



Draft Statement of Proposal: Gas Production and Storage Facility Outage Information

16 December 2020

Executive Summary

Introduction

The purpose of this paper is to set out a draft Statement of Proposal (SOP) for the disclosure of gas production and storage facility outage information and seek parties' views on the various matters included in the assessment. We are particularly interested in parties' views on our assessment of the options for addressing the identified information problems, including the design elements of the regulatory option. These views will be used to inform the development of the final SOP.

This draft SOP includes the following aspects:

- Description of the legislative framework applying to information disclosure in the gas sector.
- Discussion on the problems identified with limited information transparency and asymmetry issues related to gas production and storage facility outages.
- Assessment of possible options to address the identified problems. These options are assessed with reference to the Government's policy objectives.
- Consideration of whether a non-regulated option is likely to satisfactorily achieve the regulatory objective and, if the regulatory objective cannot be achieved through non-regulatory means, a discussion of the key elements that comprise the design of the recommended option.

Problem assessment

Our discussion of issues with inadequate gas production and storage outage information in the New Zealand wholesale gas sector draws heavily on the *Information Disclosure: Problem Assessment* paper ("Problem Assessment paper"). This paper identified several problems with limited information, with implications for efficiency in both the gas sector and related energy markets. These issues appear in several parts of the gas sector value chain and most notably at the consumer end of the market. The fact that the availability of information is sometimes asymmetric across parties also has fairness implications. We also note that limited and asymmetric information is inconsistent with the Government's outcome for good, publicly available information on the present state of the gas sector.

The Problem Assessment paper was completed prior to the commencement of the Upstream Gas Outage Information Disclosure Code 2020 (Upstream Disclosure Code). This draft SOP considers information issues that were apparent prior to the introduction to the Code. The various options discussed in this paper, which include the Upstream Disclosure Code, are assessed against these issues.

Regulatory objective

Gas Industry Co's approach to developing governance arrangements under the Gas Act requires the development of a regulatory objective. Given the findings in the problem assessment, we consider that the regulatory objective should be:

That arrangements are in place that ensure the effective and timely availability of gas production and storage outage information for all gas and related market participants

Options for addressing the identified problems

Gas Industry Co has identified the following information disclosure regime options for gas production and storage facility outage information:

- Disclosure of gas production and storage facility outage information under the *Upstream Gas Outage Information Disclosure Code 2020*.
- Rules or regulations under the Gas Act for the disclosure of gas production and storage facility outage information. The design of these rules or regulations could pick up some of the basic building blocks in the Upstream Disclosure Code or adopt an alternative approach.

Assessment of the Upstream Gas Outage Information Disclosure Code 2020

The Upstream Disclosure Code has a number of positive features that have led to a major improvement in both the quantity and quality of information that gas producers and Flexgas have shared publicly regarding both planned and unplanned facility outages. For example, the disclosure of information on the recent Pohokura outages (associated with deliverability issues at the facility) has helped to reduce the uncertainty that parties may have had regarding these events. This is in stark contrast to the lack of public information regarding Pohokura in 2018. OMV has also recently published its forecast production for both the Maui and Pohokura fields for 2021. This reporting goes beyond the disclosure requirements in the Code. We commend OMV for providing this information to help reduce uncertainty in the market regarding production at these fields.

Despite the step change improvement in outage reporting that has occurred, Gas Industry Co is concerned that there are deficiencies with the Code that may limit its suitability as an enduring framework. Most notably, the lack of a credible compliance and enforcement mechanism means that costs of non-compliance with the Upstream Disclosure Code may not outweigh any benefits. Some parties may decide – either deliberately or through omission – to not fully meet the requirements of the Code, with limited repercussions. At that point, a regulated solution may be the only alternative, but the lead times in implementing this option are long.

Apart from this compliance and enforcement matter, there are several other issues with the Upstream Disclosure Code, including:

- The structure of the Code as a multilateral agreement between producers and gas storage owners means that the Code can only be enforceable between those parties and limits the role of affected parties in changes to the Code.
- Some of information in the outage definitions is private information, making it difficult for third parties and Gas Industry Co to review whether parties to the Code have reported outage information consistent with the Code's terms.
- The timing of notifications for unplanned outages and material changes to planned outages may not address issues with information asymmetry.
- The provisions of the Code do not override confidentiality obligations in current contracts held by gas producers and gas storage owners.
- When considered in conjunction with the absence of an effective compliance and enforcement regime, the broad liability exclusion in the Code significantly reduces the incentives for gas producers and gas storage owners to comply with the requirements of the Code.

- There are some issues regarding the review process in the Code, including whether the third-party reviewer is a neutral party and the timing of the reviews.

Gas Industry Co considers that the *Upstream Gas Outage Information Disclosure Code 2020* does not satisfactorily achieve the regulatory objective. Regarding the government’s policy objectives for the gas industry, we consider:

- An improvement in efficiency outcomes requires information to be available to all relevant parties, all of the time and on a consistent basis. The lack of a meaningful compliance and enforcement framework in the Code, as well as the other issues identified above, means that this outcome is not assured under this framework.
- The fact that there is a risk that information transparency and symmetry may not be consistently achieved implies that fairness outcomes may not be delivered over time.

Assessment of the option of rules or regulations under the Gas Act

The regulatory option uses the basic structure in the Upstream Disclosure Code, which we consider captures matters that we would reasonably expect to be included in an information disclosure framework. The proposed regulated option adopts aspects of the Upstream Disclosure Code where we consider those aspects to have merit. Other aspects of the Upstream Disclosure Code are augmented or replaced to address various limitations and/or make the elements workable as a regulated set of arrangements.

Key elements of this option are summarised in the table below.

Element	Comment
<p>Coverage</p> <p>The arrangements should include the following facilities:</p> <ul style="list-style-type: none"> • Gas production facilities. Production facilities that have produced a minimum of 20 TJ/day. • Gas storage facilities. Storage facilities that have a maximum withdrawal rate of at least 20 TJ/day. 	<p>We consider that disclosure obligations should not be placed on production and storage facilities who are of a small size and are unlikely to have a market impact if an outage occurs at that facility.</p>
<p>Outage definitions</p> <p>The outage definitions are based on a similar structure to the definitions in the Upstream Disclosure Code and cover both planned and unplanned production and storage facility outages:</p> <ul style="list-style-type: none"> ▪ <i>Planned gas production facility outage.</i> For the following 12-month period, a reduction in the supply of gas from a production or processing facility caused by an outage, in a quantity of 20 TJ/day or more (for a gas day). The planned reduction is measured against the producer’s forecast gas production for the 14 gas days preceding the forecast start of the outage. ▪ <i>Unplanned gas production facility outage.</i> A reduction in the supply of gas caused by an outage in a quantity of 20 TJ/day or more (for a gas day). 	<p>We consider that the 20 TJ/day threshold used in the Upstream Disclosure Code should be used in a regulated set of arrangements. We are conscious of the concern that the threshold may need to be revised over time to reflect changes to the industry. While changes to the threshold may need to be progressed through a regulatory change process, our preference would be for the threshold to be determined outside of the regulation through a regulated review and consultation process.</p> <p>Gas Industry Co considers that, at a high level, the benchmark measures set out in the Upstream Disclosure Code are a reasonable approach for setting the baselines that changes in production (caused by an outage) are measured against. We have changed some of the benchmark metrics so that all gas production is included.</p>

<p>The unplanned reduction is measured against a forecast of week ahead total gas production.</p> <ul style="list-style-type: none"> ▪ <i>Planned gas storage facility outage.</i> For the following 12-month period, a reduction in the withdrawal capacity from a gas storage facility, caused by an outage, in a quantity of 20 TJ/day or more (for a gas day). The reduction is measured against the total withdrawal capacity of that facility. ▪ <i>Unplanned gas storage facility outage.</i> A reduction in the withdrawal capacity from a gas storage facility, caused by an outage, in a quantity of 20 TJ/day or more (for a gas day). The reduction is measured against the total withdrawal capacity of that facility 	
<p>Information that should be disclosed</p> <p>The information disclosed under these arrangements should be the same as the information set identified in the Upstream Disclosure Code.</p>	<p>We consider that the information that is required to be disclosed under the Upstream Code captures the information that third parties reasonably require in order to make informed decision in response to gas production or gas storage facility outages.</p>
<p>Timing of disclosures</p> <p>Planned outages. A gas producer or storage owner should make rolling 12-month forecast outage disclosures on a quarterly basis. If the party becomes aware of any material change to this information, it should disclose it as soon as reasonably practicable.</p> <p>Unplanned outages. We consider the notification schedule for unplanned outages in the Upstream Disclosure Code to be a reasonable approach for a regulated set of arrangements. Disclosures should be updated for material changes as soon as reasonably practical (and within a 12-hour windows for the initial notification).</p>	<p>Many of the notification timing requirements in the Upstream Disclosure Code are reasonable. However, unlike the Upstream Code, we have extended the requirement to update disclosures for material changes “as soon as reasonably practical” across all relevant notification types.</p>
<p>Confidential Information</p> <p>The disclosure requirements must be complied with irrespective of whether gas producers or gas storage owners are subject to confidentiality arrangements in their agreements.</p>	
<p>Information required for monitoring</p> <p>A gas production facility owner is required to provide Gas Industry Co with:</p> <ul style="list-style-type: none"> • forecast daily production quantities on a monthly basis and actual daily production. • a daily production forecast for the next 12 months on a quarterly basis. 	<p>Gas Industry Co requires this information in order to effectively monitor compliance with the disclosure requirements.</p>

<p>A gas storage facility owner should provide Gas Industry Co with daily actual aggregate withdrawal information on a monthly basis.</p>	
<p>Confirmation of information quality</p> <p>The daily production forecast and daily production and storage withdrawal information provided to Gas Industry Co should be prepared in good faith and to the standard of a Reasonable and Prudent Operator.</p> <p>We also propose an annual director’s certification that the gas producer or gas storage owner has complied its obligations under the regulations over the previous year.</p>	<p>The fact that information covered under these arrangements is privately held makes it difficult for Gas Industry Co to verify the quality of the information that it is using for monitoring compliance. The RPO obligation is well suited to a general standard to which information is prepared. The director’s certification requirement is similar to the approach the Electricity Authority has proposed in its review of electricity wholesale market information disclosure to ensure accurate and complete reporting.</p>
<p>Compliance and enforcement arrangements</p> <p>The regulations requiring disclosure of information regarding gas production and gas storage facility outages would be subject to the existing compliance framework in the Gas Governance (Compliance) Regulations 2008.</p>	<p>The compliance and enforcement framework is consistent with the approach used for other gas rules and regulations.</p>

A cost benefit analysis (CBA) of the two options is attached as Appendix B. The CBA has been done at a qualitative level because data is limited, making any quantitative attempt potentially meaningless. This qualitative analysis is based on outputs from a series of interviews with energy sector stakeholders. The CBA concludes that the net benefits of a regulated regime would be greater than the net benefits of the upstream disclosure code. In particular, this analysis finds that the decision-making across both the gas and electricity sectors is most efficient with a regulated gas outage information regime. The CBA finds that wholesale prices, contract prices and retail prices in both markets would be more efficient under the regulated option.

Gas Industry Co considers that the most practicable means for implementing information disclosure arrangements for gas production and storage facility outage information is to implement them within a framework of regulations (and/or rules) under the Gas Act.

Next steps

Following this consultation, we will move to develop the final SOP, which will incorporate the feedback received on the draft. We are progressing the development of this SOP on the assumption that the Gas Act will be amended to provide the Minister with the power to recommend regulations requiring information disclosure. The timing of the final SOP will depend on when the Gas (Information Disclosure and Penalties) Amendment Bill has completed its passage through the House of Representatives.

Submissions

Written submissions on this Consultation Paper should be provided to Gas Industry Co by **5 pm on Thursday 4 March 2021**. Submissions can be made by logging in to Gas Industry Co's website and uploading your submission, preferably in the form of the submissions template attached to this consultation document (Appendix C). Submissions may be amended at any time prior to the closing date. All submissions will be published automatically on the website after the closing date.

Details of the submissions process are as follows:

1. No email confirmation will be sent out acknowledging receipt of submissions. To check your submission has been successfully uploaded, log in and check your account. If this is unsuccessful, contact Gas Industry Company (ph +64 4 472 1800) or email: consultations@gasindustry.co.nz for assistance.
2. The closing time for submissions is **5 pm, Thursday, 4 March 2021**. Please note that submissions received after that time may not be able to be fully considered.
3. All submissions will be published on Gas Industry Co's website. Submitters should discuss any intended provision of confidential information with Gas Industry Co prior to submitting the information.

Gas Industry Co is happy to meet with any stakeholder who wishes to discuss the proposals in more detail.

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1. Purpose and background

1.1 Purpose

The purpose of this paper is to set out a draft Statement of Proposal (SOP) for the disclosure of gas production and storage facility outage information and seek parties' views on the various matters included in the assessment. These views will be used to inform the development of the final SOP. We are particularly interested in submitters' views on the details of the various options, including the pros and cons of each option.

This draft SOP includes the following aspects:

- Description of the legislative framework applying to information disclosure in the gas sector.
- Discussion on the problems identified with limited information transparency and asymmetry issues related to gas production and storage facility outages.
- Assessment of possible options to address the identified problems. These options are assessed with reference to the Government's policy objectives.
- Identification of the option that is likely to satisfactorily achieve the regulatory objective and, if appropriate, a discussion of the key elements that comprise the design of the preferred option.

In this paper, a gas production facility is defined as a facility at which gas is produced or processed for domestic export or sale and includes any associated gas production or other wells. A gas storage facility storage is a facility where gas is injected and later made available for withdrawal (the Ahuroa Gas Storage Facility, owned and operated by Flexgas, is currently the only gas storage facility in New Zealand).

1.2 Background

Gas production outages related to the Pohokura field in 2018 led to concerns across the gas industry and wider energy sector regarding the information transparency and asymmetry in the wholesale gas market. The Minister of Energy and Resources Hon Dr Megan Woods wrote to Gas Industry Co, raising her concern that if information is not required to be disclosed in a timely manner it may have a material effect on the wider market for gas. The Minister requested that Gas Industry Co investigate the current information disclosure requirements and consider whether they are adequate.

Recognising these concerns, Gas Industry Co established a workstream to progress issues related to information availability in the wholesale gas sector.

1.2.1 Gas Industry Co workstream on information disclosure

Gas Industry Co released the *Options for Information Disclosure in the Wholesale Gas Sector* consultation paper ("Options paper") in March 2019¹. This paper was a discussion paper on

¹ <https://www.gasindustry.co.nz/work-programmes/gas-sector-information-disclosure/consultation/>

various information issues in the gas sector. It identified several possible information areas or 'information elements' where there may be problems with information transparency and asymmetry. From the consultation process we distilled 10 distinct information elements to carry forward to a formal problem assessment phase.

These elements were the focus of the *Information Disclosure: Problem Assessment* consultation paper ("Problem Assessment paper"), released in October 2019². This paper assessed the elements against the Government's policy objectives for the gas sector. In the submissions on the paper, there were no parties that disagreed that gas production and storage outage information should be disclosed in some form. This is consistent with the views expressed in the Options paper submission process. Gas Industry Co's submissions analysis on the Options paper ("Analysis of Submissions on Options for Information Disclosure") noted that "Submitters generally see upstream production outage disclosure as critical for information transparency and a well-functioning market."

Major gas producers (Greymouth Gas, OMV and Todd Energy) and PEPANZ considered that these outages should be disclosed through the *Upstream Gas Outage Information Disclosure Code 2020* ("Upstream Disclosure Code", see below)³. Other parties (including the Electricity Authority, Transpower, Mercury Energy, Meridian Energy, emsTradepoint, Vector, Major Gas Users Group, Fonterra, Trustpower and Genesis Energy) thought that gas production and storage facility outage information disclosure should be advanced to a Statement of Proposal (SOP).

From this problem assessment process, Gas Industry Co concluded that gas production and storage facility outage information disclosure should be included in a Statement of Proposal. We have decided to prioritise the development of an SOP for these information elements following feedback from several parties that these are the most important issues that need to be addressed. A shortened version of this problem assessment is included in the next section of this paper.

1.2.2 Industry Notifications webpage

Gas Industry Co developed the Industry Notifications webpage⁴ as an interim measure to help improve the flow of information in the gas industry. The page went live in August 2019. This webpage was developed as a communications channel for parties to voluntarily post information on the industry (including production and storage outages).

The information that has been posted to-date is information related to gas production and storage facility outages, although any industry information can be included on the page. This publication channel provides parties with another means for communicating information to the industry along with existing channels such as NZX releases and press releases.

Parties to the Upstream Disclosure Code wrote to Gas Industry Co in March 2020 requesting that it host a platform to facilitate their disclosures under this Code (see below). Gas Industry Co decided to enhance the Industry Notifications page to perform this function. An upgraded version of the Notifications page launched in August 2020.

² <https://www.gasindustry.co.nz/work-programmes/gas-sector-information-disclosure/problem-assessment-october-2019/>

³ <https://www.pepanz.com/assets/Uploads/Upstream-Gas-Outage-Information-Disclosure-Code-March-2020.pdf>

⁴ <https://www.gasindustry.co.nz/industry-notifications/>

1.2.3 Upstream Gas Outage Information Disclosure Code 2020

In submissions on the Options paper, the major gas producers agreed that information regarding upstream gas outages is important for a well-functioning gas market. The Upstream Disclosure Code notes that “Producers are concerned to ensure that both customers and the wider gas and electricity industries consider there to be sufficient and timely information disclosure about any upstream gas outages”.

These parties developed the Upstream Disclosure Code to address this need for information. The Code is an industry-led, voluntary framework for both planned and unplanned outage information disclosure. The Upstream Disclosure Code notes that producers “... do not believe the case has been made for more widespread regulatory intervention”.

During the development process, these parties invited Flexgas to join in the Upstream Disclosure Code’s development. Flexgas’s gas withdrawal services can affect the overall quantities of gas available in the market on any day, similar to a production station. Flexgas agreed to this request, supporting the disclosure of gas information outages. Flexgas is treated as a producer for the purposes of the Code.

The Upstream Disclosure Code came into effect on 22 June 2020. It was acceded to by natural gas producers Beach Energy, Greymouth, OMV and Todd Energy as well as Flexgas which owns and operates the Ahuroa Gas Storage Facility.

