



Statement of Proposal: Gas Production and Storage Facility Outage Information

20 July 2021

Executive Summary

Introduction

The purpose of this paper is to set out a Statement of Proposal (SOP) for the disclosure of gas production and storage facility outage information and consult with stakeholders on our assessment.

This paper 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.

The paper draws on the *Draft Statement of Proposal: Gas Production and Storage Facility Outage Information* paper (Draft SOP) released in December, along with submissions received on that paper. The paper also includes Sapere's response to parties' submissions on its cost benefit analysis of information disclosure in the gas industry (CBA). This response is attached as Appendix C.

Problem assessment

Our discussion of issues with inadequate gas production and storage outage information in the New Zealand wholesale gas sector is based largely 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 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 Company's approach to developing governance arrangements under the Gas Act requires the development of a regulatory objective. Given the findings in the problem assessment and feedback from submissions, we consider that the regulatory objective should be:

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

The word "material" has been added to the definition that was in the Draft SOP. This addition was prompted by Vector's suggestion that the definition should be adjusted to make it explicit that the focus is on material information affecting the market.

Options for addressing the identified problems

Gas Industry Company 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, OMV's disclosure of changes in expected production for 2021 at the Maui and Pohokura production facilities has been valuable to the wider energy sector in a time of considerable market stress. As we noted in the Draft SOP, OMV's reporting has exceeded the disclosure requirements in the Code.

Despite the step change improvement in outage reporting that has occurred, Gas Industry Company is concerned that there are issues 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 of non-disclosure. 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.

We have identified several other related 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.
- When considered in conjunction with the absence of an effective compliance and enforcement regime, the broad liability exclusion in the Code reduces the incentives for gas producers and gas storage owners to comply with the requirements of the Code.
- Some of the information in the outage definitions is private information, making it difficult for third parties and Gas Industry Company to review whether parties to the Upstream Disclosure Code have reported outage information consistent with the Code's

terms. We note that possible amendments to the Code (made through its review process) could potentially lessen this concern.

- The timing of notifications for unplanned outages and material changes to planned outages may not address issues with information asymmetry.
- There are some issues regarding the review process in the Code, including whether the expert party is a neutral party.

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

Gas Industry Company considers that the *Upstream Gas Outage Information Disclosure Code 2020* does not satisfactorily achieve the regulatory objective. Regarding government's policy objectives for the sector (policy outcome categories are listed in Table 3 in Section 4.3), 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.

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 that 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 	<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>forecast gas production for the 14 gas days preceding the forecast start of the outage.</p> <ul style="list-style-type: none"> ▪ <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). The unplanned reduction is measured against a forecast of week ahead total gas production. ▪ <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>For these disclosure arrangements, the definition of gas supply from a gas production or processing facility includes all gas exported from a gas processing facility.</p>	<p>There were a range of views on the level of this threshold in submissions on the Draft SOP. To address the concerns raised by some parties, it is proposed that Gas Industry Company would review this parameter after the first year of the operation of these arrangements.</p> <p>Gas Industry Company 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.</p>
<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><i>Planned outages.</i> 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 in disclosed information in events that are occurring in the first six months, the change should be disclosed as soon as reasonably practical. If a change in information occurs in the latter six months, the update should be included as part of the quarterly notifications.</p> <p><i>Unplanned outages.</i> We consider the notification schedule for unplanned outages in the Upstream Disclosure Code to be a reasonable approach for a regulated set of arrangements. The initial notification should occur as soon as reasonably practical and within a 12-hour window. Other disclosures should also follow the schedule in the Upstream Disclosure Code.</p>	<p>Many of the notification timing requirements in the Upstream Disclosure Code are reasonable.</p> <p>There were a range of views in submissions on the Draft SOP on the reporting window for the initial notification for an unplanned outage. Some thought that the 12-hour window was appropriate while others considered it was too long. The main concern of the latter group was that a 12-hour window would enable a producer or storage owners' customers to receive information on an outage before the wider market.</p> <p>To address this concern, we have included a requirement that all outage disclosures made to production or storage owners' customers should be issued publicly at the same time. This public disclosure should include the information listed immediately above. The purpose of this requirement is to prevent information asymmetries from occurring.</p>

<p>Planned outage information that is provided to a customer (irrespective of whether this is required under a contractual commitment or a voluntary disclosure) should be disclosed publicly at the same time.</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 Company with:</p> <ul style="list-style-type: none"> • Actual daily total production (provided annually). • An estimate of daily production for the upcoming 12 months (provided annually). <p>For these purposes, “gas production” includes all gas exported from a gas processing facility.</p> <p>A gas storage facility owner is required to provide Gas Industry Company with:</p> <ul style="list-style-type: none"> • Expected changes in a facility’s daily aggregate withdrawal capacity (provided annually). • Daily aggregate gas withdrawal nominations information (provided annually). • Daily actual aggregate withdrawal information (provided annually). 	<p>Gas Industry Company requires this information to effectively monitor compliance with the disclosure requirements.</p>
<p>Confirmation of information quality</p> <p>The daily production forecast and daily production and storage withdrawal information provided to Gas Industry Company should be prepared in good faith and to the standard of a Reasonable and Prudent Operator.</p> <p>We also propose that there is an annual certification by a senior manager of the gas producer or gas storage owner that it has complied with 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 Company 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 certification requirement is similar to the approach the Electricity Authority has included in its electricity wholesale market information disclosure regime 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. This analysis was included in the Draft SOP. 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.

In submissions on the Draft SOP, gas producers questioned the definition of the counterfactual in this CBA and the approach taken in the analysis. We asked Sapere to respond to this feedback. This response is attached as Appendix C. Sapere has assessed the current voluntary Code and the regulated alternative against the goal of information being disclosed on the basis that the economic benefits of doing so exceed the costs of disclosure. Sapere "...remain of the view that the proposed regulated regime would get closer to that objective than the current voluntary scheme."

Following the assessment in this SOP, Gas Industry Company 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

We invite interested parties to submit on the issues raised in this paper. Gas Industry Company will consider this feedback to determine the best long-term option for the disclosure of gas production and storage outage information.

If we conclude that rules or regulations under the Gas Act is the preferred option, the next step would be for Gas Industry Company to make a recommendation to the Minister of Energy for gas governance regulations.

Submissions

Written submissions on this paper should be provided to Gas Industry Company by 26 August 2021. Submissions can be made by logging in to Gas Industry Company's website and uploading your submission. 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 5:00 pm. 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 Company's website. Submitters should discuss any intended provision of confidential information with Gas Industry Company prior to submitting the information.

Gas Industry Company 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 Statement of Proposal (SOP) for the disclosure of gas production and storage facility outage information and consult with stakeholders on our assessment. This SOP follows the *Draft Statement of Proposal: Gas Production and Storage Facility Outage Information* paper (Draft SOP)¹, released in December 2020. The content of this paper has been updated from the Draft SOP, incorporating feedback from the submissions we have received on the draft document. We also include Sapere's response to parties' submissions on its cost benefit analysis of information disclosure in the gas industry (CBA) (attached as Appendix C).

This SOP includes the following aspects:

- Description of the legislative framework applying to information disclosure in the gas sector.
- Consideration of submissions on the *Draft Statement of Proposal: Gas Production and Storage Facility Outage Information* paper (Draft SOP), released in December 2020.
- 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 a discussion of the key elements that comprise the design of this 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 Structure of this paper

The structure of this paper follows the structure of the Draft SOP. As noted above, this paper has been updated following feedback received in submissions. There are parts of the report that are unchanged from the draft. These sections are identified to aid readers' review of the paper.

1.3 Background

1.3.1 Gas Industry Company workstream on information disclosure

Gas production outages related to the Pohokura field in 2018 led to concerns across the gas industry and wider energy sector regarding information transparency and asymmetry in the

¹ Available at <https://www.gasindustry.co.nz/work-programmes/gas-sector-information-disclosure/consultation-2/>

wholesale gas market. The Minister of Energy and Resources Hon Dr Megan Woods wrote to Gas Industry Company, 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 Company investigate the current information disclosure requirements and consider whether they are adequate.

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

Gas Industry Company released the *Options for Information Disclosure in the Wholesale Gas Sector* consultation paper ("Options paper") in March 2019². This paper was a discussion paper on 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 2019³. 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 Company's submissions analysis on the Options paper ("*Analysis of Submissions on Options for Information Disclosure*"⁴) 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)⁵. Other parties (including the Electricity Authority, Transpower, Contact Energy, 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 Company 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.

Gas Industry Company released the *Draft Statement of Proposal: Gas Production and Storage Facility Outage Information* paper in December 2020. Submissions were received on the paper in March 2021. These submissions are summarised in this paper.

1.3.2 Industry Notifications webpage

² Available at <https://www.gasindustry.co.nz/work-programmes/gas-sector-information-disclosure/consultation/>

³ Available at <https://www.gasindustry.co.nz/work-programmes/gas-sector-information-disclosure/problem-assessment-october-2019/>

⁴ Available at <https://www.gasindustry.co.nz/work-programmes/gas-sector-information-disclosure/consultation/>

⁵ Available at <https://www.pepanz.com/assets/Uploads/Upstream-Gas-Outage-Information-Disclosure-Code-March-2020.pdf>

Gas Industry Company developed the Industry Notifications webpage⁶ 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 Company in March 2020 requesting that it host a platform to facilitate their disclosures under this Code (see below). Gas Industry Company decided to enhance the Industry Notifications page to perform this function. An upgraded version of the Notifications page launched in August 2020.

1.3.3 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 (owner and operator of the Ahuroa gas storage facility) 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 gas storage owner Flexgas. In this paper, we refer to the parties covered by the Upstream Disclosure Code as the “Upstream Parties”.

The Upstream Disclosure Code has been developed by Upstream Parties independent of Gas Industry Company’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.

1.3.4 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.

⁶ <https://www.gasindustry.co.nz/industry-notifications/>

Table 1 Major gas production and storage facilities

Facility	Owner	Operator	Size ⁷
Pohokura production facility	OMV (74%) and Todd Energy (26%)	OMV	442 PJ
McKee/Mangahewa production facility	Todd Energy	Todd Energy	445 PJ
Turangi production facility	Greymouth Petroleum	Greymouth Petroleum	428 PJ
Kupe production facility	Beach Energy (50%), Genesis (46%), NZOG (4%)	Beach Energy	249 PJ
Maui production facility	OMV	OMV	293 PJ
Kowhai production facility	Greymouth Petroleum	Greymouth Petroleum	14 PJ
Kapuni production facility	Todd Energy	Todd Energy	201 PJ
Ahuroa gas storage facility	Flexgas	Flexgas	18 PJ 65 TJ/d

⁷ For production facilities, this is 2P gas reserves (PJ) as at 1/1/21, from MBIE's petroleum reserves tables. 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

Section 43F of the Gas Act provides 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).*

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 Company, and does not differ from Gas Industry Company'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 Company applies when making recommendations for regulations are discussed in detail in Section 4.3 of this paper.

