SUBMISSIONS ANALYSIS

Security and Reliability Issues Paper Submissions Analysis

GAS INDUSTRY COMPANY LIMITED

Introduction and Summary

In recent years, stakeholder concerns about the security and reliability (S&R) of the two New Zealand gas transmission systems have increased. In response, Gas Industry Co published a *Gas Transmission Security and Reliability Issues Paper* (Issues Paper) in April 2016 and called for submissions. Submissions were received from:

(a) Contact Energy Limited (Contact);

(b) First Gas Limited (First Gas);

(c) Fonterra;

(d) Genesis Energy Limited (Genesis);

(e) Major Gas Users Group (MGUG);

(f) Methanex New Zealand Limited (Methanex);

(g) Nova Energy Limited (Nova); and

(h) Vector Limited (Vector).

This paper analyses those submissions and updates the conclusions and suggested action points from the Options Paper.

In the course of the S&R review, both transmission systems have come under the ownership of First Gas.[1] The First Gas submission on the Issues Paper notes the importance of S&R to its business, and its desire to improve communication on those matters, including continued constructive discussions with Gas Industry Co, shippers and end-users.

Gas Transmission Businesses (GTBs) are subject to price-quality regulation under Part 4 of the Commerce Act, administered by the Commerce Commission. Associated information disclosure requirements, including the publication of GTB Asset Management Plans (AMPs), have greatly improved the transparency of gas transmission, including S&R arrangements. Although the Issues Paper covered a very broad range of S&R related topics, most submissions focus on how the AMPs can be improved. This suggests that the Commerce Commission's current Input Methodologies review is 'top of mind' for stakeholders, and that a side-effect of the Issues Paper may be a more informed discussion on that review.

First Gas is currently preparing its initial gas transmission AMP (covering both transmission systems), which it is required to be released by 30 September 2016. Given the limited time, its initial AMP will not be able to address all of the issues raised in submissions, but First Gas anticipates a process of continuous review and improvement.

Submissions tended to extend the analysis of the Issues Paper, rather than voicing substantive contrary views on its conclusions and suggested action points. Perhaps this indicates an acceptance that S&R is generally headed in the right direction, considerably assisted by information disclosed under the Commerce Commission's price-quality determinations, and the

[1] On 20 April 2016, Vector Gas Limited – owner of the Vector transmission system – was acquired by First State Funds, two infrastructure funds managed by First State Investments, known in Australia as Colonial First State Global Asset Management. Vector Gas Limited was renamed First Gas Limited (First Gas). Then, on 15 June 2016, First Gas purchased the Maui pipeline from Shell, Todd and OMV (collectively known as the Maui Mining Companies).

willingness of First Gas to discuss the issues and look for further improvement. We also believe stakeholders are willing to give First Gas an opportunity to make its mark, and are enthusiastic to work with it to see what can be achieved. That is also our own attitude.

Accordingly, this paper restates the conclusions and suggested action points proposed in the Issues Paper, which are principally for First Gas and for consideration as part of the Commerce Commission's programmed work for 2016, with a few additions to reflect submitter suggestions. At this stage we believe the best contribution Gas Industry Co can make is to keep monitoring and reporting the Commission's and the industry's progress on those actions, towards improved S&R.

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1. Views on adequacy of S&R disclosures

In relation to S&R of the transmission system, submitters generally consider that the current disclosed metrics provide useful status and trend indicators.

However, most submitters agree that the AMPs are difficult to interpret and missing a layer of interpretation by the pipeline owner. The majority call for greater levels of stakeholder engagement. For example, MGUG suggests that the AMP should take a stakeholder centric approach to reporting, and be developed with the involvement of stakeholders. These are matters that the First Gas submission acknowledges, and commits to address. Future reviews of the AMP will identify whether such stakeholder concerns have been dealt with.

In this chapter we describe the more specific suggestions made in submissions in regards to disclosing additional or modified S&R information.

1.1 Suggested additions to the AMP

Some submitters think that additional information should be included in future AMPs. In particular:

(a) **Asset management philosophy and principles used to determine level of redundancy for key assets**

MGUG suggests that a transparent asset management philosophy is needed, perhaps along the lines set out in AS/NZS 2558.1 and ASME B31.8. This would require service levels to be explicitly expressed, and would inform discussions around issues such as the Whitecliffs realignment.

On the same theme, Nova suggests that the principles applied to determine the appropriate level of redundancy for key assets need to be articulated by the GTB.

(b) **Risk analysis**

Fonterra considers that the transmission AMP should include a risk matrix showing the major risks on the pipeline, their impact and likelihood to occur, and detailing what the GTB is doing to mitigate/eliminate those risks, particularly high-impact/high-likelihood risks. Fonterra considers this would help users to prepare their business continuity plans.

Methanex also thinks that threats, mitigation strategies and the condition/expected life of critical assets such as OATIS need more emphasis, including more analysis of performance against objectives, particularly missed targets. It considers that the risk associated with critical IT, such as OATIS, gets scant coverage in the current AMP.

MGUG argues that more disclosure is required around risks, risk tolerance, risk acceptance criteria, threats, mitigation measures and performance. It suggests stakeholder consultation on these matters would introduce a strategic context, and should be regular.

Genesis notes that there is already continuous monitoring and review of the landslide and erosion risk for the Maui Pipeline, and that alternative means of addressing those risks are being considered, but that this is not being discussed with stakeholders.