The Upstream Disclosure Code has been developed by upstream parties independent of Gas Industry Co’s information disclosure workstream. We welcome producers’ voluntary disclosure of information and note that feedback from energy sector participants on the information that has been published to-date has been positive. In this SOP, this Upstream Disclosure Code is considered as one of the options for addressing problems with limited gas production and storage facility outage information.

1.2.4 Description of gas production and gas storage facilities

New Zealand’s major gas production facilities and its sole gas storage facility are detailed in the following table.

Table 1 Major gas production and storage facilities

Facility	Owner	Operator	Size ⁵
Pohokura production facility	OMV (74%) and Todd Energy (26%)	OMV	498 PJ
McKee/Mangahewa production facility	Todd Energy	Todd Energy	505 PJ
Turangi production facility	Greymouth Petroleum	Greymouth Petroleum	343 PJ
Kupe production facility	Beach Energy (50%), Genesis (46%), NZOG (4%)	Beach Energy	286 PJ
Maui production facility	OMV	OMV	142 PJ
Kowhai production facility	Greymouth Petroleum	Greymouth Petroleum	22 PJ
Kapuni production facility	Todd Energy	Todd Energy	197 PJ
Ahuroa gas storage facility	Flexgas	Flexgas	18 PJ 65 TJ/d

⁵ For production facilities, this is 2P gas reserves (PJ) as at 1/1/20, from MBIE’s petroleum reserves tables (<https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/petroleum-reserves-data/>). For storage facilities, this is the storage capacity of the facility, as well as the maximum withdrawal/injection rate (TJ).

2. Legislative Framework and Requirements

2.1 The Gas Act and the Government Policy Statement

The Gas (Information Disclosure and Penalties) Amendment Bill proposes that section 43F of the Gas Act is amended to provide the Governor General, on the recommendation of the Minister of Energy and Resources, with the power to make regulations for the following purposes:

Arrangements relating to outages and other security of supply risks

- (e) *providing, in relation to wholesale or any other markets for gas, for arrangements relating to outages and other security of supply risks, including imposing requirements in connection with those matters on any industry participant or consumer (other than a domestic consumer):*

Information disclosure for whole gas industry

- (f) *providing for the provision and disclosure of data and information by any industry participant or consumer (other than a domestic consumer).*

While the Gas Act changes have not yet completed their passage through the House of Representatives, Gas Industry Co is progressing this workstream on the assumption that the Gas Act will be amended to provide the Minister with the power to recommend regulations requiring information disclosure.

We note that the Minister's power to recommend regulation under section 43F of the Gas Act is subject to section 43J of the Act. That section provides that, in relation to the section 43F regulation making powers, the Minister may only recommend regulation if the recommendation gives effect to a recommendation from Gas Industry Co, and does not differ from Gas Industry Co's recommendation in any material way.

The Government Policy Statement on Gas Governance 2008 (GPS), at paragraph 9, states that the Government's objective for the entire gas industry is:

To ensure that gas is delivered to existing and new customers in a safe, efficient, fair, reliable and environmentally sustainable manner

The above objective incorporates, and expands on, the objectives in section 43ZN of the Gas Act.

The specific objectives that Gas Industry Co applies when making recommendations for regulations are discussed in detail in Section 3.3 of this paper.

2.2 Regulatory objective

Gas Industry Co's approach to developing gas governance arrangements under the Gas Act requires the development of a regulatory objective as part of the process. The proposed regulatory objective is contained in section 3 of this paper.

2.3 Process requirements

Sections 43L and 43N of the Gas Act require Gas Industry Co to complete the following steps before making a recommendation to the Minister for regulation:

1. Seek to identify all reasonably practicable options for achieving the regulatory objective;
2. Assess the options by considering the costs and benefits of each option and the extent to which the objective would be promoted or achieved by each option;
3. Ensure that the regulatory objective is unlikely to be satisfactorily achieved by any reasonably practicable means other than the making of regulation;
4. Prepare a statement of proposal containing a statement of the proposal, the reasons for the proposal and an assessment of the reasonably practicable options.
5. Consult with persons that it considers to be representative of the interests of persons likely to be substantially affected;
6. Consider submissions on the statement of proposal.

This paper is intended to fulfill the above requirements.

3. Problems with limited production & storage outage information

3.1 Introduction

In this section, issues with inadequate gas production and storage outage information in the New Zealand wholesale gas sector are discussed. The section draws heavily on discussion contained in the *Information Disclosure: Problem Assessment* ("Problem Assessment paper") and *Problem Assessment Paper - Analysis of Submissions and Next Steps* papers⁶.

The Problem Assessment paper was completed prior to the commencement of the Upstream Disclosure Code. The discussion below considers information issues that were apparent prior to the introduction to the Code. The various options discussed in this paper, which include the Upstream Disclosure Code, are assessed against these issues.

3.2 Overview

The Options paper noted that most gas in New Zealand is sold under long-term, bilateral gas supply agreements (GSAs)⁷. Flexgas also has bilateral arrangements with its customers⁸. Gas producers and Flexgas provide production and storage outage information respectively to contract counterparties. Prior to the introduction of the Industry Notifications page, this information had not been shared generally with the wider gas sector. These arrangements resulted in production and storage outage information being relatively opaque to the broader gas market. The contract counterparties had an information advantage relative to other sector participants; that is, there was information asymmetry regarding production and storage outage information.

As noted earlier, gas producers and Flexgas agree information about upstream gas outages is important for the wholesale gas market to function effectively. Following Gas Industry Co's creation of the Industry Notifications page, these parties published gas production and storage facility outage information on the page on a voluntary basis. As a consequence, information transparency and asymmetry issues related to these outages reduced. However, because the information was provided voluntarily on an operator-by-operator basis, the form and type of disclosure varied between production and storage facilities. More importantly, voluntary information disclosure relies on companies' goodwill and there was a risk that this information sharing may not be sustained over time.

Major gas producers and Flexgas have included obligations in their Upstream Disclosure Code that attempt to address some of the limitations with voluntary disclosure. The option of this

⁶ See <https://www.gasindustry.co.nz/work-programmes/gas-sector-information-disclosure/overview/>

⁷ This is similar to the arrangements in other gas markets; for instance, most gas supplied in the Australian gas markets is sold under bilateral contracts.

⁸ at the time of writing, Contact Energy and Nova are the cornerstone users of the Ahuroa Gas Storage Facility.

Upstream Disclosure Code as a permanent solution for addressing production and storage information issues is explored in Section 5.

The following discussion examines the problems with limited production and storage outage information.

3.3 Assessment framework

We have assessed the information issues identified during the workstream process against the Government's policy objectives for the sector to identify problems relating to limited gas production and storage facility outage information. These objectives are identified in the Gas Act and the GPS.

Relevant Gas Act and GPS objectives and outcomes are listed in Table 2. GPS outcomes that are unlikely to be relevant to information disclosure outcomes are not included in the table.

Table 2 Assessment criteria

Criterion	Objective/Outcome	Text
1	Gas Act s43ZN(a)	the principal objective is to ensure that gas is delivered to existing and new customers in a safe, efficient, and reliable manner
2	Gas Act s43ZN(b)(i)	facilitation and promotion of the ongoing supply of gas to meet New Zealand's energy needs, by providing access to essential infrastructure and competitive market arrangements
3	Gas Act s43ZN(b)(ii)	barriers to competition in the gas industry are minimised
4	Gas Act s43ZN(b)(iii)	incentives for investment in gas processing facilities, transmission, and distribution are maintained or enhanced
5	Gas Act s43ZN(b)(iv)	delivered gas costs and prices are subject to sustained downward pressure
6	Gas Act 43ZN(b)(v)	risks relating to security of supply, including transport arrangements, are properly and efficiently managed by all parties
7	Gas Act s43ZN(b)(vi)	consistency with the Government's gas safety regime is maintained
8	GPS Item 12(a)	energy and other resources used to deliver gas to consumers are used efficiently
9	GPS Item 12(b)	competition is facilitated in upstream and downstream gas markets by minimising barriers to access to essential infrastructure to the long-term benefit of end-users
10	GPS Item 12(c)	the full costs of producing and transporting gas are signalled to consumers
11	GPS Item 12(d)	the quality of gas services where those services include a trade-off between quality and price, as far as possible, reflect customers' preferences
12	GPS Item 12(e)	the gas sector contributes to achieving the Government's climate change objectives as set out in the New Zealand Energy Strategy, or any other document the Minister of Energy may specify from time to time, by minimising gas losses and promoting demand-side management and energy efficiency
13	GPS Item 9	it is also the Government's objective that Gas Industry Co takes account of fairness and environmental sustainability in all its recommendations. To this end, the Government's objective for the entire gas industry is as follows: To ensure that gas

		is delivered to existing and new customers in a safe, efficient, fair, reliable and environmentally sustainable manner
14	GPS Item 13 point 1	pursue: An efficient market structure for the provision of gas metering, pipeline and energy services
15	GPS Item 13 point 2	pursue: Efficient arrangements for the short-term trading of gas
16	GPS Item 13 point 3	pursue: gas governance arrangements are supported by appropriate compliance and dispute resolution processes.
17	GPS Item 13 point 4	good information is publicly available on the performance and present state of the gas sector

These criteria can be mapped against the five outcome categories listed in Table 3. These outcome categories are identified in the GPS, listed as criterion 13 in the previous table.

Table 3 Assessment categories

	Efficiency	Fairness	Reliability	Environment	Safety
Gas Act	Criterion 1 Criterion 2 Criterion 3 Criterion 4 Criterion 5		Criterion 1 Criterion 2 Criterion 6		Criterion 1 Criterion 7
GPS Objective	Criterion 8 Criterion 9 Criterion 10 Criterion 11	Criterion 13		Criterion 8 Criterion 12 Criterion 13	
GPS Outcome	Criterion 14 Criterion 15 Criterion 16 Criterion 17				

3.4 Problem assessment

3.4.1 Efficiency

Limited production and storage facility outage information has efficiency implications for many parts of the gas industry value chain and associated markets. These implications are summarised below. A fuller discussion on these issues is included in the Problem Assessment paper.

Gas production and storage

To the extent that outage information is not shared between individual gas production and storage operators, there could be efficiency losses. For example, outages may not be timed as well as they could be. However, the small size of the upstream sector in New Zealand means that any efficiency cost is likely to be small. For instance, PEPANZ commented in its submission on the Problem Assessment paper that upstream parties already share information about upcoming outages at forums such as the Taranaki Energy Forum and the Joint Petroleum Operators' and Regulators' Forum.

Transmission

Under the Maui Pipeline Operating Code (MPOC) (and interconnection agreements under the Gas Transmission Access Code (GTAC)), gas producers provide planned and unplanned outage information to Firstgas. Flexgas is an affiliate of Firstgas, so Firstgas has knowledge of storage facility outages.

Given these arrangements, there are no obvious efficiency issues for the gas transmission system operator regarding limited production or storage outage information.

Downstream gas sector (including major users)

Several downstream parties commented in Options paper submissions that a lack of information regarding the Pohokura outage events in 2018 and 2019 adversely affected their operations. The Major Gas Users Group (MGUG) noted that the experience of its members during these outages was that their gas suppliers were not able to inform them fully or in a timely way. This limited information availability left these companies poorly equipped to deal with the consequences of the outages. Fonterra and NZ Steel both commented that a lack of information limited their ability to make effective business decisions in response to the supply shocks. These submissions highlight that the operations of downstream parties may be affected adversely by inadequate information regarding gas production facility outages.

The Problem Assessment paper observed that the efficiency implications of limited storage facility outage information are not unlike production outages. For instance, it is possible that if the Ahuroa facility was to have an outage and its deliverability to the market was affected, some major users may have an experience similar to when there is a production facility outage. The paper concluded that limited gas storage outage information, like production facility information, could negatively affect the operations of gas users and potentially parties across the wider energy sector.

Gas wholesale trading market

Transparent and symmetric availability of information is a cornerstone for the efficient operation of any market. The gas wholesale market is no different. emsTradepoint commented in its submission on the Options paper that the GPS includes an objective of providing for "Efficient arrangements for the short-term trading of gas" (criterion 15 in Table 2). It argued that in the absence of meaningful and transparent information disclosure, this objective is not met. Following this logic, limited information regarding production and storage facility outages may reduce the efficiency of the emsTradepoint wholesale trading market.

We note that there are multiple reasons why production from a gas field may vary. Plant outages are one reason. Production may also vary due to a range of other factors, including commercial decisions and reservoir issues (e.g. a well entering its decline phase). Disclosure of plant outages will improve the level of information regarding the supply of gas into the wholesale market, supplementing parties' understanding of the market.

Related markets – electricity

Following the 2018 Pohokura outages there has been increased recognition by electricity sector parties of the interconnected nature of that the gas and electricity markets and the importance of wholesale gas market information. This has been evidenced in Gas Industry Co's information disclosure workstream, with significant engagement by electricity sector parties, including several parties that do not have direct links to the gas sector⁹.

A common theme among electricity parties' submissions was that there is a need for information transparency, particularly around gas supply availability. Several parties commented that information regarding gas sector events is important for the efficient operation of the electricity wholesale market. For instance, in its Options paper submission, Genesis considered that "...greater transparency of information about gas supply and gas availability is critical to the efficient operation of both the gas and electricity markets.". Thermal electricity generation is important for both baseload and peaking duties and often sets the wholesale market price as the marginal form of generation in the market.

The renewables-only generators (Meridian and Mercury) submitted that they have asymmetric information regarding gas production outages, relative to competitors who have thermal generation in their portfolios. In contrast, all electricity companies have information on hydro storage and Meridian provides snow storage information¹⁰. Mercury commented in its Options paper submission that if "... competitors have information asymmetry this results in inefficient decision making and poor market outcomes". Finally, information asymmetry regarding thermal fuel availability may also make market-making in the electricity hedge market more difficult¹¹.

The electricity system operator raised its concerns in correspondence with Gas Industry Co that it was not given enough visibility over the Pohokura outages to effectively manage short- and medium-term electricity security of supply. In general, a lack of information on gas supply issues makes it more difficult for the system operator to manage outages on the electricity network. It can also lead to potential gaps in security of supply forecasting and information (i.e. energy risk information). We understand that the system operator has addressed these concerns through informal, confidential discussions with relevant parties to improve its knowledge. However, the fact that these discussions are confidential means that the operator cannot share the information with electricity parties, which makes it difficult to manage electricity security of supply. Upstream parties and Flexgas posting outage notifications over the last several months using the Industry Notifications webpage has reduced this problem.

The Electricity Authority is currently considering actions to improve the availability of thermal fuels information in the electricity sector as part of its Wholesale Market Information Disclosure workstream. The Authority is reviewing thermal fuel information disclosure rules after identifying gaps in this information. Its focus includes information on electricity sector impacts from any changes in the gas supply outlook. The Authority is considering a change to the Electricity Code and updates to the disclosure guidelines to ensure the Code's disclosure requirements are being met. It is also considering ways to make thermal information in the electricity sector easier to

⁹ For instance, 10 of the 20 submitters on the Problem Assessment participate in the electricity sector, with seven of these having no gas operations.

¹⁰ See <https://www.meridianenergy.co.nz/who-we-are/our-power-stations/snow-storage>

¹¹ The Electricity Price Review paper recommends that "The Electricity Authority should impose a mandatory market-making obligation on vertically integrated companies within 12 months unless the industry can develop an incentive-based scheme by then that is effective, funded largely by those companies and acceptable to the Authority" (recommendation D2). See <https://www.mbie.govt.nz/assets/electricity-price-review-final-report.pdf>

find and use. These actions may address some of the concerns that parties raised during the submissions process.

3.4.2 Fairness

There was less focus on fairness in parties' submissions. A theme across some submissions was that some parties have greater access to gas production information than others (i.e. asymmetric information), which has fairness implications. For instance, companies that are counterparties to a gas supply agreement for a particular field are informed of outages at that facility while other energy companies are not. Upstream parties' disclosure of outage information on the Industry Notifications in recent times has reduced this issue.

All of the capacity at the Ahuroa gas storage facility is contracted and so there are currently limited fairness issues associated with outage information at this facility.

3.4.3 Reliability

This outcome is focussed on the reliable supply of gas (see criterion 2 and 6). The main impact of limited outage information on this measure is that downstream parties have increased uncertainty regarding gas supply availability. This uncertainty affects these companies' business decisions and leads to inefficient outcomes. For instance, Fonterra's submission on the Options paper commented that a lack of information regarding the reliability of gas supply from the Pohokura field in 2018 limited its ability to make effective business decisions. In particular, Fonterra's contingency planning, which depends on the particular set of events at the time, was compromised.

3.4.4 Environment

There was limited comment in the submissions processes on the impact that limited information transparency regarding gas facility outages may have on environmental outcomes. However, Meridian's submission on the Problem Assessment paper noted that insufficient information may lead to renewable generation facilities being operated less efficiently. As a consequence, thermal generation may be run more often, with an associated environmental impact.

3.4.5 Safety

There were no impacts on safety outcomes from a lack of information transparency regarding gas production and storage facility outages identified in the Problem Assessment paper or submissions.

3.4.6 Summary

This problem assessment has identified several issues associated with limited transparency and asymmetry of gas production and storage facility outage information. In particular, we have found there are implications for efficiency in both the gas sector and related energy markets arising from limited publicly available information regarding gas production and storage outages. These issues appear in several parts of the gas sector value chain and most notably at the consumer end of the market. We also note that limited and asymmetric information is inconsistent with the Government's outcome for good, publicly available information on the present state of the gas sector (Table 2, criterion 17).

Following the establishment of the Industry Notifications web page, gas producers and Flexgas voluntarily published gas production and storage facility outage information to address these information issues. As we have already noted, because the information has been provided on a voluntarily and operator-by-operator basis, the form and type of disclosure varied between production and storage facilities. There was a risk that the current level of reporting may not

endure over time. These parties have developed their Upstream Disclosure Code partly to address some of these limitations with voluntary disclosure. The option of this Upstream Disclosure Code as a permanent solution for addressing production and storage information issues is considered in Section 5.

3.4.7 Regulatory objective

As discussed in Section 2, Gas Industry Co's approach to developing governance arrangements under the Gas Act requires the development of a regulatory objective. Following the discussion in this section, we consider that the regulatory objective should be:

That arrangements are in place that ensure the effective and timely availability of gas production and storage outage information for all gas and related market participants.