2.2 Regulatory objective

Gas Industry Company'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 4.4.7 of this paper.

2.3 Process requirements

Sections 43L and 43N of the Gas Act require Gas Industry Company 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. Consideration of submissions on the Draft SOP

3.1 Introduction

In this section, we discuss stakeholder feedback on the *Draft Statement of Proposal: Gas Production and Storage Facility Outage Information* paper (Draft SOP). This discussion focusses on the major themes in submissions; detailed feedback (including specific points regarding our review of the Upstream Disclosure Code and the design of regulatory arrangements) is included in the relevant sections.

Submissions on the Draft SOP were received from 16 parties:

- Todd Energy Limited (Todd)
- OMV New Zealand Limited (OMV)
- Beach Energy (Beach)
- Greymouth Gas New Zealand Limited (Greymouth)
- Firstgas Limited (Firstgas), Flexgas (owner and operator of the Ahuroa gas storage facility) is an affiliate of Firstgas
- Energy Resources Aotearoa (ERA), formerly known as Petroleum Exploration and Production Association of New Zealand (PEPANZ)
- Contact Energy Limited (Contact)
- Mercury Limited (Mercury)
- Trustpower Limited (Trustpower)
- Vector Limited (Vector)
- Haast Energy Trading Limited (Haast)
- Transpower Limited (Transpower)
- Genesis Energy Limited (Genesis)
- Meridian Energy Limited (Meridian)
- emsTradepoint Limited (emsTP)
- Major Gas Users' Group (MGUG)

The major themes from submissions are related to the following areas:

- Problem assessment and regulatory definition;
- Options for addressing the regulatory objective;
- Reporting threshold for outages;

- Compliance and enforcement framework in the *Upstream Gas Outage Information Disclosure Code 2020* ("Upstream Disclosure Code" or "Code");
- Suitability of the Upstream Disclosure Code as a long-term option;
- Cost benefit analysis (conducted by Sapere).

These issues are discussed below.

3.2 Problem assessment and regulatory definition

3.2.1 Issue

The problem assessment discussion in the Draft SOP summarised the relevant content in the Problem Assessment paper. A shortened version of this problem assessment discussion is included in Section 4.

Based on this discussion, we considered 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.

3.2.2 Stakeholder feedback

Most submitters who commented on this topic agreed with this regulatory objective. Vector generally agreed with the definition but suggested that it should be adjusted to make it explicit that the focus is on material information affecting the market. Greymouth was the only party that did not agree with the definition, commenting that the objective has already been achieved with the Upstream Disclosure Code.

3.2.3 Gas Industry Company comment

Regarding Greymouth's comment, the regulatory objective sets the outcome that the various options are measured against. The fact that Greymouth considers the objective has already been achieved with the Upstream Disclosure Code does not make this objective less valid or relevant.

On Vector's point, we agree that the options should be focused on material information that may affect the gas wholesale market. For instance, the de minimus coverage threshold in the regulatory arrangements design (see Section 6.2) focuses on facilities that may have a material effect on the wholesale gas market. We agree that this materiality consideration should be incorporated into an amended regulatory objective:

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

3.3 Information disclosure options

3.3.1 Issue

The Draft SOP identified two options for addressing the regulatory objective:

- **Upstream Disclosure Code.** Disclosure of gas production and storage facility outage information under the *Upstream Gas Outage Information Disclosure Code 2020*. The Upstream Disclosure Code was developed by upstream parties (Beach Energy, Greymouth, OMV and Todd Energy), with Flexgas (owner/operator of the Ahuroa gas storage facility) (together referred to as "Upstream Parties" in this

paper) and Energy Resources Aotearoa (ERA, formerly known as PEPANZ). This Code has been in operation since June 2020.

- **Regulated Disclosure Code.** Rules or regulations under the Gas Act for the disclosure of gas production and storage facility outage information. The proposed design of this option would pick up the basic structure of the Upstream Disclosure Code. Some elements of the Code would be augmented or replaced to address various limitations and/or make the elements workable as a regulated set of arrangements.

3.3.2 Stakeholder feedback

Most stakeholders that commented agreed that these two options are possible options for meeting the regulatory objective.

Upstream Parties considered that a third option should also be considered, which is an amended version of the Upstream Disclosure Code. This option would be developed in the Code's review process, scheduled to begin in June 2021. These parties commented that issues that Gas Industry Company has identified with the current Upstream Disclosure Code would be addressed in this amended version.

3.3.3 Gas Industry Company comment

We agree that some operational matters in the Code could be improved through Code's review process. We comment on the opportunity for these improvements in the relevant sections in Section 6. However, as we discuss in Section 3.6, we consider that a modified Upstream Disclosure Code would not be substantially different to the Code in place currently (particularly on the key issues of compliance and enforcement). Accordingly, a potential amended Code is not considered as a separate option.

3.4 Reporting threshold for outages

3.4.1 Issue

The Upstream Disclosure Code and the regulatory option have similar outage definitions. Under both options, outage information that must be disclosed pertains to outage events that involve a reduction in supply that is equal or greater than a minimum size (referred to as the outage "threshold" in our assessment) when measured against a business-as-usual production or capacity estimate ("benchmark"). This threshold is 20 TJ/day for most cases in the Code and all cases in the proposed design of the regulatory option.

This 20 TJ/day threshold was used in the design of the regulatory arrangements in the Draft SOP. We commented that normal daily production from the major fields can vary by more than 20 TJ/day. This suggests that a lower threshold may not be useful. However, we were conscious of the concern that the 20 TJ/day threshold may need to be revised over time to reflect changes in the industry. We noted that 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.

3.4.2 Stakeholder feedback

Submissions were split between those parties who thought that 20 TJ/day is a reasonable threshold and those who considered a lower figure is appropriate.

All of the Upstream Parties who commented on the issue (Todd, Greymouth and OMV) submitted that 20 TJ/day is an appropriate threshold. For instance, Todd considered that this level enables

major outages to be disclosed but avoids small events such as minor planned maintenance activities, like compressor servicing.

Vector suggested that the threshold should be defined in hourly units. Its rationale was that this approach would limit the delay in the initial notification of an outage. It proposed setting the threshold at 1 TJ/hour (i.e. 24 TJ/day), which is higher than the Upstream Disclosure Code's current threshold.

MGUG was comfortable with a 20 TJ/day threshold, but suggested adjustments to the manner in which it is applied. It noted the market could be affected by multiple, smaller outages occurring at the same time (for example three concurrent outages that are each 19 TJ/day) which would not need to be disclosed under the rules. MGUG suggested that Gas Industry Company may want to consider a lower reporting threshold without the need for public disclosure.

Three submitters (Contact, Genesis and Haast) thought that the threshold should be set lower. Contact considered the threshold should be 10 – 15 TJ/day, noting that a reduction of this size "would have an impact" on parties. Genesis submitted that the threshold should be 5 TJ/day, arguing that an unplanned interruption in gas supply of more than 5 TJ/day can affect electricity participants' trading positions and could potentially impact electricity futures prices. Haast considered that the threshold should be 10 TJ/day. No rationale was provided for this suggestion. Like MGUG, Haast also commented on the potential for multiple smaller facility outages occurring at the same time. It suggested that the reduction threshold should be applied on a gas producer basis (i.e. it would apply in aggregate across all production facilities that a party has an ownership stake in).

3.4.3 Gas Industry Company comment

Gas Industry Company considers that 20 TJ/day is an appropriate reporting threshold. The reasons for this include:

- Our review of the recent production history of the major fields has found that for some of the gas production facilities (including Pohokura and Mangahewa), normal day-to-day supply variability can exceed 20 TJ/day.
- This threshold is lower than the level used in Australia's Gas Bulletin Board⁸. In Australia, information updates are triggered if the change in information is greater than 10 percent of the nameplate rating or 30TJ.
- Parties seeking a lower threshold are concerned that a smaller outage than this threshold may potentially affect the electricity wholesale market. We note there are multiple downstream users of gas from each field⁹. The impact of an outage will be spread across these customers, depending on individual contractual arrangements. In particular, there may not be an equivalent reduction in a generator's gas supply from an outage (for example, a 20 TJ reduction in supply caused by an outage may not translate into a 20 TJ reduction in gas available for electricity generation).

⁸ 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.

⁹ For example, Contact's entitlement for Pohokura gas (supplied by OMV) in 2021 is around 15 percent of total gas entitlements (sourced from Enerlytica's May NZ Gas report). The users of Contact's gas entitlements are split between its retail gas customers and its generation assets. Similarly, Genesis' entitlement is 8 percent (excluding gas it has secured from other Pohokura gas users, including Methanex).

Under the regulated disclosure arrangements option, our preference would be for this parameter to be set outside regulation if this is possible. This would enable the threshold to be modified if it was considered to be set at an inappropriate level. It is proposed that Gas Industry Company would review this parameter after the first year of the operation of these arrangements.

We understand the motivation behind Vector's suggestion of an hourly measure. However, this could result in an outage that is as low as 1 TJ/day being reported (an outage that results in a one TJ reduction in supply that lasts for an hour), which we consider to be de minimus.

We consider the likelihood of several small contemporaneous outages resulting in material change in overall gas supply to be an unlikely scenario. Haast's suggestion of reporting by producer is not workable, because several of the fields are owned by Joint Ventures (including Pohokura and Kupe) rather than single producers. Disclosure by individual producer would lead to multiple reporting of the same event.

3.5 Compliance and enforcement framework

3.5.1 Issue

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

1. A two-yearly review process involving a "suitably experienced" third party who will review the performance of the Upstream Disclosure Code, including parties' compliance with the Code. The first review was scheduled to begin no later than June this year.
2. A requirement that a party to the Code must respond to any complaint made by any person regarding compliance matters. If the complainant is not satisfied with the response, they may make a complaint to Gas Industry Company who may deal with it as it sees fit.
3. A provision that if a party to the Upstream Disclosure Code has failed repeatedly to comply with the Code, the other parties may request its withdrawal from the Code.
4. Once a party has ceded to the Code, participation is required unless and until they request a formal notice of withdrawal. Upstream Parties consider that this notice of withdrawal would signal to the market and to Gas Industry Company that the Code has failed. They consider that this provides a deterrent from non-compliance.
5. A requirement that a gas producer must include an obligation that it complies with the Code in gas contracts that it enters after the Code comes into effect.

