

30 April 2024

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Submitted via email to [consultations@gasindustry.co.nz](mailto:consultations@gasindustry.co.nz)

Dear Andrew

## **Firstgas response to proposal for amending Critical Contingency Management Regulations**

First Gas Limited (**Firstgas**) welcomes Gas Industry Company's Statement of Proposal (**SoP**) for amending the "*Gas Governance (Critical Contingency Management) Regulations 2008*" (**CCM Regulations**). No part of this submission is confidential and Firstgas is happy for it to be made publicly available.

The SoP is divided into three distinct parts. Our submission focuses predominantly on parts two and three of the SoP, which address proposed changes to the critical contingency pressure threshold ranges and associated locations in Schedule 1 of the CCM Regulations.

### **Need for changing Schedule 1**

We have provided our rationale for seeking changes to Schedule 1 of the CCM Regulations in previous documents and presentations.<sup>1</sup>

As we have outlined previously, the following factors drive the need for greater flexibility in setting critical contingency pressure thresholds:

1. optimising the operation of the Transmission System in a context of changing supply and demand patterns;
2. increasing reliability for gas users;
3. facilitating prudent capital and operational investment decisions;
4. enabling future energy initiatives and emissions reduction initiatives; and
5. reducing the likelihood of unnecessary critical contingency declarations and curtailment.

We elaborate on each of these points in our attached submission.

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<sup>1</sup> Proposed Changes to Critical Contingency Pressure Threshold Ranges, October 2022; Proposed Changes to Critical Contingency Pressure Threshold Ranges: Cost Benefit Analysis, July 2023; Cost Benefit Analysis: Proposed Changes to Pressure Ranges in Schedule 1 of the Gas Governance (Critical Contingency) Regulations 2008, 21 June 2023 published as appendices to the SoP and available at <https://www.gasindustry.co.nz/our-work/work-programmes/critical-contingency-management/#statement-of-proposal>

### **The importance of flexibility**

A key underlying theme of the SoP is flexibility. In various sections Gas Industry Co cites the need for “flexibility” and “regulatory discretion” in a “dynamic and uncertain environment”.<sup>2</sup> Firstgas endorses this view: we also believe that greater flexibility needs to be introduced into the CCM Regulations to enable Firstgas and the gas industry to respond more efficiently and effectively to rapidly evolving shifts in gas production and consumption.

We note that flexibility has also been cited as a key component in other important work-streams that are currently being progressed by gas industry regulators. For example, the Ministry of Business Innovation and Employment states in its Gas Transition Issues Paper:<sup>3</sup>

*It is likely that the needs of fossil gas consumers, particularly the thermal electricity generators, will become increasingly variable, which will mean the gas system will need to become more flexible than it is today.*

Another example comes from an Enerlytica report<sup>4</sup> that analyses the potential of liquefied natural gas (LNG):

*On the demand side, increasing penetration of intermittent renewable generation and the retirement of baseload thermal generation plant has reduce[d] overall demand but increase[d] the need for flexibility.*

Firstgas supports Gas Industry Co in seeking greater flexibility within the CCM Regulations. We are seeking the same flexibility regarding Schedule 1 pressure thresholds in the “dynamic and uncertain environment” in which all stakeholders are operating. Such flexibility is key to ensuring the longevity of the CCM Regulations and the gas industry itself.

### **Consistency with the regulatory purpose**

Firstgas is concerned that the SoP uses the term “security of supply” in a way that is inconsistent with the purpose of the CCM Regulations. The regulatory purpose refers to “long term security of supply,” which in this context relates to maintaining delivery pressures to distribution networks, thus avoiding extensive and lengthy outages to consumers supplied by those distribution networks.

In contrast, the term “security of supply” in the SoP seems to be talking about short-term security of supply. While this is an important topic, it is outside the ambit of the CCM Regulations. Firstgas submits that it is the regulatory purpose alone—managing critical gas outages and other contingencies while maintaining pressure in the distribution networks—against which potential amendments to the CCM Regulations are required to be assessed.

### **Useable linepack**

There is much discussion in the SoP about linepack and potential impacts of lowering transmission pressure. Our submission discusses the more relevant concept of useable linepack – that is, the linepack between normal operating pressure and minimum regulator inlet pressure at a delivery point.

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<sup>2</sup> For example, page 20 section 1.2.2, and page 22 section 1.2.4

<sup>3</sup> Ministry of Business, Innovation and Employment, August 2023, *Gas Transition Plan – Issues Paper*, page 10. <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-consultations-and-reviews/advancing-new-zealands-energy-transition-consultation-document/introduction/>

<sup>4</sup> Enerlytica, March 2023 *LNG import and options to increase indigenous gas market capacity and flexibility in New Zealand*, page 2. <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-strategies-for-new-zealand/gas-transition-plan/>

In some cases, overly high critical contingency pressure thresholds are needlessly limiting the amount of useable linepack that would otherwise be available for avoiding a critical contingency.

As useable linepack depends on operating pressures and delivery point configuration, it can be modified in response to changing circumstances. In the case of Taupō, for example, the delivery point has been reconfigured, which extended the useable linepack range at lower delivery pressures.

### **Pipelines operated at less than 20 bar g**

In several places, the SoP incorrectly states that the proposed Schedule 1 changes would remove pipelines operating at less than 20 bar g from the CCM Regulations. This is not true. Delivery points with less than 20 bar g delivery pressure would not trigger a critical contingency, but consumers supplied from those points would still be able to be curtailed during a critical contingency.

### **Future proofing the regulations**

We don't know what the future holds but, given the pace of change the industry has seen in the last few years, we think it will look different to the status quo. We believe it is imperative that Schedule 1 of the CCM Regulations is amended to have the flexibility to adapt to these changing conditions.

Without this flexibility, there are three possible outcomes, none of them appealing:

1. no progress on new energy-saving or renewable gas initiatives; or
2. a dependence on urgent changes to the CCM Regulations; or
3. a CCM regulatory framework that is increasingly outdated and irrelevant because it does not reflect the:
  - (a) actual operation of the transmission system; or
  - (b) objectives of the gas industry and its stakeholders.

That is not a future that Firstgas wants. We are therefore seeking changes to Schedule 1 to allow Firstgas the ability to efficiently, safely, and responsibly meet the challenges of the energy transition and an evolving energy sector.

If you have any questions or need more information on the points we raise in our submission, please do not hesitate to contact me.

Kind regards

**Ben Gerritsen**

General Manager Customer & Regulatory

## Submission

### Purpose of the Regulations

Regulation 3 of the CCM Regulations states that:

*The purpose of these regulations is to achieve the effective management of critical gas outages and other security of supply contingencies without compromising long-term security of supply.*

The original Recommendation to the Minister, published in June 2008<sup>5</sup>, provides additional context on the problem that the CCM Regulations were designed to address [emphasis added]:

*Because of the shared nature of the high pressure transmission system, a shortage of gas supply has the potential to adversely affect all users of the system... [T]he potential loss of revenue from curtailing valuable load, the inability to control the demand of many customers, the uncertainties surrounding the extent and duration of supply outages, and the desire to rely on pipeline inventory to cover such events tends to result in mixed responses to the requirement to self-balance...*

*To the extent that shippers who have lost gas supplies do not reduce their offtakes, the linepack in the pipeline will deplete and pressures will fall. If that situation is allowed to continue unchecked then it is possible that pressures could fall to such a level that insufficient pressure remains in the system to supply the distribution networks. The outcome of such an event would be an **extensive outage for any distribution network so affected**. Reinstatement of supply to such a network would require significant time and resources to isolate customers, purge and re-pressurise the system, and re-light customer installations. That exercise would be very costly and, because reinstatement would take several weeks in a large urban setting, is likely to result in the permanent loss of a number of gas customers.*

In other words, the purpose of the CCM Regulations is to manage gas outages such that supply to distribution networks is not interrupted, thereby maintaining long term security of supply. That is the cornerstone of the CCM Regulations.

It is important for Gas Industry Co and the wider gas industry to keep that purpose firmly at the centre of any consideration of changes to the CCM Regulations. Equally, it is important to keep in mind what the CCM Regulations are not designed to do: they do not—and indeed cannot—guarantee security of supply to every gas consumer.

There are places in the consultation document that seem to conflate these two ideas. For example, the second paragraph on page 8 very appropriately states that: “

*If sufficient pressure is not maintained in downstream networks, recovering a distribution network serving a large urban area could take many months and would be very costly.*

However, this sentence is followed by:

*Falling system pressures may also impact the delivery of gas to certain designated consumers who require gas for certain essential and critical care services or providing*

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<sup>5</sup> Gas Industry Company, June 2008, *Recommendation to the Minister of Energy on arrangements for the Effective Management of Critical Contingencies*, page 1. <https://www.gasindustry.co.nz/our-work/work-programmes/critical-contingency-management/background/recommendation-to-the-minister-of-energy-on-arrangements-for-the-effective-management-of-critical-contingencies/>

*time for an orderly shutdown of a plant to prevent or mitigate major plant or environmental damage.*

Gas Industry Co has been very clear in the past that gas consumers must make their own contingency plans, as security of supply can never be guaranteed. In a situation where circumstances allow, a designation may allow essential and critical care consumers not to be curtailed or allow critical processing consumers more time to shut down. But the designation is not a guarantee, and the CCM Regulations are very clear on this point. Regulation 46L specifically requires potential designation holders to certify that they understand that they may be required to stop using gas despite holding a designation.