Q1 Do you agree with the regulatory definition? Please provide reasons supporting your views.

4. Options for addressing identified problems

4.1 Introduction

This section identifies the reasonably practicable options for achieving the regulatory objective described in Section 3.4.7. These options range from industry arrangements through to formal rules and/or regulations under the Gas Act. We also describe the framework that has been used for evaluating the options.

4.2 Option evaluation framework

The options are assessed following the process prescribed in the Gas Act for evaluating options when recommending regulations (or rules) to the Minister. This process is set out in Section 43N of the Gas Act (see Section 2). Section 43N requires Gas Industry Co, prior to making a recommendation to the Minister of Energy to:

- Identify and assess reasonably practicable options for addressing the objective of the regulation;¹²
- Assess the costs and benefits of each of the options;
- Assess the extent to which the objective would be promoted or achieved by each option;
- Ensure that the problem(s) are unlikely to be satisfactorily addressed by any reasonably practicable means other than the making of the regulation (including, for example, education, information, or voluntary compliance).

A Statement of Proposal is required to include these matters.

The Government's policy objectives for the gas sector set the criteria for assessing the options. These were listed in Table 2 above and summarised in Table 3.

4.3 Options considered

Gas Industry Co has identified the following information disclosure regime options for gas production and storage facility outage information:

- Disclosure of gas production and storage facility outage information under the *Upstream Gas Outage Information Disclosure Code 2020*.
- Rules or regulations under the Gas Act for the disclosure of gas production and storage facility outage information. The design of these rules or regulations could pick up some of the basic building blocks in the Upstream Disclosure Code or adopt an alternative approach.

These two options are assessed in the following sections of this paper, using the assessment framework set out in the previous section and summarised in Table 3.

¹² We use the term "problem" to describe the issue that the regulatory objective is intended to address.

4.4 Cost Benefit Analysis

A cost benefit analysis of these options is included in Appendix B.

Q2 Do you agree with the information disclosure options for gas production and storage facility outage information that have been identified? Please provide reasons for your views.

Q3 Are there other options that you think should be considered in this process?

5. Upstream Gas Outage Information Disclosure Code 2020

5.1 Introduction

In this section, key features of the *Upstream Gas Outage Information Disclosure Code 2020* ("Upstream Disclosure Code" or "Code") are described and the merits and issues with each feature are assessed. We conclude this assessment with an evaluation of the Upstream Disclosure Code using the criteria identified in Table 3. The full Upstream Disclosure Code is available at <https://www.pepanz.com/assets/Uploads/Upstream-Gas-Outage-Information-Disclosure-Code-March-2020.pdf>.

5.2 Code coverage and structure

5.2.1 Description

The Upstream Disclosure Code is a multilateral agreement between the following parties:

1. Beach Energy Limited (Beach)
2. Flexgas Limited (Flexgas)
3. Greymouth Gas New Zealand Limited (Greymouth)
4. OMV New Zealand Limited (OMV)
5. Todd Energy Limited (Todd)

5.2.2 Assessment

While the Code does not include every gas producer, we think that it captures those gas producers and gas storage owners who own significant (in terms of size) production and storage assets. We do not consider that, at this point in time, there are other gas producers or gas storage owners that should be included within the scope of the Code due to the small size of assets that currently fall outside the Code. Outages at these facilities are unlikely to have a significant impact on the wholesale gas market.

The Code permits other gas producers to accede to the Code by signing the Deed of Accession contained in Schedule 1 of the Code. We think that this aspect of the Code is desirable as it ensures that the Code is sufficiently flexible to cope with future industry changes.

An issue with the current structure of the Code as a multilateral agreement between gas producers and gas storage owners is that the Code can only ever be enforceable between those parties and changed by agreement between those parties. Third parties who may be impacted by performance, or non-performance, of obligations under the Code cannot enforce the requirements of the Code and have a limited role in the drafting of Code changes (except for

providing feedback as part of a Code review process).¹³ We consider this to be an issue because the parties impacted by performance, or non-performance, under the Code are more likely to be third parties who are purchasing gas in the gas market, or trading in related markets, rather than the gas producers or gas storage owners who are signatories to the Code.

A multilateral agreement can be a workable structure for some gas governance arrangements (for example transmission access arrangements). However, it is less likely to be effective where the impact of performance, or non-performance, can have a material impact beyond the signatories to the Code.

5.3 Outage definitions

5.3.1 Description

The outage definitions set out the type and size of events that should be disclosed. In general, there are two parts to the definitions:

1. Reported information is confined to events involving facility outages. For instance, gas production or storage withdrawal reductions associated with operational decisions are not included in the Code.
2. The reported information is for outages that meet certain minimum thresholds. For instance, small transient outage events are not included. The threshold definitions have the general form of a minimum supply reduction (referred to as the outage “threshold” in our assessment) and a business-as-usual production or capacity estimate (“benchmark”) that the reduction is measured against.

The Code also states that reductions in the supply or withdrawal of gas from a production or storage facility respectively do not include any reduction resulting from an event or circumstances at a downstream customer’s plant or any reduction initiated by the customer.

The definitions describe the minimum set of outage notifications that a party that has acceded to the Code must provide. A party may choose to provide further information beyond these minimum requirements.

The first point is the key part of the definitions: the disclosure of information is confined to outage events. The threshold part of the definitions may be considered as a de minimus measure, or a proxy for a material change that could affect the market. This is a supporting limb of the definition; the primary limb is the distinction that only outage-related production or withdrawal reductions are disclosed under the Code.

Planned gas production facility outage

The definition of a planned production facility outage that should be reported is:

For the following 12-month period, a reduction in the supply of gas from a production or processing facility caused by an outage, in a quantity of 20 TJ/day or more (for a gas day¹⁴). The planned reduction is measured against the producer’s forecast gas production for the 14 gas days preceding the forecast start of the outage.

¹³ Although we note that the broad liability exclusion, and limited compliance mechanisms, means that the ability for a party to enforce non-compliance with the Code is likely to be limited. These issues are discussed in greater detail in Section 5.5.7 (Liability) and Section 5.5.10 (Compliance and Enforcement) of this paper.

¹⁴ Period of 24 consecutive hours, beginning at 0000 hours.

Unplanned gas production facility outage

The definition of an unplanned production facility outage that should be reported is:

A reduction in sales nominations caused by an outage in a quantity of 20 TJ/day or more (for a gas day). The unplanned reduction is measured against the week ahead or other nominations related to the facility made under the gas transmission code.

Or, where the previous definition does not apply, a reduction in the maximum gas production capacity in a quantity of 50TJ/day or more. The capacity reduction is measured against the maximum daily production from the facility over the previous 14 days. Given the structure of the other definitions, we assume that this capacity reduction is linked to a facility outage.

We understand that the second part of the definition is intended to cover a scenario where production at a facility has reduced in response to a major user's production decision (so no outage, because this is a customer-caused reduction), but then an unplanned outage at the facility occurs over this period. Under the first limb of the definition, this outage may not be captured because the benchmark period is affected by reduced production associated with a customer event. This part of the definition is designed to cover this scenario.

Planned and unplanned gas storage facility outages

The definitions of planned and unplanned gas storage facility outages that should be reported are the same:

A reduction in the withdrawal capacity from a gas storage facility, caused by an outage, in a quantity of 20 TJ/day or more (for a gas day). The reduction is measured against the total withdrawal capacity of that facility.

We note that a time period for storage planned outages is not included in the definition. This appears to be an oversight, given that the definition does not make sense without this element. For this assessment, we assume the definition is for the same 12-month time horizon used in the planned production facility outage definition.

5.3.2 Assessment

Planned gas production facility outage definition

The threshold for the disclosure of planned production facility outages is set at 20 TJ/day (this threshold is the same across most of the outage definitions in the Upstream Disclosure Code). The Code includes a process for reviewing this threshold after an initial six-month period, enabling this setting to be tested against the outages that have occurred over the first several months that the Code has been in place.

We have conducted an initial analysis to understand whether the 20 TJ/day threshold is a reasonable setting. This analysis involved a review of the recent production history of the major fields and the outages that have been posted to-date. Our review has found that for some gas production facilities (for example, Pohokura and Mangahewa), normal day-to-day supply variability can be 20 TJ/day or more. An implication of this variability is that a lower threshold may result in information being provided on events that have limited market impact. We will be interested in the third-party reviewer's findings on this matter (see above and the later discussion on review processes in Section 5.9).

Apart from the threshold size, the other key part of this definition is the benchmark that a production reduction associated with an outage is measured against. The Upstream Disclosure Code uses a forecast production measure for this benchmark (specifically, the producer's

forecast gas production for the 14 gas days preceding the forecast start of the outage), reflecting expected production near the time of the planned outage event.

We understand that the motivation for this approach to setting the benchmark centres on the fact that the production characteristics of gas facilities change over time¹⁵. This variation means that, unlike the gas storage facility definitions, nameplate capacity is unlikely to be a good proxy for current, “business-as-usual” production. For example, the nameplate specification for a piece of equipment may substantially exceed current levels of production. The forecast production measure addresses this variability issue by using a benchmark that is a proxy for expected production around the time of the event.

Our concern with this approach is that a producer’s forecast of expected gas production is private information, not visible to any other party. This makes it difficult for external parties, or even other signatories to the Upstream Disclosure Code, to monitor a producer’s compliance with the disclosure framework. Parties could provide this forecast information to the third-party reviewer, but the information may be difficult to verify – it is a producer’s private information, and there is no way for the reviewer to assess its validity (e.g. a producer could elect to submit a retrospective production forecast for review that is consistent with the disclosures it has made). The fact that daily gas from a production facility that is shipped on Firstgas’s transmission pipeline is visible retrospectively may possibly lessen this issue. But actual exports and a forecast of gas production made say three months prior to the event¹⁶ are not necessarily the same for a variety of reasons. In addition, not all the gas that is produced at some facilities is shipped on this pipeline.

An alternative approach could be to use current, known production information for the benchmark. For example, average consumption over the last six weeks might be suitable for assessing whether a planned outage in 12 months’ time should be disclosed. We have reviewed several options of this form (including average, moving average and maximum production over various time intervals), comparing them against known planned outage events. None of these options perform well, due to two main reasons. First, the major production facilities have varying characteristics. For example, mean gas production at Pohokura is considerably larger than Maui and, in recent times, Pohokura production has had greater absolute and relative variability¹⁷. Second, as noted earlier, the production profiles of fields change over time, due to their physical and economic lifecycles.

In conclusion, this definition for planned production facility outages makes sense at a conceptual level. However, the definition has implementation issues due to third parties’ inability to observe whether producers are applying the definition appropriately. Daily gas from a production facility that is shipped using First Gas’s transmission is visible retrospectively, which may possibly lessen this issue. However, only gas actually shipped on the transmission pipeline is visible, not the producer’s forecast production of gas, which is the measure included in the definition.

¹⁵ For instance, there could be investment in further production wells, so production could increase materially year-on-year, or a well or a whole field might enter its decline phase resulting in reduced production. The production chart on Gas Industry Co’s information portal shows this variability, <https://www.gasindustry.co.nz/publications/landing-pages/gas-production-and-major-consumption-charts/>

¹⁶ Parties are required under the Code to disclose planned outages on a rolling basis up to a year in the future with quarterly updates – see the timing of notifications discussion.

¹⁷ For the 2020 calendar year to August 2020, mean production at Pohokura was 148 TJ/d, while Maui was 70 TJ/d. Over this period, the coefficient of variation (standard deviation/mean) of Pohokura was 34% while Maui was 14%.

Unplanned gas production facility outage definition

Like the other outage definitions, the unplanned outage definition includes a minimum outage threshold and a benchmark that a reduction in production is measured against.

There are two parts to the definition, with the first part likely to be relevant for most unplanned outage events:

Primary part of the definition

In this part of the definition, the threshold is 20 TJ/day, which is the same size as the threshold used in the planned gas production facility outage definition. We agree that the size of the two thresholds should be the same.

Both the threshold and benchmark components of this part of the definition are based on gas that is nominated for shipping on the transmission pipeline. We understand the motivation for this definition: the nominations process is a regular, operational activity for producers that involves a short-term forecast of gas that would be shipped over the outage period.

Our concern is that, for some production facilities, sales nominations may not necessarily include all gas produced from the facility. In particular, gas that may be shipped over private pipelines or used on-site (or nearby) is not captured under this nominations-based framework. This means that for some production facilities:

- The threshold may not reflect the total change in production caused by an outage. This could potentially lead to under-reporting of some outage events.
- Similarly, the nominations-based benchmark may be an incomplete measure of what production would have been if the outage had not occurred. This means that, for some production facilities, the outage may not be measured against an estimate of the total quantity of gas that would have been produced if the outage had not occurred.

Apart from these issues, nominations information is not available to the wider market (the information is limited to the producer and Firstgas; individual shippers know their own nominations but not the aggregate nominations for a field). This lack of visibility makes it difficult for external parties to monitor compliance with the disclosure framework. If the third party (see Section 5.9) reviewer has access to the information, then this is less of a problem. However, the Upstream Disclosure Code does not specify what information will be provided to this reviewer.

Secondary part of the definition

As discussed earlier, the second part of the definition is to cover a particular unplanned outage scenario that the first part does not cover. The threshold for this part of the definition is set higher at 50 TJ/day. Unlike the other production outage definitions, the benchmark is a historic period – the immediately preceding 14 days. We understand that the higher threshold for this part of the definition is driven by the variable production at several fields, coupled with the backward-looking nature of the benchmark, resulting in a benchmark that is a less accurate measure of production around the time of the outage. We consider that this is a pragmatic approach for addressing a relatively infrequent set of circumstances.

Overall, our assessment for this unplanned production outage definition is that:

- The threshold sizes appear reasonable.
- The nomination-based approach used in the primary part of the definition does not necessarily cover all the gas produced at a production facility. This means that, for some production facilities, the definition may not cover all outage events that could have a material impact on the market. Apart from this coverage issue, the definition also suffers from an inability of third parties to observe whether producers are applying the definition appropriately.

Gas storage facility outage definitions

Currently, New Zealand has one gas storage facility, the Ahuroa gas storage facility (“Ahuroa”)¹⁸, owned and operated by Flexgas (an affiliate of Firstgas).

Both the gas storage facility unplanned and planned outage threshold definitions are very similar. These definitions are based around a threshold reduction in gas withdrawal relative to total (nameplate) withdrawal capacity.

We consider that the general form of these definitions is sound; a definition based on a withdrawal reduction relative to nameplate capacity is a simple and effective measure. For instance, this approach is used in Australia for reporting planned facility outages, or changes in available capacity, affecting transmission pipelines, processing facilities, storage facilities and LNG facilities¹⁹.

The threshold for disclosure is set at 20 TJ/day, which is the same as the thresholds in both production outage definitions. We consider this threshold is set at a reasonable level. Again, we will be interested in the third-party reviewer’s findings on this matter.

Turning to the observability of information, we note that withdrawal capacity is known information – the current withdrawal capacity of Ahuroa is 65 TJ/day. However, daily gas withdrawal information is not visible (monthly information on Ahuroa is posted on Gas Industry Co’s website). This lack of visibility limits the ability of external parties and Gas Industry Co to monitor Flexgas’s reporting relative to the outage definitions.

The Code does include a review process, which has a third-party expert reviewing the Code’s operation after 12 months and then on a two-yearly basis. The reviewer may have access to this daily information to enable them to assess parties’ disclosure against the outage definitions. However, the reviewer’s access to the information is unclear. Also, the Code does not include provisions that would ensure the independence of the reviewer. These issues are picked up in the review processes section below (section 5.9).

Overall, these definitions are a workable approach for the disclosure of gas storage facility outage information. However, the lack of information on daily gas withdrawals limits the ability of external parties to monitor Flexgas’s compliance with the Upstream Disclosure Code definitions.

¹⁸ See <https://flexgas.co.nz/about-ahuroa/>

¹⁹ Australia’s Gas Bulletin Board includes information on medium term capacity and adequacy. This information covers planned and scheduled facility outages, or changes in available capacity, affecting transmission pipelines, processing facilities, storage facilities and LNG facilities. Information for a 12-month outlook period is updated on a six-monthly basis. Information updates are triggered if the change in information is greater than 10 percent of the nameplate rating or 30TJ.

Reductions in the supply or withdrawal of gas due to a customer event

A further part of the above definitions is that the production or withdrawal reductions do not include reductions caused by a customer action or event. We question whether this additional condition is required. Only information related to facility outages is disclosed under the Upstream Disclosure Code, which excludes supply reductions caused by customer actions.

5.4 Information that should be disclosed

5.4.1 Description

The Upstream Disclosure Code sets out the minimum set of information that should be disclosed, consistent with the disclosure definitions. This information includes:

- The date and time of the outage.
- A description of the nature and cause of the outage (if known).
- The estimated duration of the outage.
- The estimated quantity per gas day of the reduction in gas supply due to the outage.
- Where appropriate, a description of progress in formulating a remedial plan.
- When applicable, confirmation of resumption of normal operations or other disclosure of the final status of the outage.

The Code has several notification forms that span the life of an event. These forms are uploaded to an outage notification IT platform. The Code document includes further details regarding the information that should be disclosed.

5.4.2 Assessment

We consider that the information list specified in the Upstream Disclosure Code covers the set of outage information that should be disclosed. The timing of notifications is discussed in the next section.

5.5 Timing of disclosures

5.5.1 Description

Unplanned Outages

Parties are required to disclose an initial notification identifying that there is an unplanned outage at a facility as soon as reasonably practicable after it has occurred. The timing of this notification must not be greater than 12 hours after the outage has occurred.

If the outage extends beyond the day it occurred, parties to the Code are required to disclose daily information for the following two weeks. Weekly updates are required after this period.

There is also a general statement that a party to the Upstream Disclosure Code "... may at any time provide such other update disclosures as it considers necessary or desirable to ensure the information then disclosed is as up to date as is reasonably practicable for it to so disclose." (cl. 15.2).

Planned Outages

Planned gas production and storage facility outage notifications are updated quarterly as a rolling 12 month forecast. If a party becomes aware of any material change in disclosed information and the event occurs in the first six months, the change should be disclosed as soon

as reasonably practical. If the outage occurs later in the forecast period, the update should be included as part of the quarterly notifications.

