitter	Submitter response to question 3 Do you agree with the proposed regulatory objective?	Gas Industry Co response
Carter Holt Harvey	Agrees entirely with the proposed regulatory objective and considers it aligns with the Gas Act and GPS objectives.	
Contact Energy	The regulatory objective is not appropriate due to the issues of problem definition.	71. We believe the problem—the reduction in competition to supply major end users—has been clearly stated in the Statement of Proposal.
Genesis Energy	No comment.	
Greymouth Gas	Yes, except for the comment about 'effective choice of supplier' because this refers to an end user receiving multiple reasonable offers for supply. These words could mean multiple retailers have reasonable offers for supply, and multiple retailers have offers subject to capacity availability. Words should be to the effect that an end user has 'maximum' effective choice of supplier, with the description of 'effective choice' factoring this into account also.	72. We consider our statement that 'effective choice' means an end user receives multiple reasonable offers for supply that it can choose from, is clear.
Major Gas User Group	Agrees with the proposed regulatory objective. The existing arrangement falls short of Gas Act, GPS objectives. Concurs that aspects of the current capacity allocation arrangement may be of interest to the Commerce Commission.	73. The Commerce Commission is keeping abreast of developments (see point 47).
Maui Development Ltd	MDL believes the objective should require evidence of consistent anti-competitive results. Suggested alternative wording: 'To ensure that, in the short term, end users who are able to be supplied by existing pipeline capacity are not consistently prevented from having access to alternative suppliers. The solution should not compromise achieving the Gas Act and GPS objectives in the longer term'. MDL also advocates a qualification that requires any interference with contractual rights to take into account the effect on new investment incentives.	74. We consider the proposal will quickly remedy an outcome that participants never expected—reduced competition for existing load when a pipeline is constrained. It would fix this problem until a longer-term change to the access arrangements can be developed. The 'consistently prevented' wording proposed by MDL suggests identification of market failure is insufficient to trigger intervention, but that a history of economic harm needs to accumulate before action is taken. In our view this delay would be unnecessary and delaying a solution would reduce the associated benefits, while prolonging and therefore increasing the cost of the harm that has already been identified. 75. We agree investment incentives are relevant when considering the effect of the proposal. Some submitters

Submitter	Submitter response to question 3 Do you agree with the proposed regulatory objective?	Gas Industry Co response
		suggest the remedy might dampen new investment incentives, though a plausible mechanism by which that might occur has not been described. We note the new regulatory model being developed by the Commerce Commission is the primary influence on investment incentives. Moreover, it is doubtful whether the current situation is conducive to early investment. One reason is that the pipeline owner does not benefit from capacity rents, a potential source of investment funds. Additionally, the parties currently benefitting from capacity rents—some retailers—may not wish to see new investment, because it would remove those capacity rents.
Mighty River Power	Yes.	
Nova Energy	No. The regulatory objective should ensure industry arrangements support the efficient allocation of scarce resources (in this case North Pipeline capacity) to the highest value use. With respect to objectives regarding pricing and investment there is a strong crossover with the Commerce Commission. Gas Industry Co has not discussed incremental investment in additional capacity. Gas Industry Co's powers under the Gas Act enable it to regulate for this purpose.	76. We agree the proposal does not ensure existing capacity will be allocated to the highest value use but note this is also true of the current arrangements. The Commerce Commission is keeping abreast of developments (see point 47).The competition issue is the only issue under consideration in the Statement of Proposal (see point 6).
PVL Proteins	Yes. Gas Industry Co has limited powers and this proposal fits with the regulatory objective of increasing retail competition. This is where the economic rent is currently being paid by the end user through uncompetitive allocation methods that provide the shippers/retailers with constrained capacity at no additional cost—these shippers/retailers are then able to extract that rent from the end users. One of the key issues is that there is no medium-term solution identified, which makes it difficult to employ a short-term fix consistent with the medium-term outcome.	77. We agree the longer-term access issues are important, and need to be dealt with, but the Statement of Proposal seeks only to improve competition to supply large end users. We will continue to work with industry on the longer-term solution 78. Alignment with the longer-term solution would be helpful, but is not essential.
Total Utilities Management	No comment.	

Submitter	Submitter response to question 3 Do you agree with the proposed regulatory objective?	Gas Industry Co response
Group		
Vector	No comment.	