Part 2 of the SoP similarly uses the term “security of supply” in a way that is different from the regulatory purpose: For example, on page 76:

*There is an open question arising from this proposed amendment concerning the appropriate balance between incremental **security of supply** risks and transmission costs....*

*We consider that this change needs to be carefully considered to find a balance between a level of **security of supply** with the additional costs of serving consumer demand.*

*Therefore, Gas Industry Co is of the opinion that there is a case for putting a process in place to ensure that there is a balance between investment costs and **security of supply** risk with costs to consumers and whether consumers have adequate means for providing a view on this balance.*

Firstgas has been very open with stakeholders that we believe that the proposed changes to Schedule 1 will enable the transmission system to be run in a way that is more resilient and entails less risk of a critical contingency occurring. While we are open to engagement on transmission system operation, these conversations fall outside the ambit of the CCM Regulations. The intent of the CCM Regulations does not include constraining or dictating how the transmission system is operated.

Firstgas submits that it is the regulatory purpose alone—managing critical gas outages and other contingencies while maintaining pressure in the distribution networks—against which potential amendments to the CCM Regulations are required to be assessed.

### **Overview of transmission system operations**

We begin our more detailed comments with an overview of how the transmission system operates and the mechanisms available for managing pressure on the system.

Gas flows throughout the transmission system due to pressure differences: gas flows from regions of high pressure to regions of lower pressure. At gas receipt points, gas producers’ outlet pressure must be a higher pressure than the pipeline receiving the gas so that gas flows into the system. Due to pressure drops across the transmission system, compressors located at various points throughout the transmission system increase pressure again to ensure that the gas reaches the farthest delivery points and pressure above the critical contingency thresholds is maintained. Once the gas reaches a delivery point, a specialised piece of equipment called a regulator reduces the pressure for supply to a downstream distribution system or direct connect customer.

The figure below illustrates the changes in transmission pressure from gas receipt to delivery.

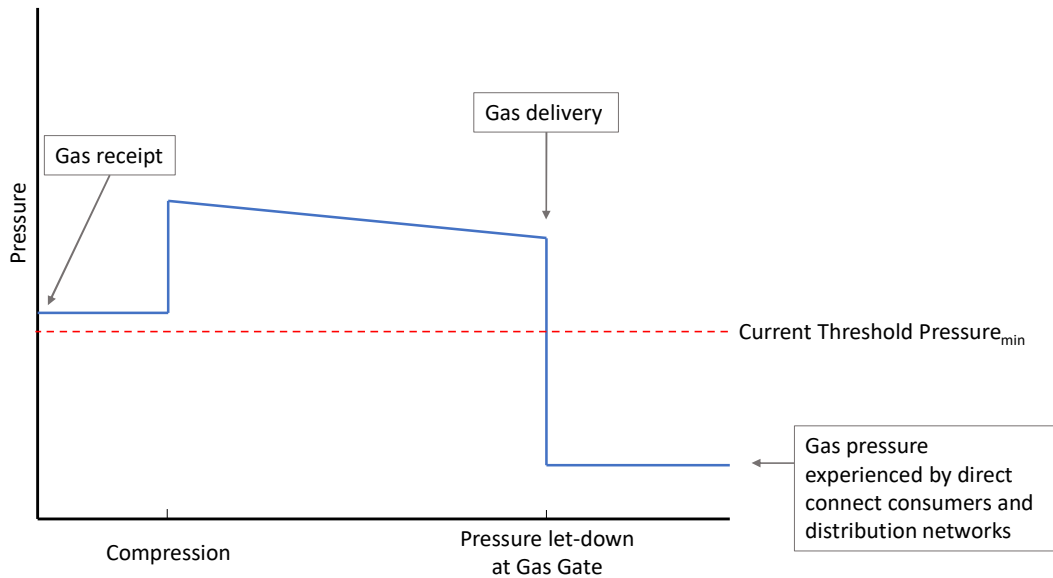


Figure 1: Illustrative gas pressure from receipt to delivery

The pressure in the southern part of the Maui pipeline is generally between 42 and 48 bar gauge (**bar g**), as provided in the Maui Pipeline Operating Code. The Frankley Road line is operated at a similar pressure. The Mokau compressor station, located north of Pairoa, acts to lower the pressure in the southern part of the Maui pipeline essentially by “pulling” gas from the southern section and “pushing” it north. The Mokau compressor compresses the gas travelling north to about 50-60 bar g.

Compressors at Rotowaro, Pokuru, Kaitoke, Kapuni, and Kawerau (or a subset of these compressors) compress the gas to pressures that range from about 60 bar g to 80 bar g. Setting the discharge pressures (known as **set points**) for the compressors is the main way that Firstgas can control gas flows and pressures across the transmission system. Set points are generally determined by the contingency threshold at the farthest delivery point from the compressor, because the pressure of the gas in the pipeline falls the farther it travels from the compressor in the pipeline. For example, the set point of the Pokuru compressor is determined by the threshold at the Tauranga delivery point, as this is where the critical contingency threshold would be breached first if the set point at Pokuru were lowered.

Once the gas enters a delivery point, it passes through a pressure regulator, which lowers the pressure for delivery to gas consumers and works to maintain this pressure, even if transmission pressures fluctuate. Gas regulators come in a wide range of sizes, and the pressure regulation equipment at any particular delivery point depends on the characteristics of the downstream load and upstream transmission pressures.<sup>6</sup>

There are two key parameters of a pressure regulator, the inlet pressure on the transmission side and the outlet pressure on the distribution or direct consumer side. Regulators are designed to operate within a certain inlet pressure range, and if inlet pressures fall below this range, the regulator will “fail” – that is, gas will no longer flow through it in required volumes. There is a wide range of minimum inlet pressures across the transmission delivery points: from 2.5 bar g to 65.0 bar g. The distribution of minimum inlet pressures is shown in the chart below:

<sup>6</sup> In practice, delivery points contain two regulator sets, the primary or “duty” regulator and the standby regulator. The minimum inlet pressure of the standby regulator is set below that of the duty regulator, so that it can take over in the case that the duty regulator fails. The data in this section are for the duty regulators.

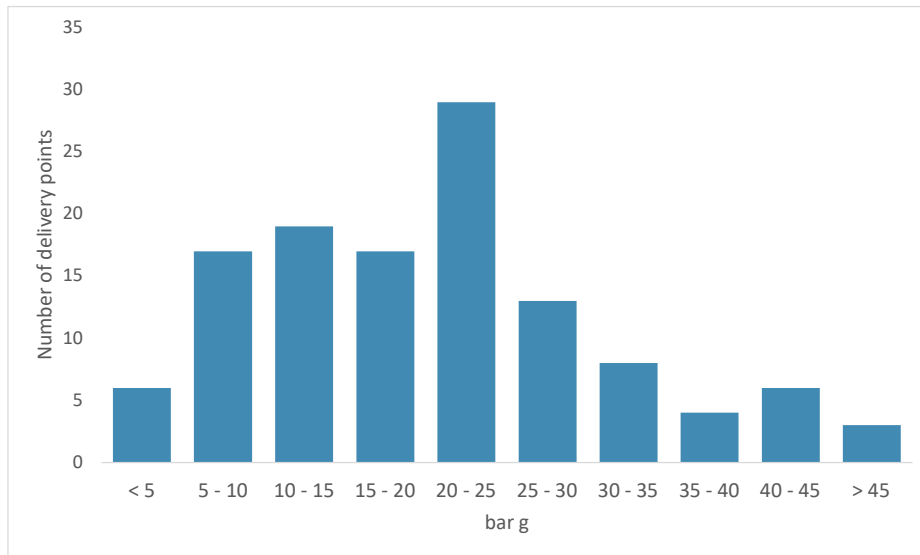


Figure 2: Delivery points by regulator minimum inlet pressure

While there is a lot of discussion about linepack in the SoP, it is important to distinguish between total linepack—that is, all of the gas in a pipeline—and useable linepack, which is the gas represented by the difference between normal operating pressure and minimum regulator inlet pressure. We will return to this point later in the submission.

**SoP Part 2: Changes to Schedule 1**

Firstgas strongly supports the proposed changes to Schedule 1. We consider that the changes will provide clear benefits to gas consumers, the wider industry, the environment, and New Zealand.

***Preventing unnecessary critical contingency declarations and curtailment***

Under the CCM Regulations, the critical contingency operator (**CCO**) must make a determination that there is a critical contingency if a breach occurs of a critical contingency threshold or considers that a breach is unavoidable (r 48). The CCO is then empowered to issue curtailment instructions under regulation 50. Termination of a critical contingency happens when the transmission system is capable of supplying the reasonably expected gas consumption after the event (r 60)—in other words, when pressures have been restored to above critical contingency thresholds.

The definition of the critical contingency thresholds is key. There are two components to the critical contingency thresholds: minimum operating pressure ( $P_{min}$ ) and time to  $P_{min}$ . How should these components be chosen?