The First Gas submission accepts that the AMP should contain the key pipeline integrity risks.

(c) **Major/Minor, Good/Bad rankings**

MGUG suggests that the various AMP performance metrics should be ranked from major to minor importance, and that performance against those metrics should be ranked good to bad. Fonterra also considers reporting the severity and impact of reported failures would he a helpful addition.

In regard to rankings, MGUG suggests that external references may provide a useful guide in assessing whether performance is good or bad.

In similar vein, Genesis suggests that the information gas users are most interested in is in relation to maintenance and investment programmes, and that this information should be prominent.

(d) **Business Continuity Plan**

Fonterra proposes that the AMP should include any business continuity plan or emergency response plan that the GTB has in place to restore gas supply after an outage. It suggests the plan might contain arrangements for curtailing/reinstating bands of demand, similar to the critical contingency management arrangements.

(e) **Maintenance Plan**

Genesis proposes that a comprehensive maintenance plan should minimise outages and shorten outage times.

(f) **Intelligent pigging results**

Genesis considers that the AMPs published to date don't provide sufficient detail about the condition of the pipelines. It believes that the GTB uses results of intelligent pigging to identify maintenance or other issues, and that these results should also be disclosed to stakeholders. It notes that the data is likely to be included in the PIMP, and while it does not support disclosure of the full PIMP, it believes there is a case for requiring the GTB to make regular intelligent pigging runs and disclose the results. This information would help stakeholders understand the state of the pipeline.

(g) **Lead indicators**

Both MGUG and Nova are keen to see a set of lead indicators published regularly.

Nova notes that studies of major international disasters such as the Fukushima nuclear power station and Deep Water Horizon oil platform are fostering new approaches to risk management. In particular, they identify lead indicators for situations where unacceptable risks might occur. Nova suggests that the change of pipeline ownership and management structures, changes in the pipeline balancing regime, climate change increasing the likelihood of extreme weather events, etc, could combine to cause problems. Nova recommends that the transmission AMP include a set of suitable lead indicators that are to be published on a regular basis to give warning of such problems, as well as providing a benchmark for future reviews.

MGUG suggests that leading indicators, at least of material incidents, would give users comfort that the risks are being properly managed. These could include adherence to scheduled maintenance on critical assets, adherence to system audit schedule, etc. MGUG also suggests a need for visibility of the risk of potential congestion. Some of these lead indicators, such as the number faults occurring on critical assets, may be suitable for inclusion in the AMP, others would require more frequent reporting, as discussed in section 1.3 below.

(h) **More PIMP information in the AMP**

Most submitters think that at least some elements from the PIMP should be disclosed in the AMP. MGUG considers that, even if not disclosed it total, stakeholders should have visibility of the PIMP. Genesis concurs, arguing that transparency is the lever stakeholder have to ensure that the GTB is undertaking appropriate and prudent maintenance. And Fonterra thinks that, if the AMP does not contain enough detail on what the GTB is doing to mitigate/eliminate high-impact high-likelihood risks, then the full PIMP should be disclosed.

Nova considers that it would be sufficient that the PIMP is made available to any independent party mandated to review the overall risks related to the gas transmission system.

More generally, Methanex argues that information should be available where consumers are willing to pay for it to be disclosed.

Gas Industry Co's views on these suggestions is given in Chapter 3.

1.2 Other suggestions for improving the AMP

As well as the additions to the transmission AMP suggested above, other suggested improvements were:

(a) **Keeping performance measures relevant to end-users**

Methanex considers it is important that consumers can provide on-going input about what performance measures are most meaningful. For example, in relation to the current measures, it suggests that, rather than recording the number hours each individual compressor is available, it would be more meaningful to record the number of hours when only one compressor at a station was available, and the number of hours when co-incident outages occurred.

(b) **Clarifying the meaning of performance measures**

First Gas notes that there is scope to clarify the meaning of some metrics. For example, 'incidents and emergencies' covers a broad range of events that are caused by quite different factors. Similarly, reporting the 'number of gas vents' may not be helpful if the reason for venting are not clear.

(c) **Linking targets to stakeholder objectives and external benchmarks**

MGUG suggests that more could be done to link the targets to stakeholder objectives and to include external benchmarks where relevant. It would also be helpful to relate performance to outcomes by showing, for example, how compressor availability affects supply reliability. MGUG also notes that ideally measures should be reported in one place rather than being spread through the AMP and other information disclosures (financial and performance).

(d) **Quantifying reliability**

Some MGUG members wish to get a better understanding of whether particular risks are, say, of a 1 in 10 year event, or of a 1 in a 1000 year event. This information would help them to assess their own site risk, and whether further investment is required.

1.3 Suggested disclosures outside the AMP

In addition to providing annual disclosures through the AMP, submitters also consider that additional S&R related information could be provided outside of the AMP. In particular:

(a) Visibility of the risk of potential congestion (MGUG);

(b) Pressure and flow monitoring data on daily basis (Nova);

(c) Planned maintenance, especially for critical assets such as compressors and water heaters (Nova); and

(d) Notification of corrosion monitoring of the pipelines (Nova).

2. Views on other aspects of S&R

2.1 Views on reputational, contractual and legislative drivers

The Issues Paper concluded that there are strong reputational, contractual and legislative drivers for a GTB to achieve effective S&R.

While most submitters generally agree, a few noted reservations.