Submitter	Submitter response to question 4 Do you consider that the evaluation criteria are appropriate for evaluating the options?	Gas Industry Co response
Carter Holt Harvey	Yes.	
Contact Energy	The criteria and their application are subjective. The outcomes of the evaluation could be different depending on how the criteria are ranked.	79. We note Contact's concern about the subjective nature of the evaluation. We agree the evaluation in the Statement of Proposal is qualitative (and by definition qualitative evaluations involve some aspect of judgement). Gas Industry Co notes that all cost-benefit assessments of regulatory change are subjective to some degree because they require prediction. There are usually conflicting views on which matters should be considered in an analysis, and what weight should be given to them. These are matters requiring the regulator to exercise judgement.
Genesis Energy	No comment.	
Greymouth Gas	Yes.	
Major Gas User Group	Agrees with the evaluation criteria.	
Maui Development Ltd	In general, yes. However, MDL notes the tendency to opt for 'middle of the road' solutions where competing criteria exist.	80. We acknowledge MDL's concern.
Mighty River Power	Gas Industry Co has not considered the economic inefficiencies that would occur if capacity compulsorily transferred under the proposed regime did not meet all of the winning retailers' requirements to supply the end user and/or caused the losing retailer to incur increased overrun charges. This is an important factor, which needs to be considered.	81. We acknowledge MRP's concern. For the winning retailer, the outcome may not be ideal, but will be much better than the current situation. For the losing retailer, we recognise there may be an increase in overrun charges, but this can occur in any circumstance where a customer is lost. We would value any evidence if this is considered to be a serious problem created by the proposal (rather than one inherent in a competitive market).
Nova Energy	Nova has several concerns about the evaluation criteria.	82. We will endeavour to obtain the information necessary to

Submitter	Submitter response to question 4 Do you consider that the evaluation criteria are appropriate for evaluating the options?	Gas Industry Co response
	No mention is made of efficiency although that could be bundled with competition. If the most important issues of competition and efficiency are weighted equally with secondary considerations, the evaluation may result in outcomes that do not meet the overall regulatory test of efficiency. The curtailment criteria should be refined and labelled 'forced curtailment'. If arrangements contemplate curtailment on a voluntarily basis as a part of a commercial bargain then that is a positive development compared with forced and arbitrary curtailments of end user demand.	estimate the efficiency effects of the proposal. 83. We agree it is desirable to do a final check of the overall benefits of the preferred solution. The Covec report (Appendix A) provides estimates of net public and consumer benefits of the proposed intervention. 84. We agree with the comments on the curtailment criterion.
PVL Proteins	No comment.	
Total Utilities Management Group	No comment.	
Vector	No comment.	

Submitter	Submitter response to question 5 Do you have any comments on the evaluation of options?	Gas Industry Co response
Carter Holt Harvey	The evaluation has been correctly done.	
Contact Energy	The evaluation is insufficient to substantiate the proposal and lacks quantitative support. A robust cost-benefit analysis should guide the evaluation of all options, as is required of GIC. As it stands, the evaluation is a subjective assessment, and different conclusions could be reached depending on how the criteria are ranked. The same concerns apply to the cost and benefits of the preferred option. As well as the VTC change request option, the Gas Industry Co should have, and is required to, consider other non-regulatory options. Contact suggests four non-regulatory options and contends Gas Industry Co cannot proceed without considering such reasonably practicable options. Vector has begun offering interruptible capacity contracts, which Gas Industry Co should have taken into account in its problem definition. The regulatory options may not be in the best interests of end users.	85. Gas Industry Co notes all cost-benefit assessments are subjective to some degree. There are usually conflicting views on which matters should be considered in an analysis, and what weight should be given to them. These are matters requiring the regulator to exercise judgement. 86. Contact will be well aware of the difficulties in obtaining a non-regulatory solution to issues on which divergent views are held. In addition, Gas Industry Co lacks the power to require the industry to initiate the development of, or to adopt, non-regulatory options (and no power to prevent one being pursued to avoid regulation). Gas Industry Co therefore generally considers non-regulatory solutions are impracticable options except where the parties involved have a powerful imperative to put them in place. In the case of the competition issue most retailers are opposed to change. Nevertheless, Gas Industry Co will continue to support the efforts on industry participants to avoid regulation, providing a timely solution can be found. 87. Gas Industry Co considered the Interruptible Power Stations option was reasonably practicable because it required the agreement only of Vector and the power station owners. In contrast, the non-regulatory options suggested by Contact require wider agreement. We comment briefly on them below. 88. Contact suggests the release of a new, amended VTC in 2011 (delayed from 2010), may provide a non-regulatory option. We agree it may, but note we have no power to influence the content of that amendment. Knowing how controversial the necessary change would be, we have not considered this is a reasonably practicable option. However, subject to obtaining a timely outcome we will continue to support industry efforts to avoid regulation. 89. Contact suggests another option is to promote a secondary