5.5.2 Assessment

Unplanned Outages

The 12-hour maximum period for the initial notification appears to be a reasonable timeframe, providing sufficient time for corporate sign-off of the notification. However, we note that the details required in the initial notification are high level (name of the facility and the outage, the date of the outage and the threshold met for disclosing the outage), which may affect the timeframe for what is considered “reasonably practicable.” We welcome parties’ views on the length of this reporting window.

The daily and two-weekly notification requirements do not include an obligation for parties to report a material change to the market as soon as reasonably practical. For example, in the case of an unplanned outage that extends beyond two weeks, a material change may not be updated until the next weekly update. Although the Upstream Disclosure Code *permits* upstream parties to update information outside the prescribed timetable, it does not require upstream parties to do so. This approach may result in information asymmetry for a period of time.²⁰

We do not think an obligation to disclose material changes to unplanned outages within a shorter timeframe (e.g. as soon as reasonably practicable) would impose a burden on gas producers and gas storage owners that is out of proportion to the benefit to the wider gas market and related markets. Disclosures are currently made on a “as soon as reasonably practicable” basis for changes to planned outages that occur within the next six months. We would assume that customers are notified of material changes to unplanned outages on a similar basis.

Planned Outages

We consider that the quarterly update schedule is reasonable. However, we have a concern regarding the requirement for updating for material changes in information. Material changes for the first six months of the outage forecast must be updated “as soon as reasonably practicable”²¹. However, the Upstream Disclosure Code requires material changes for the latter six months to be made on a timetabled basis rather than when knowledge of the material change is first acquired.²² Again, the Upstream Disclosure Code *permits* upstream parties to update information outside the prescribed timetable, but it does not require upstream parties to do so. This approach may result in information asymmetry for a period of time.

We consider that the timing of notifications for both planned and unplanned production facility outages goes some way to addressing issues with information asymmetry. However, the issue is not fully addressed under the current terms of the Code.

²⁰ Upstream parties will be required to update their disclosures for a material change if a contract requirement or expectation with a contract counterparty exceeds the requirements of the Upstream Disclosure Code. However, this would not apply to voluntary disclosures that are not required under a contract.

²¹ Our review of the operation of the Upstream Disclosure Code shows that parties appear to have been meeting this requirement. For instance, OMV posted a number of updates to its planned Pohokura outage notification over the August-December 2020 period.

²² For planned outages, updates are made on a quarterly basis. For unplanned outages, updates are made on a daily and weekly basis.

5.6 Confidential information

5.6.1 Description

Parties' disclosure obligations under the Upstream Disclosure Code are intended to apply regardless of any duty of confidence owed to a third party. A party to the Code must ensure that gas contracts that are entered into after these arrangements have begun do not impede disclosure of information under the Code.

5.6.2 Assessment

These confidentiality arrangements are a positive feature of the Code, limiting the potential for the disclosure of outage information to be restricted due to confidentiality issues. We note that information confidentiality has limited the disclosure of information in other information disclosure regimes. For instance, we understand some electricity parties consider that the confidentiality exclusion in the Electricity Participation Code has been used as a reason to not disclose information. The Electricity Price Review identified this as an issue that should be reviewed²³.

However, the confidentiality arrangements in the Code may not go far enough. For example, the requirement to ensure that contracts do not impede disclosure under the Code only applies to contracts entered into after Code has come into effect. This means that the Code may not be effective in overriding confidentiality arrangements in current gas contracts. Given the long-term nature of gas supply agreements, the inability of the Code to override the confidentiality arrangements in those agreements means that there may be situations where a producer's ability to disclose under the Code is somewhat restricted. We note that there is also a broader question of whether parties will comply with these arrangements. Compliance issues are discussed in Section 5.10.

5.7 Liability

5.7.1 Description

There is no liability for a disclosing party associated with information disclosed, or not disclosed, under the Upstream Disclosure Code.

5.7.2 Assessment

The Upstream Disclosure Code only applies to acceding gas producers. This means that third parties who have not signed the Code may not be bound by the requirements of the Code, or able to enforce the obligations in the Code.²⁴ The issue of Code coverage and structure was discussed in Section 5.2 above. The implications of this coverage are that:

1. Even if the liability exclusion had not been included in the Code, third parties who have not signed the Code may not have been able to hold upstream parties (including Flexgas) liable for breaches of the Code.
2. The liability exclusion may not be effective between upstream parties and third parties who have not signed the Code (and therefore does not mitigate upstream parties' risk).

²³ Electricity Price Review (2019) "The provision allowing participants to withhold (sic) information supplied to them on a confidential basis deserves particular attention. It is a critical weakness because it potentially neutralises the disclosure regime for most gas supply information held by generators."

²⁴ Gas producers accede to the Upstream Disclosure Code by signing the Deed of Accession for Gas Producers contained in Schedule 1 of the Code.

We consider that the broad liability exclusion effectively weakens the Upstream Disclosure Code by removing an incentive for upstream parties to comply with the requirements of the Code (on the basis that the threat of liability drives Code-compliant behaviour). However, we consider that the impact of the liability exclusion is moderated by the following:

1. As discussed above, the Upstream Disclosure Code only applies to acceding gas producers, so the scope of potential liability may be limited to claims between the parties to the Code (i.e. the key issue is code coverage and structure).
2. Pursuing compensation is likely to be costly and risky for parties, so the threat of enforcement action is likely to be weak (and therefore the incentives for Code-compliant behaviour are likely to be somewhat limited).

There is a broader issue of the incentives for compliance with the requirements of the Code. This issue is discussed in more detail in Section 5.10 below.

5.8 Information standard

5.8.1 Description

An information disclosure standard is the standard that parties are required to comply with when reporting information. The standard has a direct influence on the quality of reported information and, by extension, the confidence that energy sector participants have in the value of the information.

The standard in the Upstream Disclosure Code is that a party must perform its obligations under the Upstream Disclosure Code in good faith and as a reasonable and prudent operator (RPO) (cl. 6). An RPO is defined as, in relation to the performance of obligations under the Code, the application by a party to the Code of that degree of diligence, prudence and foresight reasonably and ordinarily exercised by experienced gas producers under the same or similar circumstances and conditions.

5.8.2 Assessment

Gas Industry Co considers the requirement for a gas producer to perform its obligations in good faith and to the standard of an RPO is a reasonable approach. The standard can be applied to a variety of circumstances and does not require knowledge or intent to be established. A similar approach is adopted in the Australian National Gas Rules (NGR) which requires information to be reported in accordance with good gas industry practice²⁵.

5.9 Review processes

5.9.1 Description

The Upstream Disclosure Code includes a review mechanism that includes the appointment of a "suitably experienced" third party or parties to review the Code's operation after 12 months and then every two years (cl. 5.3). The review process will:

- Assess the Code's performance against its stated purpose (cl. 2), which includes meeting the government's policy objectives for the gas sector. These objectives are summarised in Table 2 above.
- Consider whether the outage definitions have appropriately delivered on this purpose.

²⁵ Australia's National Gas Rules govern access to natural gas pipeline services and elements of broader natural gas markets, see <https://www.aemc.gov.au/regulation/energy-rules/national-gas-rules/current>

- Examine whether parties to the Code have complied with its requirements.

The review will be published and made available to Gas Industry Co which may elect to support its findings or make recommendations for change. The review will also provide an opportunity for the wider energy sector to provide feedback on the Code's operation.

As we discussed in the outage definitions section (Section 5.3), there have been differing views on whether the outage threshold should be 20 TJ/day, or if it should be 15 TJ/day or perhaps lower. The Upstream Disclosure Code includes a review process for this threshold setting (cl 5.2). This review involves the appointment of a third party to review the outage information of facilities after the first six months of the Code's operation and assess whether the threshold should be lowered to 15 TJ/day. Parties to the Code will amend the threshold to 15 TJ/day if this reduction has the support of all parties.

5.9.2 Assessment

These review processes are a key element of the Upstream Disclosure Code's compliance framework (see Section 5.10).

The reviewer has a major role in assessing parties' compliance with the Code. In part, this is because some of the key information required to assess compliance with the outage definitions is not available to third parties, limiting their ability to monitor and report on suspected cases of non-compliance.

There are several issues with the review framework as it is set out:

- As discussed in Section 5.9, for the reviewer to be effective in monitoring parties' compliance with the Code, they need access to the information that is referred to in the outage definitions. It is not clear that the reviewer will have access to this information. As we discussed earlier, there is also the issue that some of the information is companies' private information, which potentially makes it difficult for the reviewer to verify the accuracy of information even if it is provided.
- Linked to the previous point, external parties' ability to lodge complaints may be restricted by a lack of access to relevant, privately held information.
- Neutrality of the reviewer is important to give the review credibility. The Code is silent on how the reviewer is appointed so that neutrality is ensured. The fact that the reviewer is funded by the parties to the Code may also compromise the reviewer's independence.
- Because this review process is the main compliance mechanism, the two-yearly interval for reviews is too infrequent. A party who chooses not to disclose under the requirements of the Code may not be picked up for up to two years, limiting the effectiveness of the Code's compliance arrangements.

We think that the review process for the threshold is beneficial for addressing an issue identified by several parties during the development of the Code (i.e. whether the threshold size for disclosure is appropriate).

Overall, Gas Industry Co considers that relying on the review process as a means for assessing compliance with the Code has a number of limitations (as discussed above). We consider that the neutrality of the reviewer is also an issue for this process.

5.10 Compliance and enforcement arrangements

5.10.1 Description

The Upstream Disclosure Code's compliance and enforcement framework includes the following components:

- *Regular reviews.* As discussed in the previous section, parties' compliance with the Code will be the subject of reviews by a "suitably experienced" third party or parties with recommendations for amendments, if any. The Upstream Disclosure Code notes that the findings will be made available to Gas Industry Co (and they will be published), who may support the findings or make recommendations for change.
- *Process for complaint management.* A party to the Code must respond to any complaint made by any person arguing it has not complied with its obligations under the Code. If the complainant is not satisfied with the response, they may make a complaint to Gas Industry Co who may deal with it as it sees fit pursuant to its role as co-regulator (cl. 9.3).
- *Process for addressing repeated non-compliance.* If a party to the Code has failed repeatedly and materially to comply with the Code, the other parties (if by a consensus of 75 percent or more) may request its withdrawal from the Code (cl 9.4).
- *Future gas contracts.* The Upstream Disclosure Code contains a requirement that a gas producer includes an obligation that it complies with the Code in gas contracts that it enters after the Code comes into effect.

5.10.2 Assessment

In general, a compliance and enforcement framework should aim for high levels of compliance in a least cost manner. This outcome requires there to be strong incentives to comply, which may occur where parties consider that:

1. Non-compliance will be identified – the review process, which is the main compliance monitoring arrangement in the Code, is discussed in Section 5.9.
2. Parties will be held to account for the quality of the information they report – the information standard is discussed in Section 5.8.
3. Credible and meaningful action will occur in the face of non-compliance.
4. The costs of non-compliance outweigh any benefits.

For gas sector information disclosure, the compliance framework should result in energy market (including gas and electricity) participants having confidence that information that may affect the wholesale gas market is reported accurately and in a timely manner.

Our assessment of the compliance and enforcement framework in the Upstream Disclosure Code is based on these four factors.

The first two factors (identification of non-compliance, parties being held to account for the quality of information they report) are related to the Upstream Disclosure Code's review process. The discussion on the review process (Section 5.9) concluded that this process may not be an effective mechanism for identifying an excursion from the Code's rules. This means that for some outage events, these two outcomes may not be realised. Regarding the second factor, we concluded in Section 5.8 that the information standard set in the Upstream Disclosure Code is a reasonable approach. However, limitations with the review process mean that parties' disclosures of outage information may not be measured against this standard in all cases.

The third and fourth factors (credible and meaningful action will occur, costs of non-compliance outweigh any benefits) relate to the enforcement provisions in the Upstream Disclosure Code. As described earlier, there are two enforcement or incentive mechanisms:

1. A complaint regarding non-compliance may be made by any party to Gas Industry Co who may deal with it as it sees fit.
2. Parties (through a consensus of 75 percent or more) may ask a non-compliant member to withdraw from the Code if they continually fail to comply with its obligations.

On the first matter, as a general point, a party may raise any gas industry issue with Gas Industry Co. This Code does not alter that ability. The issue is what powers does Gas Industry Co have to address the matter raised. Regarding a complaint related to a compliance issue matter under the Code, we have no particular power (such as an enforcement power) to do anything with the matter. As co-regulator we can work with parties to try to resolve industry issues. However, our enforcement mechanism is limited ultimately to initiating a review to consider implementation of gas governance regulations for production and storage information disclosure (including a Statement of Proposal process, a recommendation to the Minister, and if the recommendation is to regulate, the possible development of rules or regulations). This is a very blunt and time-consuming response. A party may view the cost of this review being initiated (i.e. the cost of non-compliance) to be low relative to the commercial benefits that may accrue from not reporting commercially valuable information.

On the second matter, we have two comments. First, it may be difficult for producers and Flexgas to monitor each other given that the outage definitions involve information that is private to the individual companies. This issue was discussed in the earlier review process section. Secondly, and more importantly, the removal of a producer is at odds with the aim of the Upstream Disclosure Code, which is for information to be disclosed in accordance with the requirements of the Code. Removal of one of the parties from the Code is likely to undermine its effectiveness, particularly given that the Code only spans five parties. The removal of any party means that less information will be made available.

The requirement that a gas producer includes an obligation that it complies with the Code in gas contracts that it enters after the Code comes into effect is unlikely to provide an effective incentive to comply with the Code. Firstly, there is unlikely to be an incentive for the counterparty to these contracts to enforce this contractual requirement. The counterparties to gas contracts would be expected to receive notification of the outage as a customer of the gas producer, so they are unlikely to have been impacted by non-disclosure. Secondly, it is unclear whether the contractual requirement would override the disclaimer on liability in the Upstream Disclosure Code (cl 8).

In conclusion, Gas Industry Co considers that compliance under the Upstream Disclosure Code may be difficult to monitor given the issue with private information. It is not clear whether the third-party reviewer will be an independent party and whether they will have access to all of the information required to monitor compliance. The two-yearly review cycle is too infrequent for monitoring compliance. Turning to enforcement, the enforcement mechanisms in the Code are very limited. The implication of this is that costs of non-compliance may not outweigh the benefits of non-compliance for a party to the Code. There is a risk that, over time, parties may limit the disclosure of information if disclosure may cause them commercial detriment. Additionally, the limited enforcement mechanisms may mean that there are insufficient incentives for parties to put in place appropriate processes to avoid inadvertent non-compliance with the requirements of the Code.

5.11 Performance of the Upstream Disclosure Code to-date

The Upstream Disclosure Code has been in operation since March 2020. At the time of writing, there have been 73 separate notifications on the Industry Notifications webpage, relating to new events or (mostly) updates to previously reported events. OMV, in particular, has provided numerous updates related to its Pohokura compression project and investigations into the cause of the deliverability reduction at the Pohokura facility.

While we cannot say that the disclosures have met the reporting requirements identified in the outage definitions (as noted, the information required to assess this is not available to third parties), the level of reporting indicates that parties appear to be generally making an effort to communicate outage events. However, we note that some parties have not always followed the strict requirements of the Code. For instance, the notification templates have not been used in some cases, and notifications have not always followed the schedule outlined in the Code. We expect that a reason behind this reporting inconsistency may be due to parties getting used to the reporting requirements in the Code. Also, the reporting framework in the Code may need to be adjusted to make reporting less cumbersome. The notifications platform could also be improved to encourage reporting consistency.

5.12 Conclusion

Overall, the Upstream Disclosure Code has a number of positive features that have led to a major improvement in both the quantity and quality of information that gas producers and Flexgas have shared publicly regarding both planned and unplanned facility outages. For example, the disclosure of information on the recent Pohokura outages (associated with deliverability issues at the facility) has helped to reduce the uncertainty that parties may have had regarding these events. This is in stark contrast to the lack of public information regarding Pohokura in 2018. OMV has also recently published its forecast production for both the Maui and Pohokura fields for 2021. This reporting goes beyond the disclosure requirements in the Code. We commend OMV for providing this information to help reduce uncertainty in the market regarding production at these fields.

Despite the step change improvement in outage reporting that has occurred, Gas Industry Co is concerned that there are deficiencies with the Code that may limit its suitability as an enduring framework. Most notably, the lack of a credible compliance and enforcement mechanism means that costs of non-compliance with the Upstream Disclosure Code may not outweigh any benefits. Consequently, some parties may decide – either deliberately or through omission – to not fully meet the requirements of the Code, with limited repercussions. At some point, when the commercial benefits of limiting the public reporting of outage information outweigh the relatively limited costs, a party may decide not to provide details publicly on an outage event. Simply put, the Upstream Disclosure Code will work until it doesn't. At that point, a regulated solution may be the only alternative, but the lead times in implementing this option are long.

We have identified several other issues with the Upstream Disclosure Code, including:

- The structure of the Code as a multilateral agreement between producers and gas storage owners means that the Code can only be enforceable between those parties and limits the role of affected parties in changes to the Code.
- Some of information in the outage definitions is private information, making it difficult for third parties and Gas Industry Co to review whether parties to the Code have reported outage information consistent with the Code's terms.

- The timing of notifications for unplanned outages and material changes to planned outages may not address issues with information asymmetry.
- The provisions of the Code do not override confidentiality obligations in current contracts held by gas producers and gas storage owners. Some of these contracts are likely to be long-term arrangements which may, in some circumstances, limit the ability to meet the disclosure obligations under the Code.
- When considered in conjunction with the absence of an effective compliance and enforcement regime, the broad liability exclusion in the Code significantly reduces the incentives for gas producers and gas storage owners to comply with the requirements of the Code.
- There are some issues regarding the review process in the Code, including whether the expert party is a neutral party and the timing of the reviews.

We consider these to be smaller issues compared with the compliance and enforcement issue.

Gas Industry Co considers that the *Upstream Gas Outage Information Disclosure Code 2020* does not satisfactorily achieve the regulatory objective as set out in Section 3.4.7. Regarding the outcome categories listed in Table 3, we consider:

- An improvement in efficiency outcomes requires information to be available to all relevant parties, all the time and on a consistent basis. The lack of a meaningful compliance and enforcement framework in the Code, as well as the other issues identified above, means that this outcome is not assured under this framework.
- The fact that there is a risk that information transparency and symmetry may not be consistently achieved implies that fairness outcomes may not be delivered over time.

