



Gas Governance Issues in Quality: Issues Paper Analysis of Submissions

December 2010





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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Introduction

1.1 Purpose

In this paper Gas Industry Company Limited (Gas Industry Co) analyses and responds to submissions on its *Gas Governance Issues in Quality: Issues Paper* (the Issues Paper)¹.

1.2 Background

Gas Industry Co released the Issues Paper for consultation in September 2010. The paper presented findings of a review of industry arrangements for managing gas quality, summarised the areas where Gas Industry Co thinks further evaluation is desirable, and suggested next steps.

The review found three main areas for further investigation: whether arrangements for monitoring gas quality are sufficiently prescriptive; gaps in the contractual arrangements for ensuring the parties liable for damages from non-specification gas are the causers, or those best able to manage the risk; and the lack of gas quality monitoring procedures.

We expected some further work would be needed to assess the reasonableness of current industry arrangements in relation to gas quality. Such work would include:

- a cost-benefit analysis to assist in determining whether it is reasonable to require continuous monitoring of gas composition;
- a detailed review of current industry monitoring and management arrangements for gas contamination; and
- a detailed review of the effectiveness of the gas quality auditing role provided by the Transmission System Owners (TSO).

The Issues Paper invited submissions from industry participants before we finalised the next steps.

1.3 Submissions received

Nine submissions were received from the following industry participants:

¹ The paper is available here: http://www.gasindustry.co.nz/sites/default/files/u180/Gas_Governance_Issues_in_Gas_Quality_153573_2.pdf

- Arete/Hale and Twomey (submission made on behalf of Fonterra, Carter Holt Harvey, NZ Steel, and NZ Refining Company; in the body of the paper, this is referred to as a single submission)
- Contact Energy Limited (Contact)
- GasNet Limited (GasNet)
- Genesis Energy Limited (Genesis)
- Greymouth Gas Limited (Greymouth)
- Maui Development Limited (MDL)
- Mighty River Power Limited (MRP)
- Powerco Limited (Powerco)
- Vector Gas Limited (Vector)

Appendix A is a summary of submissions.

2

Discussion of matters raised in submissions: description of issues

2.1 Overview

In the Issues Paper, Gas Industry Co asked submitters to respond to five questions about the description of gas quality-related issues. The questions were:

- Are there any significant effects of non-specification gas, other than those identified in section 2.3, that Gas Industry Co should consider? (Q1)
- Do you agree with the assessment of types of non-specification gas and potential causer? (Q2)
- Do you agree with the proposed regulatory objective? If you disagree please explain why and/or provide an alternative. (Q3)
- Do you agree that we have interpreted the provision within the transmission codes and contracts correctly? Are there any additional contracts or provisions that should be considered? (Q4)
- Are there any aspects in section 6.1 (Liability for non-specification gas) that you believe to be inaccurate or misleading? (Q5)

2.2 Effects of non-specification gas

Identifying effects of non-specification gas

One submitter contends Gas Industry Co has not sufficiently defined the nature or scope of problems related to gas quality. Also, the Issues Paper did not identify the likely effects of each type of non-specification gas (composition, hydrate formation or sulphur deposition, and oil and dust contamination). Non-specification gas entering the transmission system following production and gas treatment is by far the most likely cause of problems. Reducing this risk should be the main focus.

Another submitter notes that in situations where non-specification gas has a low CV, the increased throughput could cause supply issues.

Gas Industry Co does not agree that the Issues Paper did not identify the likely effects of each type of non-specification gas (composition, hydrate formation or sulphur deposition, and oil and dust

contamination). What 'the most likely cause of problems' is depends on what the problem is. If the problem is gas that is outside the CV range, then non-specification gas being injected into the pipeline is the most likely cause. If the problem is that dust causes filter blockages, then the most likely cause is a build-up of dust in a transmission pipeline. A key message in the paper was that non-specification gas has several manifestations, and the causer is not the same in all cases.

Extent of potential effects

One submitter expresses reservations about the potential effects of non-specification gas, believing the Issues Paper overstates them. Another, however, comments that 15% of gas demand in New Zealand is for use as a feedstock to industrial processes in which the level of gas contaminants and stability of gas composition are important parameters not fully dealt with in NZS 5442.

Gas Industry Co notes these views.

2.3 Assessment of types of non-specification gas and causers

Three submitters comment on the types of non-specification gas and the likely causer. One submitter suggests that, in addition to the parties identified in the paper, distribution network owners could also cause or contribute to contamination. The second submitter notes that rate of change of CV is also a type of non-specification gas. It considers the causer is likely to be a producer, but can also be caused by a TSO. Another submitter thinks it would also be useful to separately identify operators of gas treatment plants as potential causers.

One submitter, a TSO, rejects the presumption that it is likely to be responsible for any gas quality issue. Contractual arrangements entitle it to presume gas entering its system meets specifications. It considers the shipper is in the best position to ensure producers and direct injecting parties comply with their contractual obligations regarding specification gas. The submitter believes it is appropriate for a TSO to notify its shippers when non-specification gas is identified or suspected, but does not accept TSOs have any responsibility beyond this.

While it is possible that the operation of distribution networks could cause or contribute to contamination, we think this is unlikely. Distribution networks mostly comprise polyethylene pipes, there are no compressors, and the pipelines are not pigged.

In relation to the view that rate of change of CV should be included we note that it would fall into the category of 'composition'. A potential causer of composition problems has been identified as the producer but we accept the view that a TSO may also cause composition issues. For example, Vector can control how much gas supplied to the Bay of Plenty comes from Maui pipeline and how much comes from the Vector system by configuring the valves and compressor at the Pokuru interconnection station. If gas in the Maui pipeline has a significantly different CV from gas in the Vector system, a step change in CV may result.

While such a step change may be smoothed (by a slower transition from one pipeline to the other), there are other circumstances when step changes cannot be avoided. For example, two production stations could be producing gas with markedly different CVs. If one plant were to trip, a step change in CV would result.

Since it is not possible to avoid all circumstances that would cause a step change in CV, we consider it is best for the owners of equipment to address the issue. This could either be done by specifying less sensitive equipment or contracting with the supplying TSO to receive advance notice of CV changes.