The Draft SOP concluded that independent compliance monitoring under the Upstream Disclosure Code may be difficult given that the framework is based on private information.

In addition, the enforcement mechanisms in the Code are very limited. The only tangible enforcement mechanism in the Code is described in point three above which involves the removal of a party for repeated infringements. However, the potential removal of an Upstream Party is at odds with the aim of the Upstream Disclosure Code, which is for the disclosure of outage information that may affect the market. 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 may mean that less information will be made available.

A further, related matter is that the Code only applies to acceding gas producers. This means that third parties who have not signed the Code are not able to enforce the reporting obligations in the Code.

In the regulated option, the compliance and enforcement framework for gas production and storage outage information disclosure would be subject to the existing compliance framework in the Gas Governance (Compliance) Regulations 2008.

3.5.2 Stakeholder feedback

Many of the Upstream Parties commented that the Upstream Disclosure Code includes a workable compliance framework that ensures parties will follow the reporting requirements. These parties submitted that the reputational risk from not complying is significant and provides strong incentives to meet the requirements of the Code. For instance, OMV noted that “One of the upstream industry’s primary business drivers is maintaining its societal “License to Operate”... Ensuring that the upstream industry is and is seen to be a responsible partner for the extraction of the crown’s [sic] resources is core to our interests.”. Todd commented that it is happy for Gas Industry Company to perform a monitoring role.

Many of these parties submitted that the Code is working well and that so far there have been no compliance problems. Upstream parties commented generally that the performance of the Upstream Disclosure Code should be assessed in its review process. Deficiencies that the Draft SOP has identified, including compliance and enforcement matters, could be addressed through this process.

Greymouth made the point that the compliance and enforcement arrangements included in the regulatory option in the Draft SOP “...will inevitably put upwards pressure on gas prices if producers anticipate additional risk”.

Parties supporting a regulatory solution made similar points to the Draft SOP on the effectiveness of the Upstream Disclosure Code’s compliance and enforcement framework. For instance, Vector commented that compliance regulations support “more durable” information disclosure arrangements. Genesis noted that the lack of material consequences in the Code for non-disclosure creates a heightened risk of non-compliance.

3.5.3 Gas Industry Company comment

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 for parties to comply with the relevant requirements.

Gas Industry Company does not consider reputation to be a sufficient incentive for ensuring compliance with the Upstream Disclosure Code. While reputation risk may provide some incentives for an Upstream Party to comply with the Code, it does not provide anyone else with the ability to hold the Upstream Party accountable for compliance with the Code’s framework. As we noted in the Draft SOP, there is a possibility that at some future date, a party may decide that the benefits of non-disclosure (which could potentially be significant in a gas market that is under transition, with increased levels of uncertainty) may outweigh the associated costs, including reputational implications. These implications are likely to vary from party to party and depend on the circumstances at the time.

Regarding Upstream Parties’ comment that there have been no compliance problems with the Upstream Disclosure Code so far, we note that this is incorrect. For example, a party recently made a planned production facility outage disclosure that did not comply with the Code disclosure rules. We have also contacted a least one party to correct issues with the content of a disclosure. There are also limits to Gas Industry Company’s ability to verify Upstream Parties’ view that there have been no compliance issues given that some of triggers for disclosure in the

Code rely on private information. The implication of this is that there may have been other departures from the Code requirements that Gas Industry Company is unaware of.

Upstream Parties suggested that the Upstream Disclosure Code could be amended to address the compliance and enforcement framework issues identified in the Draft SOP. We agree that the Code could be amended to improve the scope of information available for monitoring, although the ability of third parties to verify information accuracy is still limited.

We consider that amendments to the Code would not address the incentive issues identified above, for the following reasons:

1. The current signatories to the Code are not directly impacted by non-compliance with the Code and have few incentives to enforce the Code. Parties impacted by non-disclosure of upstream outages, including those parties who trade in the gas and related markets, are not parties to the Code, and cannot enforce its terms. Signing every potentially impacted party up to the Code is unlikely to be achievable.
2. It is unlikely that Upstream Parties could develop an appropriate mechanism for compensating parties impacted by non-compliance and incentivising compliance. The impact and severity of non-compliance is likely to vary depending on the circumstances of a particular non-disclosure event. Upstream Parties, and those who are impacted by non-compliance, require a fair and impartial process for determining the impact of non-compliance. This is likely to require an independent adjudicator who can make orders that are binding on both Code signatories and impacted parties. This is unlikely to be achieved through an amended Code that is not inclusive of all impacted parties.

We believe that, despite Upstream Parties suggestion of an amended Code to address compliance and enforcement concerns, the Code would remain an industry arrangement without an effective compliance and enforcement regime.

Gas Industry Company addressed a similar issue in our decision to replace the voluntary National Gas Outage Contingency Plan (NGOCP) with the Gas Governance (Critical Contingency Management) Regulations 2008 (CCM Regulations). Prior to the CCM Regulations, the NGOCP was an industry-led mechanism, providing for good faith co-operation of industry participants during a contingency event. In our review of these critical contingency arrangements¹⁰, Gas Industry Company found that the NGOCP lacked commercial incentives, allowed free-riding, lacked any proper governance, and had no workable means of enforcing compliance. We noted that the NGOCP was vulnerable to withdrawal or non-compliance by one or more parties. Gas Industry Company commented "...there are greater challenges in enforcing compliance with an industry agreement and that may be regarded as weakening the effectiveness of such an arrangement". We concluded that the reasonably practicable option which best met the regulatory objective was to develop rules or regulations to govern critical contingency management.

3.6 Suitability of Upstream Disclosure Code as a long-term option

3.6.1 Stakeholder feedback

¹⁰ Gas Industry Company (2008). "Recommendation to the Minister of Energy on Arrangements for the Effective Management of Critical Contingencies", June 2008. <https://www.gasindustry.co.nz/work-programmes/critical-contingency-management/background/original-development-2006-2008/recommendation-to-the-minister-of-energy-on-arrangements-for-the-effective-management-of-critical-contingencies/document/2746>

Several Upstream Parties argued in submissions on the Draft SOP that the industry-led Upstream Disclosure Code should be given an opportunity to work. They considered that there is an obligation requiring Gas Industry Company to consider non-regulatory solutions to meet the regulatory objective before seeking to regulate (s43N(1)(c) of the Gas Act). For instance, Todd commented that "...it is inappropriate for GIC to peremptorily regulate a disclosure regime before there is any signal that the Code has failed".

Upstream Parties contended that the review process in the Upstream Disclosure Code should proceed. This would enable the Code to be amended to address identified issues, including the problems with its compliance and enforcement framework. The parties submitted that Gas Industry Company should consider the option of an amended Upstream Disclosure Code that addresses the identified deficiencies in the Code. For example, Firstgas submitted that it "...consider[s] proceeding to a regulated solution would be premature without first carrying out the inaugural review of the operation of the Upstream Disclosure Code".

Supporters of a regulatory option considered that industry-led, voluntary arrangements for the disclosure of storage and production outages are unlikely to be enduring. For instance, Trustpower submitted that "...the current voluntary arrangements will likely fail at a time when they are needed the most to deliver the best outcomes for end customers in both the gas and electricity [sectors]". The implication is that regulatory arrangements should be introduced now before waiting for failure to occur; that is, there should be a proactive rather than reactive approach to regulatory intervention.

3.6.2 Gas Industry Company comment

Gas Industry Company was an observer at the Upstream Parties' working group meetings where the Upstream Disclosure Code was developed. Although we attended the meetings in an observer capacity, we did communicate to the group that an effective compliance and enforcement framework was a critical component of any arrangement that was developed.

Parties acknowledged the importance of such a framework in various submissions that pre-dated the Upstream Disclosure Code. For instance, Todd noted in both its submission and cross-submission (respectively) on the Options Paper¹¹:

(submission)

Todd considers that the industry-led solution, whether in the form of a multilateral agreement or rules, should include:

- a. A comprehensive enforcement regime as required to ensure effective compliance*

(cross-submission)

A key criticism of a voluntary disclosure code is the lack of "teeth" of such a code, having no regulated penalties for non-compliance. Gas producers are aware of the need for a mechanism for compliance and this is being addressed.

Despite our communication on this matter and Upstream Parties' acknowledgement of the importance of the matter, these parties were unable to include suitable compliance and enforcement arrangements in the Code.

A possible course of action could be to let the Code review occur (as proposed by Upstream Parties). However, it is unclear to us how the Code review process could address the compliance

¹¹ Gas Industry Company (2019). "Options for Information Disclosure in the Wholesale Gas Sector", April 2019

and enforcement issues that we have raised and that formed a key part of the conclusion in the Draft SOP that the regulatory objective would only be achieved by regulated arrangements. We consider that a modified Upstream Disclosure Code would not be substantially different to the Code that is currently in place.

3.7 Cost Benefit Analysis

3.7.1 Issue

Under Section 43N of the Gas Act, a Statement of Proposal should consider the benefits and costs of each option for achieving the regulatory objective. Gas Industry Company retained Sapere Research Group ("Sapere") to develop a cost benefit analysis (CBA) for the two identified options. This CBA was included in the Draft SOP and is attached as Appendix B.

The CBA involved a comparison of the net benefits of the regulatory option against a counterfactual. Sapere considered that because of the perceived vulnerabilities with the Upstream Disclosure Code, there is a "strong possibility" that the Code might fail at the time that it is most needed. Because of this likelihood, Sapere contended that the counterfactual is equivalent to a situation where there is no disclosure of gas production and storage facility outage information.

Sapere found significant net benefits in both the gas and electricity markets from the move to a regulated set of arrangements for information disclosure, compared to the counterfactual. It found that the net benefits of the regulated regime would be greater than the net benefits of the voluntary arrangement. Sapere concluded that decision-making around outages for physical assets in the energy sector and fuel utilisation (renewable and fossil fuels) is most efficient with a regulated gas outage scheme. It was convinced that this efficiency effect would be greater under the regulated scheme compared with the current scheme. It also concluded that wholesale, contract and retail prices in both the gas and electricity markets would be more efficient under a regulated set of arrangements.