Submitter	Submitter response to question 5 Do you have any comments on the evaluation of options?	Gas Industry Co response
		market for trading of capacity (for example, a simple bulletin board). We note that in *OATIS: Vector Regime—Industry Training Guide* (Section 9: Capacity Trades), the arrangements for capacity trading are clearly already in place. We therefore believe there are no barriers to trading secondary capacity, so no need to consider such an option. 90. Contact also suggests bilateral trading between shippers is an option. We note bilateral trading is also possible now, but Gas Industry Co cannot force parties to trade bilaterally. 91. Finally, Contact suggests an end user could require its supplier to trade capacity with any new shipper subsequently appointed by the end user. Once again, this is a possibility now, but does not occur, probably because the end user lacks sufficient bargaining leverage to require it. However, we acknowledge that it could be the basis of a solution if it could be made enforceable. 92. We also observe that any of the options in the Statement of Proposal is capable of being implemented via VTC code changes should parties to the VTC wish to consider such a possibility. 93. We have asked Vector about the interruptible capacity contracts you refer to. They advise us 'Vector has in the past and continues now to offer interruptible capacity as a product. In the last year, a further 6 TJ of interruptible capacity has been secured on the North Pipeline and offers for interruptible capacity have been discussed with Shippers who have end users on the Bay of Plenty Pipeline.' Gas Industry Co is pleased that extra interruptible contracts are allowing greater utilisation of the pipeline at off-peak times. However, we do not see the relevance of this to increasing competition when firm capacity is limited. 94. We note Contact's concern the regulatory options may not be in the best interests of end users. The Covec report (Appendix A) may answer this concern to some extent. It provides an estimate of the net public and consumer

Submitter	Submitter response to question 5 Do you have any comments on the evaluation of options?	Gas Industry Co response
		benefits of the proposed intervention.We also continue to support industry efforts to avoid regulation, providing a timely outcome can be achieved.
Genesis Energy	No comment.	
Greymouth Gas	No comment.	
Major Gas User Group	The evaluation accurately supports the preferred option.	
Maui Development Ltd	MDL disagrees with the priority of objectives and with the low weighting given to 'existing contractual rights'—cancellation of contractual rights will be met with significant opposition (placing upward pressure on implementation costs), and might discourage investment in infrastructure. Cancellation of contractual rights is not to be undertaken lightly; this criterion should be weighted more heavily.	95. We acknowledge MDL's concerns about the alteration of contractual rights, and agree such changes should not be undertaken lightly.
Mighty River Power	The proposed options are all designed to address the current situation on the North Pipeline. They are based on the premise that current demand exceeds the capacity on it, yet there have been no curtailments of reserved capacity on the North Pipeline. The options address the symptoms of the current problem, not the root cause.	96. We agree the competition issue is not the root cause of the capacity constraint. However, the capacity constraint is likely to remain for several years or longer, so the Statement of Proposal has considered what options there are for dealing with it. 97. We agree there have been no curtailments and perhaps this is an indicator that Vector's security of supply standard is too conservative. Nonetheless, we consider that, even if Vector is being conservative, the pipeline is not far from its physical limitation at peak times. The proposal would require some investigation of this before a pipeline was declared a 'constrained pipeline'.
Nova Energy	*9.1 Evaluation Summary* Nova disagrees with some aspects of the evaluation including: • Capacity Follows End User. Nova suggests changing the competition rating of the preferred option from '✓' to '××'	98. Regarding Nova's suggested re-rating of the preferred option under the 'competition' criterion, Gas Industry Co agrees the proposal could put some existing demand in a preferential position compared with some new demand,