In its description of non-specification gas and potential causers in this section of the paper, Gas Industry Co was considering physical, rather than contractual arrangements. Even if the presumption is made that only specification gas is entering the pipeline, there is still a possibility that specification gas could become contaminated while being transported on the transmission system. As described in the paper, pipeline dust and oil from the TSO's compressors are inevitably present in a gas transmission pipeline, along with contaminants that have entered the pipeline from the production plants. Ordinarily the quantities of contaminants in the delivered gas are low enough to cause no issues, but can build up or combine with sulphur in the gas to cause the malfunction of equipment.

2.4 The regulatory objective

Statement of objective

One submitter thinks it premature to describe a regulatory objective at this stage. However, Gas Industry Co believes it important to do so, even though the Gas Act does not require it. A regulatory objective ensures work has a focus and its scope is defined. The regulatory objective can then be refined as work progresses and the focus shifts or narrows.

Suggested amendments

Gas Industry Co proposed the following regulatory objective:

To ensure industry arrangements include reasonable terms and conditions for gas quality that: allow for the safe, efficient, and reliable delivery of gas; and provide for risks to be properly and efficiently managed by those parties best able to manage such risks.

Two submitters think the regulatory objective should be stronger. One suggests making it more prescriptive so stakeholders better understand Gas Industry Co's intention and proposes an alternative. The other submitter thinks the objective should be more assertive about the management and resolution of non-specification gas incidents.

A third submitter thinks the objective should be more neutral and suggests an alternative.

One submitter recommends the objective include a statement that liability should, to the fullest extent possible, fall on the causer(s) of the damage. After reviewing submitters' suggestions in relation to the regulatory objective, Gas Industry Co considers that it is better not to narrow the scope of the

objective too much at this stage. However, we think that the modifications proposed by several submitters do improve on our original formulation. We will therefore modify the regulatory objective to:

To ensure industry arrangements provide for gas quality in a manner that facilitates the safe, efficient, and reliable delivery of gas; and provide for risks relating to security of supply to be properly and efficiently managed by those parties best able to manage such risks.

This clearly articulates our purpose without prejudging which specific matters might need to be addressed. It also links back to the Gas Act objectives. We note that section 3.4 of the Issues Paper contains an explanation of the key elements of the regulatory objective: safety and reliability, and efficiency. This explanation remains valid, and we believe it encompasses the matters that concerned some submitters. For example:

- Safety and reliability relate to ensuring gas quality is managed in a way that ensures the safe and reliable transportation of gas (this includes parties taking actions to manage non-specification gas incidents);
- efficiency is described in a way that captures;
 - the 'cost to causer' principle;
 - the trade-off between price (and/or cost) and quality; and
- assigning responsibility for meeting the quality standard to those parties best able to control gas quality.

The objective does not expressly meet the concern of one participant that '...the quality of delivered gas reliably meets a standard consistent with the standard of similar international markets'. However, we consider that there are a range of international standards, all 'similar' to some extent, so including this in the objective may not be helpful.

Safety and security of supply

One submitter is concerned about including safety in the objective, believing it risks a conflict between Gas Industry Co and the Gas Association of New Zealand (GANZ). Another considers the regulatory objective should better reflect the risks in the Gas Act that relate to security of supply and suggests an alternative objective.

Gas Industry Co notes the Gas Act gives us an explicit mandate to take 'safety' into account when reviewing and developing gas governance arrangements (s 43ZN). We note also that the statutory body primarily responsible for ensuring the safe supply and use of electricity and gas in New Zealand is the Energy Safety Services (ESS). GANZ is an association representing several companies and other gas-related bodies on a range of technical and safety issues. GANZ has no statutory standing or responsibility to ensure safe outcomes.

Other comments

One submitter notes the restrictive use of 'composition' to mean the burning characteristics of gas ignored the need for stability or control of the rate of change of composition.

Another disagrees with Gas Industry Co's assertion that evidence of efficiency includes the following: 'where the causers (of damage caused by a gas quality issue) cannot be identified, or the costs of doing so are disproportionate to the benefit, all potential causers should meet the costs of any damage caused'.

As noted in section 2.1 of the Issues Paper the Gas Specification recognises that in some circumstances rate of change of gas composition is important, but it does not set limits for this parameter. It also recommends that supply and transport contracts specify limits for the rate of change, if relevant. We are not aware of any such provisions having been introduced to any contracts. As noted in section 2.5, one submitter has suggested that limiting the rate of change in the Vector Transmission Code (VTC) may even conflict with other provisions of that code.

2.5 Provisions related to gas quality

Submitters are generally satisfied with Gas Industry Co's interpretation of contractual arrangements except as noted below.

Section 4.2 of the Issues Paper noted that Section 17 of the Maui Pipeline Operating Code (MPOC) requires direct injecting parties to monitor gas quality as shown in Table 4. One submitter noted that this was not accurate since the monitoring requirements set out in section 17.15 of the MPOC are minimum requirements and do not limit the requirement that each direct and indirect injecting party to ensure that all gas that it injects into the Maui pipeline complies with the gas specification. It notes that the gas specification does not prescribe a frequency of testing but instead requires a frequency likely to detect potential deviations beyond specification limits. It suggests that this is a pragmatic approach and avoids unnecessarily frequent testing for characteristics and components that have low probability of falling outside specification limits.

We note that Table 4 of the Issues Paper did note where the frequency of monitoring were minimum requirements. However, we accept that the submitter provided a more detailed description of the MPOC requirements than the one presented in the paper.

The same submitter also pointed out that Vector does not have any explicit obligation under the VTC to avoid step changes to gas composition. The submitter notes that such an obligation could be inconsistent with Vector's other obligations under the VTC, such as not to give preference or priority to any shipper over other shippers, and the express provision that Vector has no obligation to monitor gas quality entering its pipelines. Gas Industry Co notes these corrections and clarifications.

MDL disagrees with Gas Industry Co's statement that MPOC arrangements do not meet the proposed regulatory objective in all respects. Vector states the contractual responsibilities under the VTC, Vector ICAs, and the MPOC, are unambiguous.

Gas Industry Co notes these views. In relation meeting the regulatory objective we consider that, as explained in the Issues Paper, there appear to be problems with liabilities flowing back through the contract chain to the causer of a non-specification gas incident.