3.7.2 Stakeholder feedback

OMV, Todd, Greymouth, ERA, Beach and Contact disagreed with the findings in the CBA.

Several of these parties (OMV, Todd, Greymouth, ERA, Beach) submitted that the counterfactual option in the analysis is mischaracterised. For instance, Todd contended that the counterfactual is "fundamentally flawed". It commented that "The presence of regulation does not guarantee that all parties will comply and likewise an industry led code does not mean parties will breach the code." Similarly, Greymouth submitted that "Comparing a new policy option to a status quo which is assumed to fail (when it has not) will always create a biased cost-benefit analysis towards action." ERA and Beach also disagreed that the counterfactual to a regulated option is the failure of the existing Code.

These parties made the point there is no indication that the Upstream Disclosure Code will fail in times of market tension. For example, OMV noted that, in the current period of tight gas supply, the perception is that there is good disclosure performance. OMV submitted that the company "...has gone beyond the requirements of the code in response to market tension."

Todd, OMV and Greymouth also commented that Sapere's interviews with industry parties did not include any upstream sector participants. Greymouth argued that this led to the CBA being biased.

3.7.3 Gas Industry Company comment

Gas Industry Company asked Sapere to respond to this feedback. Sapere's response to submitters is attached as Appendix C. The following is from the executive summary:

The way we characterised the factual (a regulated scheme) and the counterfactual (the voluntary scheme) may have left the impression that we think the regulated scheme will work perfectly compared to the likelihood that the voluntary scheme will fail. That is not the case. A regulated scheme will come with imperfections and economic costs.

We appreciate that some of the parties to the voluntary Code will adhere to its provisions as if it were regulated. We recognise the importance of the incentive created by parties wanting to maintain a social license to operate and the reputational risk of non-compliance. However, we stand by our observation that as long as it is possible for one or more parties to trade off the consequences of non-compliance against the merit of non-compliance with no other penalties the counterfactual remains as per our original advice.

In this review we have responded to the criticism of our original assessment by applying a law and economics approach to a regulated scheme versus a voluntary scheme. We rely on the assessment of costs and benefits in our original analysis but now add this different approach. This test asks whether one information disclosure regime would get closer to the goal of information being disclosed on the basis that the economic benefits of doing so exceed the economic costs of disclosure than the other. We remain of the view that the proposed regulated regime would get closer to that objective than the current voluntary scheme.

4. Problems with limited production & storage outage information

4.1 Introduction

In this section, issues with inadequate gas production and storage outage information in the New Zealand wholesale gas sector are summarised. The Draft SOP and the *Information Disclosure: Problem Assessment* paper ("Problem Assessment paper")¹² discussed these issues in detail. Feedback on the Draft SOP was supportive of our problem assessment, with no further matters raised (see Section 3.2). To avoid undue repetition, the discussion in this section is kept short. The interested reader is referred to the Problem Assessment paper for a more detailed review of the issues.

4.2 Overview

The Options paper noted that most gas in New Zealand is sold under long-term, bilateral gas supply agreements (GSAs)¹³. Flexgas also has bilateral arrangements with its customers¹⁴. 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.

In previous consultation rounds, gas producers and Flexgas agreed that information about gas production and storage facility outages is important for the wholesale gas market to function effectively. Following Gas Industry Company's creation of the Industry Notifications page, these parties began publishing outage information voluntarily on the page on an operator-by-operator basis. They subsequently developed the Upstream Disclosure Code to standardise this disclosure. The Code also includes obligations around the disclosure of outage information. The option of this Upstream Disclosure Code as a permanent solution for addressing production and storage information issues is explored in Section 6.

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

4.3 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

¹² See <https://www.gasindustry.co.nz/work-programmes/gas-sector-information-disclosure/overview/>

¹³ 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.

¹⁴ at the time of writing, Contact Energy and Nova are the cornerstone users of the Ahuroa Gas Storage Facility.

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 Company 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
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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 1		Criterion 1
	Criterion 2		Criterion 2		Criterion 7
	Criterion 3		Criterion 6		
	Criterion 4				
	Criterion 5				
GPS Objective	Criterion 8	Criterion 13		Criterion 8	
	Criterion 9			Criterion 12	
	Criterion 10			Criterion 13	
	Criterion 11				
GPS Outcome	Criterion 14				
	Criterion 15				
	Criterion 16				
	Criterion 17				

4.4 Problem assessment

4.4.1 Efficiency

Limited production and storage facility outage information has efficiency implications for many parts of the gas industry value chain and associated markets:

- *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. However, the small size of the upstream sector in New Zealand means that any efficiency cost is likely to be small.
- *Transmission.* There are no obvious efficiency issues for the gas transmission system operator regarding limited production or storage outage information. Firstgas receives production outage information under the Maui Pipeline Operating Code (MPOC). Flexgas is an affiliate of Firstgas, so Firstgas has knowledge of storage facility outages.
- *Downstream gas sector (including major users).* In the consultation rounds, several downstream parties commented that a lack of information regarding production facility outages has previously adversely affected their operations. For instance, limited knowledge of outage events has adversely affected some parties' ability to make effective business decisions in response to gas supply shocks. The Problem Assessment

paper observed that the efficiency implications of limited storage facility outage information are not unlike production outages.

- *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 limited outage information inhibits “efficient arrangements for the short-term trading of gas” (criterion 15 in Table 2).
- *Related markets – electricity.* A common theme among several 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. 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 had asymmetric information regarding gas production outages, relative to competitors who have thermal generation in their portfolios. The electricity system operator commented that a lack of information on gas supply issues makes it more difficult for it to manage outages on the electricity network and can also lead to potential gaps in security of supply forecasting and information. We note that the Electricity Authority has made amendments to the Electricity Industry Participation Code and its information disclosure guidelines to improve the disclosure of thermal fuel information.

4.4.2 Fairness

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

4.4.3 Reliability

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.

4.4.4 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.

4.4.5 Safety

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

4.4.6 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 Gas Industry Company's creation of the Industry Notifications page, Upstream Parties began publishing outage information voluntarily on the page to address these information issues. They subsequently developed the Upstream Disclosure Code to standardise this disclosure. The Code also includes obligations around the disclosure of outage information. The option of this Upstream Disclosure Code as a permanent solution for addressing production and storage information issues is considered in Section 6.

4.4.7 Regulatory objective

As discussed in Section 2, Gas Industry Company's approach to developing governance arrangements under the Gas Act requires the development of a regulatory objective. Following the discussion in this section, and feedback on the problem assessment discussion in the Draft SOP (see Section 3.2), we consider that the regulatory objective should be:

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

5. Options for addressing identified problems

5.1 Introduction

This section identifies the reasonably practicable options for achieving the regulatory objective described in Section 4.4.7. 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.

5.2 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 Company, prior to making a recommendation to the Minister of Energy to:

- Identify and assess reasonably practicable options for addressing the objective of the regulation;¹⁵
- 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.

5.3 Options considered

Gas Industry Company 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.

¹⁵ We use the term "problem" to describe the issue that the regulatory objective is intended to address.

As noted in Section 3.3, Upstream Parties commented in submissions that a third option, involving an amended version of the Upstream Disclosure Code, should also be considered. This amended Code would be developed in the Code's two-yearly review process (the first review was scheduled to commence in or before June 2021).

We agree that some operational matters in the Code could be improved through this process. We comment on the opportunity for these improvements in the relevant sections in Section 6. However, following the discussion in Section 3.6, we consider that a modified Upstream Disclosure Code would not be substantially different to the Code in place currently (particularly on the key issues of compliance and enforcement). Accordingly, a potential amended Code is not considered as a separate option.

6. Upstream Gas Outage Information Disclosure Code 2020

6.1 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. This discussion is an update of the Upstream Disclosure Code review included in the Draft SOP, incorporating feedback from the consultation process.

The full Upstream Disclosure Code is available at

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

6.2 Code coverage and structure

The content in this section remains unchanged from the discussion in the Draft SOP. There was no significant feedback on this issue in the consultation process.

6.2.1 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)

6.2.2 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 or storage owners to accede to the Code by signing the Deed of Accession contained in Schedule 1 of the Code. We think that this is a positive feature of the Code because it enables the Code to be flexible to cope with future industry changes.

As we discussed in Section 3.5.3, an issue with the 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).¹⁶ 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.

6.3 Outage definitions

The description of the outage definitions in this section is unchanged from the Draft SOP. We have included submitters' feedback on the draft in the assessment discussion.

6.3.1 Overview

As we explained in the Draft SOP, the Upstream Disclosure Code's outage definitions set out the type and size of events that should be disclosed. There are four types of outages:

1. Production facilities – planned outages;
2. Production facilities – unplanned outages;
3. Storage facilities – planned outages;
4. Storage facilities – unplanned outages.

In general, there are two parts to the outage 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. a minimum supply reduction (referred to as the outage "threshold" in our assessment); and
 - b. 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.

¹⁶ 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 6.7 (Liability) and Section 6.10 (Compliance and Enforcement) of this paper.

The first part (described in 1) is the key part of the definitions: the disclosure of information is confined to facility outage events. The threshold part of the definitions (described in 2) may be considered as a de minimus measure, or a proxy for a material change that could affect the market.

The Code includes a process for reviewing the outage 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.

Gas Industry Company is not aware of this review process occurring even though this six-month period ended in December 2020.

6.3.2 Outage Definitions

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 day¹⁷). The planned reduction is measured against the producer's forecast gas production for the 14 gas days preceding the forecast start of the outage.

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 (in the discussion that follows we refer to this as the "primary definition").

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 ("secondary definition"). Given the structure of the other definitions, we assume that this capacity reduction is linked to a facility outage.

We understand that the secondary 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 primary 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

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

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

¹⁷ Period of 24 consecutive hours, beginning at 0000 hours.

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

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. Todd commented in its submission that this time period was inadvertently left out of the definition and that this can be amended by Code participants. For this assessment, we assume the definition is for the same 12-month time horizon used in the planned production facility outage definition.

6.3.3 Assessment

Reporting thresholds

The minimum threshold is the same across all outage forms (with the exception of the secondary definition included in the unplanned production outage definition). This is set at 20 TJ/day. As discussed in Section 3.4, we consider that this is set at an appropriate level.