Submitter	Submitter response to question 5 Do you have any comments on the evaluation of options?	Gas Industry Co response
	because '…if capacity transfers from an existing retailer on a switch how can a new user ever acquire (through competitive bidding for available capacity) firm capacity. A retailer who loses a customer is unable to retain capacity to sell to a customer who places a higher value on the capacity than the incumbent.' • Capacity Follows End User. Nova also suggests changing the shock, consistency and curtailment ratings from '✓', '✗' and '✓✓' respectively to '✗✗' because '… when capacity is transferred to another retailer, insufficient capacity may be transferred meaning that the switching retailer and customer is exposed to potential overrun charges and possible curtailment. If this is not the case then the remaining customers of the retailer at the affected gate may instead be left with insufficient capacity due to loss of diversity and to much capacity being transferred with the switching customer resulting in risk of overrun charges and curtailment for those remaining customers. New users are of course curtailed all of the time or can only be supplied on interruptible terms. In addition, as capacity automatically transfer at the CRF price, existing end users do not see any price signals that capacity is scarce and face little incentive to become more efficient or consider different usage profiles and alternative fuels.' *9.2 Priority of objectives* Nova disagrees that existing contractual rights are unimportant. Erosion of contractual property rights creates regulatory uncertainty and undermines investment decisions.	though we note that there are already barriers to serving new demand in the form of scarce capacity. However we defined the competition criterion (page 32 and page 35 of the Statement of Proposal) as being 'to ensure that end users who are able to be supplied by existing pipeline capacity are not prevented from having an effective choice of supplier.' We believe that against that criterion, our assessment is correct. 99. Regarding Nova's suggested re-rating of the preferred option under the 'shock', 'consistency', and 'curtailment' criteria, Gas Industry Co considers Nova is painting an overly bleak picture. If a retailer considers it will have insufficient capacity, and will therefore be exposed to overrun charges, it will build this in to the price it bids to supply the customer. So we would not expect a significant price shock to be caused. Curtailment for overrun is, in our opinion, not a credible outcome. It has never occurred, and no mechanisms (such as real-time monitoring of overruns) are in place to allow it. Nor do we consider the proposal would increase the risk of curtailment for other users elsewhere on the North Pipeline. 100. Regarding 'consistency', the criterion refers to not compromising achieving the Gas Act objectives in the longer term. We rated our preferred option as '✗' because the scarcity of capacity is not signalled to all end users. Although Nova considers an '✗✗' rating is more appropriate, the only option we rated as '✗✗' on 'consistency' was the Liable Capacity option. This was because it relied on increased levels of curtailment which would not be appropriate for a long term solution. We believe the relativity between these ratings is appropriate. 101. Regarding the priority of objectives, we said (page 43 of Statement of Proposal) that '[a]lmost by definition, a regulatory solution will impinge on contractual rights. If rights need not be impinged, then a voluntary solution

Submitter	Submitter response to question 5 Do you have any comments on the evaluation of options?	Gas Industry Co response
		could probably be found.' However, we agree that changing contractual rights is a matter requiring careful consideration.
PVL Proteins	Gas Industry Co has used a very 'academic' approach to the evaluation. Constant reference are made to an efficient market where prices manage scarcity and end users requiring cheap high-volume gas should move from Auckland, or change energy source. In the real world it is not a viable option to change location or fuel simply because the gas infrastructure model within New Zealand's largest city is inefficient.	102. We appreciate there is a 'real world' political dimension to this issue. Gas Industry Co is bound to assess issues in relation to the objectives of the Gas Act. Government, as our co-regulatory partner, will advise us when they wish us to take wider issues into consideration.
Total Utilities Management Group	No comment.	
Vector	No comment.	