**Minimum operating pressure ( $P_{min}$ )**

Figure 2 shows that over 70% of transmission delivery points have a regulator minimum inlet pressure of less than 25 bar g. That is, they will fail at pressures lower than 25 bar g. In contrast, the CCM Regulations specify critical contingency threshold pressures of at least 27.5 bar g.<sup>7</sup> The difference between the regulator failure pressure and the critical contingency threshold pressure provides a margin of safety, but it also represents an opportunity cost. Critical contingency thresholds that are too high could result in critical contingency declarations and consumer curtailment occurring earlier than required or even unnecessarily.

<sup>7</sup> For all delivery points with the exception of Whangārei, which has a minimum threshold pressure of 22.5 bar g.

An example is the Waitangirua delivery point, which serves Wellington consumers. The current critical contingency threshold at Waitangirua is 10 hours to 37 bar g. Figure 3 shows the results of modelling what would happen in the case of a failure at the Kaitoke Compressor Station:

- compressor failure is at time 0;
- the blue line depicts the critical contingency pressure threshold of 37 bar g;
- the green line shows the modelled pressure at Waitangirua using peak week flows; and
- the red vertical line shows that a critical contingency would be declared at about hour 6 based upon the pressure trajectory of the dotted black line.

Under regulation 48, the CCO must assume that any pressure reduction will continue at a constant rate, and at hour 6, the slope of the curve indicates a breach of the pressure threshold will occur in 10 hours or less. This is the point where the CCO should begin to direct demand curtailment.

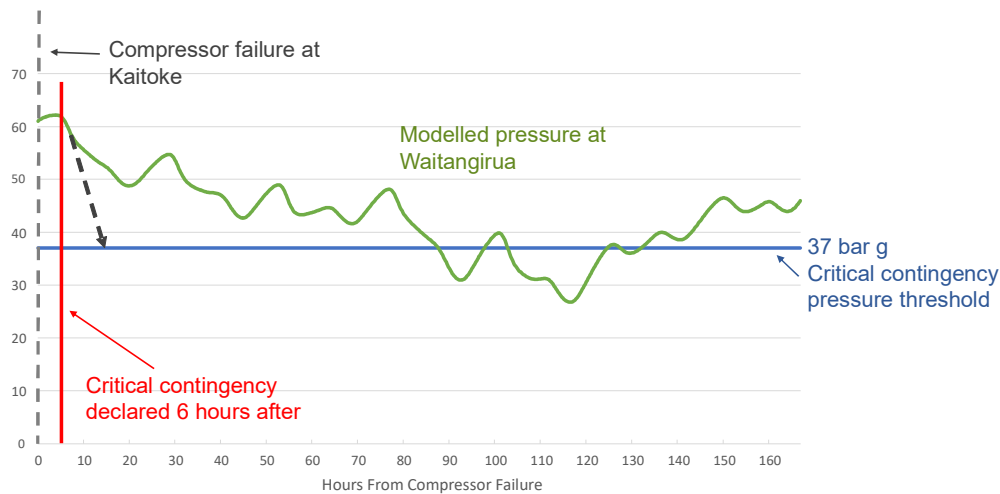


Figure 3: Waitangirua threshold modelling

However, the regulator failure point at Waitangirua is around 21 bar g—a very wide margin away from the existing 37 bar g threshold. Another way of looking at this is that there is potentially useable linepack below 37 bar g, but the existing critical contingency threshold will require curtailment of load rather than the use of this linepack in a pipeline event.

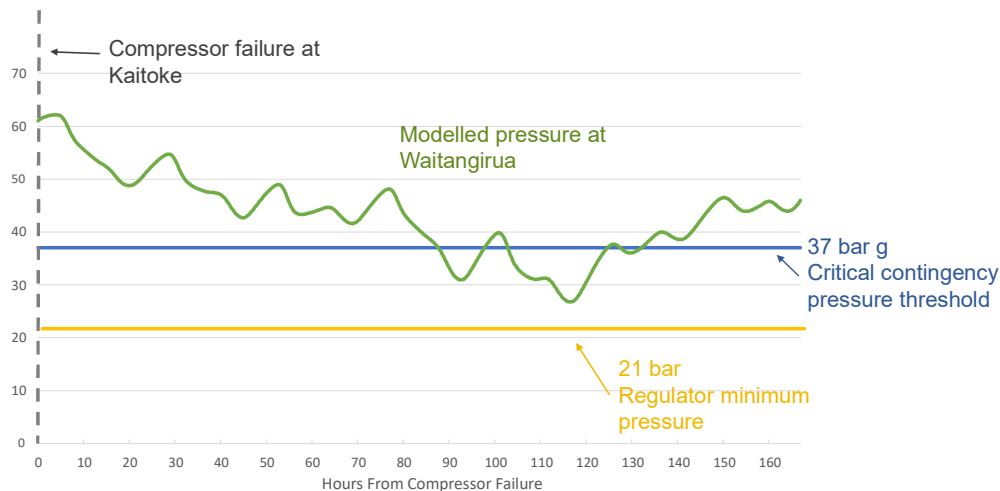


Figure 4 Waitangirua minimum regulator pressure



This situation highlights the opportunity to revise the critical contingency pressure threshold downward. In the case of Waitangirua, a critical contingency pressure threshold of 27 bar g represents a better balance between conservatively safeguarding downstream distribution networks and avoiding unnecessary and costly critical contingency events and demand curtailments. Figure 5 shows the difference a lower pressure threshold can make.

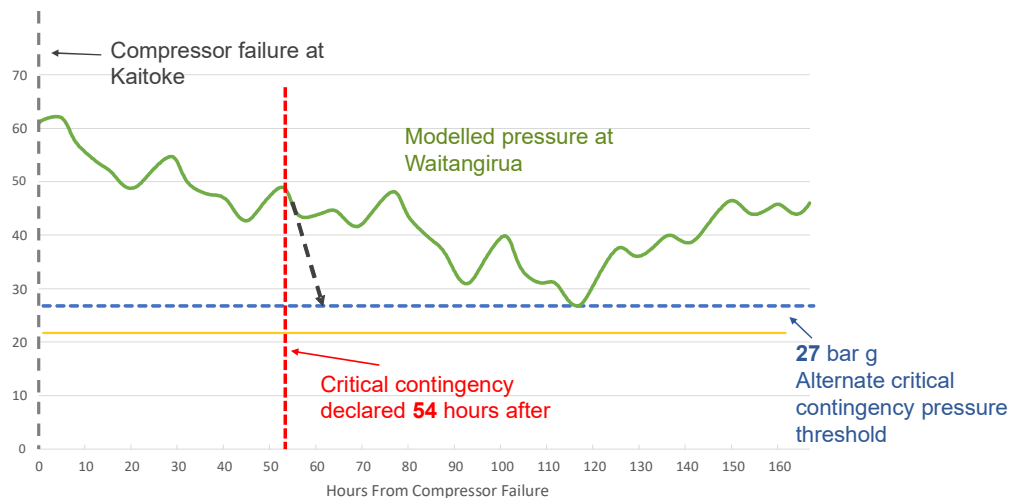


Figure 5 Waitangirua modelling with alternate pressure threshold

With a critical contingency threshold of 10 hours to 27 bar g, a critical contingency would be declared 54 hours after compressor failure at Kaitoke. Note also that 10 hours to 27 bar g is an appropriately conservative threshold: it provides ample time for load curtailment and it is triggered well in advance of the regulator failure pressure. In other words, with the lower pressure threshold, there is more time to diagnose and repair the problem. What it also provides is additional time for the event that triggered the critical contingency to be resolved. With a threshold at 37 bar g, demand curtailment happens quickly, but with a threshold of 27 bar g, demand curtailment is delayed or perhaps not necessary at all. The difference can translate to real cost savings for gas consumers and stakeholders.

Similar examples exist throughout the transmission system. With the current critical contingency pressure ranges, there is a risk of unnecessary or premature curtailment.

Firstgas' proposals represent moderate, assessment-based critical contingency pressure ranges that are more closely aligned to actual inlet pressure failure points for gas gate equipment. They are still conservative, providing a margin of safety above the regulator failure pressure. They appropriately balance the risk of unnecessary declarations and curtailments with the critical need to protect system security.

In terms of the changes we are seeking in Schedule 1, we have proposed wider pressure ranges that encompass the status quo and the assessment-based pressures described above. This was a deliberate choice: it means that current threshold values will still be valid under the amended CCM Regulations. This in turn means that changes to transmission system operation can be done gradually, as the need arises, and in concert with threshold changes in the CCMP.

#### Time to $P_{min}$

The second component of critical contingency thresholds is the time to minimum pressure. The time to  $P_{min}$  represents the amount of time that the CCO has to direct demand curtailment and for curtailed customers to implement those directions. It is different for different locations, as the profile of downstream consumers is different. Generally speaking, load curtailment is faster where there are

customers in band 3 and above, as they represent significant load and can be contacted relatively quickly.

Firstgas has not proposed changing the time to  $P_{min}$  for any of the thresholds, as we believe the existing times are appropriate based on our review of the number of downstream installation control points (ICPs) in each curtailment band at each location in Schedule 1.

**Enhancing system optimisation and reliability**

Simply put, operating the transmission system at higher pressures than necessary results in higher than necessary fuel gas use. This means higher operating costs for the transmission system, costs that our transmission customers ultimately bear.<sup>8</sup> From an environmental viewpoint, the higher fuel gas usage leads to higher—and preventable—carbon emissions, for every unit of gas delivered.