Q4 Do you agree with our assessment of the Upstream Gas Outage Information Disclosure Code 2020 as an option for achieving the regulatory objective? Please provide supporting arguments for your views.

6. Rules or regulations under the Gas Act

6.1 Introduction

In this section, the option of information disclosure arrangements for gas and storage facility outages implemented as a framework of regulations (and/or rules) under the Gas Act is discussed. We begin the section by considering options for the broad form of the arrangements. This is followed by a discussion of the key elements that frame the regulatory option.

6.2 Approaches to information disclosure

There are two broad approaches to regulated information disclosure that could be adopted; the arrangements could be designed around a principles-based approach or as a set of specific disclosure rules. These options were discussed in the *Options for Information Disclosure in the Wholesale Gas Sector* paper (“Options paper”)²⁶. Briefly, a principles-based approach to information disclosure is a mode of disclosure that relies upon principles as opposed to distinct rules. The approach is based on achieving an outcome rather than setting detailed rules that parties must adhere to. The information disclosure regime in the New Zealand wholesale electricity market and the continuous disclosure framework in the New Zealand stock market are examples of principles-based regulation. A specific approach to information disclosure is where the information provided by parties is based on their compliance with specific disclosure rules. The Upstream Disclosure Code is an example of a specific, rules-based information disclosure code.

Gas Industry Co considers that a specific, rules-based approach is the appropriate form for production and storage facility outage information disclosure.

A principles-based approach is based around a simple, measurable outcome. For both the electricity and NZX disclosure arrangements, this outcome is framed as a material change in the relevant market price (the electricity wholesale market price and equity prices respectively). The nature of the gas wholesale market means that a simple outcome-based construct is not possible. Most of the gas wholesale market is comprised of bilateral contracts. Apart from the emsTradeport market, a simple market price does not exist (bilateral contracts are a complex, bespoke mix of supply terms that include price as one facet), making it difficult to infer the market “price” response from a particular outage event.

Apart from this practical implementation issue, compliance monitoring and enforcement is generally considered to be more difficult in principles-based regulation. This is partly because the regulated parties have an inherent information advantage over the regulator. Unless there is detailed guidance documentation (which may begin to look like disclosure rules) consistency of reported information may vary across parties. To address these issues, the regulator needs to have compliance systems in place, which may be costly. For instance, monitoring must be conducted on a proactive basis.

²⁶ <https://www.gasindustry.co.nz/work-programmes/gas-sector-information-disclosure/consultation/document/6480>

We note that a specific, rules-based approach can lead to under or over-compliance depending on how the regulations are drafted and the risk profiles of regulated parties. There is also the potential for regulated parties to “game” the rules. However, we consider that gas production and storage facility outage reporting involves relatively simple information, so if the rules are drafted carefully, this should not be a significant issue.

Finally, the information disclosure framework should be “fit-for-purpose”. The New Zealand wholesale gas market is small. There are currently four operators of the major gas fields and one gas storage facility owner. We consider that a specific rules-based approach is likely to be a lower cost, practical solution for information disclosure in the gas sector.

6.3 Key elements of regulated information disclosure arrangements

6.3.1 Introduction

In the following discussion we describe the key design elements that make up a proposed regulated information disclosure option. The rationale behind these elements is also discussed.

The layout of this section uses the basic structure in the Upstream Disclosure Code, which we consider captures matters that we would reasonably expect to be included in an information disclosure framework. The proposed regulated option adopts aspects of the Upstream Disclosure Code where we consider those aspects to have merit. Other aspects of the Upstream Disclosure Code are augmented or replaced to address various limitations and/or make the elements workable as a regulated set of arrangements.

6.3.2 Coverage of the arrangements

Description

We consider that the coverage of the arrangements should include production and storage facilities that operate above an appropriate de minimus threshold (i.e. a threshold below which there is unlikely to be a market impact). Following this approach, we think that the arrangements should include the following facilities:

- Gas production facilities. Production facilities that have produced a minimum of 20 TJ/day should be included in the arrangements.
- Gas storage facilities. Storage facilities that have a maximum withdrawal rate of at least 20 TJ/day should be included in the arrangements.

Comment

We do not consider that disclosure obligations should be placed on production and storage facilities who are of a small size and are unlikely to have a market impact if an outage occurs at that facility.

The de minimus threshold is proposed due to the challenges associated with a principles-based approach discussed in the preceding section and the difficulty in determining a proxy for market impact.

6.3.3 Outage Definitions

Description

The outage definitions cover planned and unplanned outages for both gas production and storage facilities. The definitions are based on a similar structure to the definitions in the Upstream Disclosure Code:

- Information disclosed under the arrangements includes reductions in gas production or storage withdrawal associated with a facility outage.
- Reporting is narrowed to information on outages over a minimum size, to effectively exclude events that are unlikely to have a material impact on the gas wholesale market. This minimum level is defined by:
 - A base, business-as-usual, measure of gas production or storage withdrawal rate that would be expected in the absence of the outage (“benchmark”).
 - A minimum production or storage withdrawal reduction, measured against this benchmark (outage “threshold”).

The main elements of these definitions are the size and form of the threshold and the form of the benchmark. These are discussed below for each of the facility and outage combinations. This is followed by a discussion on the other elements that make up the definitions.

Threshold – gas storage and production facility planned and unplanned outages

We consider that the threshold measure should be the same across all forms of outage and both gas storage and production facilities. We consider that an absolute measure for the threshold is appropriate. We propose a threshold of 20TJ/day.

Benchmark – gas storage facility planned and unplanned outages

We think that the benchmark for gas storage facility outages (both planned and unplanned) should be the withdrawal capacity of the facility. For the Ahuroa gas storage facility, this is currently 65 TJ/day.

Benchmark – gas production facility planned outages

The benchmark for gas production facility planned outages should be the maximum daily production in the producer’s production forecast for the 14 gas days preceding the forecast start of the outage. Gas Industry Co’s monitoring requirements for this benchmark are covered in Section 6.3.7.

Benchmark – gas production facility unplanned outages

We consider that the benchmark for all gas production facility unplanned outages should be the relevant week ahead estimate of total gas production, which may include:

- Relevant week ahead or other nominations related to the facility made under the gas transmission code.
- An estimate of any daily gas quantities that would have flowed on private pipelines over the outage period.
- An estimate of other daily gas quantities that would have been consumed on/near the site.

Gas Industry Co’s monitoring requirements for this benchmark are covered in Section 6.3.7.

Other outage definition elements

Apart from the threshold and benchmark components of the definitions, other parts of the definitions include:

- Planned outage information is for the following 12 month rolling period. Updates to this information are required on a quarterly basis, or if there is a material change in the details of the outage.
- All information is for a gas day.

Comment

Threshold

We consider that the 20 TJ/day threshold used in the Upstream Disclosure Code should be used in a regulated set of arrangements. Our analysis of daily production from the major fields (see the discussion in Section 5.3) indicates that a lower threshold may not be useful given the size and variability of production across the major fields. The Upstream Disclosure Code includes a review of this threshold after an initial six-month period. This will be a useful input for confirming that this parameter is appropriate.

We are conscious of the concern that the 20TJ/day threshold may need to be revised over time to reflect changes to the industry. While changes to the threshold may need to be progressed through a regulatory change process, our preference would be for the threshold to be determined outside of the regulation through a regulated review and consultation process.

We do not propose adopting a separate threshold for an outage that does not result in a reduction in forecast gas quantities (i.e. the second limb of the definition of an “unplanned outage” in the Upstream Disclosure Code). This is because an outage in this situation is unlikely to have a material market impact (even though there is an outage, net supply to the market from the facility is mostly unaffected).

Benchmarks

Gas Industry Co considers that, at a high level, the benchmark measures set out in the Upstream Disclosure Code are a reasonable approach for setting the baselines that changes in production (caused by an outage) are measured against. We have changed some of the benchmark metrics so that all gas production is included. For instance, the nominations-based benchmark for unplanned gas production facility outages in the Upstream Disclosure Code has been replaced with a daily total gas production benchmark. In our view, the overall available gas supply is not limited to gas volumes transported through the open access gas transmission system. It is all gas that is produced, including gas transported via private pipelines or consumed on site. The definition should be indifferent regarding the mode of transmission.

6.3.4 Information that should be disclosed

Gas Industry Co considers that the information disclosed under these arrangements should be the same as the information set identified in the Upstream Disclosure Code, including:

- The date and time of the outage.
- A description of the nature and cause of the outage (if known).
- The estimated duration of the outage.
- The estimated quantity per gas day of the reduction in gas supply due to the outage.
- Where appropriate, a description of progress in formulating a remedial plan.
- When applicable, confirmation of resumption of normal operations or other disclosure of the final status of the outage.

For unplanned outages, the information that is provided at the various notification stages (initial update, daily update, weekly update, cessation notification) should be the same as the information supplied under the notification stages in the Upstream Disclosure Code.

Comment

We consider that the information that is required to be disclosed under the Upstream Code captures the information that third parties reasonably require in order to make informed decision in response to gas production or gas storage facility outages.

6.3.5 Timing of disclosures

Description

Planned outages

A gas producer or storage owner should make rolling 12-month forecast outage disclosures on a quarterly basis. If the party becomes aware of any material change to this information, it should disclose it as soon as reasonably practicable.

Unplanned outages

Gas Industry Co considers that the following notifications are required for an unplanned outage:

- Initial notification. An initial notification should be made as soon as reasonably practicable and not later than 12 hours after the occurrence of the outage.
- Daily updates. If the outage continues beyond the gas day it occurred, there should be daily updates of information for up to the first two weeks beyond this gas day (depending on the length of the outage).
- Weekly updates. Once the outage has continued for 14 days, there should be weekly updates of information.
- Cessation notification. The production or storage owner should notify that the facility has resumed normal operation as soon as reasonably practicable after this event has occurred.
- Material updates. Notwithstanding the daily and weekly schedule of updates, if over these timeframes the party becomes aware of any material change to the currently disclosed set of information, it should disclose it as soon as reasonably practicable.

Additional disclosure

Similar to the Upstream Disclosure Code, nothing in the arrangements should prevent a producer or storage facility owner from disclosing more information than the information set defined in the arrangements.

Comment

We consider that many of the notification timing requirements in the Upstream Disclosure Code are reasonable. However, unlike the Upstream Code, we have extended the requirement to update disclosures for material changes “as soon as reasonably practicable” across all relevant notification types for the following reasons:

- This approach is consistent with the requirements in relation to planned outages. We see no practical difference between the impact of a material change in a planned outage or an unplanned outage.
- We expect that gas producers and gas storage owners would be providing updates to direct customers of these facilities as soon as reasonably practicable. The intention here is to promote information symmetry across all parties.

We have retained the 12-hour maximum window for the initial notification of an unplanned outage. This window recognises the time that may be required for parties to get corporate sign-off on the notification. We welcome parties' views on this timeframe.

6.3.6 Confidential information

Description

The disclosure requirements must be complied with irrespective of whether gas producers or gas storage owners are subject to confidentiality arrangements in their agreements.

Comment

We do not consider that the nature of the information that will be disclosed by gas producers and gas storages owners under the proposed rules-based approach will give rise to concerns regarding confidentiality.²⁷ Accordingly, confidentiality obligations should not present a barrier to disclosure.

6.3.7 Information required for monitoring

Description

Under these arrangements, a gas production facility owner is required to provide Gas Industry Co with:

- Actual daily total production.
- Forecast daily production quantities (provided on a monthly basis). This information is required for Gas Industry Co to monitor compliance with the unplanned outage definition.
- An estimate of daily production for the next 12 months (provided on a quarterly basis). This information is required for Gas Industry Co to monitor compliance with the planned outage definition.

A gas storage facility owner is required to provide Gas Industry Co with daily aggregate withdrawal information on a monthly basis.

Comment

The regulated disclosure requirements propose that an outage disclosure is made if a specific threshold is met. This threshold is defined by reference to a business-as-usual production or capacity estimate (in the case of storage facilities) that the outage is measured against.

In order to effectively monitor compliance with the disclosure requirements, Gas Industry Co needs data relevant to the benchmark definitions. For gas production facilities, total daily forecast gas quantities (for the month or year ahead) are not publicly available. These requirements address this information gap.

We also need information on the total gas quantities actually produced at production facilities and the aggregate daily withdrawals made from storage facilities to monitor whether an outage may have occurred. For production facilities, there is public information on OATIS that provides insight into daily production. However, there is no information on gas that is shipped on private pipelines or used on-site/nearby. The requirement for daily production information enables total gas production to be observed. For gas storage facilities, there is no public information on daily gas withdrawals (we note that Flexgas provides a monthly snapshot of this information to Gas Industry Co which is published on our website). The requirement for daily storage withdrawal

²⁷ We note that most of information is already disclosed under the terms of Upstream Code.

information enables Gas Industry Co to have visibility of this information for monitoring purposes.

We note that information disclosed under these disclosure arrangements will only be used for the purpose of monitoring compliance with information disclosure rules. The information will not be used for purposes outside these arrangements.

6.3.8 Confirmation of information quality

Description

We consider that the daily production forecast and daily production and storage withdrawal information provided to Gas Industry Co should be prepared in good faith and to the standard of a Reasonable and Prudent Operator.²⁸

We also propose an annual director's certification that the gas producer or gas storage owner has complied with its obligations under the regulations over the previous year.

Comment

The fact that information covered under these arrangements is privately held makes it difficult for Gas Industry Co to verify the quality of the information that it is using for monitoring compliance.

The RPO obligation is well suited to a general standard to which information is prepared. The advantage of this option is that it is a standard that is reasonably well-understood, flexible, and largely objective.

The director's certification requirement is similar to the approach the Electricity Authority has proposed in its review of electricity wholesale market information disclosure to ensure accurate and complete reporting. The advantage of this requirement is that it is likely to be an effective means for improving the quality of disclosures, providing assurance that parties are following the information disclosure requirements and encouraging self-reporting. The downside of this proposal is that imposes an additional regulatory burden on these companies.

6.3.9 Compliance and enforcement arrangements

Description

The regulations requiring disclosure of information regarding gas production and gas storage facility outages would be subject to the existing compliance framework in the Gas Governance (Compliance) Regulations 2008 (Compliance Regulations).

Breaches of the information disclosure regulations would be processed in the same manner as breaches of the Gas (Switching Arrangements) Rules 2008, the Gas (Downstream Reconciliation) Rules 2008 and Gas (Critical Contingency Management) Regulations 2008.

A Market Administrator, Investigator and Rulings Panel are appointed under the Compliance Regulations to undertake a range of functions in relation to alleged breaches as follows:

- The Market Administrator receives breach notices, refers allegations that raise material issues to the Investigator and where appropriate, attempts to achieve a resolution on allegations which do not raise material issues. The Market Administrator function is currently being performed by Gas Industry Co.

²⁸ The regulations would adopt a definition of an RPO that is similar to the Upstream Disclosure Code.

- The Investigator investigates the facts surrounding all alleged breaches notified to him/her, and endeavours to settle every alleged breach.
- The Rulings Panel has jurisdiction to approve or reject settlements provided by the investigator. The Rulings Panel also determines alleged breaches which the Investigator has been unable to settle.

Comment

The lack of a meaningful compliance and enforcement framework is a key issue leading to our conclusion that the Upstream Disclosure Code does not satisfactorily achieve the regulatory objective (see Section 5).

As Gas Industry Co would need to recommend an amendment to the Compliance Regulations, a separate Statement of Proposal for the proposed amendment to the Compliance Regulations is attached at Appendix A. This Statement of Proposal contains the rationale for the proposed changes to the Compliance Regulations, an assessment of options, and an assessment of costs and benefits.

6.4 Conclusion

As we discussed in Section 6.3, the structure of these regulatory arrangements uses the basic design of the Upstream Disclosure Code. We have incorporated those parts of the Upstream Disclosure Code which we consider to be suitable elements of a regulated solution. We have modified or replaced other parts of this Code to address areas where we have identified deficiencies, as summarised in Section 5.12.

Gas Industry Co considers that the most practicable means for implementing information disclosure arrangements for gas production and storage facility outage information is to implement them within a framework of regulations (and/or rules) under the Gas Act.

Q5 Do you agree with the design of this regulatory option? Are there parts of design that require amendment? Please provide supporting information in your response.

Q6 Do you agree with our conclusion that the most practicable means for implementing information disclosure arrangements for gas production and storage facility outage information is to implement them within a framework of regulations (and/or rules) under the Gas Act? Please provide supporting arguments in your response.

7. Next Steps

As we discussed at the beginning of this paper, the purpose of this draft SOP is to seek parties' views on the various matters included in our assessment. We are particularly interested in stakeholders' feedback on the options for addressing the problems associated with limited information.

Following this consultation, we will then move to develop the final SOP, which will incorporate the feedback received on the draft. We are progressing the development of this SOP on the assumption that the Gas Act will be amended to provide the Minister with the power to recommend regulations requiring information disclosure. The timing of the final SOP will depend on when the Gas (Information Disclosure and Penalties) Amendment Bill has completed its passage through the House of Representatives.

Appendix A – Proposed amendments to Gas Governance (Compliance) Regulations 2008

In Section 6.3.9 of the Draft Statement of Proposal: Gas Production and Storage Facility Outage Information, Gas Industry Co proposed that the regulations requiring disclosure of information regarding gas production and gas storage outages would be subject to the compliance framework in the Gas Governance (Compliance) Regulations. As a change to the Compliance Regulations would be required to give effect to that proposal, the purpose of this Appendix is to fulfil the requirements in the Gas Act in relation to that change.

Following extensive consultation with the industry, on 31 May 2007 Gas Industry Co recommended to the Minister of Energy that he recommend to the Governor General the making of regulations by Order in Council to establish a compliance and enforcement regime to support the Gas (Switching Arrangements) Rules 2008 and the Gas (Downstream Reconciliation) Rules 2008. The regime comprises:

1. A Market Administrator which has responsibility for receiving notices of reported breaches of the rules, attending to administrative tasks, determining the materiality of breaches, and attempting to resolve any immaterial breach with the agreement of the parties.
2. An Investigator who investigates material or unresolved immaterial breaches, endeavours to settle the matter, and refers settlements and unresolved breaches to the Rulings Panel and
3. A one member Rulings Panel which approves or rejects settlements, determines unresolved breaches, and orders remedies.