Submitter	Submitter response to question 6 Do you agree that Gas Industry Co has, through the evaluation of options, correctly identified the 'Capacity Follows End User' as the preferred option?	Gas Industry Co response
Carter Holt Harvey	Yes.	
Contact Energy	Because the criteria and their influence are entirely subjective, the outcomes of the evaluation could be quite different depending on how the evaluator chooses to rank them.	103. We agree cost-benefit assessments are subjective to some degree. The exercise of some judgement is necessary.
Genesis Energy	No comment.	
Greymouth Gas	Greymouth Gas agrees with the preferred option, but makes no comment on it being derived correctly from the evaluation.	
Major Gas User Group	Agree.	
Maui Development Ltd	MDL agrees that GIC's suggested solution might be warranted in the specific case of the North Pipeline once Gas Industry Co has clearly established and quantified the existence of significant anti-competitive behaviour	104. Gas Industry Co notes it has not alleged or assumed any deliberate attempt to undermine competition (that is, 'anti-competitive behaviour'). The reduction of competition is a consequence of the current contractual arrangements operating in a situation where capacity is constrained. This problem can exist without any deliberate anti-competitive behaviour.
Mighty River Power	No, the 'Capacity Follows End User' proposal will create as many problems as it proposes to resolve. Refer to 'general comments'.	105. See points 25, 26, and 27.
Nova Energy	No. The 'capacity follows end user' option is flawed for the following reasons. • It effectively denies access to capacity for new users and in particular those who have a higher value use for capacity than an existing user. • It creates disincentives for retailers who act in the market in an aggregator role from pursuing innovation in the area of peak demand shaving/shifting.	106. We agree that, by preventing price signals from reaching consumers, the proposal does not ensure capacity will be allocated to the highest value use. However, we note there are a range of reasons why current arrangements may not ensure capacity is always allocated to the highest value use, including differing contract lengths, and portfolio effects (for example, average pricing). 107. We note Nova's view that the suppression of the price signal weakens the incentive for investment in new

Submitter	Submitter response to question 6 Do you agree that Gas Industry Co has, through the evaluation of options, correctly identified the 'Capacity Follows End User' as the preferred option?	Gas Industry Co response
	• It prevents price signals from reaching consumers. • The suppression of price signal also weakens the incentive for investment in new capacity. The flow-on effects to suppliers are constrained supply and reduced incentives to invest in oil and gas exploration and development because suppliers cannot get their gas to market.	capacity. We believe a contrary case can be made (see point 75). 108. We note Nova's view the proposal creates disincentives for retailers pursuing innovation in the area of peak demand. There is much economic evidence that innovation is more likely to arise where markets are competitive. The Statement of Proposal posits that the current contractual arrangements drive the market to resemble a 'franchise model' more than a 'competitive model'. The resulting loss of competition would be expected to reduce the incentives to develop innovative options for users. So we think our proposal will enhance rather than weaken incentives for retail innovation. 109. Regarding whether the proposal is more likely to prevent gas coming to market than current arrangements, we note it is the capacity constraint that is limiting the quantity of gas reaching the market, rather that this being a flow-on effect of our proposed solution to the competition problem. We do not think that improving competition is likely to weaken the incentive to invest in new capacity.
PVL Proteins	Agrees the 'capacity follows end user' is the preferred short-term model for managing the current constrained supply. However, the root cause needs to be sorted in the short to medium term because gas pipeline size should not be allowed to constrain business growth in the northern part of the North Island, especially Auckland.	110. See points 1, 2, and 3.
Total Utilities Management Group	No comment.	
Vector	No comment.	

Submitter	Submitter response to question 7 Do you have any comments on the details of the proposal?	Gas Industry Co response
Carter Holt Harvey	Shippers are unlikely to agree voluntarily to the proposed change. A rule change will be necessary.	111. We agree shippers benefitting from the current competition problem may lack incentive to seek a change.
Contact Energy	Issues of problem definition and lack of quantitative support for the proposal make comment difficult. Contact is concerned about the damage to property rights. The proposal could result in a wealth transfer from parties who have legitimately secured transmission capacity to those who haven't, with no evidence of net efficiency gains. This would have serious consequences for regulatory certainty for Vector and other participants and contradicts the objectives of the Gas Act. The long-term physical capacity issue underpins Gas Industry Co's concerns about the short term. Therefore, it is concerning Gas Industry Co is promoting regulatory intervention likely to dissuade Vector from investing in physical capacity and detract from medium-term options already canvassed, and for which there was some industry support. There are also implementation risks. The proposed timing also raises questions about just how short-term this proposal is. Non-regulatory solutions (if required) could likely be implemented sooner.	112. We agree the proposal would result in a wealth transfer from retailers to end users, and note Contact's concern about this. 113. We note it can be argued that Vector's incentive to invest will be enhanced by the proposal (see point 75). 114. We would welcome any non-regulated solutions (VTC changes) that could improve competition and be implemented sooner than regulation.
Genesis Energy	No comment.	
Greymouth Gas	Yes, but the proposal lacks meaningful detail. The high-level concept is supported, but the building blocks have significant holes (several improvements to the detail of the proposal are suggested). The rules need to be written and comments sought.	115. If it is decided to recommend the rules to the Minister, a draft will be discussed with the industry at a workshop before finalised.
Major Gas User Group	The underlying principles look reasonable, although Gas Industry Co should ensure that any disputes between a TSO and retailers do not prevent timely transfer of capacity. A Go Live date earlier than Q2 2011 is preferred. Funding is of key interest to users. However until the costs of the regulations are known, and how they may be passed to users, it is not possible to comment.	116. The Gas Governance (Compliance) Regulations 2008 would be amended to include any rules associated with the proposal. 117. The draft rules (which would be discussed with the industry at a workshop before being finalised), require that costs can become payable from the time a transmission system owner refuses a request for new capacity. The costs Gas