2.6 Liability for non-specification gas

One submitter notes it seems reasonable that compensation for any damages from non-specification gas should come from the causer. However, this approach is complicated by several factors, including open access supply, the ability to control supply, and the complex supply arrangements. The current arrangements have been developed with these trade-offs in mind.

Another submitter clarifies that many MPOC liability arrangements are guided by the practicalities arising from the requirement for each Welded Party to maintain liability insurance.

One submitter does not accept that current arrangements could result in affected parties being unable to recover costs from causers. Such issues could be resolved through common law. The real issue is one of proof.

Gas Industry Co agrees that there are trade-offs that need to be considered when reviewing gas quality arrangements.

In relation to the last submitter's comment, we note in the Issues Paper that common law claims may be able to assist. This may be a possible solution but, considering the cost and complexity of pursuing a common law case, the possible limitation of such claims under contractual arrangements (for example, we understand many contracts seek to also limit claims in negligence) we do not think it will be an efficient approach in every circumstance. Another, less costly and time consuming mechanism should be in place to deal with circumstances where a causer is unidentifiable.

3

Discussion of matters raised in submissions: possible areas for further work

3.1 Overview

Gas Industry Co asked submitters to respond to five questions about the possible areas for further work. The questions were:

- Do you consider that liability for gas quality issues is best addressed through contractual arrangements or regulations? (Q6)
- Do you think the proposed regulatory objective would be better achieved with more prescriptive arrangements for monitoring of gas composition and contaminants? (Q7)
- Do you think further work to identify the options for more active gas quality monitoring, and to quantify the costs and benefits of those options, is justified? (Q8)
- Do you think TSOs should monitor gas quality more actively (for example, by continuously monitoring the water content in the transmission system to manage the risk of hydrate formation)? (Q9)
- Currently, the TSOs audit producers' monitoring of gas composition. Do you think this arrangement provides sufficient assurance against the delivery of non-specification gas? (Q10)

3.2 Addressing liability for damages caused by gas quality incidents

Regulation versus contractual arrangements

Submitters differ on whether the transmission codes or regulation should deal with liability. Four think that liability is best dealt with in contracts; one prefers contractual changes but would support regulation if it were considered necessary; and one submitter prefers regulation.

One participant suggests a review of the NZS 5442. A review might result in clarified and changed producer and TSO obligations, which could then be reflected in contractual arrangements.

Another submitter believes the inability to recover all damage in all circumstances is not necessarily evidence of market failure, so need not be a concern of Gas Industry Co. This submitter is also not aware that gas quality is a significant concern.

The submitter preferring regulation comments that a cost-benefit analysis might not favour a regulated system in which gas quality is continuously monitored. However, regulation is the only way to guarantee the protection of all participants in the supply chain. Another agrees there are too many parties at different positions in the supply chain for contractual arrangements to be robust should a major event occur.

We note that the Issues Paper explained why contractual arrangements are unlikely to allow the costs of a failure due to a gas quality incident to be passed back up the contract chain to the party responsible for the failure. This means that those costs will lie with parties who did not cause the failure (and in all likelihood had no practical means of preventing the resulting damage). This externality is a market failure.

Gas Industry Co agrees that, on the basis of submissions, gas quality is not a significant concern to many participants. However, this may reflect that quality issues are generally not publicised, and that there has never been a quality issue in New Zealand that has affected large numbers of end users. A few submitters clearly do have significant concerns about gas quality.

Section 5.3 of the Issues Paper discusses the significance of the Consumer Guarantees Act 1993 (CGA). It noted that the sale of gas to consumers must comply with the 'acceptable quality' guarantee in the CGA. If gas doesn't comply, consumers could have a right of redress against the supplier (that is, the retailer) and against the 'manufacturer' (that is, the producer), although we noted that this right would not apply in all circumstances, and was only available to consumers (not retailers or distributors).

One matter in relation to the CGA not discussed in the Issues Paper is the Ministry of Consumer Affairs consumer law reform review. Under that review, amendments to the CGA are being considered² that relate to the acceptable quality of electricity in. Broadly, the issue identified by electricity retailers is that they are not able to negotiate contractual indemnities with lines companies for breaches of acceptable quality caused on a network. Among other changes, the Ministry proposes that:

- lines companies should be subject to the same quality guarantee as retailers;

² The original discussion paper can be found at <http://www.consumeraffairs.govt.nz/pdf-library/legislation-policy-pdfs/consumer-law-review-a-discussion-paper.pdf>. A further discussion paper, that makes recommendations for amendments to the CGA, can be found at: <http://www.consumeraffairs.govt.nz/pdf-library/consumer-law-reform-submissions-pdfs/consumer-law-reform-additional-paper-on-electricity-and-the-cga.pdf>.

- retailers have the benefit of a statutory indemnity from lines companies in respect of payments made to consumers by retailers where the cause is an event on a lines company's network (Transpower is included as a lines company for this purpose).
- the jurisdiction of the Electricity and Gas Complaints Commission (EGCC) is extended to include indemnity disputes between retailers and lines companies (including Transpower) in respect of the CGA quality guarantee.

One submitter brought this matter to our attention, as discussed in Section 4.3 below.

While we accept that some market imperfections are too costly to cure, we do consider that it is worth considering whether the efficiency loss from current arrangements is likely to be significant or not, and whether the Ministry of Consumer Affairs analysis in respect of electricity quality may be applicable to gas.

Definition of RPO

One submitter considers the rights of retailers and end users to sue for damages are being undermined by the TSOs' lack of accountability for the delivery of non-specification gas. A TSO should be responsible for delivering specification gas and assume liability when it does not. To meet this responsibility, the definition of a 'reasonable and prudent operator' (RPO) should be strengthened.

Gas Industry Co agrees that, if contracts are to be relied on to pass liability up the supply chain, then provisions that restrict liability can break the chain. However, we are not convinced that the submitter's suggestion for strengthening the RPO obligations would significantly improve accountability.

We note that the RPO definitions in both the VTC and MPOC are essentially the same:

... an operator of a high pressure gas transmission system whose standard of performance is equal to or better than good high pressure gas transmission system operating practice as determined by reference to proper and prudent practices recognised internationally as applying to the operation of such systems

The submitter suggests that this could be changed to:

...a person seeking in good faith to perform its contractual obligations and in so doing and in the general conduct of its undertaking exercising that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced operator complying with applicable law engaged in the same type of undertaking in the same or similar circumstances and conditions...