In 2008, the Gas Governance (Compliance) Regulations (Compliance Regulations) were amended to include breaches of the Gas Governance (Critical Contingency Management) Regulations 2008 within the scope of the Compliance Regulations.

The above approach is contemplated in Subpart 1 of Part 4A of the Gas Act, which sets out the framework for enforcing compliance with any gas governance rules or regulations. The provisions:

1. contemplate that a Rulings Panel might be established;
2. include limits on investigation powers for monitoring and enforcing compliance with gas governance regulations and rules, obligations on industry participants to co-operate with any investigation, and privileges protection (sections 43U to 43W);
3. contain a list of the orders that the Rulings Panel can make (sections 43X and 43Y);
4. impose limits on tort claims against service providers (section 43Z); and
5. establish rights of judicial review and appeal to the Courts (sections 43ZA to 43ZJ).

Section 43G(2) of the Gas Act provides that the Minister of Energy and Resources can recommend to the Governor General the making of the following regulations:

Dispute resolution procedures

(i) providing procedures for resolving disputes between industry participants, other than indemnity disputes (as defined in [section 43EAA](#)):

(j) providing for the operation and facilitation of those dispute resolution procedures by a person, and the powers and procedures of that person:

Enforcement of gas governance regulations

(k) providing for compliance with gas governance regulations and rules to be monitored and enforced by the industry body or the Commission or any other person or court, and the powers and procedures of that person or court:

In addition, section 43S of the Act includes supplementary empowering provisions applying to any regulation or rule made under Subpart 1 of Part 4A of the Act. These supplementary empowering provisions include the ability to provide for persons or bodies to carry out functions in relation to regulations or rules and disclosure of information.

Prior to making a recommendation for regulations relating to compliance and enforcement, the Gas Act requires Gas Industry Co to comply with the process requirements in sections 43L and 43N of the Act. Those requirements are discussed in detail in section 2.3 of this paper. They include identification of reasonably practicable options, assessing the costs and benefits of each option and consulting on a statement of proposal.

This paper sets out a statement of proposal for the compliance and enforcement framework for the proposed information disclosure regulations.

We propose that the objective for the compliance and enforcement regime is:

to establish an efficient and effective compliance and enforcement regime to ensure the integrity of the information disclosure framework

The main options for compliance and enforcement of the proposed information disclosure regulations are:

1. A voluntary multilateral arrangement.
2. A regulated compliance and enforcement arrangement.

We consider that a voluntary multilateral arrangement is unlikely to achieve the regulatory objective for the following reasons:

1. The difficulty in reaching consensus on the terms of a multilateral compliance arrangement.
2. Remedies are likely to be limited to a contractual claim, which may effectively limit compliance action being taken (and therefore the incentives for compliance).
3. The diverse nature of parties who would need to be included within the scope of the multilateral arrangement. Given that compliance with disclosure requirements may have an impact beyond the parties making disclosure, parties receiving information would need to be a party to the arrangement.
4. Parties cannot be compelled to join the multilateral arrangement.

There is a wide range of potential options for a regulated compliance arrangement based on the empowering provisions in the Gas Act. The options were explored in detail as part of the development of the Compliance Regulations.²⁹ That analysis concluded that the Compliance Regulations should lead to good levels of compliance, provide a high level of transparency around the process and minimise transaction costs as far as possible.

²⁹ See Compliance and Enforcement Arrangements in the New Zealand Gas Industry, 12 April 2006 available at <https://www.gasindustry.co.nz/work-programmes/compliance/background/original-development-2006-2008/options-for-compliance-and-enforcement-arrangements-in-the-new-zealand-gas-industry/document/127>

We consider that regulations requiring disclosure of information regarding gas production and gas storage outages could be made subject to the compliance framework in the Compliance Regulations with little difficulty.³⁰ The Compliance Regulations are also a fit-for-purpose mechanism for addressing breaches of the proposed regulations for the following reasons:

1. Any participant or other person may raise a breach of the rules.
2. The Compliance Regulations contain a tiered process for resolving breaches of the rules based on severity.
3. There is a requirement to cooperate with an investigation for the purpose of monitoring and enforcing the rules, including a requirement to make information available requested for the purpose of the investigation.
4. The Rulings Panel has the power to make a variety of orders including compliance directions, compensation orders and civil pecuniary penalties.

The benefits of a compliance regime are linked to ensuring that the benefits of the arrangements that they enforce are achieved. The benefits of effective and timely availability of information regarding gas production and storage outages has been discussed in the preceding sections of this paper.

As the establishment and ongoing costs of administering the compliance regime under the Compliance Regulations have already been incurred, the incremental cost of adding the information disclosure regulations will include any additional workload for the Market Administrator, the Investigator and the Rulings Panel. While forecasting compliance activity is difficult, we do not believe it will be necessary to appoint additional personnel to any of the above functions.

³⁰ The definition of “rules” in the Compliance Regulations is the only substantive drafting change that we have been able to identify.

Appendix B – Cost Benefit Analysis

Cost benefit analysis of information disclosure in the gas industry

Evaluating GIC's statement of proposal

Toby Stevenson and Ashley Milkop

11 December 2020



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Executive summary

A voluntary Gas Outage Information Disclosure Code¹ has been in effect since June 2020. This code follows the industry notifications webpage, which GIC set up in August 2019. These initiatives were taken once the implications of limited disclosure became better understood following outages occurring in late 2018 and early 2019. The Gas Industry Company (GIC) in its problem assessment paper on information disclosure states that “[l]imited production outage information has efficiency implications for most parts of the gas industry value chain, as well as other related sectors.”² It follows that any issues of comprehensiveness of the information, consistency or timeliness have the potential to compromise the regime.

The impacts of gas production outage information disclosure are not confined to gas consumers and the working of the gas market. The electricity market also bears the impact of there not being a gas outage disclosure scheme.

However, there are points of vulnerability with the mechanism in place:

- It is voluntary.
- Posts made under the voluntary code are not consistent.
- There is no compliance regime.
- Incentives for compliance are weak.
- Scheme reviewers have limited ability to access underlying data.

GIC has asked us to produce a cost benefit analysis (CBA) of a regulated specified information disclosure. We are to demonstrate which one of two options – a regulated approach versus the existing voluntary scheme – has the highest net economic benefit (lowest net cost). Because of perceived vulnerabilities around the voluntary disclosure regime, we have had to consider the strong possibility that the voluntary regime might fail at the time that it is most needed. The likelihood of failure means we are comparing a reliable, enforceable regime of information disclosure with a counterfactual of no information disclosure.

We have relied on literature around information disclosure in markets to identify cost and benefits for analysis. We have also interviewed market participants, focusing on feedback around the workings of the voluntary regime. We provide a qualitative analysis because data is limited and too many assumptions would have to be made, rendering any quantitative attempt potentially meaningless.

For this work we have focused on the downstream impacts of gas outage information. We commend the upstream companies for supporting the voluntary scheme. From an economic perspective, we do not want our enthusiasm for a regulated regime to be interpreted as a criticism of the upstream parties. Our position is simply that for the benefits of disclosure to be fully realised, a regime should be comprehensive, consistent and enforceable. The way to ensure that is to take the step to regulate the regime.

Our conclusions for each cost and benefit category are set out in Table 1 below.

¹ Upstream Gas Outage Information Disclosure Code, 2020

² GIC, Information Disclosure: Problem Assessment (Consultation Paper), December 2019

Table 1: Conclusions

	Category	Conclusion
Costs	Increased costs of supplying information	Compared to the status quo, the additional costs of compliance are small, given that compliance with the disclosure code is already happening.
	Regulator costs – proposal development, monitoring and enforcement	The regulator will incur some costs to develop and operate the information disclosure. These costs are not significant.
	Private cost of disclosure	Wealth transfers are ignored in an economic cost benefit analysis.
	Reduction of incentives to innovate	The costs are very unlikely to arise.
	Facilitation of collusion and exercise of market power	The costs are very unlikely to arise.
Benefits	More efficient decision-making	Better coordination of gas production, electricity generation, gas transmission, electricity transmission and major plant outages will be substantially more efficient even than the voluntary gas outage disclosure regime. One key benefit is better security of supply outcomes in both markets.
	More efficient prices	Prices impacted by the quality of gas disclosure include wholesale gas, wholesale electricity, bilateral contracts in both markets. Price volatility, especially in wholesale prices, will be lower than would otherwise be the case with a regulated gas outage regime. Risk premiums in fixed price contracts will also be lower than would otherwise be the case.
	Effectiveness of regulation	The proposed regulated gas outage regime will be more effective than the voluntary scheme because gas and electricity participants and end consumers will be able to rely on the quality of the information.
	Greater market participation	The additional confidence that comes from a more reliable gas outage regime will encourage and not discourage new market participants in either gas or electricity markets.
	Signalling of a mature market	The regulated gas disclosure regime is consistent with a mature market to the benefit of gas and electricity market participants and end consumers.

On balance, while we have not quantified the benefits, we see significant net benefits in both the gas and electricity markets from the move to the regulated regime compared to the counterfactual. We find that the net benefits of the regulated regime would be greater than the net benefits of the voluntary scheme.

Decision-making around outages for physical assets in the energy sector and fuel utilisation (renewable and fossil fuels) is, to us, clearly most efficient with a regulated gas outage regime. We are

convinced that this efficiency effect will be greater under the regulated scheme compared with the current voluntary scheme.

Wholesale prices, contract prices and retail prices in gas and electricity markets will be more efficient than would otherwise be the case.

1. Introduction

An Industry Notifications webpage went live in August 2019, and in June 2020 the Upstream Disclosure Code came into effect, which covers disclosure of supplier outages, including gas storage facilities. Participation in this scheme is voluntary; however, while compliance with the code is required, the possibility of parties withdrawing from the scheme remains. We get confidence from the voluntary Code that the value of information disclosure is not in dispute. However, there are points of vulnerability with this mechanism:

- It is voluntary.
- Posts made under the voluntary code are not consistent.
- There is no compliance regime.
- Incentives for compliance are weak.
- Scheme reviewers have limited ability to access underlying data.

GIC proposed that these concerns be addressed by developing a regulated specific information disclosure mechanism as an alternative set of arrangements for achieving its regulatory objective, rendered in GIC's Statement of Proposal³ (SOP) as:

That arrangements are in place that ensure the effective and timely availability of gas production and storage outage information for all gas and related market participants.

The SOP assesses the merits of both the Upstream Disclosure Code and the regulatory option related to achieving this objective. The SOP follows an options for information disclosure consultation paper,⁴ which canvassed information disclosure by gas market participants.

There are some problems that have become evident since the introduction of voluntary disclosure. These include the visibility of the outage definitions and the unplanned producer outage benchmark. We understand that these issues will be dealt with in the final version of the proposed regulations.

1.1 Scope of information disclosure

Whether information disclosure is regulated or not, it is not a simple, homogeneous product. Information required to be disclosed requires calibration of:

- definition of content
- materiality thresholds
- level of detail to be disclosed
- timelines for disclosure, especially the period of time from when the disclosing party becomes aware of the information or confirms a decision
- undertakings for updates as information changes
- equal access to information that is disclosed

³ GIC, Statement of Proposal (Gas Production and Storage Facility Outage Information, December 2020

⁴ GIC, Options for Information Disclosure in the Wholesale Gas Sector (Consultation paper), April 2019

- a requirement for all information captured by the regime to be treated (released) to the market in the same way.

1.2 Relevant markets

For our purposes, the relevant markets are natural gas produced in New Zealand and the electricity market in New Zealand.

It is clear from discussions with downstream gas participants and electricity market participants that information about gas production and gas outages has as much of an impact on the electricity market as on the gas market. The cost associated with thermal generators' contracted gas essentially sets the marginal price for electricity under the current arrangements. Furthermore, information on gas outages is essential for scheduling outages of electricity generation and for deciding how much water to dispatch through hydro generators. Looking further out, information about gas outages is used to determine positions in the hedge market for electricity.

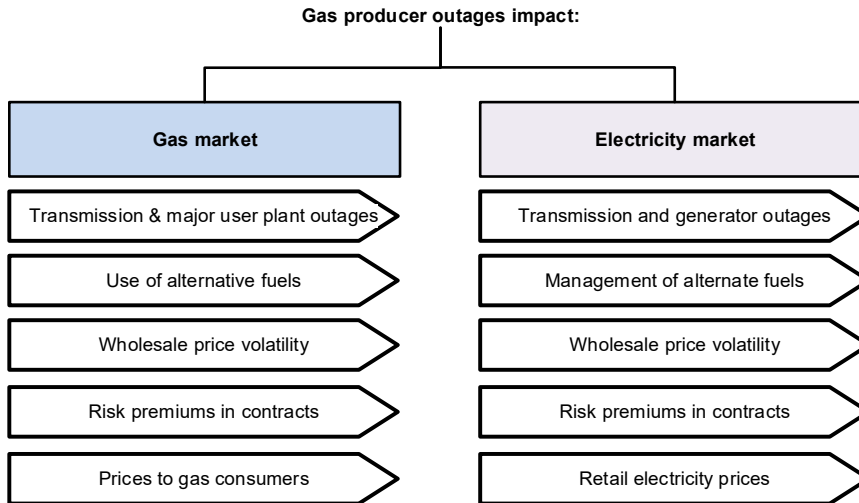
Gas outages are also a matter of interest by Transpower as System Operator and Grid Operator. We note the way System Operator refers to gas matters as being integral to managing its responsibility for security of supply. In its most recent Market Summary for the week ended 29 November 2020, Transpower includes a Gas Outlook for Electricity Generation and Security of Supply 2021 in which it is observed that:⁵

Gas is New Zealand's third largest fuel [...] electricity generation fuel behind hydro and geothermal and therefore the largest source of thermal generation. Due to the controllability of thermal generation compared to that of geothermal and wind, it plays a key role in maintaining security of supply when hydro inflows and storage levels are low. As an indication of its importance, in 2017, a relatively dry year, thermal generation output was 25% (1,207GWh) higher than in 2016, a relatively wet year. Recently there has been a clear downward trend of gas production from Pohokura, New Zealand's largest gas field. OMV, the operator and part owner of this field, recently indicated output may be as low as 39PJ during 2021, a 40% decrease compared to 2019. This decline has caused concern amongst stakeholders for the upcoming winter, when electricity demand peaks.

In Figure 1 we show the impact of gas outgas on the electricity market and gas market. We take this breadth of impact into account in our discussion of costs and benefits on the proposal to regulate the gas outage regime.

⁵ Transpower, Gas Outlook for Electricity Generation and Security of Supply 2021. See <https://www.transpower.co.nz/sites/default/files/bulk-upload/documents/Gas%20Outlook%20for%20Electricity%20Generation%20and%20Security%20of%20Supply%202021.pdf>

Figure 1: Areas of discernible impact of the quality of the gas outage disclosure regime



We estimate annual value of the New Zealand gas market at \$1.51 billion. This value includes distribution, transmission and retailer margin but excludes GST.

Table 2: Gas market in New Zealand in 2019

Sector	Volume (PJ)	Price (\$/PJ)	Value (\$m)
Residential	6.83	34.91*10 ⁶	238.6
Commercial	8.51	14.26*10 ⁶	121.3
Industrial	120.00	6.80*10 ⁶	816.1
Electricity generation	49.59	6.80*10 ⁶	337.2
Total	184.94	8.18*10⁶	1,513.2
Total excluding electricity generation	135.34	8.69*10 ⁶	1,176.0

MBIE statistics, Sapere workings

We estimate the value of the New Zealand electricity at \$7.2 billion. This value includes costs of energy, transmission, distribution and margins but excludes GST.

Table 3: Electricity market in New Zealand in 2019

Sector	Volume (PJ)	Price (\$/PJ)	Value (\$m)
Residential	45.4	70.3*10 ⁶	3,193.9
Commercial	34.4	47.8*10 ⁶	1,646.7
Industrial	63.5	37.8*10 ⁶	2,399.2
Total	143.4	50.5*10⁶	7,239.8

MBIE statistics, Sapere workings

The combined value of the final sales of these combined markets is \$8.4 billion per annum, which is the sum of both markets less the value of gas as input to the electricity market.

1.3 Assessment framework

A cost benefit analysis (CBA) is an economic assessment of a proposal. The CBA considers the value to society from an incremental change between the status quo and a set of alternative options. It considers which option has the highest net benefits (lowest net costs).

The CBA ignores wealth transfers. If a proposal causes costs to one party where those costs become a benefit to another party, then that wealth transfer is set aside. An example of a wealth transfer is a cost recovery mechanism which sees a change in price structure but no change to the total cost recovered. In such cases, at least in the short term, there has been no change to the economy as a whole.

We note, however, that even a cost recovery review can result in some forms of economic efficiency when we move beyond the static effects. If costs charged to participants are better reflective of the true economic cost, then we should expect to see some efficiency gains.

The concepts of economic efficiency normally accounted for in a cost benefit analysis are as follows:

1. **Allocative efficiency.** We would expect that gas is available to those who place the highest value on it within production and transmission constraints. For example, if a residential customer places a higher value of gas than an industrial customer, in the event of an outage we would expect that the industrial customer will curtail consumption first.
2. **Productive efficiency.** Productive efficiency means an optimal combination of inputs for which economic output is maximised. An example of how this is achieved in the gas market could be that electricity generators coordinate hydro storage in light of gas outages for a co-optimised solution.
3. **Dynamic efficiency.** Dynamic efficiency is concerned with productive efficiency over time. We would expect that costs for a firm to produce a given unit of output reduce from one period to the next. Dynamic efficiency would be expected to comprise the greatest share of the benefit of a given intervention to improve competition. As new firms enter the market because of more efficient prices, for example, there are positive feedback loops that develop, involving more efficient pricing and more competition.

For any CBA, incremental change to arrangements is challenging to quantify, and that has proven to be the case here. While the benefits from locking in a regulated gas outage disclosure scheme are sufficiently large that they should be able to be quantified to some degree, this is not what we are trying to assess. What we are looking to assess in this case is the change in 'control' between a strictly voluntary regime that could fail when it is most needed and a mandatory regime.

As a result, we have relied on core CBA principles, literature on the merits of information disclosure on the workings of markets and a clear view expressed by the parties we interviewed for this case.

We also note the stated purpose of, and objectives for, the Gas Industry Company.