The unplanned gas production facility outage includes a 50 TJ/day threshold as a special case. We understand that the threshold is set higher for this part of the definition because gas production at some fields is reasonably variable (i.e. not a steady rate per day). This variable production profile means that the recent history of production used for the benchmark may be a less accurate measure of gas that would have produced if the outage had not occurred. We consider that this is a pragmatic approach for addressing a relatively infrequent set of circumstances.

Planned gas production facility outage benchmark

Apart from the threshold size, the other key part of the outage definitions is the benchmark that a production or storage reduction associated with an outage is measured against.

For planned production outages, the benchmark is a forecast production measure (specifically, the producer's forecast gas production for the 14 gas days preceding the forecast start of the outage). This reflects 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 time¹⁹. 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. 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

¹⁹ 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 Company's information portal shows this variability, <https://www.gasindustry.co.nz/publications/landing-pages/gas-production-and-major-consumption-charts/>

months prior to the event²⁰ are not necessarily the same for a variety of reasons. In addition, not all the gas that is exported at some facilities is shipped on Firstgas's transmission pipelines.

OMV and Todd submitted that this matter could be addressed through amendments to the Upstream Disclosure Code, implemented as an outcome of the 12-month review process. For instance, under an amended Code, parties could voluntarily provide Gas Industry Company with this forecast information to enable independent monitoring. However, we note that there would be limited incentives to encourage parties to supply accurate, timely information (apart from parties' reputational concerns). Furthermore, this monitoring function would be ineffectual without an accompanying enforcement mechanism. These issues are discussed further in Section 3.5.

Unplanned gas production facility outage benchmark

Primary definition benchmark

This benchmark is 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 in on-site electricity generation assets is not captured under this nominations-based framework.

In addition, nominations information is not available to the wider market. This information is limited to the producer and Firstgas as the transmission system operator. Parties may choose to make the information available to the third-party reviewer for the review process; however, this information sharing is not covered in the Code. 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.

Secondary definition benchmark

Unlike the other production outage definitions, the benchmark for this definition is production over a historic period – the immediately preceding 14 days. As we commented earlier, we consider that this is a pragmatic approach for addressing a relatively infrequent set of circumstances.

Overall, our assessment for this unplanned production outage benchmark is that the benchmark 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.

As we noted in the planned production outage discussion, some Upstream Parties submitted that these benchmark issues could be addressed through amendments to the Upstream Disclosure Code. Our concerns regarding the limited incentives and enforcement inherent in the Code apply equally to this discussion.

²⁰ 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.

Gas storage facility outage benchmarks

The planned and unplanned outage definitions for gas storage facilities are the same. These definitions are based around a threshold reduction in gas withdrawal capacity 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 facilities²¹.

We note that nameplate withdrawal capacity for current gas storage facilities is known information – the current withdrawal capacity of Ahuroa is 65 TJ/day. However, daily withdrawal capacity information is not visible. This lack of visibility limits the ability of external parties and Gas Industry Company 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 capacity information to enable them to assess parties' disclosure against the outage definitions. However, the reviewer's access to the information is unclear.

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.

6.4 Information that should be disclosed

The content in this section remains unchanged from the discussion in the Draft SOP. There was no feedback on this issue in the Draft SOP consultation process.

6.4.1 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.

²¹ 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.

6.4.2 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.

6.5 Timing of disclosures

6.5.1 Description

This part of the Code sets out when information should be reported. Timings are defined for planned and unplanned outages.

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.

6.5.2 Assessment

Unplanned Outages

Timing of initial disclosure

Our initial view presented in the Draft SOP was that the 12-hour maximum period for the initial notification appeared to be a reasonable timeframe, providing sufficient time for corporate sign-off of the notification.

Submissions on this matter were split between parties who agreed with this conclusion, and others who considered that the maximum period should be shorter.

Upstream Parties who commented on the issue (OMV, Todd, Greymouth) considered that the 12-hour maximum period is appropriate because it recognises the practicalities of disclosing information when there are limited staff. For instance, Todd noted that if an outage occurs in the middle of the night, a production station is likely to be operating with a skeleton night crew and will be focussed on remediation. Staff will have limited time to be engaged with reporting obligations.

Vector submitted that the 12-hour period is too long. It noted that this length of time would mean the disclosure may not be timely and would lead to a market environment where buyers of gas from the production facility would become aware of price sensitive information ahead of other market participants. Haast and MGUG were also concerned that an outage disclosure

should occur at the same time the information is being made available to customers to prevent information asymmetries.

We note that the Upstream Disclosure Code includes a provision (cl.14.2) that requires an Upstream Party to disclose outage information to the market at the same time it provides information to a contract counterparty, pursuant to any contractual requirement. This clause addresses asymmetry issues that may potentially arise due to parties' contractual duties. However, there remains the potential for information asymmetries to occur where producers or storage owners voluntarily disclose information to their customers (i.e. apart from contractual obligations).

Timing of subsequent disclosures

In the Draft SOP, we commented that 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 could result in information asymmetry for a period of time (particularly in the scenario where an Upstream Party voluntarily discloses information to a customer).

Planned Outages

We consider that the quarterly update schedule is reasonable. As we noted in the Draft SOP, 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"²². 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.²³ 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.

OMV submitted that cl. 14.2 addresses potential asymmetry issues that would be caused by contractual reporting obligations. However, this clause does not address the potential asymmetry issue with parties voluntarily sharing information, as described earlier.

Conclusion

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

6.6 Confidential information

6.6.1 Description

²² 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.

²³ For planned outages, updates are made on a quarterly basis. For unplanned outages, updates are made on a daily and weekly basis.

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.

6.6.2 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 reviewed²⁴.

We commented in the Draft SOP that 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. There is also a broader question of whether parties will comply with these arrangements. Compliance issues are discussed in Section 3.5 and Section 6.10.

Todd submitted that it has not been prevented from disclosing any information under the Code due to confidentiality provisions of its gas supply contracts. OMV considered that these concerns are overstated, noting that it would be unusual for a customer to impose (and a seller to accept) a confidentiality requirement whereby the customer governs what the seller can do. We acknowledge that the issue we have identified may have not arisen to date, at least for some of the parties. However, the limited information that is available for monitoring parties' disclosure performance prevents us from being certain this is the case. In addition, the fact that these contracts are confidential documents (preventing Gas Industry Company from verifying OMV's claim) and the possibility for this issue to appear in the future means that this remains a potential issue.

6.7 Liability

6.7.1 Description

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

6.7.2 Assessment

We commented in the Draft SOP that because the Upstream Disclosure Code only applies to acceding gas producers, 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.²⁵ The issue of Code coverage and structure was discussed in Section 6.2. The implications of this coverage are that:

²⁴ 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."

²⁵ Gas producers accede to the Upstream Disclosure Code by signing the Deed of Accession for Gas Producers contained in Schedule 1 of the Code.

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).

We considered 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).

We considered that this issue is moderated by the fact that pursuing compensation is likely to be costly and risky for parties, so the threat of enforcement action is likely to be weak in any event (and therefore the incentives for Code-compliant behaviour are likely to be somewhat limited).

Todd submitted that, when drafting the Code, Upstream Parties considered that the incentives for compliance centred on reputational risk and the risk of regulation. It noted that the intent of the Code was to try to deal with asymmetrical information; it was not intended to provide a remedy of damages or compensation to any party. These issues are covered in the compliance discussion in sections 3.5 and 6.10.

6.8 Information standard

The content in this section remains unchanged from the discussion in the Draft SOP. There was no substantive feedback on this issue in the Draft SOP consultation process.

6.8.1 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.

6.8.2 Assessment

Gas Industry Company 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 is 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 practice²⁶.

6.9 Review processes

6.9.1 Description

²⁶ 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>

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

The review will be published and made available to Gas Industry Company 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.

The Upstream Disclosure Code also includes a review process for the outage 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.

6.9.2 Assessment

These review processes are a key element of the Upstream Disclosure Code’s compliance framework (see sections 3.5 and 6.10).

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.

In the Draft SOP, we identified several issues with the review framework as it is set out currently:

- 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.

Todd submitted that it does not believe the issue with private information exists, noting that “If there is a material outage that affects the market, then someone will notice it. If it’s not a material outage, then there’s no real issue.”

We consider that formalised arrangements for the provision of monitoring information are required for an effective monitoring regime. We do not consider that it is sufficient for parties in the wider energy sector (who have varying levels of understanding of the gas sector) to rely on informal sources to assess the operation of the Upstream Disclosure Code.

OMV considered that the Code could be adapted to address the issues that Gas Industry Company raised in the Draft SOP. We agree that at least some of the issues that have been identified could potentially be addressed through a modified Code. However, even if improved monitoring arrangements could be introduced, we consider that these would have limited benefit without an effective enforcement regime. As we discuss in sections 3.5 and 6.10, we do not consider that such a regime can be implemented in the Upstream Disclosure Code.

In the Draft SOP, we considered 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). However, Gas Industry Company is not aware of this review process occurring even though this six-month period ended in December 2020.

6.10 Compliance and enforcement arrangements

6.10.1 Description

The Upstream Disclosure Code's compliance and enforcement framework is described in Section 3.5. In summary, this framework includes the following elements:

- Two-yearly review process – conducted by a third party that includes an assessment of parties' compliance with the Code;
- 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;
- Process for removing a party that is disclosing outage information under the Code - if a party fails repeatedly to materially to comply with the Code, the other parties may request its withdrawal.
- Future gas contracts – these contracts must include an obligation that that parties comply with the Code.

6.10.2 Assessment

Our assessment of the Upstream Disclosure Code's compliance and enforcement framework is included in Section 3.5.

An effective 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.

Gas Industry Company does not consider that the Upstream Disclosure Code meets this objective. In Section 3.5 we commented that:

- As discussed in the Draft SOP, independent compliance monitoring under the current version of the Upstream Disclosure Code may be difficult given that the framework is based on private information. We acknowledge the feedback from some Upstream Parties that the Code could potentially be amended to address this issue. However, we consider that incentives for timely and accurate information sharing would remain insufficient, as we comment below.
- The enforcement mechanisms in the Upstream Disclosure Code are limited. Some Upstream Parties submitted that reputational risk ensures parties' compliance with the Code. Gas Industry Company does not consider reputation to be a sufficient incentive for ensuring all parties comply with the Upstream Disclosure Code, all of the time. While reputation risk may provide some incentives for an Upstream Party to comply with the

Code, it does not provide anyone else with the ability to hold the Upstream Party accountable for compliance with the Code's framework.