In Figure 1 above, we showed how gas is compressed in the transmission system to a relatively high pressure, only for the pressure to be let down again at the delivery point. Figure 6 below presents a rational alternative. In Figure 6, compression is still used to ensure that pressures remain at a margin of safety above the contingency threshold; and there is still a large pressure drop at the delivery point. However, the savings in not using unnecessary fuel gas and the resulting emissions reduction, shown as the cross-hatched section, are significant.

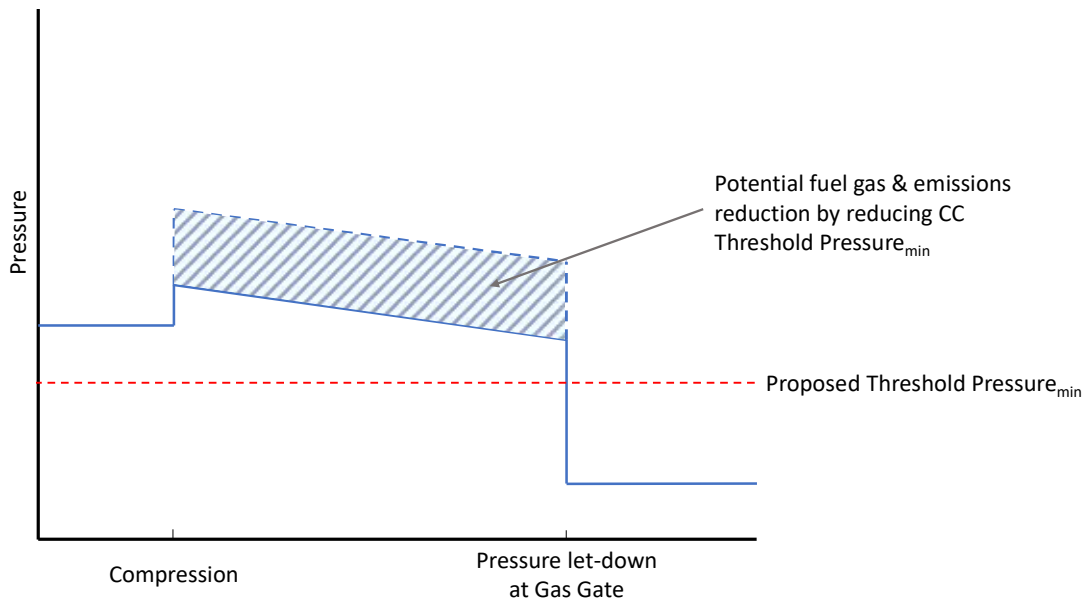


Figure 6: Potential fuel gas and emissions reduction

A real-world example of the inefficiency resulting from the existing approach is the current threshold at Cambridge Delivery Point, shown in the map below. The critical contingency threshold at Cambridge Delivery Point has a pressure threshold of 30 bar g, and the delivery pressure to the Cambridge distribution network (that is, on the outlet side of the regulator) is less than 20 bar g. To ensure that gas pressures remain higher than the Cambridge threshold, Firstgas compresses the gas at Rotowaro Compressor Station, so gas bound for Cambridge must first travel north to Rotowaro and then back south for a round trip of 45km. The compressor outlet pressure at Rotowaro is sometimes set solely to meet this threshold at Cambridge.

<sup>8</sup> At the moment, fuel gas consumed on the non-Maui system is considered an operational expense. From 1 October 2026, all gas used in compression will be a pass-through cost and borne directly by consumers.

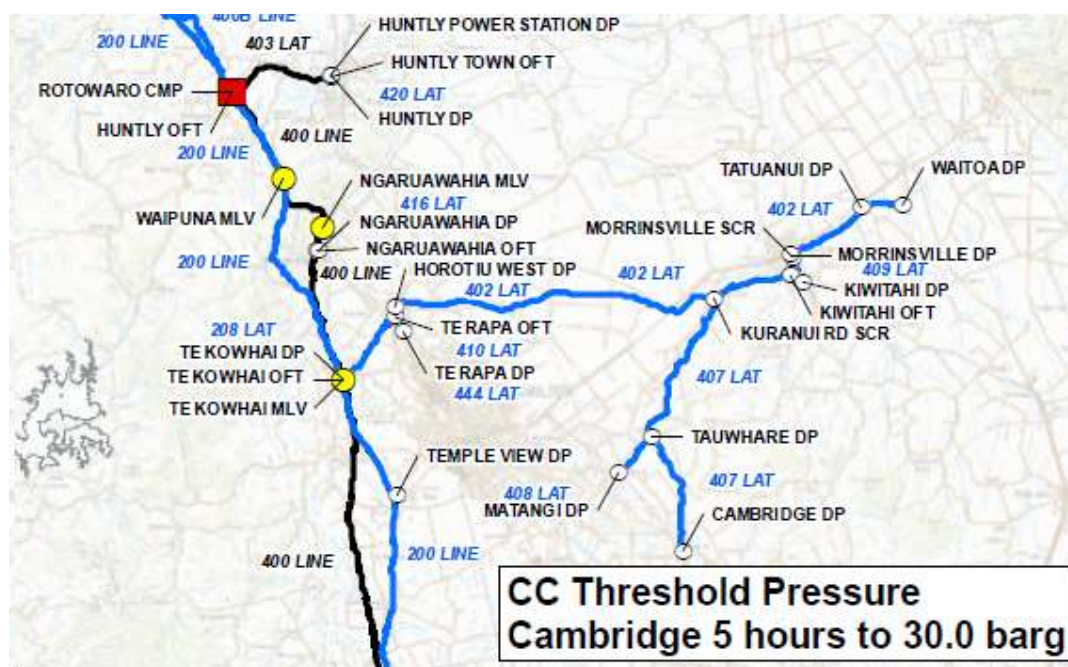


Figure 7 Map showing Cambridge DP and Rotowaro

Operationally, however, there is no strict need for gas to flow on such a circuitous route. There is sufficient pressure in normal operation of the system for Cambridge to be supplied without travelling through the Rotowaro Compressor Station. In fact, the trip to Rotowaro in some ways makes gas supply to Cambridge less secure, as a failure of the Rotowaro compressors would mean a lower delivery pressure to Cambridge than the delivery pressure from the more direct route.

This is an example of the type of inefficiency that Firstgas would like to address. Gas is compressed above the level that it needs for prudent operation of the system, without benefit to gas consumers. The outcome is simply increased expense to consumers and significant carbon emissions. Firstgas has estimated that 5,000 tCO<sub>2</sub> per year could be saved by operating compressors more efficiently.

The Cambridge example is particularly relevant, as it is close to the Te Rapa delivery point. Until last year, Te Rapa was the site of a co-generation facility. Now it is used solely by Fonterra as a processing plant. The change has entailed a significant change in gas demand, and with it, an opportunity to review transmission operations to ensure efficiency and reliability across the system. Recently, Fonterra has announced further changes to milk processing at Te Rapa.<sup>9</sup> Although the implications for gas demand are not yet clear, this example again underscores the need for flexibility to respond to changing patterns of gas supply and demand.

**Facilitating efficient capital and operational investment decisions**

Gas pipeline networks currently face clear risks of asset stranding as the energy system transitions to meet New Zealand’s legislative target of net zero emissions by 2050. The risk of shortened asset lives can create future price escalation risks for consumers as fixed capital is recovered from lower levels of demand. This risk has been recognised by the Commerce Commission through the provision of accelerated depreciation in its default price-quality path decision in 2022. In this context, Firstgas

<sup>9</sup> Zollickhofer, Danielle, New Zealand Herald, 15 April 2023, *Fonterra to close plants in Te Rapa and Waitoa to focus on 'high-value products.'* <https://www.nzherald.co.nz/waikato-news/news/fonterra-to-close-plants-in-te-rapa-and-waitoa-to-focus-on-high-value-products/EAVANFWWVOVFBTPZYJWRSHPE24/>

believes that it is important to ensure that future capital expenditure is carefully managed and does not exacerbate stranding and price escalation risks.

Firstgas' transmission compression fleet has a high average unit age with several machines close to replacement. The configuration of the system was designed based on historical demands and expectations for future growth. In turn, the critical contingency thresholds were designed to maintain and support that compressor configuration. To optimise the capital expenditure of the compression replacement decisions, Firstgas needs the flexibility to change how the system is operated to meet present and evolving needs and the ability to invest based on future scenarios.

As we previously outlined in our Cost Benefit Analysis, we estimate that optimising the transmission compressors will save over \$9 million of capital expenditure and reduce operating expenses by over \$1 million per year.

### **Enabling future energy initiatives**

Firstgas' transmission and distribution networks cover much of the North Island and are ideally placed to support the development, transfer, and use of low or zero carbon gases such as hydrogen and biomethane. The 2021 Hydrogen Feasibility Study<sup>10</sup> showed that it could be technically feasible to introduce hydrogen into the Firstgas pipeline network from 2030 and convert to 100% hydrogen by 2050. The joint biogas study with Beca, Fonterra and EECA<sup>11</sup> concluded that, by 2050, anaerobic digestion could produce enough biomethane to supply all residential users and three quarters of commercial natural gas users in New Zealand.