Gas Industry Company Limited (Gas Industry Co) was established in 2004 to provide for the governance of the gas industry under Part 4A of the Gas Act 1992 (Gas Act).⁶ The Gas Act details a number of objectives to be considered when recommending regulation:

⁶ [Gas Act 1992](#)

43ZN Objectives of industry body in recommending regulations for wholesale market, processing facilities, transmission, and distribution of gas

The objectives of the industry body, in recommending gas governance regulations under section 43F, are as follows:

(a) the principal objective is to ensure that gas is delivered to existing and new customers in a safe, efficient, and reliable manner; and

(b) the other objectives are—

(i) the facilitation and promotion of the ongoing supply of gas to meet New Zealand's energy needs, by providing access to essential infrastructure and competitive market arrangements:

(ii) barriers to competition in the gas industry are minimised:

(iii) incentives for investment in gas processing facilities, transmission, and distribution are maintained or enhanced:

(iv) delivered gas costs and prices are subject to sustained downward pressure:

(v) risks relating to security of supply, including transport arrangements, are properly and efficiently managed by all parties:

(vi) consistency with the Government's gas safety regime is maintained.

The gas sector is also guided by the 2008 Government Policy Statement (GPS) on Gas Governance in which the Government's objective for the entire gas industry is stated as:

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

Section 12 of the GPS specifies that all the policy objectives in the GPS should apply to all GIC recommendations for rules, regulations or non-regulatory arrangements for all parts of the gas industry. Section 12 lists a number of specific objectives:

a) Energy and other resources used to deliver gas to consumers are used efficiently;

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

c) The full costs of producing and transporting gas are signalled to consumers;

d) The quality of gas services where those services include a trade-off between quality and price, as far as possible, reflect customers' preferences; and

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

Section 13 lists in detail the outcomes Government expects Gas Industry Co to pursue and report against to the Minister of Energy under the following categories:

- Consumer benefit
- Efficient retail market
- Efficient wholesale market
- Access to key infrastructure
- Critical contingency management
- Other outcomes

2. Options identification

In a CBA a comparison is made between a base case (where nothing changes), which we call the status quo, and a series of alternative options. Doing nothing is always an option.

2.1 A voluntary disclosure regime is operating currently

The status quo is that there is a voluntary framework for reporting planned and unplanned outages. This is supported by the Upstream Gas Outage Information Disclosure Code (the Code),⁷ which came into effect on 22 June 2020. The notifications are publicly available on a website:

<https://industrynotifications.gasindustry.co.nz/>.

The relevant features of this arrangement are summarised in Table 4.

Table 4: Features of disclosure code

Feature	Detail
Upstream participants	Gas producers (including storage)
Demand participants	Not envisaged
Type of disclosure	Planned and unplanned outages
Threshold	20TJ/day (50TJ/day in some circumstances)
Compliance and enforcement	Not applicable: voluntary arrangement only
Other	No price disclosure
Remedies	Directive to withdraw from code

2.1.1 There is a risk that participants withhold information on a future occasion

The current arrangement in the New Zealand gas market has neither an explicit – positive – incentive regime nor a compliance regime to investigate and ensure compliance with disclosure rules.

It could be argued that there are means for implied incentives to be meaningful:

- There are reputational consequences for failing to comply with voluntary disclosure.
- There is a threat of subsequent regulation if voluntary disclosure does not work.

Taking each of these points in turn, we would contend, first, that while the reputational incentives are real, they are not sufficient to ensure continued compliance. Gas producers have well established, bilateral, legally enforceable contracts with gas users, the terms of which are subject to price and availability pressures primarily and overwhelmingly rather than with reference to the brand reputation of a supplier.

⁷ Upstream Gas Outage Information Disclosure Code 2020
<https://industrynotifications.gasindustry.co.nz/assets/Upstream-Gas-Outage-Information-Disclosure-Code-March-2020-Copy.pdf>

Second, we would also contend that regulation of what is currently provided is not in and of itself a strong disincentive.

Despite the upstream participants' behaviour under the voluntary regime to date, we note that an incentive does exist to gain from non-disclosure of information. Each producer will be aware that this same incentive also exists for its competitors. The equilibrium outcome of this sort of dynamic will be not to disclose information if the immediate gains exceed the discounted (for risk and time) gains of a subsequent non-disclosure of information. This calculation would have to factor in the probability that a competitor will also choose not to disclose information at some future point in time.

2.1.2 Market stress can impact on voluntary arrangements

We do not have to look much further than the New Zealand electricity market's market making scheme to see an example of what happens when a voluntary scheme fails. When the sequence of gas production outages unfolded in late 2018 and early 2019, electricity prices were extremely volatile, aided in no small part by the market makers withdrawing from the voluntary activity in the New Zealand electricity futures market. As a result, participants caught unaware faced enormous costs to regain control over their risk positions. The Electricity Authority was concerned about the volatility in the electricity market and focused, in the first instance, on steps that would shore up the market making regime. Two passages from its November 2019 consultation paper are included below to explain the exposure to a voluntary scheme and, coincidentally, the link back to the gas outage regime:

Some stakeholders have questioned whether current arrangements are fit for purpose

3.1 During periods of wholesale market stress participants' views of future spot prices become less certain and this is reflected in wider bid-ask spreads for futures. Voluntary market-making arrangements have not prevented bid-ask spreads widening during such events, and it is an expected outcome of increased uncertainty. For example, during the market stress period in spring 2018 future spot prices became highly uncertain as low lake levels were compounded by the extent and duration of the Pohokura gas outage being unclear.⁸

3.2 The uncertain and volatile trading conditions increased the cost and risk of providing market making services, and market makers relied on a provision in their agreements that released them from the obligation to market make when they experience financial stress. These provisions are often referred to as the 'portfolio stress' provisions. The criteria used by each market maker when they relied on the portfolio stress provisions was opaque, both to other market makers and the wider wholesale market. That two of the market makers had direct involvement in the gas market and two did not added very significantly to the perceived risk of market making for the two without gas involvement as they feared parties with better gas related information could use this to their disadvantage. The outcome was wide spreads for most market made futures contracts, but particularly for near-term contracts.⁹

⁸ To be clear, regarding the last sentence of this passage, there was a period of time while the operator assessed the situation before they could release reliable information and that would also be the case with the current and proposed gas disclosure regimes.

⁹ Electricity Authority, *Hedge Market Enhancements (market making): Ensuring market making arrangements are fit for-purpose over time*, Discussion paper, November 2019.

2.1.3 The counterfactual is the failure of the voluntary scheme, i.e. reversion to a non-disclosure situation

For the purpose of an economic cost benefit analysis, care must be taken as to what the proposed regime is compared with. That state is referred to as the counterfactual. Treasury advice states:¹⁰

The 'counterfactual' is the situation that would exist if the intervention does not go ahead. The counterfactual needs to be realistic. In many situations, a status quo of 'Doing nothing' is not a realistic counterfactual. You should consider questions like:

- What is the status quo? What are the current impacts of 'business as usual'?
- Would an intervention for the same problem be provided by someone else?
- Would other factors already affect the impacts?
- What would you actually do, if you did not undertake the proposed intervention? What is the next best alternative?
- Are there other things that might influence the situation? If we weren't to fund the proposal, would the problem remain the same, or decline over time, or get better?

We have heard (unsubstantiated) claims that even under the voluntary regime, some parties do not strictly follow the Code. Further, the examples of market making in the electricity futures market in late 2018 early 2019 illustrate that when a scheme relied upon urgently for efficient price discovery fails, the consequences are significant for all participants and consumers. We also know, with respect to the New Zealand gas market, that outages have a direct impact on the electricity market and some parties have a very weak feed of information from the gas market. Finally, when gas outages do occur, the impact on the electricity market can vary widely and, as we have seen, significantly. If the current arrangement is voluntary, the risk remains that it is not there at some future date when it is really needed for energy security, including the gas and electricity markets. On that basis, the counterfactual scenario is no gas disclosure regime.

2.2 The alternative is a regulated disclosure regime

The alternative option on the table is for regulated information disclosure along substantially the same lines as the existing voluntary regime with a compliance and enforcement regime. This arrangement is set out in the table below.

Feature	Detail
Upstream participants	Gas producers (including storage)
Demand participants	Not envisaged
Type of disclosure	Planned and unplanned outages
Threshold	20TJ/day (50TJ/day in some circumstances)
Compliance and enforcement	Yes
Other	No price disclosure

¹⁰ NZ Treasury, *CBAx Tool User Guidance, Guide for departments and agencies using Treasury's CBAx tool for cost benefit analysis*, September 2018

Feature	Detail
Remedies	Compliance directions, compensation orders and civil pecuniary penalties

3. Developing the cost benefit framework

3.1 Literature review

We commissioned a literature review to look at two questions:

1. Economic costs and benefits of information disclosure in energy markets, specifically upcoming outages in gas production facilities that impact on the gas and electricity markets.
2. Economic costs and benefits of regulated versus voluntary schemes; in this case the scheme is information disclosure in a gas market.

In addition, we reviewed the feedback provided by energy market participants to GIC consultation on information disclosure and undertook interviews with market participants. The categories of costs and benefits we developed are set out below.

Costs

Category	Specific sources	Description
Increased cost of supplying information (planning and implementation)	GIC, Options paper for Information Disclosure in the Wholesale Gas Sector, 2019	Personnel costs (FTE) required to set up systems, legal fees, systems costs to manage interface and automation.
Increased cost of supplying information (operational)	Ibid	Ongoing personnel and other related costs to maintain operational requirements.
Regulator costs: monitoring and enforcement	Ibid	Additional costs of monitoring compliance and enforcement actions in the event of non-compliance.
Regulator costs: developing regulatory proposal	Ibid	Costs of undertaking consultation and implementing proposal.
Private cost of disclosure	Kieran Murray, Preston Davies - Cost-benefit analysis of Gas Bulletin Board and Gas Statement of Opportunities – December 2012	<i>“Competitive responses among domestic opponents would largely be a wealth transfer between the parties, which may end up as an economic benefit if it results in continuous lower prices to consumers that better reflect the efficient costs, than otherwise would have been the case.”</i>

Reduction of incentives to innovate	Independent Market Operator Concept Paper - 2011 Outage Planning Review Recommendations – Information Transparency – June 2012	<p><i>“For a business to innovate (technically, operationally, or administratively) some types of information may need to remain private in order that the firm may earn an adequate return on that investment in innovation.”</i></p> <p>Also: <i>“Exposure to public scrutiny could in fact result in increased innovation.”</i></p>
Facilitation of collusion and exercise of market power	Hooper, Twomey and Newbery – Transparency and confidentiality in competitive electricity markets – USAID June 2009	<p><i>“Information openness may facilitate overt or tacit collusion, particularly in oligopolistic market structures.”</i></p> <p>Noted that collusion would more likely to occur around price setting rather than in outage scheduling.</p>

Benefits

Category	Specific sources	Description
More efficient decision making: on scheduling plant outages and fuel coordination	Electricity Authority – Wholesale Market Information Disclosure/ Review of Thermal Fuel Information Disclosure – July 2020	<p><i>“Market participants need information to make decisions about the future. Poor information can lead to increased risk and uncertainty. Potential consequences may include mistaken decisions and increased costs. For example, if parties had poor information about the effect of planned gas outages on thermal generation, this could lead to less reliable supply and/or unnecessarily high costs to maintain stand-by resources.”</i></p>
More efficient decision making: on scheduling plant outages and fuel coordination (2)	Kieran Murray, Preston Davies – Cost-benefit analysis of Gas Bulletin Board and Gas Statement of Opportunities – December 2012	<p><i>“Costs associated with outages/curtailment could be reduced as a result of improvements to gas supply capability.”</i></p>
More efficient decision making on scheduling plant outages and fuel coordination (3)	NZ Steel’s submission on the Options paper	<p><i>“What is most frustrating is we had just completed a major plant shutdown that could have been scheduled to coincide with Pohokura outage had information been available in a timely manner. Equally the interaction of gas supply to the electricity market resulted in a significant increase in the cost of electricity. The result was inefficiencies relating to production and several million dollars in increased costs and negative impact on steel supply to the NZ construction industry.”</i></p>
More efficient prices (reduction in volatility)	Kieran Murray, Preston Davies - Cost-benefit analysis of Gas Bulletin Board and Gas Statement of	<p><i>“More regular (and possibly more accurate) data provision could lead to a reduction in volatility as participants are able to react to data in a more timely fashion.”</i></p>

	Opportunities – December 2012	
More efficient prices (reduction in risk premium)	Electricity Authority	<i>“Reduce[s] the scale and persistence of unexpected price spikes. Reduce[s] the risk premium to market participants and narrow the bid-ask spreads in the futures market.”</i>
More efficient prices (reduction in distortions)	Kieran Murray, Preston Davies	<i>“Information provided by the [proposal] may promote more efficient pricing decisions. The economic effect is captured by a reduction in distortions/deadweight loss.”</i>
Effectiveness of regulation: regulatory certainty	Ibid	<i>“With more information available, more (and more informed) debate around regulation and decision-making could result, reducing the resources dedicated to the regulatory process.”</i>
Effectiveness of regulation: better monitoring of participants' behaviour	Ibid	<i>“Market monitoring can assist in the uncovering of problematic short run behaviours. Improved market monitoring can therefore provide increased assurance to consumers and their representatives about market outcomes and reduce the risk of ad hoc intervention.”</i>
Greater market participation (confidence to invest and transact)	Ibid	<i>“The more stakeholders (both actual and potential) know about the market, the more likely they are to feel confident to invest and transact. Secrecy may mean stakeholders perceive they are not able to detect anti-competitive behaviour, a high level of uncertainty about how the market functions, and how stakeholders should interpret the signals the market sends.”</i>
Signalling	Ibid	<i>“Signals a form of maturation in the gas industry and an evolution towards a competitive and efficient market.”</i>

For each type of cost and benefit we discussed with energy market participants its relevance of materiality and reviewed established positions based on feedback to consultation.

3.2 Discussion of costs of introducing a regulated scheme

3.2.1 Increased costs of supplying information

We recognise that there are compliance costs for market participants. Participants need to set up systems, and monitor and review compliance. Although suppliers are already providing similar information, it is possible that, with regulation, participants may want to provide disclosure at a higher standard because of the penalties of non-compliance and will reprioritise their compliance activities as a result.

There may also be an additional cost associated with the requirement of a director’s certification.

Conclusion:

Compared to the status quo, the additional costs of compliance are small given that compliance with the disclosure code is already happening.

3.2.2 Regulator costs – proposal development, monitoring and enforcement

We would expect the following costs to be relevant in our determination:

- developing the information disclosure proposal
- monitoring and enforcing the information disclosure regime
- further development of the disclosure platform.

Conclusion:

The regulator will incur some costs to develop and operate the information disclosure. These costs are not significant.

3.2.3 Private cost of disclosure

We are interested in economic costs, not wealth transfers (which are a cost to one party but a corresponding benefit to another). In economic studies of information disclosure, some participants have advanced the argument that a possible cost that should be taken into consideration is the “loss of competitive advantage”. By that we understand that suppliers may lose the opportunity to benefit from non-disclosure of information.

We treat this in our cost benefit assessment as a wealth transfer from suppliers to other parties which, if it stays in the hands of those other parties, is simply a wealth transfer.

Conclusion:

Wealth transfers are ignored in an economic cost benefit analysis.

3.2.4 Reduction of incentives to innovate

The argument goes that forced disclosure of information will reduce the return that upstream participants make from innovation and therefore discourage further investment. However, because outage information is currently disclosed voluntarily, we consider that this is not an active consideration for participants.

We would also contend that if there is a higher rate of return that is needed to attract investors, then that would be better signalled through the underlying contract price rather than through short-term and uncertain gains made from non-disclosure of information. The market will price scarcity when necessary to signal investment.

Conclusion:

The costs are very unlikely to arise

3.2.5 Facilitation of collusion and exercise of market power

We are of the view that the likelihood of collusion because of information disclosure is low. First, collusion is far more likely to take place around a price than in the scheduling of an outage, which this proposal is concerned with. Second, the transparency of information disclosure will provide the visibility for all participants to see what is happening in the market which does not facilitate collusion.

Conclusion:

The costs are very unlikely to arise

3.3 Discussion of benefits of introducing a regulated scheme

Common themes that arose from our research and discussions with market participants were:

- The existence and quality of a gas outage regime impacts significantly on the gas market and the electricity market.
- The voluntary regime has helped both markets to become more efficient.
- Some participants have reservations about the voluntary scheme because they don't feel they can rely fully on the information being comprehensive, consistent and timely under all future conditions.
- The proposal to regulate the scheme should focus on the equivalent specifications as the voluntary scheme in the first instance.

Below we consider each of the benefit categories and include anonymous quotes from interviewees.

3.3.1 More efficient decision-making

Planned outages amongst gas and electricity transmission grids, gas production facilities, electricity generators and major gas users are an essential part of the workings of the energy sector. The more outages can be synchronised across the sector, the lower the risk to security of supply and the lower the disruption to the market (which is discussed in the next section.)

We heard through interviews many parties' frustration that their organisation was caught by planned outages not having been signalled in the past. Interviewees were also consistent in the view that they could not have complete confidence that the voluntary regime would consistently deliver efficient decisions on scheduling.

Gas and electricity market participants

This was a recurring theme amongst interviewees for both the electricity and gas markets. It is clear that a regulated scheme would lead to more efficient decision making around the scheduling of gas use for industrial demand and electricity generation. We heard:

Three things are important for the gas outage regime:

- Timeliness and common receipt

- Fulsomeness
- Understanding impact

Some gas purchasers were not so worried about this because they were privy to advice under contracts with the key suppliers. Even so, two such participants said:

[x] were party to a [y] contract at the time of the original Pohokura outage. Even so [x] didn't feel as though they had a lot of information. [x] felt it was in the dark as much as anybody else.

Were unsure whether could go out and purchase additional gas.

Other gas purchasers were clear that they needed confidence that gas outage information is comprehensive and there is greater consistency in gas outage information (plus updates) than they currently perceive is the case under the voluntary scheme. This would lead to better decision-making around industrial production scheduling and financial risk management in the gas market. Some of the comments we heard were:

Certainly, [the voluntary scheme is] a good step forward comparing to receiving no information. Some of it arrives late.

A voluntary scheme would work if everyone complied.