The submitter believes that this is more in line with other RPO definitions in the industry. We agree that it very common to have 'diligence', 'skill', 'prudence' and 'foresight' mentioned in RPO clauses. The absence of these descriptors seems to be main difference between the submitter's suggestion and the RPO definition of the VTC and MPOC. However, we do not consider that this would materially

affect the interpretation of the definition. In addition, we note that VTC expressly relieves Vector of any obligation to monitor gas quality³. So it may not bring the benefits the submitter expects.

We consider that a more direct way of increasing accountability for gas quality (and reducing the uncertainty of outcomes), if that was appropriate, would be to explicitly provide that:

1. the TSO will only deliver specification gas; and
2. the RPO shield will not apply if non-specification gas is delivered.

This is the approach the MPOC takes in respect of Direct Injecting Parties. Such a party is obliged to ensure that all gas that it injects into the Maui Pipeline complies with the Gas Specification, and that it monitors to demonstrate compliance (section 17.2). In the event of a failure to perform, for the purpose of determining liabilities: '... any failure by a Direct Injecting Party to comply with this section 17 shall constitute a failure to act as a Reasonable and Prudent Operator'. We note that any party to either the MPOC or VTC may propose a code change.

3.3 Arrangements for monitoring gas composition and contaminants

Four submitters consider the existing arrangements for monitoring gas composition and contaminants are sufficient. A fifth submitter is of the view that more prescriptive arrangements are unnecessary if TSOs are subject to a stricter RPO obligation.

Three submitters think more prescriptive arrangements are required but hold different views about how to implement them. One of these submitters prefers reviewing NZS 5442 and incorporating more prescriptive arrangements. Another would like better documentation of the monitoring regime and a compliance regime to monitor the documentation. The third submitter supports more prescriptive arrangements for TSOs, or for third parties to monitor gas composition and contaminants; and for the arrangements to be specified in regulation.

We note views that the current arrangements are satisfactory and views that the arrangements should change. Gas Industry Co thinks a stricter definition of RPO is unnecessary if contractual responsibilities are clear. We consider that some assessment of the costs and benefits of the various options for improved monitoring (including the status quo option) is warranted.

3.4 Options for more active monitoring of gas quality

Four submitters consider further work is justified to identify the options for more active monitoring of gas quality, and to quantify the costs and benefits of those options.

³ Section 12.6 of the VTC states that 'nothing in this section 12 requires Vector to monitor the quality of Gas entering a Pipeline'.

One submitter thinks TSOs acting under a stronger definition of RPO is likely to be sufficient. It considers the MPOC and VTC could usefully contain provisions requiring the disclosure of complaints regarding gas quality.

One submitter, a TSO, thinks it would be too expensive to actively monitor its 139 delivery points. It comments that gas is injected into its system at four points. It would make more sense for gas quality to be monitored at these points instead of the delivery points.

The lack of quality-related complaints suggests to one submitter that more active monitoring is unnecessary. However, it considers it may be beneficial for an independent agency to periodically assess compliance with the gas specification. The submitter suggests compliance could easily be achieved if parties were required to publish monitoring results daily.

We agree that the first step when considering whether to pursue additional monitoring is to consider the costs and benefits. However, we do not accept that the lack of quality-related complaints can be taken as an indicator that the problem is not significant. First, there is no mechanism for recording and reporting complaints, so it is not possible to say whether they are frequent or not. Second, gas contamination can cause equipment malfunction on the transmission and distribution system leading to pressure fluctuations or supply failure. Consumers would not be aware that such failures were caused by non-specification gas.

3.5 TSO role in monitoring gas quality

Two participants submit that more active management by TSOs should be considered only if the benefits outweigh the costs.

Another submitter reiterated its view that more active management is unlikely to be required if TSOs are acting under a stronger definition of RPO.

Two submitters agree that TSOs should more actively manage gas quality. One of those submitters adds that TSOs also need to monitor all aspects of gas quality continuously. The other submitter notes that continuous monitoring by TSOs or a third party is international best practice.

Two submitters consider that injecting parties are in a better position than TSOs to monitor gas quality. One party believes the MPOC and VTC should require monitoring.

Gas Industry Co accepts that the costs and benefits of any additional monitoring need to be carefully considered.

3.6 TSOs role in auditing producers' monitoring

Current arrangements

Three submitters indicate that current arrangements are sufficient. One questions how the effectiveness of the existing regime can be considered or improved if previous occurrences of non-specification are unknown.

Gas Industry Co agrees that full transparency on all non-specification gas incidents should be considered. Since such incidents are fully investigated by TSOs the costs of disclosing the results of such investigations should be minimal. The benefits will be a better understanding of the types of incident that are occurring, the risks of future incidents, and identification of any control or monitoring shortcomings.

Independent audits

One submitter, a TSO, states it would not object to having a third party undertake the audit.

Another submitter indicates it would support internal audits by gas producers as part of their compliance arrangements with NZS 5442—but only if independent audits verified the producers' quality assurance and compliance regimes.

Other comments

One submitter has been affected by previous events related to gas quality. According to this submitter, this is clear evidence the current practice does not provide the assurance the industry requires.

Gas Industry Co notes this view.

4

Other issues

4.1 Mandate for work on gas quality

One participant's view is that Gas Industry Co has no mandate to undertake work on gas quality.

We consider that Sections 1.3 and 1.4 of the Issues Paper explained our mandate. We also think it important to clarify that section 43ZN of the Gas Act outlines the goals or aims of any work we undertake, rather than describing specific areas of work. When undertaking any work Gas Industry Co must also have regard for the objectives of the GPS.

Section 43F of the Gas Act sets out the purposes for which Gas Industry Co can recommend regulation be made. In relation to the transmission and distribution of gas, Gas Industry Co can recommend regulation be made for the purpose of '*prescribing reasonable terms and conditions for access to transmission or distribution pipelines.*' It is under this purpose that work on gas distribution and gas quality is being considered, it was also relevant to previous work Gas Industry Co undertook in relation to retail contracts.