As Gas Industry Co is aware, Ecogas' Organics Processing Facility near Reporoa is the first large-scale renewable gas to pipeline project in New Zealand, and other renewable gas projects are in development. Powerco recently announced its involvement in two biogas projects.<sup>12</sup>

Firstgas is keen to promote the development of multiple renewable gas to pipeline facilities. As a member of the Climate Leaders Coalition, Firstgas is committed to leading the decarbonisation of New Zealand's gas networks with low emissions technology and to provide our customers with zero carbon gas. Increasing the use of biomethane in our pipelines may also address to some degree the stranding and price escalation risks mentioned above – increasing energy options for consumers while maintaining affordability.

To enable the introduction of low emission gases such as hydrogen blends or biomethane into the transmission system, a reduction in operating pressures below current threshold limits may be necessary. Lower operating pressures can facilitate cost effective connections to facilities that produce gas at lower pressures. One step to achieving this will be ensuring the existing critical contingency pressure threshold ranges don't become an artificial barrier to parties progressing these important future fuels initiatives. In the Reporoa context, an urgent recommendation to amend the CCM Regulations was required. It would seem inefficient and flawed to continue to use this urgent amendment mechanism for future opportunities which are already on the horizon.

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<sup>10</sup> Firstgas Group, 2021, *Bringing Zero Carbon Gas to Aotearoa: Hydrogen Feasibility Study – Summary Report*. <https://firstgas.co.nz/content-hub/tackling-industrial-emissions-with-hydrogen>

<sup>11</sup> EECA, Beca, Fonterra, and Firstgas Group, 2021, *Biogas and Biomethane in New Zealand*. <https://www.becca.com/ignite-your-thinking/ignite-your-thinking/year-2021/biogas-and-biomethane-in-nz-report>

<sup>12</sup> Powerco, 20 March 2024, *Powerco announces renewable natural gas development initiatives*. <https://www.powerco.co.nz/news/media/powerco-announces-renewable-natural-gas-development-initiatives>

## Response to issues raised in SoP

### **Do consumers face greater risk if Firstgas lowers critical contingency thresholds and operating pressures on some sections of the transmission system?**

The short answer is “No”. Several of the sections above refer to the possibility of lowering the  $P_{min}$  component of some critical contingency thresholds. A new lower threshold range could allow a lowering of pipeline operating pressure for the reasons and associated benefits discussed in this submission.

As outlined above, the  $P_{min}$  portion of a critical contingency threshold will always be a margin of safety above the regulator failure pressure. In addition, Firstgas operates the transmission system at a margin above the critical contingency thresholds. Effectively, this means that there are two safety margins above the regulator failure point: one from the threshold pressure and the other from the operation of the pipeline.

The figure below illustrates how the margin of safety in operating pressure above the critical contingency threshold would remain the same. Note that these margins are additional to the margin above the regulator fail point.

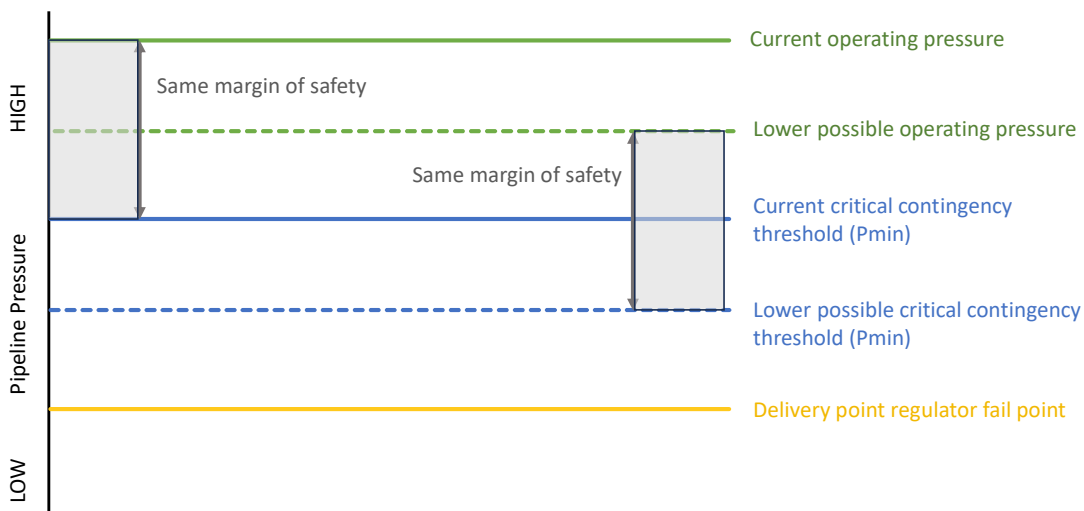


Figure 8 Margin of safety remains the same

### **Proposal to exclude gas gates supplied by pipelines operating at less than 20 bar g from Schedule 1**

A large section of Part 2 of the SoP is focused on Firstgas’ proposal to exclude gas gates supplied by a pipeline operating at less than 20 bar g from Schedule 1 of CCM Regulations.

In several places the SoP incorrectly states that:

*Firstgas potentially operating other gas gates <20 bar g would remove these parts of the transmission system from the Regulations.*

Firstgas operating transmission pipelines at a pressure less than 20 bar g does **not** remove these parts of the transmission system from the CCM Regulations. Rather, it only removes those locations from potentially triggering a critical contingency event. As we have outlined previously (particularly in the February 2024 webinar), Taupō and Broadlands Delivery Points can still be curtailed under a critical contingency event that occurs upstream of the Reporoa Delivery Point or indeed anywhere else on the transmission system. It is unfortunate that this statement in the SoP is incorrect and consequently may be misleading to customers and stakeholders.

The SoP states:

*Gas Industry Co is of the opinion that there is a case for putting a process in place to ensure that there is a balance between investment costs and security of supply risk with costs to consumers and whether consumers have adequate means for providing a view on this balance. Our analysis showed that a specific risk assessment for each gas gate is necessary to maintain an acceptable level of security of supply before lowering the operational pressure to an <20 bar g.*

We are keen to understand the process Gas Industry Co is proposing. There is insufficient detail to enable Firstgas to determine where such a process would sit, its scope, cost and the extent to which it may impact on Firstgas' contractual rights and responsibilities as owner and operator of the transmission system. We are also not sure exactly what analysis informed the proposed requirement for a "specific risk assessment for each gas gate" if the pressure was <20 bar g.

Our sense is that Gas Industry Co is concerned that the proposed blanket exception of all gas gates supplied by a pipeline operating at less than 20 bar g from Schedule 1 does not have the same checks and balances and opportunity for customer consultation provided by the CCMP amendment process.

Future-proofing Schedule 1 of the CCM Regulations is a key theme of this submission. While we do not currently anticipate lowering the operating pressure of any other transmission pipelines below 20 bar g, we cannot discount the possibility of another opportunity arising in the future where such a step is the most appropriate course of action in the circumstances. As noted above, it would seem inefficient to continue to use the "urgent amendment" mechanism for such future opportunities.

Perhaps there is a solution that would help to allay Gas Industry Co's concerns around the proposed exception of pipelines operating at less than 20 bar g. Firstgas is willing to explore the possibility of including such pipelines within the scope of the CCMP review and approval process. This could be achieved through amending section 25(1) of the CCM Regulations, which sets out the required content of a CCMP. A sub-section could be introduced into section 25(1) that requires any gas gates supplied by pipelines operating at less than 20 bar g to be listed in the Firstgas CCMP. This would mean that any changes to this list would be subject to the same robust independent review and approval process as when Firstgas sets a minimum pressure threshold within the prescribed Schedule 1 ranges. The process to amend the CCMP requires affected party consultation and allows CCO input if they consider it necessary.

### **Section 5ZN of the Climate Change Response Act 2002**

Firstgas submits that climate change legislation is a relevant consideration in amending Schedule 1 of the CCM Regulations. Section 5ZN of the Climate Change Response Act 2002 (**CCRA**) is an enabling provision that empowers any body exercising public functions and powers to make decisions that are consistent with, or contribute to the achievement of, the 2050 target, emissions budgets or emissions reduction plans.

We have illustrated the challenges and opportunities Firstgas faces in responding to dynamic market and policy conditions, and how the current critical contingency thresholds can be a roadblock to progressing efficient solutions and potential opportunities. Firstgas initiatives such as reducing fuel gas use (and consequently emissions) through transmission system optimisation and the injection of biomethane are directly aligned with the Climate Change Commission's recommendations. It would also be an unfortunate outcome if Schedule 1 was a barrier to entry for potential lower carbon new production.

We therefore ask that Gas Industry Co relies on the empowering nature of section 5ZN of the CCRA to seek changes to the pressure threshold framework in the CCM Regulations that are consistent with, or contribute to the achievement of, the 2050 target, emissions budgets or emissions reduction plans.



### **SoP Part 3: Urgent Amendment to Schedule 1 of the CCM Regulations to exclude Taupō and Broadlands**

Firstgas strongly supports the recommended changes to Schedule 1 of the CCM Regulations to remove the Broadlands and Taupō gas gates.

As noted in the SoP, the urgent change to Schedule 1 of the CCM Regulations was required to avoid the anomalous and unnecessary outcome of a critical contingency needing to be continually declared on the Reporoa-Taupō pipeline when that pipeline is simply (and safely) being operated at a reduced pressure.