- Gas Industry Company considers that the structure of the Upstream Disclosure Code as a multilateral agreement limits the potential for effective governance arrangements, given that non-compliance is likely primarily affect parties that are outside the Code.

We consider that, despite Upstream Parties suggestion of an amended Code to address compliance and enforcement concerns, the Upstream Disclosure Code would remain an industry arrangement without an effective compliance and enforcement regime.

6.11 Conclusion

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, OMV's disclosure of changes in expected production for 2021 at the Maui and Pohokura production facilities has been valuable to the wider energy sector in a time of considerable market stress. As we noted in the Draft SOP, this reporting has exceeded the disclosure requirements in the Code.

Despite the step change improvement in outage reporting that has occurred, Gas Industry Company is concerned that there are issues 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 of non-disclosure.

We have identified several other related 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.
- When considered in conjunction with the absence of an effective compliance and enforcement regime, the broad liability exclusion in the Code reduces the incentives for gas producers and gas storage owners to comply with the requirements of the Code.
- Some of information in the outage definitions is private information, making it difficult for third parties and Gas Industry Company to review whether parties to the Upstream Disclosure Code have reported outage information consistent with the Code's terms. We note that possible amendments to the Code (made through its review process) could potentially lessen this concern.
- The timing of notifications for unplanned outages and material changes to planned outages may not address issues with information asymmetry.
- There are some issues regarding the review process in the Code, including whether the expert party is a neutral party.

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

Gas Industry Company considers that the *Upstream Gas Outage Information Disclosure Code 2020* does not satisfactorily achieve the regulatory objective as set out in Section 4.4.7.

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.

7. Rules or regulations under the Gas Act

7.1 Introduction

In this section, the option of information disclosure arrangements for gas production and storage facility outages implemented as a framework of regulations (and/or rules) under the Gas Act is discussed.

7.2 Key elements of regulated information disclosure arrangements

7.2.1 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.

7.2.2 Coverage of the arrangements

The content on this issue remains unchanged from the discussion in the Draft SOP.

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.

7.2.3 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:

1. Information disclosed under the arrangements includes reductions in gas production or storage withdrawal associated with a facility outage.
2. Reporting is narrowed to information on outages over a minimum size, to exclude events that are unlikely to have a material impact on the gas wholesale market. This minimum level is defined by:
 - a. A base, business-as-usual, measure of gas production or storage withdrawal rate that would be expected in the absence of the outage ("benchmark").
 - b. 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 both 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. This threshold pertains to withdrawal capacity for gas storage facilities and daily gas production for production facilities (see the definition of gas production below).

Submissions on this matter varied considerably (see Section 3.4). Recognising the range of feedback, we consider that the threshold level should be reviewed after the first year that the arrangements have been in place.

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 and unplanned outages

The benchmark for gas production facility planned outages should be the maximum daily gas production in the producer's production forecast for the 14 gas days preceding the forecast start of the outage. The definition of gas production for this benchmark is described below.

We consider that the benchmark for gas production facility unplanned outages should be the relevant week ahead estimate of gas production.

Gas production definition

For these arrangements, the definition of gas supply from a gas production or processing facility includes all gas exported from the gas processing facility.

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. The timing of disclosures is covered in Section 7.2.5.
- All information is for a gas day.

Gas Industry Company's monitoring requirements for these benchmarks are covered in Section 7.2.7.

Comment

Threshold

Our comments on threshold matters are included in Section 3.4.

Benchmark – gas storage facility planned and unplanned outages

Following on from the Draft SOP, the benchmark for gas storage facility planned and unplanned outages is the same as the benchmark used in the Upstream Disclosure Code. We received no feedback on this matter in submissions.

Benchmark – gas production facility planned and unplanned outages

Gas Industry Company 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.

In the Draft SOP, the definition included all gas produced from the field, which included gas used to fuel the processing plant, gas that is reinjected and gas shipped on private pipelines. Todd submitted that this definition is too broad and would produce distracting information. For instance, reinjection activity would be caught in the definition. Todd also considered that gas supplied on private pipelines is commercially sensitive and should not be included in the definition. OMV considered that the Upstream Disclosure Code already provides for gas shipped on private pipelines to be included as production and would support proposals to clarify that intent. Similar to Todd, it submitted that gas used on site for the production of export gas should be excluded.

We agree that gas used in the processing facility, or gas that is reinjected, should not form part of the outage definitions – this gas is used as part of the production process and inclusion of this gas has no value to the wider wholesale market. However, we consider gas that is shipped on private pipelines should be included in the definitions since these pipelines are another method of shipping gas to the market. Regarding Todd's confidentiality concern, we note that the gas that is shipped on these pipelines is aggregated with all of the other gas that is shipped to the market. We expect that this should address confidentiality concerns.

We have modified the definition of gas production from the definition in the Draft SOP to address these matters.

7.2.4 Information that should be disclosed

Gas Industry Company 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.

Disclosures under these arrangements may be made on behalf of a gas producer by the operator (or another nominated person) of the relevant production facility or storage facility.

Comment

We consider that the information that is required to be disclosed under the Upstream Disclosure 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.

7.2.5 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 in disclosed information in events that are occurring in the first six months, the change should be disclosed as soon as reasonably practical. If a change in information occurs in the latter six months, the update should be included as part of the quarterly notifications.

Planned outage information that is provided to a customer (irrespective of whether this is required under a contractual commitment or a voluntary disclosure) should be disclosed publicly at the same time. This public disclosure should include the information described in Section 7.2.4.

Unplanned outages

Gas Industry Company 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.

Unplanned outage information that is provided to a customer (irrespective of whether this is required under a contractual commitment or a voluntary disclosure) should be disclosed publicly at the same time. This public disclosure should include the information described in Section 7.2.4.

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

Planned outages

In the Draft SOP, we used the general form of the planned outage notification timing requirements in the Upstream Disclosure Code for the regulated option. We also included a requirement that if a party becomes aware of any material change to the currently disclosed set of information for the 12-month period, it should disclose it as soon as reasonably practicable. This extended the “as soon as reasonably practicable” criteria in the Upstream Disclosure Code from six to the full 12-month rolling period.

We received mixed feedback on this rule design. Todd and OMV considered that the extension of this criteria would potentially lead to disclosure overload, without adding any useful information. It was noted that the timing and scope of planned outages further than six months in the future often change. A requirement to update these outages would lead to multiple disclosures that are of little use to stakeholders. In contrast, Vector agreed with the “as soon as reasonably practical” requirement applying over the 12-month period. Haast considered that the requirements should clarify that “as soon as practical” includes that information should be disclosed at the same time as it is released to any customer or other market participant.

We agree that extending the “as soon as reasonably practicable” criteria to 12 months may result in multiple updates of outages that are occurring later in the reporting window which have limited benefit for stakeholders. From submissions, the focus of this rule should be to ensure that information asymmetries do not arise from some parties receiving information earlier than others.

We have modified the planned outage rule to address these issues. The body of the rule is the same as the rule in the Upstream Disclosure Code (particularly, keeping the “as soon as reasonably practicable” criteria to the first six months). We have added a requirement that all planned outage disclosures made to production or storage owners’ customers should be issued publicly at the same time.

We think that this modification addresses the most significant matter raised in submissions, which is to ensure that information asymmetries are not created from some parties having better information than others. The Upstream Disclosure Code (cl. 14.2) requires customer disclosures pursuant to any contractual requirement to be disclosed. This rule extends this requirement to also include any voluntary disclosures that may be made.

Unplanned outages

In the Draft SOP, we used the general form of the unplanned outage notification timing requirements in the Upstream Disclosure Code for this regulated option. We included the 12-hour maximum window for the initial notification of an unplanned outage, recognising that time may be required for parties to get corporate sign-off on the notification – particularly if the outage occurs in the middle of the night. We extended the requirement to update disclosures for material changes “as soon as reasonably practicable” across all relevant notification types (in the Upstream Disclosure Code, this requirement applies only to the initial notification).

Todd and OMV submitted that the extension of the “as soon practicable” criteria across all unplanned outage notification times (i.e. including the requirement for the daily and weekly update notification windows) would unduly increase the disclosure burden without providing significant additional information to market participants. Todd submitted that it would add to compliance costs and commented that the Upstream Disclosure Code includes a clause (cl. 14.1) noting that gas producers may disclose more information than the requirements in the Code. OMV commented that the extension of the criteria across all notification windows would potentially result in disclosure overload. In contrast, Vector considered that the notification timing should be consistent with the Electricity Authority’s wholesale market information

disclosure (WMID) guidelines²⁷. The Authority's view is that "...a participant must disclose disclosure information as soon as it becomes aware of it, subject to reasonable practicalities which might include verification, approval, and communications, etc". Haast submitted that information disclosure should occur at the same time information is made available to customers.

Todd, OMV and Greymouth considered that the 12-hour maximum window for the initial notification is appropriate. Todd and Greymouth both submitted that this "soft" guideline is reasonable because of practical considerations with an outage occurring in the middle of the night. Vector considered that the 12-hour timeframe is too long. It argued that this reporting window would lead to disclosures that are not timely (and so reduced in value) and could lead to information asymmetry. Haast was also concerned that the timeframe could lead to information asymmetries.

We consider that both the extension of the "as soon as practicable" and the 12-hour maximum window matters are focussed primarily on the timely availability of information and the potential for information asymmetries to occur because some parties (particularly Upstream Parties' customers) could receive information sooner than others. We think that these matters are addressed by ensuring that all market-related information on outages is available to all interested parties concurrently. Accordingly, we have added a requirement that that all unplanned outage disclosures made to production or storage owners' customers should be issued publicly at the same time. This public disclosure should include the information described in Section 7.2.4.

With this reporting requirement in place, we have retained the 12-hour maximum window, recognising the practical issues that Upstream Parties have raised. This is analogous to the Electricity Authority's WMID guidelines, which recognise the "reasonable practicalities" parties may have with disclosing information (albeit the Authority does not put a limit on the timeframe). We have decided not to extend the "as soon as practicable" criteria across all notification windows.

7.2.6 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 storage owners under the proposed rules-based approach will give rise to concerns regarding confidentiality.²⁸ Accordingly, confidentiality obligations should not present a barrier to disclosure. OMV commented in its submission that it supported Gas Industry Company's proposal that there should be no exclusions for the disclosure requirements for reasons of commercial confidentiality.