4.2 Identifying the problem

Some submitters indicate they see no evidence of issues related to gas quality. However, others describe events related to gas quality that have affected them. For example, one submitter indicates it has been affected by at least five events since 2004; another states it has experienced water entering its distribution system.

We note that the Issues Paper set out the preliminary findings of our review and invited submissions to help us establish if there were problems that should be resolved.

4.3 Consequences of market power

One submitter observed that in the electricity sector there are concerns that liabilities imposed on retailers under the Consumer Guarantees Act 1993 for distribution network quality problems are not able in practice to be transferred to distributors given the monopoly power of electricity distribution businesses. This issue is being considered by the Ministry of Consumer Affairs as part of its consumer law review and will also be considered by the Electricity Authority as part of implementing the Electricity Industry Act 2010.

The submitter suggested that a similar problem may arise in the gas sector.

The same submitter noted that Section 36 of the Commerce Act 1986 does not include a broad prohibition against taking advantage of market power. The prohibition is limited to the case of substantial market power and is limited to specified anti-competitive purposes.

We consider that retailers do not have much negotiating leverage with transmission or distribution companies on issues where their interests differ. The issues are unlikely to be of sufficient weight to justify a Commerce Act action, even if there were adequate grounds for such an action. However, the issues may suggest that the current terms are not reasonable (in terms of section 43ZN of the Gas Act).

5

Next steps

5.1 Conclusions

Gas Industry Co thanks submitters for their submissions on the Issues Paper. After considering submissions, we conclude that some further work is required.

There were essentially two matters under consideration in the Issues Paper: whether appropriate arrangements are in place to prevent gas quality incidents, and whether the costs of a gas quality incident will be met efficiently (for example, whether damages can flow through the contractual chain to the ‘causer’). There is, of course, a strong link between these two matters. If parties are likely to be held responsible for their actions, they are likely to behave appropriately, and have incentives to put in place preventative measures.

Are appropriate arrangements in place to prevent gas quality incidents?

Section 4 of the Issues Paper—Current gas quality arrangements —focused on contractual arrangements. With a few minor corrections (see Section 2 and Appendix A of the Issues Paper—Provisions related to gas quality), submissions confirmed that we had described these arrangements correctly. However, the Issues Paper did not describe how the various obligations relating to gas quality were being discharged—that is, the operational arrangements. In particular, the monitoring, testing, reporting, and auditing practices of the various industry participants were not described.

Given the concerns expressed in submissions about the adequacy of current gas quality operational arrangements, we believe it is necessary for us to investigate and describe these operational arrangements.

We are also concerned about the poor visibility of gas quality incidents. There appears to be a wide range of views on whether gas quality is an issue⁴, what incidents have occurred, and whether reporting is adequate⁵. We did not report on this in the Issues Paper, but believe it needs to be considered.

⁴ One power station owner noted in its submission that it has experienced problems with gas quality at various times over the last two years relating to the abnormal build up of sulphur which could create serious problems. In contrast, another power station owner stated it was not aware that gas quality is a significant concern. One distribution owners noted that the number of incidents on its network caused by contamination since 2004 clearly shows that this issue needs addressing. In contrast, another distribution system owner (also a transmission system owner) does not think that more prescriptive arrangements for the monitoring of gas composition and contaminants are necessary.

⁵ The Arete/Hale and Twomey submission proposes that a quality complaints process is necessary to allow complaints to be reported and investigated, and to provide transparency.

Will the costs of a gas quality incident be met efficiently?

In the Issues Paper, Gas Industry Co explained why existing contractual arrangements were unlikely to allow liabilities to flow through the contract chain to the party who causes an incident. End users⁶ believe the rights of retailers and other end users to sue for damages are being undermined by pipeline companies failing to accept accountability for delivery of non-specification gas. It was suggested that a strengthened RPO obligation may address this.

Surprisingly, this did not appear to be a concern for many retailers. There could be a number of reasons for this. Retailers may consider:

- the prospect of a failure due to non-specification gas causing damage is remote; and
- their financial exposure is not great⁷, and possibly adequately covered by their business insurance.

Similarly, TSOs were unconcerned with current contractual arrangements for quality. MDL was 'broadly satisfied with current arrangements', and Vector believes they are '... adequate, well understood and accepted by industry participants.'

However, submissions from companies mostly involved with gas distribution—Powerco and GasNet—both argued that regulation was necessary to bring certainty and ensure the causer of a quality incident bears its cost. GasNet suggests the critical contingency arrangements could be modified to accommodate this.

Gas Industry Co considers that work is warranted to assess whether efficiency improvements in liability arrangements are justified.

5.2 Next steps

We believe that the Issues Paper and submissions on that paper have made a valuable contribution to improving the level of understanding of gas quality issues. However, to meet the regulatory objective, we believe that further work is required to:

- investigate and describe the operational arrangements for managing gas quality (that is, monitoring, testing, reporting, and auditing practices);
- consider the options for improving quality monitoring, including an assessment of the costs and benefits;
- consider the options for introducing greater transparency on gas quality incidents (such as, a quality complaints process as suggested by users), including an assessment of the costs and benefits; and

⁶ Arete/Hale and Twomey submitted on behalf of Fonterra Cooperative Ltd, Carter Holt Harvey Ltd, New Zealand Steel Ltd, and New Zealand Refining Company Ltd.

⁷ Section 5.1 of the Issues Paper notes that the Gas (Safety and Measurement) Regulations 2010 provide that a supplier failing to deliver specification gas could be fined up to \$50,000 (regulation 6)..

- assess whether the efficiency loss from current contractual arrangements is likely to be significant, and whether the Ministry of Consumer Affairs analysis in respect of electricity quality may be applicable to gas.

Below is a timetable for Gas Industry Co's next steps.

Table 1 Next steps

Date	Item
December 2010	Issue Submissions Analysis
April 2011	Report on gas quality operational arrangements
June 2011	Report on options for improving quality monitoring
June 2011	Report on options for introducing greater transparency on gas quality incidents
August 2011	Report on whether the efficiency loss from current contractual arrangements is likely to be significant

Gas Industry Co will update the Minister on the matters discussed in this paper, and advise that we do not believe that regulation is required at present.