Submitter	Submitter response to question 7 Do you have any comments on the details of the proposal?	Gas Industry Co response
	The expected level of uptake/utilisation in the proposed regime may be understated. There may be a greater level of churn as competition returns to the market. Further, the 10TJ threshold may leave a gap between small and larger industrial users. It could be worth investigating whether the threshold could be lowered for smaller industrial users with installed TOU meters.	Industry Co incurs in declaring a constrained pipeline and reviewing a declaration, would be published and are recoverable from the pipeline owner. 118. For administrative simplicity and cost minimisation, we believe it is important for the proposal to apply to an already defined group of customers. However other options could be considered at the time the rules are discussed at an industry workshop.
Maui Development Ltd	See 'general comments'.	
Mighty River Power	Gas Industry Co's assumption that retailers 'require sufficient capacity to cover the peak demand of its end users' is flawed. Retailers manage aggregate gas demand using a portfolio approach. If the capacity of a customer whose load is not perfectly peak correlated with the retailer's portfolio is transferred, the incumbent retailer will be left with insufficient capacity for its remaining customers. The retailer will incur excess capacity reservation overrun charges, which will be passed on to their tariff customers. Also, retailers will seek customers who have peak loads uncorrelated with its current portfolio of customers. Gas Industry Co has not considered the potentially significant cost implications and economic inefficiency of this consequence. The proposal confers rights and benefits of access to capacity to large end users without the associated obligations or responsibilities within the VTC. If end users wish to have capacity rights they should access them by signing the VTC. The proposal would create problems for retailers, who optimise capacity demand on a portfolio-of-customers basis. Regardless of how retailers currently calculate their capacity requirements, from 1 October next year the proposal will result in retailers with large end users calculating the value of the capacity they would be forced to relinquish if these end users changed retailers. The retailers will then aggregate these and add that total figure to their optimised capacity reservations for their remaining customers. The net result	119. We do appreciate retailers manage a portfolio, and acknowledge the wording in the quote referred to was loose. However, the previous paragraph (page 91 of the Statement of Proposal) should make it clear we understand the importance of portfolio management. 120. MRP might have misunderstood how we propose to calculate the amount of capacity an incumbent retailer would be required to relinquish. The amount relinquished would be the end user's demand at the *retailer's* peak, not the end-user's peak demand. However, as with any adjustment to a retailer's portfolio, we accept that more or less overruns may result. 121. The proposal increases end users' choice of supplier. In a constrained situation this can only be done if transmission capacity is passed from the existing retailer to the new retailer. We do not propose to alter the retailers' capacity rights in any other respects. 122. We note MRP's view that there might not currently be a physical constraint.