Possible effect of asymmetrical risk on the provision of S&R

MGUG notes that the financial consequences of an outage for suppliers, transporters and end-users can be quite different, and that externalities (such as wider social costs) could also apply.

MGUG extrapolates the results of the 2011 Maui Pipeline outage to illustrate its point. It suggests that the difference between a 5-day outage and a 20-day outage could be a $600m economic loss to the NZ economy, but it is not clear how that outcome would be factored into the resources the GTB would be willing to apply in order to minimise the outage.

MGUG concludes that:

> 'This is why S&R is context specific, and context is a function of all stakeholders, not just suppliers, strategic objectives. Effective S&R therefore invites wider stakeholder input into identifying threats and mitigation measures. This is a process that needs to be led by the supplier but can be facilitated by for example the GIC to ensure the necessary stakeholder engagement and input.'
>
> MGUG submission, response to Q3

Fonterra also touches on this when it notes that the introduction of a pure revenue cap may reduce the commercial incentive on the GTB to minimise disruptions. It notes that the only quality standard set in the price quality regulation is to respond to an emergency within 3 hours, but this provides no assurance on how quickly the emergency might be resolved.

Genesis also has concerns, noting that reputational and contractual drivers cannot be relied on in relation to a monopoly business providing efficient investment, and that the wider reliability implications for stakeholders need to be considered.

Nova has a similar view, noting the absence of a risk framework to ensure that investment decisions align with the overall market need for S&R.

However, First Gas is very strongly of the opinion that a failure of S&R has wide consequences for its business, potentially affecting future growth prospects. This is why First Gas regards an S&R failure as one of the largest risks to its business.

2.2 Capacity allocation

Since there is no immediate prospect of a capacity constraint, Methanex does not understand the relative importance being placed on addressing capacity allocation. Contact, however, suggests that there is further work to be done to improve the efficient capacity allocation arrangements when constraints occur, possibly including demand side management arrangements.

2.3 Certificates of fitness

MGUG suggests that Gas Industry Co's analysis puts a lot of reliance on the Certificate of Fitness requirement under the Health and Safety (Pipelines) Regulations 1998, a control arising from health and safety legislation rather than S&R per se, and that is only issued at intervals. Fonterra agrees.

2.4 Individual v Collective need for S&R

The Issues Paper proposed that, if an individual end user did not find the level of S&R provided by the GTB to be sufficient, then it should be able to explore opportunities for the GTB to provide enhanced reliability. For example, providing an additional compressor on the transmission pipeline may be a cheaper option that for the end user to invest in back-up fuel facilities, or pay for extra insurance, or similar.

Fonterra questions whether this is likely to be efficient. It suggests that rather than individual end users each investing in back-up arrangements, it may be more efficient for the GTB to invest in a higher level of S&R. In other words, the collective benefit to end users could outweigh the cost to the GTB.

2.5 Involving stakeholders in consideration of maintenance options

Genesis proposes that where the GTB is deciding among alternative ways of maintaining the pipelines (such as alternative ways of addressing the erosion risk), these should be discussed with stakeholders since those decisions could have a financial impact on stakeholders.

3. Gas Industry Co comments and next steps

Gas Industry Co believes that much of the stakeholder concern about transmission S&R arose from poor communication between the former GTBs – MDL and Vector – and stakeholders, particularly with regard to the possible pipeline realignment at Whitecliffs. Early indications are that the new owner – First Gas – is keen to work with stakeholders to consolidate and improve S&R reporting, and consult constructively to address stakeholder concerns. Gas Industry Co will facilitate these communications where it can.

The timing of the Issues Paper is fortunate because it established a baseline position from which First Gas can move forward. It also identified the hot-spots that justify attention, and gave stakeholders an opportunity to articulate their concerns in a structured way.

As also discussed in the Issues Paper, the Commerce Commission's current work programme in relation to transmission pipelines also offers potential opportunities for discussion and improvement.

We believe that, taken together, the Issues Paper and the stakeholder submissions set the groundwork for improved S&R.

Here we offer our perspective on the submissions and consider what this means for the next steps.

3.1 AMP additions and improvements

In considering the proposed additions and improvements to the AMP, it is helpful to recall the baseline requirement for an AMP, as set out in s2.6.2 of the Information Disclosure Determination:

> '2.6.2 The purposes of AMP disclosure referred to in subclause 2.6.1(1)(b) are that the AMP—
>
> (1) Must provide sufficient information for interested persons to assess whether-
>
> (a) assets are being managed for the long term;
>
> (b) the required level of performance is being delivered; and
>
> (c) costs are efficient and performance efficiencies are being achieved;
>
> (2) Must be capable of being understood by interested persons with a reasonable understanding of the management of infrastructure assets;
>
> (3) Should provide a sound basis for the ongoing assessment of asset-related risks, particularly high impact asset-related risks.'

Also, New Zealand's gas transmission pipelines are certified for compliance with NZS/AS 2885, which requires[2] the GTB to ensure and demonstrate that:

(a) each threat to the pipeline and each risk from loss of integrity of a pipeline is systematically identified and evaluated;

[2] Ministry of Business, Innovation & Employment *Review of the Maui Pipeline Outage of October 2011* (Oct 2012) at 28

(b) actions to reduce threats and risks from loss of integrity are implemented;

(c) risks are reduced to as low as reasonably practicable;

(d) a procedure is established to ensure that the identification of threats and risks from loss of integrity, and their evaluation, is an on-going process over the life of the pipeline, at intervals of no less than five years; and

(e) competent and experienced personnel carry out the assessment and management of risks.