The big difference is that in a regulated market you know that [the producers] will get pinged.

In the electricity market a number of parties are quite removed from the gas market and now know they need comprehensive, consistent and timely information on gas outages so they can schedule their generation, manage their fuel (notably stored hydro) and manage their financial risk in the electricity market. We heard:

The impact on the electricity market is critical. The two are inextricably linked.

The gas industry is a bit of a black box for us. Understood a lot more recently. [x] do feel the effects and struggle to understand what has happened. Even under the voluntary scheme not as informed as others.

It is evident that if all parties in the gas market have more clear information on gas outages, they will better organise their own production and outages so the overall disruption from the whole sequence of outages is less. This will be more the case with a regulated outage regime than a voluntary scheme because participants are less able to rely on the efficiency of the posted outage plans.

The case is amplified when the coordination of outages in the electricity market are considered. As one party said, if everyone can rely on the gas outage information there would be:

Better decision-making by consumers of electricity and gas e.g. DSM or substitution.
More gas available to others.

Substitution was mentioned several times during interviews. Buyers of gas for production or electricity generation were forced to utilise coal and/or diesel.

In summary, we would expect that information about gas supplier outages would lead to more efficient decisions in the following areas:

- Generator outages could be scheduled more effectively with, for example, gas generators choosing to coincide generator outage with a gas outage, thereby releasing gas to other users; other types of electricity generation would schedule outages for periods outside periods of gas supply outage.
- Gas customers will have additional time to schedule plant closures, to procure another supply of gas or another source of fuel.
- Gas consumers and electricity generators and industrial users would be less likely to have to resort to additional coal and or diesel use.
- In the case of Genesis, knowledge of an impending gas supply outage may assist it with coal procurement.
- Major electricity users could schedule outages to coincide with gas supply outages.
- Hydro generators would look to retain hydro storage in the short term if there is an impending gas outage.

The effect of these decisions would be to lower the cost of electricity supply and reduce the risk of shortages of thermal fuel and hydro storage for electricity generation.

Electricity transmission

Several interviewees focused on gas and electricity transmission and distribution decision-making which is a security of supply issue:

Electricity market and SO get all of the information they require to keep the lights on.

The electricity sector has done a lot of work getting information from market participants and the gas limb undermines it.

When the market was struggling with the Pohokura outage, the an HVDC outage was also ongoing, which caused problems for the system operator.

Conclusion:

Better coordination of gas production, electricity generation, gas transmission, electricity transmission and major plant outages will be substantially more efficient even than the voluntary gas outage disclosure regime. One key benefit is better security of supply outcomes in both markets.

3.3.2 More efficient prices

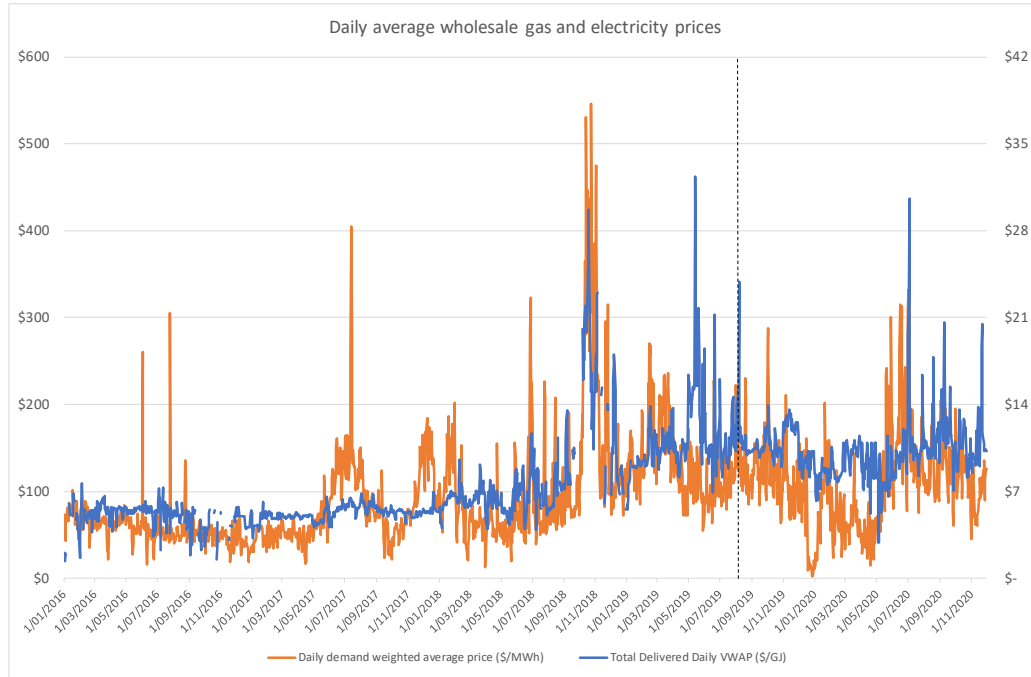
Prices will be less volatile and risk premiums in fixed-term contracts for gas and electricity (wholesale and retail) would be lower than would otherwise be the case with no gas production outage information or even the voluntary scheme. This is very difficult to quantify because the required data in both markets is limited and many assumptions must be taken to filter out all of the other influences on price even if good data was available.

Figure 2 plots daily average gas prices on emsTradepoint and daily average wholesale electricity prices. The dotted line at August 2019 indicates when the Gas Industry Co's interim gas outage information webpage went live.

In the period May 2017 to May 2018, we see gas prices slightly elevated compared with the previous year. Electricity prices were more volatile this year than the previous year because of the hydrological conditions.

In the period May 2018 to October 2018, gas and electricity prices were firmer and more volatile.

Figure 2: Daily average gas and electricity prices January 2016 – November 2020



Source: Sapere, data sourced from emsTradepoint and the Authority's Electricity Market Information website (EMI)

From November 2018 to February, gas prices on emsTradepoint and wholesale electricity prices in the spot market reflected the Pohokura outages (planned and unplanned) during the period. From there though to August 2019, electricity prices remained volatile but settled compared with the gas market. From August 2019 to May 2020, electricity prices regained their composure, although they were still more volatile than had been the case in 2016. Electricity prices were lower on average through the pandemic lockdown period but recovered in May at the same time as low rainfall, generator outages and ongoing uncertainty about fuel availability combined with demand rising going into winter.

Gas prices became more volatile again in mid-2020 as some unplanned outages occurred and uncertainty about the future of Pohokura was factored into decision-making.

We have plotted these two series to illustrate the degree to which daily spot prices in the two markets interact. In truth, the bulk of the gas used to accommodate hydro storage and peaking requirements is supplied under longer-term contracts. The spot gas prices reflect a combination of short-term gas for electricity generation, industrial requirements and balancing gas. A lot of the volatility in electricity prices is explained by factors other than gas such as hydrology. However, in the absence of statistically separating those effects, we note that the rise and fall in absolute prices and the rise and fall in volatility are common to both markets and those ultimately flow into contract prices.

The literature points to the expectation that gas and electricity prices are less volatile than would have been the case with no outage disclosure after August 2019. The level of prices and the level of volatility feed into wholesale prices in both markets. A risk premium is built in to term fixed-price wholesale and retail prices in both markets.

It would be very challenging to unpick the effects of the gas outage disclosure from hydrology. It would be challenging to isolate the effects of the gas outage disclosure on contract prices. It is even more challenging to do that in the absence of any bilateral gas contracting information.

The material benefit in this category is reduced volatility, lower prices overall and a lower risk premium in gas and electricity being built into fixed price wholesale contracts and retail prices.

Volatility in gas and electricity prices is said to have been lower than it would have been in the absence of the voluntary outage information. Some interviewees said that it would be lower again if the voluntary regime were regulated. i.e. that information was comprehensive, consistent, timely and available to all parties simultaneously. For example:

As soon as information disclosed it should be available

A consequential benefit arising from the two points above, better decision making and reduced-price volatility in both the gas market and electricity market would lead to lower risk premiums for to consumers (large and small) than would otherwise be the case. Two comments on this point:

Would have all the benefits and some if the scheme was regulated.

The voluntary information feeds into risk management and trading parameters

Critically, in the electricity market half hourly spot prices are subject to all of the market information up to the minute. The futures market also trades in response to information available on any given day. Further, four electricity generators (some of whom are also gas market participants) are obliged to make markets in New Zealand electricity futures traded on the ASX.

Gas outage information is material and has been shown to have a significant effect on wholesale spot electricity prices and forward electricity prices, especially futures prices.

We would expect to see more efficient prices emerge via several mechanisms:

- Participants reacting in a timelier fashion to information will moderate demand and increase supply (as per the previous section) thereby reducing price volatility.
- Earlier reactions to impending events will mean that companies can make physical changes in demand and supply (in both the gas and electricity markets).
- For market makers in the electricity hedge market, especially those who are not gas customers, there will be greater certainty on availability of plant, which will potentially reduce the risk premium.

Ultimately the proposed mechanisms will lead to prices better reflecting the true costs of supply, and volatility in prices reducing.

Conclusion:

Prices impacted by the quality of gas disclosure include wholesale gas, wholesale electricity, bilateral contracts in both markets. Price volatility, especially in wholesale prices, will be lower than would

otherwise be the case with a regulated gas outage regime. Risk premiums in fixed price contracts will also be lower than would otherwise be the case.

3.3.3 Effectiveness of regulation

The regulated market is more effective as a result of the gas outage regime being regulated. All participants can better rely on the quality of the outage information because the release of information will be monitored for consistency and timeliness. Participants will also be able to have confidence in the outage information because it will be backed up by an enforcement regime.

The material benefit in this category is as stated in the title, a better-informed market produces more efficient outcomes.

The question of whether regulation is the correct approach has several dimensions. We can think of these dimensions as quality of information, confidence and flexibility.

It is possible that a voluntary approach will result in the same quality of information being provided as a mandatory regime, but there are some reservations about this, as the GIC has noted:

However, we note that some parties have not always followed the strict requirements of the Code. For instance, the notification templates have not been used in some cases, and notifications have not always followed the schedule outlined in the Code.¹¹

Participants we talked to indicated that information submitted under the code sometimes arrives late and expressed concerns that there was still a potential asymmetry problem. One participant expressed the view that "information is being made available when parties see fit" but we have not tested this.

Based on these observations and the literature on the question of regulating information disclosure or not we land at the position that the quality of the information from the regulated option will be superior to the voluntary regime.

The second dimension is that of confidence. The quality of information will, of course, influence the confidence participants have in it, but more serious is the perception of what happens when the market is under stress. Energy market participants are well aware of voluntary market-making falling away at the time of the Pohokura outage, which has led to the proposal for the mandatory backstop. A number of participants we talked to stated that they perceived risks of non-compliance under the voluntary regime and that without regulation they would not have confidence in the information.

Finally, there is a question about whether a voluntary regime could be more flexible, that is, if it could react more quickly to the need to update rules. However, GIC notes that:

There are some issues regarding the review process in the Code, including whether the third-party reviewer is a neutral party and the timing of the reviews.¹²

¹¹ GIC, Draft Statement of Proposal: Gas Production and Storage Facility Outage Information, 2020

¹² Ibid

Put simply, regulating the voluntary arrangements will give the regulator and market participants confidence that the benefits of the outage disclosure regime will be able to be relied on by members. The regulatory agency will be able to enforce them.

For GIC, a regulated scheme lends itself to better monitoring participant behaviour than no scheme or even a voluntary scheme.

A well-designed set of arrangements, which has the support of the industry, will be enduring and will need only small changes to make them work.

The regulator will be able to use the information to study disclosures and market outcomes. This monitoring can be used to fine tune and perfect the disclosure regime.

Conclusion:

The proposed regulated gas outage regime will be more effective than the voluntary scheme because gas and electricity participants and end consumers will be able to rely on the quality of the information.

3.3.4 Greater market participation

The high price volatility and uncertainty that comes with no outage regime is a barrier to entry for new participants in gas retailing. The reduction in volatility and uncertainty that a regulated gas outage scheme will lead to greater participation in the gas retail market.

An information disclosure regime will signal to interested parties (including other regulators, suppliers, downstream participants and prospective entrants) that the market is on a trajectory to a competitive and efficient market.

When more efficient and less volatile prices and transparent information become a reality, new participants will be attracted to the industry. Less concentrated markets are associated with better outcomes for consumers in the form of lower prices and more innovative products.

A particular benefit is the removal of market asymmetry. Participants we talked to noted different levels of ability to understand gas market outages. A large firm with a strong analytical capability and knowledge of the workings of the market will be in a far better position than an electricity market purchaser which is at some distance from direct knowledge of an outage. By ensuring that all parties have access to the same information better decisions will be made by more participants.

Conclusion:

The additional confidence that comes from a more reliable gas outage regime will encourage and not discourage new market participants in either gas or electricity markets.

3.3.5 Signalling of a mature market

An information disclosure regime will signal to interested parties (including other regulators, suppliers, downstream participants and prospective entrants) that the market is on a trajectory to a competitive and efficient market. Comments from interviewees along these lines include:

Information is being made available when parties see fit. There is nothing on them. Maybe their drivers are engineering so not sinister but, in any event, not timely.

Looking at gas disclosure it is where POCP was 5 years ago.

The gold standard is everyone gets the same information at the same time.

Conclusion:

The regulated gas disclosure regime is consistent with a mature market to the benefit of gas market participants and gas consumers.

4. Evaluation of the costs and benefits together

4.1 Methods of transmitting costs and benefits

We are satisfied that the proposal will have tangible consequences that can be observed. Participants have provided evidence of the realms of decision making that would be affected which include:

- major gas users plant scheduling (including their own outages)
- electricity generation scheduling (including their own outages)
- fuel procurement and fuel use
- wholesale price volatility
- risk premiums for fixed price contracts (electricity and gas)
- prices to gas and electricity consumers.

4.2 On balance the net benefit is positive

Our conclusions for each cost and benefit category are set out in Table 5 below.

On balance while we have not quantified the benefits, we see significant net benefits in both the gas and electricity markets from the move to the regulated regime compared to the counterfactual. We find that the net benefits of the regulated regime would be greater than the net benefits of the voluntary scheme.

Decision-making around outages for physical assets in the energy sector and fuel utilisation (renewable and fossil fuels) is, to us, clearly most efficient with a regulated gas outage regime. We are convinced that this efficiency will be better under the regulated scheme compared with the current voluntary scheme.

Wholesale prices, contract prices and retail prices in gas and electricity markets will be more efficient than would otherwise be the case.

Table 5: Conclusions

	Category	Conclusion
Costs	Increased costs of supplying information	Compared to the status quo, the additional costs of compliance are small given that compliance with the disclosure code is already happening.
	Regulator costs – proposal development, monitoring and enforcement	The regulator will incur some costs to develop and operate the information disclosure. These costs are not significant as existing processes can be utilised.
	Private cost of disclosure	Wealth transfers are ignored in an economic cost benefit analysis
	Reduction of incentives to innovate	The costs are very unlikely to arise
	Facilitation of collusion and exercise of market power	The costs are very unlikely to arise
Benefits	More efficient decision making	Better coordination of gas production, electricity generation, gas transmission, electricity transmission and major plant outages will be substantially more efficient even than the voluntary gas outage disclosure regime. One key benefit is better security of supply outcomes in both markets.
	More efficient prices	Prices impacted by the quality of gas disclosure include wholesale gas, wholesale electricity, bilateral contracts in both markets. Price volatility, especially in wholesale prices, will be lower than would otherwise be the case with a regulated gas outage regime. Risk premiums in fixed price contracts will also be lower than would otherwise be the case.
	Effectiveness of regulation	The proposed regulated gas outage regime will be more effective than the voluntary scheme because gas and electricity participants and end consumers will be able to rely on the quality of the information
	Greater market participation	The additional confidence that comes from a more reliable gas outage regime will encourage and not discourage new market participants in either gas or electricity markets.
	Signalling of a mature market	the regulated gas disclosure regime is consistent with a mature market to the benefit of gas and electricity market participants and end consumers

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Appendix C - Questions

Draft Statement of Proposal: Gas Production and Storage Facility Outage Information

Submission prepared by: <company name and contact>

Question	Comment
Q1 Do you agree with the regulatory definition? Please provide reasons supporting your views.	
Q2 Do you agree with the information disclosure options for gas production and storage facility outage information that have been identified? Please provide reasons for your views.	
Q3 Are there other options that you think should be considered in this process?	
Q4 Do you agree with our assessment of the Upstream Gas Outage Information Disclosure Code 2020 as an option for achieving the regulatory objective? Please provide supporting arguments for your views.	
Q5 Do you agree with the design of this regulatory option? Are there parts of design that require amendment? Please provide supporting information in your response.	
Q6 Do you agree with our conclusion that the most practicable means for implementing information disclosure arrangements for gas production and storage facility outage information is to implement them within a framework of regulations (and/or rules) under the Gas Act? Please provide supporting arguments in your response.	

Glossary

AEMC	Australian Energy Market Commission
Ahuroa	Ahuroa Gas Storage Facility
EA	Electricity Authority
EPR	Electricity Price Review
eTp	emsTradepoint
Gas Act	Gas Act (1992)
GIC	Gas Industry Co
GJ	Gigajoule; 10^9 joules
GPS	Government Policy Statement on Gas Governance (2008)
GSA	Gas supply agreement
LNG	Liquefied Natural Gas; natural gas that has been cooled down to liquid form (around -162°C) for ease and safety of non-pressurised storage or transport
MBIE	Ministry of Business, Innovation and Employment
MEUG	Major Electricity User Group
MGUG	Major Gas Users Group
MPOC	Maui Pipeline Operating Code
NGR	National Gas Rules. Australia's National Gas Rules govern access to natural gas pipeline services and elements of broader natural gas markets.
OATIS	Open Access Transmission Information System; the current gas transmission IT system
PEPANZ	Petroleum Exploration and Production New Zealand
PJ	Petajoule, 10^{15} joules
RPO	Reasonable and prudent operator
SOP	Statement of Proposal, defined in s43N of the Gas Act (1992)
TJ	Terajoule, 10^{12} joules
VTC	Vector Transmission Code
VWAP	Volume weighted average price

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.

SUBMISSIONS CLOSE:
Thursday, 4 March 2021

SUBMIT TO:
www.gasindustry.co.nz

ENQUIRIES:
consultations@gasindustry.co.nz