7.2.7 Monitoring

²⁷ Electricity Authority (2018). *Guidelines for participants on wholesale market information disclosure obligations*, May 2018. Available at <https://www.ea.govt.nz/assets/dms-assets/15/15138Wholesale-market-information-WMI-disclosure-guidelines.pdf>

²⁸ We note that most of information is already disclosed under the terms of the Upstream Disclosure Code.

Description

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

- An estimate of daily production for the upcoming 12 months. This information should be provided to Gas Industry Company annually.
- Actual daily total production. This information should be supplied annually.

The definition of “gas production” includes all gas exported from a gas processing facility.

A gas storage facility owner is required to provide Gas Industry Company with:

- The facility’s daily aggregate withdrawal capacity and expected changes in this capacity. This information should be supplied annually.
- Daily aggregate gas withdrawal nominations information. This information should be supplied annually.
- Daily actual aggregate withdrawal information. This information should be supplied annually.

Gas production and storage facility owners’ compliance with these arrangements will be audited on a two-yearly basis.

Comment

In order to effectively monitor compliance with the disclosure requirements, Gas Industry Company needs data relevant to the benchmark definitions. For gas production facilities, forecast total daily gas quantities and total daily production are not publicly available. The information requirements identified above address this information gap.

In the Draft SOP, we required gas production information to be provided on a monthly or quarterly basis. OMV suggested that forecast gas production information should be provided annually to reduce the reporting burden. We agree that monitoring information should be provided annually rather than quarterly and have adjusted the monitoring requirements accordingly.

For gas storage facilities, we proposed in the Draft SOP that daily aggregate withdrawal information should be supplied to enable monitoring of the disclosure rules. Firstgas submitted that it is not clear how this information would enable extraction capacity to be monitored, since scheduled withdrawals can vary significantly from the “benchmark” on any given day. We agree that, by itself, actual withdrawal information would not be useful. To address this issue, we have added a requirement for a storage owner to also provide daily nominations information so that a “forecast versus actual” assessment may be made. This should provide an indication of capacity changes.

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

7.2.8 Confirmation of information quality

Description

We consider that the daily production forecast and daily production and storage withdrawal information provided to Gas Industry Company should be prepared in good faith and to the standard of a Reasonable and Prudent Operator.²⁹

We also propose that there is an annual certification by a senior manager of the gas producer or gas storage owner that it 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 Company 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 certification requirement is consistent with the approach the Electricity Authority has taken to encourage accurate and complete reporting of thermal fuel information in the electricity sector³⁰. 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 approach is that imposes an additional regulatory burden on these companies.

7.2.9 Compliance and enforcement arrangements

The discussion in this section remains unchanged from the discussion in the Draft SOP.

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 Company.
- The Investigator investigates the facts surrounding all alleged breaches notified to him/her, and endeavours to settle every alleged breach.

²⁹ The regulations would adopt a definition of an RPO that is similar to the Upstream Disclosure Code.

³⁰ Electricity Authority (2021). *Wholesale market information disclosure: Review of thermal fuel information disclosure: Decision*, Jan 2021, <https://www.ea.govt.nz/assets/dms-assets/27/Wholesale-market-information-disclosure-Review-of-thermal-fuels-decision-paper.pdf>

- 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 3.5).

As Gas Industry Company 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.

7.3 Conclusion

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.

Gas Industry Company 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.

8. Next Steps

The purpose of this SOP is to identify options for achieving the regulatory objective and consult with affected stakeholders on our assessment as required by section 43N of the Gas Act. In Section 4.4.7 we determined that this objective is:

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

We have identified two options for achieving the objective:

- 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.

We invite interested parties to submit on the issues raised in this paper. Gas Industry Company will consider this feedback to determine the best long-term option for the disclosure of gas production and storage outage information.

If we conclude that rules or regulations under the Gas Act is the preferred option, the next step would be for Gas Industry Company to make a recommendation to the Minister of Energy for gas governance regulations.

Any recommendation to the Minister would also propose amendments to the Gas Governance (Compliance) Regulations 2008 as outlined in Appendix A of this paper.

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

In Section 7.2.9 of the Statement of Proposal: Gas Production and Storage Facility Outage Information, Gas Industry Company 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 Company 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.
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 Company 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.³¹ That analysis concluded that the Compliance

³¹ 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>

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.

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.³² 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 have been discussed in the Statement of Proposal: Gas Production and Storage Facility Outage Information.

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.

³² 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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Oji	Darren Gilchrist

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.

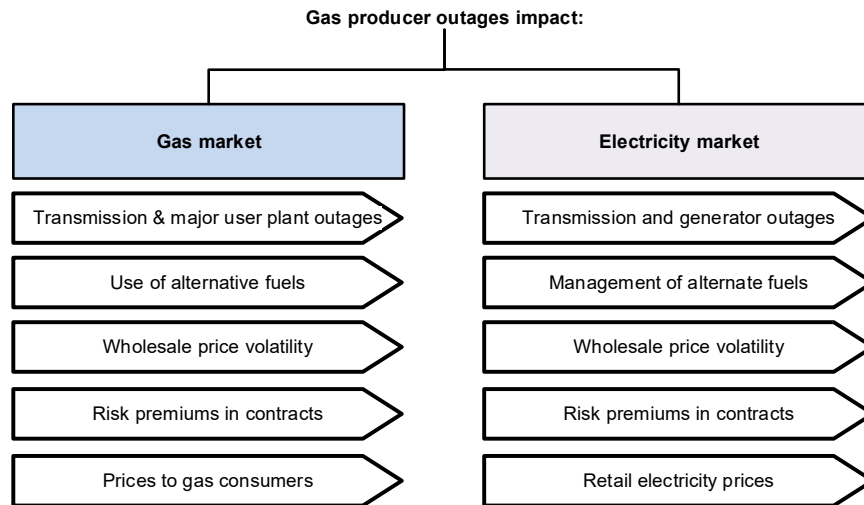
Gas outages are also a matter of interest by Transpower as System Operator and Grid Operator. We note the way System Operator refers to gas matters as being integral to managing its responsibility for security of supply. In its most recent Market Summary for the week ended 29 November 2020, Transpower 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	<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> Also: <i>"Exposure to public scrutiny could in fact result in increased innovation."</i>
Facilitation of collusion and exercise of market power	Hooper, Twomey and Newbery – Transparency and confidentiality in competitive electricity markets – USAID June 2009	<i>"Information openness may facilitate overt or tacit collusion, particularly in oligopolistic market structures."</i> Noted that collusion would more likely to occur around price setting rather than in outage scheduling.

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	<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>
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	<i>"Costs associated with outages/curtailment could be reduced as a result of improvements to gas supply capability."</i>
More efficient decision making on scheduling plant outages and fuel coordination (3)	NZ Steel's submission on the Options paper	<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>
More efficient prices (reduction in volatility)	Kieran Murray, Preston Davies - Cost-benefit analysis of Gas Bulletin Board and Gas Statement of	<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>

	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

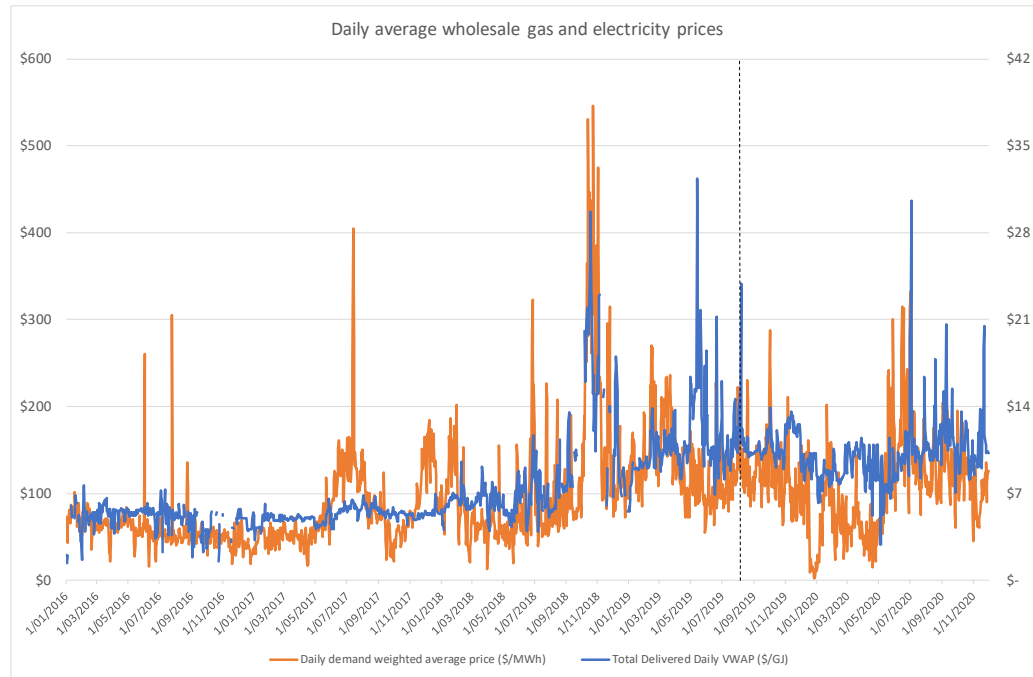
Prices will be less volatile and risk premiums in fixed-term contracts for gas and electricity (wholesale and retail) would be lower than would otherwise be the case with no gas production outage information or even the voluntary scheme. This is very difficult to quantify because the required data in 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 – Cost Benefit Analysis – Response to Submitters



CBA to accompany GLC's Statement of Proposal for gas production and storage outage information disclosure

Response to submitters

Toby Stevenson, Ashley Milkop
29 June 2021



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Executive summary

We have reviewed the submissions that discuss our cost benefit analysis of information disclosure in the gas industry (CBA). We have revisited our approach to the counterfactual for the CBA and our application of Treasury's advice.

The way we characterised the factual (a regulated scheme) and the counterfactual (the voluntary scheme) may have left the impression that we think the regulated scheme will work perfectly compared to the likelihood that the voluntary scheme will fail. That is not the case. A regulated scheme will come with imperfections and economic costs.

We appreciate that some of the parties to the voluntary Code will adhere to its provisions as if it were regulated. We recognise the importance of the incentive created by parties wanting to maintain a social license to operate and the reputational risk of non-compliance. However, we stand by our observation that as long as it is possible for one or more parties to trade off the consequences of non-compliance against the merit of non-compliance with no other penalties the counterfactual remains as per our original advice.