On the basis that s2.6.2 of the Information Disclosure Determination requires that an AMP should '… provide a sound basis for the ongoing assessment of asset-related risks, particularly high impact asset-related risks.', we support all the suggested AMP additions and modifications in principle, but note that much of the information sought is already present in some measure.

In particular, we consider that the AMP can reasonably be expected to include:

(a) **A description of the philosophy/principles being followed by the GTB**, as proposed by MGUG and Nova.

However, we note that the AMP is already required to contain a Report on Asset Management Maturity[3]. Also, to support that report and assist interested persons to assess the maturity of asset management strategy and delivery, the AMP should identify:

(i) (how the asset management strategy is consistent with the GTB's other strategy and policies;

(ii) how the asset strategy takes into account the life cycle of the assets;

(iii) the link between the asset management strategy and the AMP; and

(iv) processes that ensure costs, risks and system performance will be effectively controlled when the AMP is implemented.[4]

Accordingly, in relation to philosophy/principles, s4 of MDL's December 2015 *Transitional Asset Management Plan and Forecast Information* (MDL AMP) includes discussion on the Asset Management approach, purpose, policy and strategy. And Vector's *Gas Transmission Asset Management Plan 2015–2025* (Vector AMP) has somewhat more dispersed principles; for example the Vector AMP s5.1.2 sets out the planning principles, and s6.1-s6.7 contain principles of asset maintenance, renewal and replacement (although the detailed philosophy and guidelines for pipeline maintenance and renewal are contained in Vector's PIMP).

So perhaps all that is needed here is more discussion between the GTB and stakeholders on what fit for purpose philosophy/principles should look like, how much detail should be in the AMP, and how much visibility is required on relevant material not in the AMP.

(b) **An analysis and ranking of risks**, as proposed by Fonterra, Methanex and MGUG.

While we agree, we note that s9 of the MDL AMP covers risk management principles, risk assessments and asset criticality. Similarly, s8 of Vector AMP covers risk management, working through the various categories of risk down to s8.7, which addresses catastrophic consequence risks.

[3] s2.6.2.1 Information Disclosure Determination
[4] s3.11, Attachment A, Information Disclosure Determination

So, as with the overall asset management philosophy (discussed in (a) above), perhaps a discussion between the GTB and stakeholders could focus on how much detail should be included and how the information is best presented.

(c) **A ranking of performance against maintenance and investment targets**, as requested by MGUG and Genesis.

In our view, in addition to reporting the bare results, the GTB should offer a qualitative assessment of whether those results are good or bad. This is part of the overall story about which risks are important; how they being managed; and how the asset is performing. This story can easily be lost in the detail. Hence our suggestion that a 'dashboard' would be helpful.

In its submission, First Gas says that it is keen to understand what is meant by a dashboard, and what value it would have for its customers. We do not have anything elaborate in mind; just a presentation (in graphical or table format) of what the important metrics are, and how the business is performing against them. The value to customers is that they can quickly decide if there is anything of concern that might warrant delving more deeply into the AMP, or making enquires of the GTB.

The dashboard may also be a suitable place to show some of the 'lead indicators' MGUG and Nova have asked to see more of (see item (g) below).

(d) **An outline of how incidents/emergencies will be responded to**, as requested by Fonterra.

It seems to us that the 'business continuity plan' sought by Fonterra, maps very closely to the Emergency Plan required by AS/NZS 2885, and referred to in both the MDL AMP and Vector AMP.

Section 13 of the MDL AMP notes that: 'The Technical Operator maintains emergency response plans along with specific event guides in anticipation of being able to provide a fast and effective response to pipeline emergencies in the unlikely event that they should occur. The Specific Event Guides address a range of anticipated scenarios due to environmental, asset failure, systems and facilities failure as well as personnel issues such as pandemic response, sabotage or terrorism. It is MDL's expectation that the TO trains and tests staff in the application of emergency response plans.'

Similarly, s8.8 of the Vector AMP notes that: 'the plan describes the actions required and the responsibilities of staff during a major emergency or incident. A key component of the plan is the formation of the emergency response management team. This team includes senior staff whose role is to oversee the management of potential loss of and restoration of supply following a significant event. The team is experienced and undertakes exercises periodically, at least annually.'

These are very high level descriptions. It may be that the actual Emergency Plans are too detailed for inclusion in the AMP, but stakeholders do need to understand how the GPB will respond to incidents/emergencies. We suggest that, if this cannot be adequately described in the AMP, the detail should be made available to stakeholders on-line.

(e) **A maintenance plan**, as requested by Genesis.

However, s2.11 of Vector's AMP says that: 'Maintenance planning is undertaken to ensure that assets remain fully functional for their reasonably expected lifespan when operating within expected design ratings. It also includes activities to prolong asset lives or to enhance asset performance. Maintenance planning addresses both capital investments on renewal or

refurbishment, or long, medium and short-term asset maintenance. Vector's approach to maintenance planning is set out in Section 6.'

So, s6 of Vector's AMP probably goes a long way to giving Genesis what it wants, and there is a similar s6 in MDL's AMP.

(f) **Intelligent pigging results**, as requested by Genesis.

Our understanding is that because of the set-up costs, intelligent pig runs are not conducted every year. So this would not be an annual disclosure, although the schedule of completed and planned pigging could be updated annually.