Submitter	Submitter response to question 7 Do you have any comments on the details of the proposal?	Gas Industry Co response
	will be that for the 2011-2012 capacity reservation year the total capacity requested by retailers on the current 'constrained' pipeline will increase significantly over the capacity they currently hold. Mighty River Power's view of this problem is that it is the allocation of available capacity on the North Pipeline. This view is based on the following: to the best of its knowledge there have been no interruptions of firm capacity on the North Pipeline, there has been no new significant load growth, there is sufficient capacity for organic growth until at least 2015.	
Nova Energy	The proposal would lead to inefficient allocation of capacity and will not pass any normal regulatory cost-benefit test. The role of retailers as aggregators of capacity is important in ensuring capacity is allocated to the highest value use and that new users can access capacity on an equal basis to existing users. Current transmission arrangements are based on aggregation of individual customer loads and diversification of peak demand across many consumers. The capacity follows end user proposal is fundamentally incompatible with gate level transmission bookings and will result in: • disputes over what an individual customer's contribution to a retailers demand portfolio actually is • winners and losers when too much/too little capacity is transferred • exclusion of new users who value capacity higher than existing users.	123. We agree existing large users will be able to obtain capacity at the retailer's input cost, whereas the price to new users would include a scarcity rent. This could introduce some inefficiency but appears more of a perceived inequity issue. 124. We believe the rules will be sufficiently clear to avoid disputes over how much capacity the incumbent retailer must relinquish.
PVL Proteins	No, as long as the end user's MDQ is transferred and businesses can grow at their required rate.	125. We note the proposal will not provide for growth of the market. That will be possible only if more interruptible arrangements are introduced, lower security of supply standards are tolerated, or new capacity is constructed.
Total Utilities Management Group	No comment.	

Submitter	Submitter response to question 7 Do you have any comments on the details of the proposal?	Gas Industry Co response
Vector	No comment.	

Submitter	Submitter response to question 8 Do you agree with the next steps?	Gas Industry Co response
Carter Holt Harvey	Yes. This rule change needs to be made quickly so the focus can move as soon as possible to the longer-term issue of pipeline capacities and ways to resolve problems in an efficient and equitable manner.	126. We agree consideration of the reduction in competition when a pipeline is constrained is diverting attention from the longer-term issues.
Contact Energy	No. Gas Industry Co's proposed next steps provide no opportunity for submitters to see how their concerns will be addressed, before a proposal is made to the Minister. Unless the issues raised can be resolved, Contact submits that resolution of the medium- and longer-term issues (that is, capacity options and the creation of an environment conducive to investment in capacity) will create significantly more value than this short-term work stream.	127. Gas Industry Co believes its process meets its statutory obligations and good regulatory practice. 128. We agree the longer-term issues are more important.
Genesis Energy	No comment.	
Greymouth Gas	Gas Industry Co previously committed to facilitating a contractual solution to be in place by the end of 2010. The lack of detail in the Statement of Proposal means the next steps do not allow for release and submission on detailed rules, which is standard practice. This process should be included within the current timeframe. Greymouth Gas is considering a Vector Transmission Code Change Request.	129. It is important to allow time for participants to express their views, and for those views to be fully considered. 130. We are considering how best to consider participants views on the detailed rules. 131. We would welcome a non-regulated solution that facilitates competition.
Major Gas User Group	Agree. However, incumbent retailers with existing transmission rights are unlikely to accept regulation freely, citing lack of evidence for a problem, inadequate cost benefit analysis, and so forth. These arguments are self-serving and the current evidence is compelling enough to demonstrate that the current access arrangements are hampering the objectives of the Gas Act and GPS. Users are 'price takers' and cannot take advantage of competitive prices right now. This competitive imbalance needs to be fixed as soon as practicable. The importance and need for urgency regarding a long-term solution is emphasised.	132. To develop good quality recommendations, we need to allow time for participants to provide input, and for their views to be fully considered.

Submitter	Submitter response to question 8 Do you agree with the next steps?	Gas Industry Co response
Maui Development Ltd	The next steps should involve a paper which establishes an information framework to quantify the extent of the competition issue on the Northern Pipeline.	133. We are trying to improve our understanding of the extent of the reduction in competition.
Mighty River Power	No. Gas Industry Co should address the matters raised in MRP's submission.	134. The matters MRP have raised are addressed here.
Nova Energy	No. Nova does not believe the proposed solution will pass the normal net public benefit test for regulation; there are alternative solutions that would, and that may not even require regulatory action.	135. We would welcome a non-regulated solution that facilitates competition.
PVL Proteins	Yes, but urgency is required—52 days has been given to consider the submissions and make a recommendation to the Minister—does it need to be so long?	136. It is important to allow time for participants to express their views, and for those views to be fully considered.
Total Utilities Management Group	No comment.	
Vector	No comment.	