Appendix A Summary of submissions

Effects of non-specification gas

Submitter	Comment
Question 1: Are there any other significant effects of non-specification gas, other than those identified in section 2.3, that Gas Industry Co should consider?	
Genesis, MRP, Powerco	No.
Arete/Hale and Twomey	15% of gas demand in NZ is for use in gas as a feedstock to industrial processes. For these users, gas contaminants and stability of gas composition are important quality parameters. These are not well recognised in NZS 5442. For the volume of demand sensitive to composition changes, TSO has some scope beyond the standard to act as an RPO to these users.
Contact	<p>Before Gas Industry Co undertakes further work on gas quality, the problem definition needs to be better articulated.</p> <p>More explanation is needed of the issue. For example:</p> <ul style="list-style-type: none"> • What was the number of gas-quality incidents and what is the level now? • What is the nature of the gas-quality incidents? • What are the contentious gas quality issues that have been troubling gas industry participants? • How long have these issues been a point of contention? • What is the value associated with the gas-quality issues? • What is the nature of the requests received from the distributor? • When were the requests received from the distributor? • Why have requests only been received from one distributor? • What action has Gas Industry Co taken to address the requests received from the distributor? • What action has the distributor taken to resolve the issues? <p>Gas Industry Co could have sought data to show which gas properties are typically close to the relevant specification limits and those well within specification limits. This information would help identify characteristics and components likely to cause problems. It would also help in considering whether the resulting risk could be addressed by increased monitoring of gas quality or instead require changes to the quality standard. This would seem essential before a solution can (if required) be developed.</p> <p>The paper does not identify the likely effect of the types of non-specification gas. The effect is likely to arise from non-specification gas entering into the transmission system following production and gas treatment. Efforts to reduce that risk should be the focus of attention.</p>

GasNet	<p>In situations where non-specification gas has a low CV the increased throughput could cause supply issues.</p> <p>Water entering a distribution system can be a major problem not only in its effect on reduced capacity and supply pressures but in locating and removing the water deposits within the system.</p>
Vector	<p>Vector has reservations on the paper's descriptions of potential impact of some of the identified contaminants.</p> <p>Oil: the quantities of oil involved in relation to the 2,288km of transmission pipelines are trivial.</p> <p>Dust: It is largely unpredictable whether, or to the extent, such dust formation may occur. Again, the root cause relates to the composition of gas, which is outside the transmission system's influence of control.</p> <p>Water: We are not aware of any instances of hydrate blocked on the transmission system or at any delivery point. Hydrate formation is a threat in raw gas pipelines.</p>

Assessment of types of non-specification gas

Submitter	Comment
Question 2: Do you agree with the assessment of types of non-specification gas and potential causer?	
Genesis, MDL, MRP, Powerco	Yes.
Arete/Hale and Twomey	Table 3 excludes rate of change CV. Potential causer is a producer but can also result from a decision made by a TSO (for example, by managing comingling of gas streams).
Contact	<p>Table 3 provides a reasonable summary. We note, however, that separately identifying operators of gas treatment plant in the table would better identify causers.</p> <p>Table 3 doesn't include the likely effect of the types of non-specification gas. Efforts to reduce the risk of non-specification gas entering the system following production and treatment should be the focus of attention.</p>
GasNet	The way GasNet operates its networks means that it is possible they could also contribute to contamination, not just TSOs as set out in table 3.
Vector	<p>Vector objects to any presumption that it is 'likely to be responsible for any gas quality issue.' The assumption in the VTC is more accurate.</p> <p>Vector is entitled to presume that gas entering its system is specification gas. It would be prohibitively expensive for Vector to be required to duplicate, let alone replace, quality monitoring that gas producers are obliged to do.</p> <p>TSOs are not well placed to prevent non-specification gas from entering the pipeline. The shipper is in the best position to ensure producers and direct injecting parties are complying with their contractual obligations.</p> <p>Tracking the 'chemical signature' of any remaining solid or liquid deposits back to the source is time consuming, expensive and could still be uncertain.</p> <p>As a Welded Party, Vector is required to notify MDL if it knows or suspects that non-specification gas is being delivered from the Maui Pipeline. It is also appropriate that Vector have a similar responsibility to notify its shippers. But any requirement more than this is unjustified.</p>

The regulatory objective

Submitter	Comment
Question 3: Do you agree with the proposed regulatory objective? If you disagree explain why and/or provide an alternative.	
MRP, Powerco	Yes.
Arete/Hale and Twomey	The proposed regulatory objective is generally consistent with other obligations in the Gas Act including the GPS. We note the restrictive use of 'composition' as a reference to the burning characteristics of the gas does not recognise the need for the rate of change of composition to be stable or controlled.
Contact	<p>We suggest a more prescriptive regulatory objective to ensure stakeholders better understand Gas Industry Co's intention. We suggest:</p> <p>To establish industry arrangements to manage gas quality that:</p> <ul style="list-style-type: none"> • the quality of delivered gas reliably meets a standard consistent with the standard of similar international markets, and that is relevant for the NZ market; • are efficient; • appropriately recognise the trade-off between price (and/or cost) and quality; • assign responsibility for meeting the standard to those parties best able to control gas quality; and • balance the assignment of liability across those failing to meet their responsibilities.
GasNet	<p>We are concerned with the inclusion of safety because it risks a conflict with GANZ.</p> <p>We question whether the objective could be more assertive about the management and resolution of non-specification gas events.</p>
Genesis	<p>We query why Gas Industry Co considers it necessary to articulate a regulatory objective at this stage. It seems premature and may risk closing off options.</p> <p>A more neutral objective is suggested: 'To ensure industry arrangements provide for gas quality in a manner that facilitates the safe, efficient, and reliable delivery of gas'.</p>
MDL	<p>The scope of risks addressed in the Gas Act relate to security of supply. Therefore the regulatory objective should remain within that scope too. We suggest:</p> <p><i>To ensure industry arrangements include reasonable terms and conditions regarding gas quality that: allow for the safe, efficient, and reliable delivery of gas; and provide for risks relating to security of supply to be properly and efficiently managed by those parties best able to manage such risks.</i></p> <p>We disagree with the notion that causers cannot be identified and that all potential causers should meet the cost of any damage caused. This notion is listed as possible evidence of gas quality efficiency.</p>
Vector	<p>Strongly recommend the objective include a statement that liability should, to the fullest extent possible, fall of the causer(s) of the damage.</p> <p>There is also some benefit in Gas Industry Co taking into account the Government's recently released Draft Energy Strategy and Draft Energy Efficiency and Conservation Strategy.</p>