(g) **Lead indicators**, as requested by MGUG and Nova.

We agree that lagging indicators tell us how well the S&R performance has been, but not how prepared we are to prevent future incidents. Also, low incident rates may lead to complacency in situations where numerous risk factors are developing that should ring alarm bells. This is the kind of situation Nova warns of.

Leading indicators would focus on future S&R performance and continuous improvement. These measures are proactive and would report what is being done to identify risk factors and prevent further incidents. They can include such things as: employee/user perception surveys, S&R audits, risk factor reduction activities, S&R awareness training, etc. Of course, they are much more difficult to identify than lagging indicators, but offer the opportunity to record the good things being done to prevent failure, rather than only identifying where failures have occurred.

(h) **More transparency of PIMP information**, as requested by most submitters.

We agree with submitters that visibility of some PIMP information is desirable, but we are wary of putting extra information into the AMP. We think there is a risk that this would make the AMP bloated and unwieldy. Our preferred outcome would be for the GTB to allow on-line access to those parts of the PIMP, such as; Emergency Plans; philosophy/guidelines for pipeline maintenance and renewal; intelligent pigging results; maintenance schedules etc.

(i) **Keeping performance measures relevant to end-users**, as proposed by Methanex.

We agree with Methanex that the relevance of the performance measures should be regularly reviewed against usefulness to end users and other stakeholders.

(j) **Clarifying the meaning of performance measures**, as proposed by First Gas.

We are encouraged that First Gas is looking for opportunities to improve reporting. As discussed previously, we think that some discussion with stakeholders on these matters will improve understanding and the quality of the disclosures.

(k) **Linking targets to stakeholder objectives and external benchmarks**, as proposed by MGUG.

We support MGUG's suggestion that targets be linked to stakeholder objectives and referenced, where meaningful, to external benchmarks. While benchmarking is usually a complex and costly exercise, we think there should be scope for some simple benchmarking of parameters such as unaccounted for gas (UFG), compressor availability and third party incidents.

(l) **Quantifying reliability**, as proposed by MGUG.

We agree that some assessment of the likely frequency of events would be helpful.

3.2 Other aspects of S&R

Views on reputational, contractual and legislative drivers

We agree with MGUG and Nova that, even though the GTB will have strong reputational, contractual and legislative drivers to achieve effective S&R, it does not necessarily follow that it will consider the national interest when deciding what level of emergency response to aim for, or what level of investment to make.

This is an area where there is scope for more engagement between the GTB and its stakeholders. The GTB will have emergency response plans, an inventory of critical spares, and rapid response arrangements etc which it believes are at a prudent level. However, the value of lost load will vary substantially between users[5], and may justify additional preparedness. We discuss this further under 'Individual v Collective need for S&R' below.

Individual v Collective need for S&R

We agree with Fonterra that there could be situations where it would be cheaper for the GTB to invest in additional security measures than for each individual end user to invest in back-up arrangements. The challenge is to identify those situations, and then explore the options.

Broadly there are two possible scenarios. The first is where an end user assesses its current gas supply S&R and concludes that it is inadequate. The second is where the GTB proposes a change to the system that would materially change the S&R for one or more end users.

In the first scenario, the end user may be able to get a sufficiently good appreciation of its S&R risk from public documents. But, in any case, we think it would be advisable to discuss the situation with the GTB. If the end user concludes that the risk is unacceptably high, then it needs to assess its own options. These could include investing in: additional interruption insurance; back-up energy sources; contingency shut-down arrangements etc. The end-user could then discuss with the GTB whether there are investments that the GTB could make to achieve the same end. These could include site-specific investments, such as providing stand-by delivery station equipment, or system investments, such as: looping pipelines; building additional compression; additional signage in high hazard areas etc. If an option is identified that would involve the GTB investing in improvements that would benefit a group of end users, then those end users could be consulted to see if there was a willingness to share costs.

In the second scenario, where the GTB proposes a change to the system that would materially change the S&R for one or more end users, we would also expect the GTB to consult with those end users. As with the first scenario, this could lead to an outcome where there is a sharing of costs.

In short, it is difficult to talk about Fonterra's concern in a generic way since each end user will have a different tolerance for S&R risks, and those risks will vary with location. However, we consider that providing the GTB is open to discussions on S&R matters (and we believe that First Gas will be), we see no barrier to identifying and considering options for enhanced S&R.

Capacity allocation

The probability of congestion affecting the supply to Methanex is extremely low. And the closure of the Auckland power stations will have reduced the probability of congestion in that part of the system. However, there are other parts of the transmission system are much more likely to

[5] For example, see the Electricity Authority's 2012 report: *Investigation into the value of lost load in New Zealand – Summary of findings*

experience congestion, and industry discussions over recent years have recognised that arrangements to deal with this need to be worked out ahead of time. We therefore agree with Contact that further work is required to improve the efficient capacity allocation.

Further disclosure

When information can only be made available at a cost, Methanex proposes that consumers should have the final say on whether they wish to meet that cost or not. At face value that seems fair, but in practice we suggest that it would be a difficult arrangement to manage. For example:

(a) Who would have a right to vote, end-users, Shippers, and/or Welded Parties?

(b) Would there be 1 vote per ICP, or in proportion to consumption, or on some other basis?

(c) What would the threshold of acceptance be (50%, 75% or 100%)?

(d) Would the arrangement be contractual or regulated?

In short, we do not think the Methanex proposal is practical.