Gas Industry Co response to SRG analysis

In the table below, Gas Industry Co responds to points raised in Sapere Research Group's (SRG's) analysis of the Statement of Proposal. Nova submitted SRG's analysis as a supplementary submission. Some of the points raised by SRG have been covered above and are not repeated here.

Item	Sapere Research Group Comment	Gas Industry Co response
Large end users competing with retailers	SRG argues that, by giving large end users the ultimate discretion as to which retailer holds the capacity necessary to deliver their gas needs, those large end users could resell the capacity and compete with existing retailers using the cheaper rent free capacity.	The rules would tailor the quantity of capacity available to a new retailer to meet the needs of the end user who selected the new retailer. There would not be spare capacity to sell elsewhere, and we do not think end users would wish to supply other users ahead of meeting their own needs.
The 'cliff-edge' effect	SRG asserts insufficient attention has been given to the 'cliff-edge' effect created by the proposal applying to large end users only.	We acknowledge that a 'cliff-edge' problem does exist but do not anticipate that it will create any material inefficiencies, such as firms changing their conduct to obtain an advantage under the new rules. The problem could be avoided by extending the 'capacity follows end user' option to apply to all end users. Since smaller end users are generally supplied at retailers' posted prices, we do not think this would materially alter behaviour or outcomes. We will discuss this option if the option is progressed.
The gas supply chain	SRG proposes there are competition issues in upstream and downstream markets that deserve attention. It suggests it is likely the gas supply chain '…is characterised by sequential oligopolies at each of many stages', and this problem will persist even if the proposal is implemented. It notes the proposal does not acknowledge that rents elsewhere in the supply chain would not be eliminated or passed to New Zealand households.	We agree that because of the complexity of upstream and downstream markets it is difficult to predict the exact welfare outcome. However the argument that competition at one level of the supply chain should not be improved because there is imperfect competition at other levels is not compelling and is inconsistent with the norms of general competition law enforcement. The relevant objectives of the Gas Act (section 43ZN) are to provide '… access to essential infrastructure and competitive market arrangements' and that 'barriers to competition in the gas industry are minimised'
New users	SRG suggests the proposal might be detrimental to the entry of new gas users. Under the proposal a large end user is unlikely to sell pipeline capacity to another end user if it is a competitor. Under the current arrangements a retailer would be happy to sell to that other end user. SRG also suggests that under the proposal a retailer may be unable to sell spare capacity that is created by the loss of a customer because that capacity would move with the new retailer.	We do not believe that end users are any more likely to hoard capacity under the proposal than they are now. However, at present the opportunity to earn rents on any capacity is an incentive for retailser not to transfer capacity. We believe the proposal will reduce this incentive. The proposal will not create or destroy capacity. The lack of spare capacity to sell arises from the capacity constraint, not from any effect the proposal may have.

Item	Sapere Research Group Comment	Gas Industry Co response
Incentives to invest	SRG proposes that retailers are potentially the most likely group of counter parties to underwrite a pipeline investment, but this would become more difficult under the proposal because: • there would be a larger group of parties holding capacity contracts, so less chance that the group would reach agreement to underwrite the investment; and • the incentive to underwrite the investment is less because the certainty of securing capacity in future years is lost.	We do not think any retailer would agree to underwrite an investment unless it could contract for long-term rights to some of that capacity. There is nothing in the proposal that would prevent retailers entering into such arrangements, if they chose to do so. Rather than diminishing the incentive to invest, we believe the proposal would reduce resistance to investment. This is because existing retailers will continue to make windfall gains by capturing the capacity rent as long as capacity remains a scarce resource. These retailers therefore have some incentive to resist a change that would remove this windfall, such as increasing the pipeline capacity.
Economic principles	Gas Industry Co's rationale for intervention is based partly on its characterisation of the retail market as an example of its franchise model. Its criticism of the franchise model (section 4.4) is incorrect because: • price discrimination (of the sort Gas Industry Co criticises) *reduces* deadweight losses compared with uniform pricing • when end users are charged what they are willing to pay, users with higher valuations receive gas allocations at the expense of those for whom gas has a low value.	We consider that the franchise model prevents competition. That is the feature we object to. However, we acknowledge that the actual situation is not so extreme.