As a result of the urgent amendment being approved by the Minister of Energy, Firstgas initiated the process to amend its CCMP to reflect the removal of both the Taupō and Broadlands gas gates from Schedule 1. This process involved consultation with customers and stakeholders, review by the Expert Advisor appointed by Gas Industry Co and an opportunity for the CCO to provide input. Firstgas sought submissions from all stakeholders and provided detailed responses where questions or concerns were raised.<sup>13</sup> The vast majority of submissions received supported the proposed changes to the Firstgas CCMP.

The revised CCMP was approved by the independent Expert Advisor and endorsed by Gas Industry Co, and it has since come into force.

#### **What are the alternatives if the changes to Schedule 1 are not progressed?**

As we have outlined above, the thresholds in Schedule 1 are outdated and in certain instances no longer fit for purpose. They are based on out-of-date assumptions about pipeline operations and reflect a historical supply and demand dynamic that has long since changed and will continue to evolve. They are also a roadblock to enabling future energy possibilities, optimising the operation of the transmission system and other positive initiatives that have the potential to benefit both the gas industry and New Zealand. The past two years have shown how quickly policy and market forces can have an effect on the gas industry; in contrast to the necessarily slow and deliberative process of amending regulations. The risk is that Schedule 1 is always lagging behind, impeding rather than enabling efficient operation of the transmission system and the introduction of opportunities that will help ensure the longevity and relevance of the gas industry.

Opportunities to change the CCM Regulations are rare, and the limitations of the current pressure threshold framework are already starting to affect Firstgas' decision-making. In some cases, they are also acting as a barrier to renewable gas projects. The changes we are seeking to Schedule 1 will enable Firstgas to respond to dynamic market conditions and progress opportunities that benefit gas consumers, the wider industry, the environment, and New Zealand.

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<sup>13</sup> <https://www.gasindustry.co.nz/our-work/work-programmes/critical-contingency-management/#proposed-amendments>



Submission prepared by: Firstgas Limited

Question	Comment
<p>1. <b>Part 1:</b> Do you have any additional/further comments relating to Part 1 (Minor changes and intended recommendations to the Minister)? Please provide comments and feedback, including whether there are additional changes that Gas Industry Co should consider</p>	<p>Setting a critical contingency price</p> <ul style="list-style-type: none"> <li>We support the proposed changes to regulation 71. We consider the changes simplify and clarify the pricing parameters available to the industry expert in setting the critical contingency price, while importantly providing a degree of flexibility to address the unique circumstances associated with each critical contingency event.</li> </ul> <p>Curtailement band definitions</p> <ul style="list-style-type: none"> <li>A number of the proposed amendments in this area refer to the goals of “<i>providing greater curtailment flexibility for the CCO</i>” and looking to ensure “<i>efficient curtailment</i>” or “<i>efficient management of a critical contingency</i>”. Firstgas support these goals and any changes that will make it easier for the CCO to give effect to the optimum level of curtailment needed during a critical contingency event.</li> <li>To remove ambiguity of how annual consumer consumption is measured in the curtailment band definitions, Gas Industry Co proposes to use the average of a consumer’s consumption for the three years immediately preceding the current one to determine the consumer’s curtailment band. This approach is reasonable, but it assumes that the customer’s consumption is relatively steady. The three-year approach will not work well for customers who have growing or declining usage. In this light, basing curtailment band on the most recent one or two years may be better.</li> <li>Page 30 – Section 2.2.7 – Gas Industry Co proposes that “daily” means a customer who over the last three years has met the daily usage threshold “<i>from time to time, or in the case of new customers, is</i></li> </ul>





Question	Comment
	<p><i>expected to meet the daily usage threshold from time to time</i>". There are a number of parties who may need to determine what constitutes <i>"from time to time"</i>. For example:</p> <ul style="list-style-type: none"><li>○ Gas retailers are required to categorise their consumers into curtailment bands and to inform the CCO of the band, demand size and location.</li><li>○ The "load-shedding" field for each Installation Control Point (ICP) in the gas registry (equivalent to curtailment band) is maintained by the relevant distributor. This is usually on advice from the relevant retailer or Gas Industry Co in the case of ICPs with a "designation".</li><li>○ Under regulation 44(3)(a) Firstgas is required to <i>"provide the [Gas Industry Co] with an up-to-date list of large consumers"</i>. Accordingly, it is up to Firstgas to determine what gas consumers should be categorised as large consumers under the CCM Regulations and more specifically what curtailment band those large consumers should be assigned.</li></ul> <ul style="list-style-type: none"><li>● As there are several parties who will be considering "daily usage thresholds" and consequently applicable curtailment bands, we request that Gas Industry Co provide more guidance on what may constitute <i>"from time to time"</i>. There is a risk that one curtailment band assigning party's interpretation of this phrase may differ to the next, which could lead to inconsistencies.</li><li>● Page 27 – Chart 1 and footnote 9 – footnote 9 references some large consumers who are no longer operating or are scheduled to stop taking gas soon. We note that the Te Rapa Cogeneration Plant also closed in June 2023 and are not sure whether this has been considered in the relevant analysis of bands 1 and 2 in chart 1.</li><li>● We encourage Gas Industry Co to review the definition of "Large Consumer" in the CCM Regulations to ensure that it remains accurate and appropriate in its scope. For example, is it actually possible to determine which parties who are directly connected to the transmission</li></ul>



Question	Comment
	<p>system (but use less than 15 TJ/Day) “purchase gas directly from a gas producer or gas wholesaler or on any wholesale gas market” as is covered by the definition of Large Consumer?</p> <p>Curtailement Instructions:</p> <ul style="list-style-type: none"><li>• Pages 38 – 40 – section 3.2.5 – the SoP states, “To retain a balance between the value of critical processing designations and inefficient curtailement all critical processing designations will be required to curtail fully before band 4 is curtailed”.</li><li>• Shutdown profiles for critical processing designation holders can be up to 18-hours in duration. Presumably the nature and number of applicable shutdown profiles in the affected area of the transmission system, and when those profiles start and finish, will have a bearing on the CCO’s curtailement decision-making. We would want to avoid the situation where that CCO decision-making ends-up somehow being bound to the ‘lowest or slowest shutdown profile denominator’.</li><li>• Like all stakeholders, Firstgas wants to ensure that curtailement occurs in a predictable, sensible and logical order. We also acknowledge the value of and need for critical processing designations. However, the overriding consideration must be that the CCO can curtail in the most efficient and effective way it requires in any critical contingency circumstance. This may include the situation where urgent curtailement deep into the higher curtailement bands is warranted and shutdown profiles cannot be accommodated.</li><li>• We trust that the proposed requirement for <b>all</b> critical processing designations to curtail fully before band 4 is curtailed will not impinge on the goal of “greater curtailement flexibility for the CCO” frequently cited in the SoP or lead to anomalous outcomes for stakeholders.</li></ul> <p>Information provided to CCO:</p> <ul style="list-style-type: none"><li>• Page 41 –section 4.1 – we continue to disagree with the Gas Industry Co’s statement that “there have been instances where the CCO has</li></ul>



Question	Comment
	<p><i>been frustrated in its requests for system information”</i> because we do not consider that it accurately represents the interactions that Firstgas has had with the CCO and risks being taken out of context. Firstgas is committed to working constructively with the CCO, and we have worked diligently to ensure that the CCO has access to the extensive amount of information required to be made available pursuant to the CCM Regulations.</p> <ul style="list-style-type: none"><li>• Page 42 – section 4.2.3 – In terms of the transmission system information itself, the changes to Schedule 4 do widen the scope of the information that needs to be made available to the CCO. However, Firstgas has already progressively made this information available to the CCO since the CCM Regulations were last revisited. In general, we support the proposed changes to Schedule 4 as they largely reflect the current circumstances.</li><li>• Of course, there is a degree of interpretation with any regulatory requirement. It is possible that the proposed amendments to Schedule 4 could give rise to future requests for information that is not readily available or that requires a high degree of “customisation” or expense to produce. If this were to happen, Firstgas would look to rely on the protections afforded by regulation 38(2)(a).</li><li>• Regarding the change proposed to sub-paragraph (a) of Schedule 4, we request that any “high-level map” only require critical contingency pressure thresholds be shown for named locations in Schedule 1 of the CCM Regulations, as opposed to “every other gas gate”.</li><li>• Firstgas is in the process of undertaking a SCADA Upgrade Project that will provide the CCO with real time SCADA access, in terms of the intent of the CCM Regulations.</li><li>• Pages 43-44 – section 4.2.4 – Gas Industry Co proposes that the CCO be able to request from the industry body numbers of ICPs by curtailment band and by gas gate, as recorded in the gas registry. This information can then be used as a means of validating the data provided by retailers. Firstgas supports this proposal. However, we</li></ul>