Certificates of fitness

We agree with MGUG and Fonterra that a lot of reliance is put on the Certificate of Fitness. That is the basis of the third party certification scheme in place under the Health and Safety (Pipelines) Regulations 1998. However, as covered elsewhere in this report, we expect that the GTB will be discussing with stakeholders how much detailed information needs to be in the AMP. Those discussion could also cover the possible inclusion of some of the information/assurance behind the Certificate.

Involving stakeholders in consideration of maintenance options

We agree with Genesis that stakeholders should have a say when the GTB is choosing between alternative ways of maintaining pipeline integrity. In our view this is another example of where a consultation on the part of the GTB would go a long way to satisfying the needs of stakeholders. And the alternative to such a sensible dialog is likely to be an unwieldy regulated 'fix'. We prefer to give dialog a chance to succeed in the first instance.

3.3 Next steps

On the basis of this analysis of submissions, we think that some modification to the conclusions and suggested action points listed in the Issues Paper is warranted. We copy the conclusions and suggested actions points from the Issues Paper below, with additions notated in bold.

Conclusions

(a) The primary responsibility for transmission S&R lies with the GTBs, operating within a regulatory framework defined principally by the Health and Safety at Work Act, the Commerce Act, and the Gas Act.

(b) The regulatory agencies – WorkSafe NZ, the Commerce Commission and Gas Industry Co – have well defined roles with very little overlap.

(c) The GTB has strong incentives – reputational, commercial and statutory – to deliver effective S&R, **but needs to help stakeholders better understand the level of resilience/preparedness it is providing, and discuss whether that is an appropriate level for the market.**

(d) While we find that all the information or arrangements needed to deliver effective S&R are provided for, we note that:

(i) some arrangements affecting S&R have never been tested, in particular:

- the Customised price-quality path (CPP) arrangements, designed to allow the Commerce Commission to set a price path better suited to a GTB's circumstances, such as the need to make a major investment; and
- s43F(2)(d) of the Gas Act, which provides a path for Gas Industry Co to investigate and to make recommendations to address any rare case of under-investment;

(ii) some arrangements affecting S&R are under Gas Industry Co review, in particular:

- capacity allocation arrangements, which the Panel of Expert of Advisers (PEA) found to be inefficient; and
- physical pipeline management arrangements, including balancing arrangements, which have recently been changed;

(iii) some information needed to assess S&R can be improved, in particular stakeholders are unsure whether GTBs are providing sufficient information for interested persons to assess whether:

- assets are being managed for the long term;
- the required level of performance is being delivered; and
- costs are efficient and performance efficiencies are being achieved.

Suggested Action Points

We suggest that:

(a) The new GTB:

(i) address the capacity allocation issues identified by the PEA;

(ii) work with stakeholders (including end-users, Gas Industry Co and the Commerce Commission) to:

- ensure future AMPs and other disclosures provide a more assessable presentation of the GTB's interpretation of the data, identification of issues, and means of addressing those issues;
- **consider the suggested additions, improvements and further disclosures proposed by submitters (as set out in Chapter 1);** and

(iii) work with any individual end-user who wishes to assess the S&R of deliveries to its individual site (given that this will be affected by a possibly unique set of risks along its gas transmission route).

(b) Gas Industry Co:

(i) consider whether new balancing arrangements are contributing to more stable linepack management;

(ii) **review future AMPs to check the extent that stakeholder concerns have been addressed;** and

(iii) continue to work with the Commerce Commission to ensure that there is no duplication of function.

(c) Gas Industry Co and stakeholders:

(i) work with the Commerce Commission during its Input Methodologies Review and through the consultation on the 2017 reset of the GTB default price paths to ensure that the price-quality regime is providing appropriate constraints/incentives on investment, including major new investments.

We understand that the new GTB – First Gas – is discussing the content of the next AMP with stakeholders in preparation for releasing an AMP by the end of September 2015. Given the limited time, its initial AMP will not address all of the issues raised in submissions, but First Gas anticipates a process of continuous review and improvement.

Appendix A – Summary of submissions

QUESTION	COMMENT
Question 1	Do you agree that the current disclosed metrics provide useful status and trend indications? If not, what information do you think is redundant or missing?
Contact Energy	Yes, but could be easier to navigate.
First Gas	The metrics are meaningful, but there is scope to clarify the meaning and further categorising them.
Fonterra	Yes.
Genesis	System maintenance and investment (ie prevention) is most important to stakeholders. Intelligent pigging is part of this and results should be disclosed.
MGUG	Metrics should: • include audience they are directed at, how they meet stakeholder objectives, targets and benchmarks; • be together in an easy to find place; • be ranked as major or minor, and assessed as good or bad; and • include leading indicators eg % adherence to scheduled maintenance on critical asset programme, % adherence to system audit schedule etc. Users are interested in metrics that affect security, eg congestion risk and maintenance investment. Other stakeholders will have other interests.
Methanex NZ Ltd	Users should have opportunities to say what measures matter. For compressors, for example, the hours of coincident non-availability is more meaningful than the hours when any one compressor in isolation was available.