Provisions related to gas quality

Submitter	Comment
Question 4: Do you agree we have interpreted the provisions within the transmission codes and contracts correctly? Are there additional contracts or provisions that should be considered?	
Powerco	Yes.
Arete/Hale and Twomey	<p>Agree with the provisions as described but note that the provision alone does not necessarily imply it is being followed.</p> <p>We think the TSO has an enforceable obligation to ensure compliance with ICA provisions.</p>
Contact	<p>We have several comments on Gas Industry Co's interpretation of provisions:</p> <ul style="list-style-type: none"> • The frequency testing required by the MPOC is misstated. • The NZS 5442 does not prescribe a frequency of testing but a frequency likely to detect potential deviations beyond specification limits. • Despite Gas Industry Co's suggestion, Vector does not seem to have any obligation under the VTC to avoid step changes in gas composition. • The MPOC approach to interconnection arrangements provides a better basis for establishing consistent transmission arrangements. • The VTC interconnection agreements not providing for the transportation of gas and give no right to an interconnected party to make gas available at a receipt point, do not relate well with the interconnected party's obligations related to gas flow. • Implementation of interconnection agreements at all delivery points seems necessary to properly address issues such as balancing, metering and gas quality. Regulatory intervention may be required if that cannot be achieved voluntarily.
Genesis	<p>In the electricity sector there are concerns under the Consumer Guarantees Act for distribution network quality problems are not able in practice to be transferred to distributors given the monopoly power of electricity distribution businesses.</p> <p>It may be worth considering whether a similar problem could arise in the gas sector.</p>
MDL	<p>Agree with the summary of MPOC provisions and make no comments on the other codes and contracts. Do not agree with the statement in section 4.9 that 'the [MPOC] arrangements do not meet the proposed regulatory objective in all respect.'</p>
MRP	<p>Yes. Under NSAs, retailers are required to be responsible for the delivery of gas that complies with the gas specification. Given gas is commingled all retailers will be compliant or in breach of these clauses.</p>
Vector	<p>Agrees at a high level. Emphasises that the contractual responsibilities for compliance with the NZS 5442:2008 could not be any clearer under the VTC, Vector's ICAs and the MPOC. Further there are obligations on Vector and shippers to immediately notify the other if they suspect non-specification gas.</p> <p>There are also agreements between GMS owners and retailers setting out responsibilities. The consultation paper does not clearly distinguish GMS providers from distributors and how the former are affected by gas quality issues.</p>

Relevant issues

Submitter	Comment
Question 5: Are there any aspects of this discussion in section 6.1 that you believe to be inaccurate or misleading? If so, please explain what these are.	
Arete/Hale and Twomey, Powerco	No.
Contact	<p>In principle it would seem reasonable that the causer of supply of non-specification gas should be responsible for providing compensation for any damage. However the principle is complicated by open access supply; the ability to control gas quality; encouragement of competing supply; the complexity of supply arrangements and appropriately balancing gas quality risk and the cost of the risk.</p> <p>Gas Industry Co does not provide evidence to show that the trade-offs between quality, price and risk that have been developed by the market are inappropriate.</p>
Genesis	There is an inaccuracy in the discussion of market power in section 5.2. Section 36 of the Commerce Act does not include a broad prohibition against taking advantage of market power. The prohibition is limited to the case of substantial market power and is limited to specified anti-competitive purposes.
MDL	Many of the MPOC liability arrangements are guided by the practicalities arising from the requirement for each Welded Party to maintain liability insurance.
MRP	The network/retailer contractual arrangements included in section 4 need to be included.
Vector	We do not accept that current industry arrangements could result in affected parties not being able to recover from the causer(s). Any affected party can claim in common law irrespective of any contractual right. The real issue is one of proof.

Addressing liability for damages caused by gas quality incidents

Submitter	Comment
Question 6: Do you consider that liability for quality issues is best addressed through contractual arrangements or regulation? Please explain why.	
Arete/Hale and Twomey	The current issue with liabilities is that the rights of the retailers and other end users to sue for damages are being undermined by lack of acceptance of accountability for delivery of non-specification gas by the TSO. The TSOs should warrant that it will deliver specification gas and assume liability when it does not. The TSO should act as RPO under a stronger definition of the term.
Contact	Establishment of liability for quality issues through contractual arrangements if preferred. In respect of gas quality, is there evidence of market failure? Inability to recover all damage in all circumstances is not necessarily evidence of market failure. We are not aware that gas quality is a significant concern.
GasNet	Regulation is favoured over contractual arrangements on the basis that there are too many parties at different positions within the supply chain for the latter to be robust in the case of a major event occurring.
Genesis	We do not have a view at this stage.
MDL	The MPOC arrangements for liability are specified in great detail. If any amendments are considered desirable we propose using the modification process in the MPOC rather than proposing regulations.
MRP	These issues are best addressed by a review of NZS 5442:2008 to clarify and change the producers/TSO obligations. Changes should then be reflected in contractual arrangements. We would support regulatory intervention by Gas Industry Co if considered necessary.
Powerco	Regulation would guarantee protection to all participants in the supply chain. Continuous monitoring by TSOs or third parties is the key to ensuring compliance to composition requirements and monitoring of contaminants. Cost benefit analysis for such a system may be argued as a reason against implementing continuous monitoring. However, it may be only a matter of time before the industry's luck runs out.
Vector	Liability for quality issues is best addressed through contractual arrangements. There are ways for Gas Industry Co to encourage best practice without resorting to more prescriptive and costly regulation.