Question	Comment
	<p>also request an amendment that expressly authorises Firstgas (as TSO) to seek and the Gas Industry Co to provide any registry related information that assists Firstgas with meeting TSO obligations under the CCM Regulations e.g. gas gate and ICP information for retailer compliance reporting. Having a means of validating information provided by retailers is equally as important for Firstgas during critical contingency circumstances.</p> <p>Critical Contingency Plans</p> <ul style="list-style-type: none"><li>• Pages 47 – section 5.2.4 – as Firstgas has noted previously, we do not consider it appropriate that the Expert Adviser is required to review and approve changes to the Firstgas CCMP that both Firstgas and the CCO agree are immaterial.</li><li>• We support a “tiered” approach to proposed amendments to the Firstgas CCMP based upon materiality of those proposed changes. Gas Industry Co’s second tier currently involves sending the proposed CCMP amendment back to the TSO when Gas Industry Co does not agree the amendments are immaterial, or where Gas Industry Co feels that industry input is warranted. In instances where the second option is followed, it is our understanding that the TSO would need to conduct the consultation and resubmission of the proposed amendment in accordance with Regulation 26 but presumably without any need to engage the expert adviser.</li><li>• If Gas Industry Co did opt to exercise its rights under the second option, we consider it would be necessary for Gas Industry Co to advise Firstgas why it does not agree that the changes are immaterial or the specific areas where Gas Industry Co feels industry input is warranted.</li><li>• The relationship between the regulatory provisions concerning amendments to the Firstgas CCMP is already relatively complex. The proposed amendments to the CCM Regulations set out in section 5.2.4 of the SoP are likely to only add to this complexity. Given the CCMP is the key document that records Firstgas’ rights, obligations, processes</li></ul>



Question	Comment
	<p>and information flows leading-up to and during a critical contingency event, we request that we are closely involved with the drafting of any new regulatory provisions pertaining to the amendment of the CCMP. As one example, we don't consider that Gas Industry Co's proposed drafting in section 5.2.6 of the SoP needs to continue to refer to a "commencement date" (as currently defined). Similarly, we do not consider that the "for avoidance of doubt" provision in the proposed drafting is necessary, because we share Gas Industry Co's view that any proposed amendment related to safety would not be considered immaterial and therefore would be required to go through the scrutiny of the standard approval process.</p> <ul style="list-style-type: none"> <li>• Page 53 – section 5.2.19 – While we believe we understand the intent of the second sentence of the first paragraph, we don't believe it makes sense.</li> </ul> <p>Other Matters</p> <ul style="list-style-type: none"> <li>• <b>Amendment to definition of Retailer</b> – sections 7.2.1 – 7.2.3 – There may be a risk that Firstgas (as TSO) could fall within the ambit of the definition of a "Retailer" possibly by virtue of carrying out unrelated obligations under transmission codes e.g. balancing gas transactions, cash-outs etc. We propose to avoid any possible confusion or anomalous outcomes by expressly excluding a Transmission Owner from the definition of Retailer as is the case for gas producers.</li> <li>• <b>Curtailed Compliance Reporting</b> – sections 7.2.12 – 7.2.14 – Firstgas supports the proposal to amend Regulations 55 and 56 to require that the compliance data forwarded to the TSO is in the form specified in the CCMP. However, the proposed drafting of regulation 55 in the SoP states "<i>in the form specified in the critical contingency management plan by the transmission system owner and the critical contingency operator</i>". We do not believe the inclusion of "and the critical contingency operator" is necessary or warranted in this section. The CCMP amendment process provides an opportunity for the CCO to</li> </ul>



Question	Comment
	<p>provide input on potential changes through a CCO-specific report that is made available to the Expert Adviser. The CCMP is a Firstgas document.</p>
<p>2. <b>Part 2:</b> Do you agree with the proposed changes to the critical contingency threshold limits detailed in Schedule 1? Why or why not?</p>	<p>Part 2 – General Comments</p> <p>Firstgas supports the proposed amendments to the critical contingency threshold limits in Schedule 1 of the CCM Regulations as set out above and in the covering letter of this submission.</p> <p>Opportunities to amend the CCM Regulations are rare. The last time the CCM Regulations were amended was more than 10-years ago, and the current amendment process has been in development for approximately 5-years. We believe that greater flexibility needs to be introduced now to ensure that important industry opportunities (both known and unknown) can proceed without undue delay when they need to. The proposed changes to Schedule 1 will enable Firstgas and the gas industry to respond more efficiently and effectively to the rapidly evolving energy environment.</p> <p>We have held three online webinars for stakeholders that explored the various reasons why Firstgas considered changes to the pressure threshold ranges in Schedule 1 of the CCM Regulations were necessary.<sup>14</sup> Gas Industry Co also requested that Firstgas compile an assessment of costs and benefits associated with the proposed changes to Schedule 1 of the CCM Regulations, which was circulated to customers and stakeholders in 2023. Gas Industry Co has made most of these resources available again as appendices to the current SoP work-stream. While we don't intend to reproduce that material in full now, it remains important reference material that Firstgas requests Gas Industry Co consider in conjunction with our submission.</p>

<sup>14</sup> All available on the Firstgas website at: <https://firstgas.co.nz/about-us/regulatory-information/transmission>



Question	Comment
	<p>We have previously identified and shared some of the modifications to current Firstgas operating practices or potential industry opportunities that could be enabled by the proposed changes to Schedule 1 with no impact to the objective of the CCM Regulations. We have again provided an overview of these opportunities earlier in our submission.</p> <p>It would be a regrettable outcome if a single regulatory pressure parameter was the obstacle to the progression of opportunities and solutions that have the potential to benefit customers, the wider industry, the environment (e.g. through lower emissions) and New Zealand.</p> <p>Specific comments not previously addressed:</p> <ul style="list-style-type: none"><li>• Page 9 – Part 2 sub-heading – Gas Industry Co states the following in relation to Firstgas’ proposed changes to Schedule 1, <i>“As this request might materially affect participants’ operation of their assets, risk management, and curtailment procedures, further amendments to the Regulations would be required.”</i> This reference in the SoP is the first time Firstgas has learnt that Gas Industry Co considers that further regulatory amendments <b>would</b> be required in response to the Schedule 1 changes Firstgas proposed. We would have expected that any changes considered necessary by Gas Industry Co would have been discussed with Firstgas and if necessary referenced more specifically in the SoP for stakeholder consultation.</li><li>• In this same section Gas Industry Co states, <i>“Gas Industry Co had asked Firstgas to liaise with affected customers to present their approach to them prior to the publication of this SOP”</i>. As Gas Industry Co noted, Firstgas provided extensive material to stakeholders about our proposed changes to Schedule 1 in the form of a cost-benefit analysis and multiple presentations. Our “approach” is to view the proposed changes to Schedule 1 as unlocking the ability for Firstgas and the industry to be more agile and responsive to the evolving energy landscape, one that looks remarkably different from when Schedule 1 came into force in 2010. However, we have deliberately asked for</li></ul>



Question	Comment
	<p>changes to Schedule 1 that would still cater for existing pressure thresholds. We do not believe that immediate wholesale reductions to the critical contingency thresholds would be prudent. Rather, the amendments to Schedule 1 will allow gradual changes as the need arises.</p> <ul style="list-style-type: none"><li>• Page 20 – section 1.2.2 – in justifying its proposal to remove the restriction to base the critical contingency price on wholesale electricity prices Gas Industry Co specifically cites the changing time and nature of the industry i.e. <i>“In a dynamic and changing market, it is important that the industry expert has sufficient flexibility when making its assessment.”</i> Firstgas is simply seeking the same level of flexibility when setting pressure thresholds under the CCM Regulations in the same <i>“dynamic and changing”</i> environment.</li><li>• Page 22 – section 1.2.4, last paragraph – in a similar vein to the point above, Gas Industry Co states, <i>“we do not consider it to be desirable to “hard wire” the price floor methodology into the Regulations. This would not provide for the regulatory discretion required to be flexible enough to adjust a floor price calculation in a dynamic and uncertain environment.”</i> Again, Firstgas is simply seeking the ability to be “flexible” and to adjust pressure thresholds in a “dynamic and uncertain environment”.</li><li>• Flexibility is also a key component in other important work-streams that are currently being progressed by gas industry regulators. For example, the Ministry of Business Innovation and Employment (<b>MBIE</b>) states in its Gas Transition Issues Paper, <i>“It is likely that the needs of fossil gas consumers, particularly the thermal electricity generators, will become increasingly variable, which will mean the gas system will need to become more flexible than it is today.”</i></li><li>• Page 76 – section 1.3.1, “General Considerations” – in this section Gas Industry Co states, <i>“The costs associated with a loss of supply to Taupō are the costs associated with recommissioning the distribution network and the costs for a consumer and the wider economy associated with an extended outage of the Taupō distribution network. The likelihood of</i></li></ul>





Question	Comment
	<p><i>this situation arising will increase as a result of First Gas's proposal to reduce the pressure on this section of the transmission system (not as a result of the removal of the Broadlands or Taupō points of measurement)."</i> As expanded upon in the following bullet points, Firstgas does not believe this statement is correct, and could mislead customers and stakeholders. Put simply, we don't believe there is a material change to the "likelihood of a loss of supply to Taupō" (including the need to recommission the distribution network).</p> <ul style="list-style-type: none"><li>• Due to the lowering of the Taupō lateral pressure down to 10 bar g from the current 60 bar g, the number of credible scenarios that might result in the line requiring curtailment are considerably reduced. Any situation where the line would require a restriction in current operation at 60 bar g, but still remain operational, are almost certain to be managed without issue with the lower system pressure i.e. an incident that compromises the line at high pressure, but the line can still contain pressure will be the same in each scenario.</li><li>• The primary credible scenario on the Taupō pipeline is an event which either ruptures the pipeline and results in a leak, or the damage is so severe that the pipeline is considered likely to leak at any moment and cannot sustain any pressure. In this event either the pipeline line pack will be lost to atmosphere in a short period of time via the leak, or the pipeline will need to be vented down to have no pressure to enable a repair to be safely enacted. In both cases the line pack contained within the line is likely to be lost quite rapidly, and the survival time will be very similar.</li><li>• Page 76 – section 1.3.1, "General Considerations" – in this section Gas Industry Co states, "<i>In the case of other proposals to reduce the operating pressure on other sections of the transmission system, the absence of benefits such as the injection of biomethane may mean that it is less clear that a change in operating pressure is appropriate or what the operating pressure will be.</i>" We are not sure what "other proposals to reduce the operating pressure on other sections of the transmission</li></ul>