QUESTION	COMMENT
Nova Energy	It is unlikely that anyone can determine from that data if the pipelines are being operated at an adequate level of S&R. Small sample sizes mean that current disclosures have little statistical value (ie determining if a result that deviates from the norm). Market participants need leading indicators such as: • pressure and flow monitoring data on daily basis, to highlight any potential supply issues; • planned maintenance, especially for critical assets like compressors and water heaters; • the number faults occurring on critical assets; and • notification of corrosion monitoring of the pipelines.
Question 2	Do you agree that the metrics could usefully be summarised and displayed in a 'dashboard' format, accompanied by the GTB's interpretation? Are there other improvements you would suggest?
Contact Energy	Yes.
First Gas	The AMP scheduled for release by 30 September 2016 will take stakeholder comments on board. First Gas is keen to discuss the dashboard concept.
Fonterra	Possible improvements include consolidation into a single AMP, a dashboard summary with GTBs interpretation, and rating to indicate the severity of possible failure modes.
Genesis	Yes, presentation of information should be simplified.
MGUG	Dashboard could be helpful if it is shows how metrics relate to asset objectives and performance.
Methanex NZ Ltd	Summaries should not be at the expense of more substantive information. And more a comprehensive explanation is required when targets are missed.
Nova Energy	Yes, preferably focusing on leading indicators.

QUESTION	COMMENT
Question 3	Do you agree that there are strong reputational, contractual and legislative drivers for a GTB to achieve effective S&R? If not, what else do you think is needed?
Contact Energy	Yes.
First Gas	Yes. S&R failure is one of the largest risks to the business with the potential to undermine growth and investment. The strong RPO obligation reflects this.
Fonterra	A pure revenue cap may reduce commercial incentives for GTB to achieve S&R. The single quality standard in the price-quality regulation does not give any assurance on how quickly an event can be resolved. And, as noted in the MGUG submission, the scope of the certificate of fitness is limited.
Genesis	Yes, but legislation needs to provide that stakeholders have access to information on matters that affect their risk.
MGUG	Yes, but some risks are asymmetric. For example, the GTB may not recognise the cost to the NZ economy when assessing how it can mitigate the duration of outages (planned and unplanned). Optimal results require stakeholder input, possibly facilitated by Gas Industry Co.
Nova Energy	Yes, but we should not be complacent, pipeline S&R relies on a few experienced people, so can be easily be disrupted.
Question 4	Do you think we have correctly identified the requirements to achieve the S&R objectives? If not, what requirements are unnecessary, or missing?
Contact Energy	Yes, but there may still be a need for a demand side management regime to allow those who value it gas most to have priority to capacity when it is scarce.
First Gas	Yes, but it is useful to distinguish between physical security requirements and commercial access arrangements. Although First Gas is to unify the access arrangements, it does not follow that there is currently an S&R 'gap' in that respect. Similarly other areas of attention, such as critical contingency and balancing arrangements, do not necessarily present S&R 'gaps', but may justify attention for other reasons.

QUESTION	COMMENT
Fonterra	A few key elements are missing: Business Continuity Plans or response plans need to be included, and the NZ inc perspective needs to be taken into account when considering if enhanced S&R is justified.
Genesis	Yes.
MGUG	The requirement should be categorised according to criticality (eg propensity to lead to a critical contingency event).
Methanex NZ Ltd	No concerns.
Nova Energy	Yes, but 'business as usual' is assumed whereas gas supply could be disrupted by a combination of external events.
Question 5	Do you think the gap analysis is adequate? If not, what gaps have not been identified?
Contact Energy	Yes.
First Gas	A focus on physical S&R may be more productive than considering 'gaps'.
Fonterra	No. Business Continuity Plans are also required. Transparency is preferred over individual users having to ask the GTB about its S&R risks.
Genesis	AMPs do not provide sufficient detail to understand risks. Some information, eg pigging results, are in the PIMPs. The Certificate of Fitness focuses on safety and may not address stakeholder concerns.
MGUG	The Certificate of Fitness does not address stakeholder concerns in a quantitative or continuous basis.

QUESTION	COMMENT
Methanex NZ Ltd	Too much emphasis is given to capacity allocation and inadequate attention to OATIS obsolescence.
Nova Energy	No, it assumes 'business as usual' whereas gas supply could be disrupted by a combination of external events. Studies of major international disasters such as the Fukushima nuclear power station and Deep Water Horizon oil platform point to the need for new approaches to risk management that identify lead indicators for situations where unacceptable risks might occur.
Question 6	Do you agree that it is not necessary to mandate any security standards?
Contact Energy	Yes.
First Gas	Yes, the drivers for S&R are already strong and fixed standards would reduce flexibility.
Fonterra	Possibly, but there needs to be a way of recognising and preserving the additional S&R provided where the Vector pipeline shadows the Maui pipeline.
Genesis	Yes, access to information is crucial, but not mandated security standards.
MGUG	Security standards should be explicitly stated. This would help evaluation of investment options.
Methanex NZ Ltd	Yes, providing there is enough disclosure for users to judge whether the GTB is providing adequate security.
Nova Energy	Yes, but it would be appropriate for the GTBs to publish the principles that they apply when determining the appropriate level of redundancy for key assets.