Arrangements for monitoring gas composition and contaminants

Submitter	Comment
Question 7: Do you think the proposed regulatory objective would be better achieved with more prescriptive arrangements for the monitoring of gas composition and contaminants?	
Arete/Hale and Twomey	More prescriptive arrangements shouldn't be required under regulation if a broad RPO obligation and quality warranty incorporated under the various pipeline codes.
Contact	<p>NZS 5442 appropriately addresses monitoring frequency and test methods. It makes the person wishing to demonstrate compliance responsible for showing the characteristic or component is within the specification limit.</p> <p>The MPOC also sufficiently addresses monitoring and frequency.</p> <p>The conclusion that there is not a requirement to monitor several important parameters, including water, seems incorrect.</p>
GasNet	The introduction of the Gas (Safety and Measurement) Regulations 2010 has meant retailers will be seeking appropriate assurances from various parties that specification gas is being delivered to consumers. To meet this need, the monitoring regime should be documented and supported by evidence of compliance.
Genesis	Not convinced Gas Industry Co has developed a convincing case for intervention at this stage.
MDL	We remain to be convinced that more prescriptive arrangements are justified.
MRP	Yes, but our preference is to see more prescription via a review and changes to the NZS 5442: 2008.
Powerco	Support prescriptive arrangements for continuous monitoring of gas composition and contaminants by the TSOs or third parties.
Vector	<p>No, the monitoring arrangements for New Zealand industry complying with a New Zealand standard are appropriate.</p> <p>International models may have some relevance to the standard required of an RPO, however, the specific arrangements in the MPOC and VTC are appropriate for New Zealand.</p> <p>The current contractual regime is a minimum benchmark and does not prevent industry participants from alerting others of any component issue.</p> <p>Producers/interconnected parties are best placed to monitor the quality of gas injected into the transmission system. We understand constant monitoring at production stations, including contaminants identified in the consultation paper will require equipment costs of no more than \$100,000 per station. Some stations might already be capable of this. Gas Industry Co should discuss this with producers.</p>

Options for more active monitoring of gas quality

Submitter	Comment
Question 8: Do you think further work to identify the options for more active gas quality monitoring, and to quantify the costs and benefits of those options, is justified?	
Genesis	Yes.
Arete/Hale and Twomey	<p>TSOs should act as RPO rather than prescribing what they need to do to be reasonable and practicable.</p> <p>It would be useful if complaints regarding quality were disclosed. A process for doing so should be clarified in the MPOC and VTC.</p>
Contact	<p>The lack of complaints concerning gas quality suggests there is no proven need for more active monitoring.</p> <p>However, it may be beneficial for an authority to periodically assess compliance with the gas specification and to identify characteristics or components that have significant risk of exceeding specification limits.</p> <p>This could most easily be achieved if parties injecting gas were required to publish monitoring results on a daily basis.</p>
MDL	Yes, to some extent. Even with a detailed quantification, we expect industry participants could use their industry knowledge to make an initial CBA for options considered.
MRP	Yes. Most if not all gas delivered is commingled within the transmission pipelines and therefore we believe TSOs need to monitor continually.
Powerco	Powerco prefers proceeding with the options presented by Gas Industry Co.
Vector	No, there are 139 delivery points on Vector's transmission system. It would clearly be prohibitively expensive and technically impracticable to monitor the quality of gas at all of them. There are only four receipt points at which gas is injected in the Vector's transmission system. Checking gas quality can be done more easily and cheaply at these points.

TSOs' role in monitoring gas quality

Submitter	Comment
Question 9: Do you think TSOs should monitor gas quality more actively (for example, by continuously monitoring the water content in the transmission system to manage the risk of hydrate formation)?	
Arete/Hale and Twomey	TSOs should act as RPOs. It would be useful if complaints regarding quality were disclosed. The MPOC and VTC should allow for this.
Contact	Monitoring at injection points should ensure risks are managed. This should be a requirement in the MPOC and VTC. It doesn't seem necessary that the TSOs should carry out monitoring themselves. TSOs should require the injecting party to monitor that characteristic at a frequency commensurate with that risk.
GasNet	Only after an analysis of each scenario and its associated risk and a CBA.
MDL	The benefits would need to be worth the extra costs. TSOs can perform extra monitoring but the costs would need to be recoverable and would lead to higher transmission tariffs.
MRP	Yes, but as stated above, TSOs also need to monitor all aspects of gas quality on a continuous basis.
Powerco	International best practice should guide New Zealand. Powerco supports the adoption of a TSO or third party to continuously monitor gas quality. For the distribution system, hydrates currently present one of the greatest risks and should be monitored along with the composition elements.
Vector	The TSO is not the party best placed to prevent non-specification gas from entering into the pipeline. This is a position clearly stated in the VTC. Vector also regularly monitors the gas in its pipeline to ensure its own assets are protected in case of contamination. These arrangements are appropriate for New Zealand.

TSOs' roles in auditing producers' monitoring

Submitter	Comment
Question 10: Currently, the TSOs audit producers' monitoring of gas composition. Do you think this arrangement provides sufficient assurance against the delivery of non-specification gas?	
Genesis	Yes.
Arete/Hale and Twomey	The best form of assurance is a warranty by TSOs to deliver gas that meets the gas specification with limited room to manoeuvre out of this obligation.
Contact	The measures contained in the MPOC and VTC are largely satisfactory. If it is agreed quality data should be published, Contact would prefer gas composition data directly sourced from gas chromatographs was published rather than gas specification characteristics and components calculated from data.
GasNet	Unsure how the effectiveness of the existing regime can be questioned or improved if the historic occurrences of non-specification gas entering the system are unknown.
MDL	We would not object against moving to an audit responsibility to a third party.
MRP	Would support internal audits by Gas Producers as part of their compliance arrangements with NZS 5442 but only if producers' gas quality assurance and compliance regimes are also verified by independent audits.
Powerco	Current TSO practice offers little assurance against delivery of non-specification gas or contaminants. Gas Industry Co is aware of at least five events where Powerco has been an affected party since 2004. This is clear evidence that the current practice does not provide the assurance the industry requires.
Vector	Current contractual arrangements are commercially appropriate in providing sufficient assurance against the delivery of non-specification gas. Gas Industry Co indicated that gas chromatographs have been widely used at gas production stations. Chromatographs do not measure gas quality per se.

Other issues

Submitter	Comment
Greymouth	Gas Industry Co's mandate for this work is questionable. The paper obscures the real problem areas, which are: <ul style="list-style-type: none"> • distributor interconnection agreements with TSOs; and • access to pipelines for specification and non-specification gas.