Question	Comment
	<p>system” Gas Industry Co is referring to? Firstgas have discussed some other possible opportunities on the transmission system and their benefits in various forums, including reports, presentations, webinars and during meetings with both Gas Industry Co and stakeholders. Examples include:</p> <ul style="list-style-type: none"><li>○ system optimisation (and emission savings) through not operating Rotowaro Compressor Station continuously to solely maintain the current 30 bar g minimum pressure at the Cambridge Delivery Point; or</li><li>○ increased savings and efficiencies from moving compression for the Southern section of the transmission system from Kapuni to Kaitoke.</li></ul> <ul style="list-style-type: none"><li>• Both opportunities would, or could, involve a lower operating pressure in some sections of the transmission system, but would <b>not</b> lower the security of supply to consumers or impact the objective of the CCM Regulations. However, both opportunities would increase the risk of breaching the currently prescribed minimum critical contingency thresholds at several delivery points <b>without</b> the requested changes to Schedule 1 of the CCM Regulations.</li><li>• A key point from a Firstgas perspective is that there is potentially a suite of yet to be identified “proposals” or opportunities that will be beneficial to the operation of the transmission system and its customers and stakeholders. As noted above, it would be unfortunate if the existing Schedule 1 framework prevented these opportunities and instead distorted Firstgas investment decisions and gave rise to additional unnecessary capital investment and operational expense. Equally, it would be unfortunate if Schedule 1 acted as an undue barrier to renewables gas projects.</li><li>• Gas Industry Co states, “<i>While Logicamms modelling showed that lowering the thresholds for the gas gates in Schedule 1 generally do not materially change the response time for the CCO to manage critical contingency events, there is potentially less line pack available for</i></li></ul>



Question	Comment
	<p><i>downstream supply. Curtailment speed and order need to reflect the reduced line pack when changing the CCMP.</i> As outlined above in the example with Waitangirua, it is the amount of useable linepack that should be considered. Lowering the critical contingency threshold can delay critical contingency declarations, potentially providing the time needed for repairs so that a contingency is avoided altogether.</p> <ul style="list-style-type: none"><li>• Page 76 – section 1.3.1, “General Considerations” – Gas Industry Co states, <i>“Firstgas potentially operating other gas gates &lt;20 bar g would remove these parts of the transmission system from the Regulations. and decreasing available line pack to manage events. The pressure change doesn’t affect the likelihood of an event happening, but it increases the risk of a loss of supply.”</i> This paragraph in the SoP does have some formatting, sense and punctuation issues so we are not sure if those issues impact the paragraph’s intended meaning. Firstgas operating transmission pipelines at a pressure less than 20 bar g does <b>not</b> remove these parts of the transmission system from the CCM Regulations. Rather it removes some locations from potentially triggering a critical contingency event. Taupō and Broadlands Delivery Points can still be curtailed under a critical contingency event that occurs upstream of the Reporoa Delivery Point. It is again unfortunate that this statement in the SoP is incorrect and consequently misleading to customers and stakeholders.</li><li>• Page 76-77 – section 1.3.1, “General Considerations” – Gas Industry Co states:<ul style="list-style-type: none"><li>○ <i>“Gas Industry Co is of the opinion that there is a case for putting a process in place to ensure that there is a balance between investment costs and security of supply risk with costs to consumers and whether consumers have adequate means for providing a view on this balance”.</i></li><li>○ <i>“Our analysis showed that a specific risk assessment for each gas gate is necessary to maintain an acceptable level of</i></li></ul></li></ul>



Question	Comment
	<p><i>security of supply before lowering the operational pressure to an &lt;20 bar g.</i></p> <ul style="list-style-type: none"><li>• Please see our earlier response to these points.</li><li>• There appears to be a misconception that Firstgas either intends to operate the entire transmission system at less than 20 bar g or, that the injection of biomethane <b>always</b> requires the pressure in the receiving pipeline to be less than 20 bar g. Neither is the case. Put simply, Firstgas could not operate the entire transmission system at a pressure of less than 20 bar g. Doing so would be contrary to various contractual arrangements as well as the fundamental principles of gas pipeline dynamics.</li><li>• In the Broadlands biomethane context, there were a number of specific circumstances that meant that we were able to reduce the operating pressure of the Reporoa–Taupō pipeline.</li><li>• Firstgas’ terms of access to the transmission system are the same for all parties, irrespective of whether they are seeking to inject biomethane or natural gas. Our processes are well established and transparent. Any injecting party must sign an interconnection agreement (which we then publish) and comply with its technical standards, prudential and other requirements. Prospective interconnections have characteristics and requirements that are assessed case by case, for example their location, load profiles, capacity requirements as well as operational and engineering requirements. These robust processes already assess risk and security of supply considerations in an interconnection context.</li><li>• Page 76 – section 1.3.1, “General Considerations” – Gas Industry Co states, <i>“Therefore, we are concerned that this type of exclusion may result in situation where line pack could be rationed through curtailment directions to preserve supply to downstream networks but there is no longer an ability to curtail demand under the Regulations to preserve that line pack.”</i> We are again concerned the references “there is no longer an ability to curtail demand under the Regulations to preserve that line pack”. As noted previously, Firstgas operating transmission</li></ul>



Question	Comment
	<p>pipelines at a pressure less than 20 bar g does <b>not</b> remove these parts of the transmission system from the CCM Regulations. Rather it removes some locations from potentially triggering a critical contingency event. There is still very much an ability to “<i>curtail demand under the [CCM] Regulations to preserve [...] line pack</i>” depending on the location and nature of the event on the transmission system.</p> <ul style="list-style-type: none"> <li>• In the event of a localised event on a transmission pipeline operating at less than 20 bar g that may no longer trigger a critical contingency event, Firstgas will use all the tools available to it under the transmission codes, Interconnection Agreements and Use of System Agreements with Retailers to manage line pack and available supply and demand. This includes the issuing of operational flow orders and demand curtailment.</li> <li>• However, as noted previously, the primary credible scenario in this context is an event which either ruptures the pipeline and results in a leak, or the damage is so severe that the pipeline is considered likely to leak at any moment and cannot sustain any pressure. In these circumstances either the pipeline line pack will be lost to atmosphere in a short period of time via the leak, or the pipeline will need to be vented down to have no pressure to enable a repair to be safely enacted. In both cases the line pack contained within the line is likely to be lost quite rapidly, and the survival time will be very similar whether a critical contingency is declared or not.</li> <li>• Firstgas requests that the “distribution pressure” reference be removed from the “<i>Excluding gas gates supplied by pipelines operated at distribution pressure (&lt;20bar g)</i>” statement. We request that this should read “Excluding gas gates supplied by pipelines operating at less than 20bar g”</li> </ul>
<p>1. Do you agree with Gas Industry’s view regarding the exclusion of gas gates operated at distribution pressure &lt;20? Why or why not?</p>	<ul style="list-style-type: none"> <li>• No. Please see our responses to Part 2 above and in the covering letter</li> </ul>



Question	Comment
<p>2. What is your general view on the issue?</p>	<ul style="list-style-type: none"> <li>• Please see our responses to Part 2 above and in the covering letter</li> </ul>
<p>3. <b>Part 3:</b> Do you agree with the recommended changes to the critical contingency threshold limits to remove the Broadlands and Taupō gas gates? Why or why not?</p>	<ul style="list-style-type: none"> <li>• Firstgas strongly supports the recommended changes to Schedule 1 of the CCM Regulations to remove the Broadlands and Taupō gas gates. Please see the section that deals with this topic above.</li> <li>• Page 79 – Section 1.3 – Gas Industry Co states that “<i>First Gas’s intention, according to its Asset Management Plan Update in October 2022, is to operate the transmission pipeline between Reporoa and Taupō at 10 bar g. The operating pressure on this section of the pipeline would not be increased above 10 bar g unless demand on this section of the pipeline requires it.</i>”</li> <li>• The preceding bullet point is not quite accurate. In any transmission pipeline the actual pressure fluctuates up and down. That will continue to be the case in the Reporoa-Taupō pipeline when the operating pressure is reduced, albeit within a lower range. That operating pressure range is expected to be 10 – 14.5 bar g. The lower limit is the level at which back-up natural gas will automatically flow into the pipeline at Reporoa; the upper level is determined by normal pressure control at the biogas upgrading plant. Reporoa will be supplied from the Reporoa-Taupō pipeline, hence it is expected to receive biomethane and/or natural gas, toward the upper level of the operating pressure range. Should biomethane production fall, or be offline, back-up natural gas will enter the pipeline at Reporoa when the pressure reaches about 10 bar g.</li> </ul>
<p>4. What is your general view on the issue?</p>	<ul style="list-style-type: none"> <li>• Please see points raised above and in our covering letter.</li> </ul>