QUESTION	COMMENT
Question 7	Do you agree that the current AMPs are generally adequate, but missing a layer of GTB interpretation?
Contact Energy	Yes.
First Gas	First Gas will be reaching out to its customers to discuss how its first AMP can improve on the AMPs of its predecessors.
Fonterra	No, a Business Continuity Plan and a risk matrix is required. For each pipeline, the risk matrix would show the main risks, the likelihood of failure and the impact of failure.
Genesis	Greater interpretation of AMPs would be useful.
MGUG	No. Information is missing from the AMPs.
Methanex NZ Ltd	More information is required for particular assets on: • their condition and expected life (eg OATIS) • threats and mitigation strategies • performance against objectives (particularly where targets are missed)
Nova Energy	Information provided must be sufficient for an informed analyst to be able to assess the level of S&R being provided for in both the short and longer term. AMPs should be required to include a set of suitable lead indicators that are to be published on a regular basis, providing assurance of the continued S&R and providing a benchmark for future reviews.
Question 8	Do you agree that it is unnecessary for a GTB's PIMP to be disclosed?
Contact Energy	Yes.

QUESTION	COMMENT
First Gas	Yes, the PIMPs are asset management tools, and the key pipeline integrity risks are provided in the AMP.
Fonterra	Disclosure of PIMPs may not be required if a Business Continuity Plan and details of what the GTB is doing to mitigate/eliminate high impact or high likelihood risks. Also, it may be possible to trim some material, that is not useful to stakeholders, out of the AMP.
Genesis	PIMP information about the intended maintenance and integrity of the pipeline would be useful.
MGUG	Agree in part. Information related to risks should be transparent to those exposed to the risk. It should not be onerous to disclose the relevant parts of the PIMP.
Methanex NZ Ltd	If users want the PIMPs to be disclosed, and are willing to meet the cost of disclosure, Gas Industry Co should support this. However, it may be sufficient that the GTB meets user requests for information. Gas Industry Co should investigate what is done overseas, as a guide.
Nova Energy	Disclosing the PIMP would not in itself lead to greater security and reliability. But it should be made available to any independent party mandated to review the overall risks related to the gas transmission system.
Vector Limited	Yes, the AMP disclosure is sufficient and should identify where the key S&R risks lie, and how they are being managed.
Question 9	Do you agree that there are statutory arrangements to permit scrutiny of a GTB's decisions to invest, or not invest (albeit that these arrangements have not yet been tested)?
Contact Energy	Yes.
First Gas	Yes, but the Gas Act provision should not be required if the Commerce Commission achieves its Part 4 mandate.
Fonterra	No comment.

QUESTION	COMMENT
Genesis	Yes. And as an RPO, the GTB should disclose and discuss investment options with stakeholders.
MGUG	No opinion.
Methanex NZ Ltd	No concerns.
Nova Energy	Yes, but there does not seem to be an adequate risk framework for ensuring that those decisions are commensurate with the market's need for S&R.
Question 10	Are there any aspects of the gap analysis that you do not agree with?
Contact Energy	The CPP arrangements are untested, apparently unattractive to the GTBs, and may lack incentives to develop innovative solutions. There is more work to be done to improve capacity allocation at times of constraint.
First Gas	No.
Fonterra	Business Continuity Plans are also required. Transparency is preferred over individual users having to ask the GTB about its S&R risks.
Genesis	PIMP information about the maintenance and integrity of the pipeline is missing.
MGUG	The Certificate of Fitness does not address stakeholder concerns in a quantitative or continuous basis.
Methanex NZ Ltd	Analysis is wrong to conclude that further disclosures are not necessary, and has not identified OATIS as an 'at risk' system.

QUESTION	COMMENT
Nova Energy	The industry needs a process to assess the potential for major supply disruptions, and systems to indicate if risks are increasing or warrant further analysis over time.
Vector Limited	Agrees that the necessary arrangements are in place for an effective gas transmission S&R.
Question 11	Do you agree with our suggested action points? Are there any other actions that you believe are necessary?
Contact Energy	Yes, noting earlier comments.
First Gas	First Gas looks forward to working with stakeholders to ensure future AMPs and other disclosures provide a more assessable presentation of the GTB's interpretation of the data, identification of issues, and means of addressing those issues.
Fonterra	A Business Continuity Plan and a risk matrix, detailing what the GTB is doing to mitigate/eliminate high impact or high likelihood risks, is required.
Genesis	PIMP information about the maintenance and integrity of the pipeline would be useful.
MGUG	Broadly agree, better stakeholder engagement is necessary.
Methanex NZ Ltd	There is no justification for addressing capacity allocation issues. PIMPs should be disclosed if users want them and are willing to meet the cost. Gas Industry Co should consult with stakeholders on adequacy of the new GTB's first AMP. Gas Industry Co should investigate, or seek confirmation from the certifying authority, that the technical standards are adequate and that GTB operating procedures and maintenance regimes are being complied with.
Nova Energy	Yes, and suggest the extended risk analysis work be added to the reset of the GTB default price path.

QUESTION	COMMENT
Vector Limited	The GTB and stakeholders should meet regularly to discuss the S&R risks, possibly facilitated by Gas Industry Co.

SUBMISSIONS ANALYSIS

ABOUT GAS INDUSTRY CO.

Gas Industry Co is the gas industry body and co-regulator under the Gas Act. Its role is to:

- develop arrangements, including regulations where appropriate, which improve:
  - the operation of gas markets;
  - access to infrastructure; and
  - consumer outcomes;
- develop these arrangements with the principal objective to ensure that gas is delivered to existing and new customers in a safe, efficient, reliable, fair and environmentally sustainable manner; and
- oversee compliance with, and review such arrangements.

Gas Industry Co is required to have regard to the Government's policy objectives for the gas sector, and to report on the achievement of those objectives and on the state of the New Zealand gas industry.

Gas Industry Co's corporate strategy is to 'optimise the contribution of gas to New Zealand'.

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