In this review we have responded to the criticism of our original assessment by applying a law and economics approach to a regulated scheme versus a voluntary scheme. We rely on the assessment of costs and benefits in our original analysis but now add this different approach. This test asks whether one information disclosure regime would get closer to the goal of information being disclosed on the basis that the economic benefits of doing so exceed the economic costs of disclosure than the other. We remain of the view that the proposed regulated regime would get closer to that objective than the current voluntary scheme.

1. Background

1.1 Original work

We developed a CBA to accompany the GIC's draft Statement of Proposal for gas production and storage outage information disclosure which was released in December. To recap, we divided our assessment between the two regimes into the following categories:

- Efficient decision-making including outage coordination notably in both gas and electricity markets
- Impact on prices (gas and electricity)
- Effectiveness of the regime's reliability
- Whether one regime or another would lead to greater market participation and
- Signalling maturity in market design.

We found:

- a) There are significant net benefits in both the gas and electricity markets from the move to the regulated regime compared to the counterfactual
- b) Those benefits accrue to a wide range of interested parties which informs the assessment of who is best placed to govern arrangements with the information providers
- c) In this case the position we took is that some form of collective process for specifying, monitoring and enforcing information disclosure is likely to achieve the most benefit as possible
- d) A better information disclosure regime would provide benefits relative a poorer performing information disclosure regime, where better is defined as moving closer to the goal of information being disclosed on the basis that the economic benefits of doing so exceed the economic costs of disclosure
- e) The proposed regulated regime would get closer to the objective in (d) than a voluntary regime

Submissions

GIC received submissions on this paper in March.¹ We have been asked to respond to the submissions where our work is referenced.

Some submissions questioned our definition of the counterfactual and approach with some dismissing our CBA completely. For example we received these summaries of the usefulness of our work:

- "should not be relied upon"
- "is useless"
- "is too blunt to allow a useful comparison"

¹ See <https://www.gasindustry.co.nz/work-programmes/gas-sector-information-disclosure/consultation-2/>

Behind these conclusions lies several distinct arguments:

- More than one option to the voluntary Code should have been considered
- The Code could be reviewed and amended before jumping to the regulatory solution
- The Gas Act directs the sector to resort to voluntary mechanisms in the first instance. The inference is that a change from the current arrangement should include a different or modified voluntary version before jumping to the regulatory solution
- Producers would adhere to the voluntary Code on the basis of their need to uphold their Societal licence to operate, the strongly held sense that they need to be seen as a responsible partner and reputational consequence if information disclosure failed
- It is claimed that to date the voluntary Code has worked and that some of the parties have gone beyond the requirements of the code in response to market tension.

None of these comments tests our assessment that the regulated scheme will be likely to achieve more economic benefits over the economic costs of disclosure than the current voluntary arrangement.

1.2 Our original brief

For this note we have reviewed our original paper, the brief for that paper and the submissions that refer to our work. We were not asked to design new Code or review the performance of the Code to date. We were asked to provide a CBA for a regulatory solution to the information disclosure of planned and unplanned outages.

Effectively we were asked to consider the merits of a regulated scheme which required us to establish the counterfactual. We quoted Treasury who say:²

The 'counterfactual' is the situation that would exist if the intervention does not go ahead.
The counterfactual needs to be realistic.

One submitter observed

Treasury's advice has been mis-interpreted and the wrong counterfactual has been analysed.

We do not see that we have misinterpreted Treasury's advice but concede that we may have mischaracterised the factual and the counterfactual. We may have left the impression that we think the regulated scheme will work perfectly while the voluntary scheme is inherently flawed. Both schemes deliver benefits and both schemes come with imperfections and economic costs. In this note we have used a law and economics approach so that the comparison between the two schemes and our conclusion is clearer.

² NZ Treasury, *CBAx Tool User Guidance, Guide for departments and agencies using Treasury's CBAx tool for cost benefit analysis*, September 2018

2. Analysis

2.1 Revisiting our approach to a CBA

The way we framed the factual and counterfactual could be interpreted as comparing an arrangement that will inevitably fail with a perfect alternative in the form of the proposed regulated regime. Our comparison was, in our minds, which of two imperfect arrangements would be better (with 'better' meaning closer to the objective of information being disclosed on the basis that the economic benefits of doing so exceed the economic costs of disclosure.)

The Upstream gas outage information disclosure Code consultation in 2020 notes:

Upstream gas producers (Producers) made submissions on the Options Paper, including through the Petroleum Exploration and Production Association of New Zealand Inc. The core of their submissions was that:

- they agreed that information about upstream gas outages is important for a well-functioning gas market;
- they wished to develop a voluntary, industry-led disclosure framework in relation to both planned and unplanned outage information to ensure consistent and timely information disclosure to all interested parties; and
- they do not believe the case has been made for more widespread regulatory intervention.

We conducted a CBA for a regulated information disclosure regime. A CBA requires a factual scenario and a counterfactual. The factual is a regulated regime. A regulated regime would have certain attributes that would contribute to its effectiveness when compared to the counterfactual. These include:

- Independent monitoring for compliance i.e. conducted by the regulator or at the regulator's direction
- An independent enforcement regime operating i.e. conducted by the regulator or at the regulator's direction
- Penalties for non-compliance set out in the Code
- Ability for affected parties, i.e. other than the parties to the voluntary Code, to raise issues with an independent monitoring and enforcement regime
- Ability for affected parties, i.e. other than the parties to the voluntary Code, to contribute to any evolution of the information disclosure Code.

We had to determine a counterfactual and we considered the current regime. We had already noted there are points of vulnerability with the mechanism in place:

- It is voluntary.
- Posts made under the voluntary code are not consistent. Even though there are templates included in the Code, these are not necessarily adhered to
- There is no effective compliance regime.

- Incentives for compliance are weak.
- Scheme reviewers have limited ability to access underlying data.

2.2 A law and economics approach

Introduction

For this note a “law and economics” approach to better explain the thinking behind our original paper. A ‘law and economics’ approach assesses which method is likely to have the highest net economic benefit (lowest net cost) between the options under consideration.

The branch of economics referred to as ‘law and economics’ or alternatively the economic analysis of law, applies microeconomic theory to predict the effects of rules and to assess which forms of rules are economically efficient. Modern law and economics dates from about 1960, when Ronald Coase (who later received a Nobel Prize) published “The Problem of Social Cost” (Coase, 1960).³ Gordon Tullock and Friedrich Hayek also wrote in the area, but the expansion of the field began with Gary Becker’s 1968 paper on crime (Becker also received a Nobel Prize) (Becker, 1968). For a general introduction, available online, to the now extensive literature see Friedman, David D. Law’s Order: An Economic Account (Friedman, 2000).

Analysis

The analytical approach set out here takes as given the decision to disclose upstream outage information; that is, it does not assess whether there are net benefits or costs to disclosing information. The focus is on the efficiency of the means of disclosing that information—whether a regulated approach or a voluntary scheme is likely to result in the highest net economic benefit (lowest net cost).

The alternative schemes being considered here would likely differ in establishing rights over the following elements of an information disclosure regime:

- specification of variables in question
- monitoring or measuring compliance with what is specified
- enforcement, or assuring compliance, with what is specified.

Economic theory would predict that the highest economic benefit would be obtained when the rights over each of these elements are allocated to a party with a comparative advantage in relation to that right. A “party” in this context might be the GIC or an upstream entity. A party’s comparative advantage would be determined from the:

- information available to the party exercising the right.
- incentives faced by the party exercising the right.
- respective capabilities and expertise of the party in exercising the right.

³ This key article in law and economics is the origin of the famous Coase theorem.

The analytical power of assessing each party's comparative advantage in exercising rights over each element is evident when viewed in the negative; a good outcome would not be expected if the rights over a particular element of the information disclosure regime were allocated to a party with poor information, distorted incentives, and no relevant expertise.

In assessing the comparative advantage of each party in exercising a right over each element, it is probable that different parties may have different comparative advantages. An efficient rule might therefore require:

- balancing the advantages and disadvantages of allocating a right to particular party (e.g., a party with the best information may have poor incentives, etc), and/or
- allocating rights over different elements to different parties (e.g., in private contracts, enforcement ultimately rests with the Courts rather than the parties to the contract).

As the Court example illustrates, sometimes a third party may have a comparative advantage over one or more elements. However, the involvement of a third-party results in an agency relationship, which in turn gives rise to principal-agent costs—that is, the costs incurred in ensuring the agent acts as the principal intended plus any remaining divergence. These principal-agent costs must be weighed against the comparative advantage of that third party in exercising a right over one or more elements of the information disclosure regime.

Hence, the design of an efficient information disclosure regime would:

- minimise the basic problems of information, incentives, and capability (i.e., assign rights to the party with the comparative advantage)
- only use agency relationships when advantages outweigh agency costs
- explicitly recognise any agency relationships and carefully manage the incentives of those relationships.

In Table 1 we look at the comparative advantage of the two comparator schemes for the key elements of an information disclosure regime. The assessments made in this table are a distillation of the comprehensive costs and benefits we reported in our original paper. Before completing the table we checked the status of:

- evolution of the voluntary Code
- The penalty regime under the Code

Each is discussed in the following sections.

Evolution of the Code

Upstream parties undertook consultation on the voluntary Code.⁴

The Code includes a review process that is meant to occur 12 months after the Code comes into force and on a two yearly basis thereafter. The Code review process says that that reviews will “provide an opportunity for wider energy sector feedback on the operation of this Code”. There is some ability for parties who are not signatories to the Code to provide feedback on the operation of the Code, but the decision on any changes to the Code rests with upstream parties. The findings of the review would also be made available to GIC.

We have received no advice that the 12-month review is underway or planned.

Compliance under a regulated Code

There are three existing sets of gas governance rules or regulations that are subject to the compliance process under the Gas Governance (Compliance) Regulations 2008.

The GIC Statement of Proposal proposed that a regulated information disclosure regime would also be subject to the process in the Compliance Regulations.

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

1. 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.
2. The Investigator investigates the facts surrounding all alleged breaches notified to him/her, and endeavours to settle every alleged breach.
3. 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. The Rulings Panel has the power to impose orders on industry participants, including:
 - a. issuing private and public warnings
 - b. ordering an industry participant to pay compensation to another person
 - c. ordering an industry participant to pay a civil pecuniary penalty
 - d. recommending changes to regulations or rules

In relation to point 3 c. above, the current maximum civil pecuniary penalty that the Rulings Panel may order is \$20,000. However, the Gas (Information Disclosure and Penalties) Amendment Bill (currently

⁴ See the following release from Energy Resources Aotearoa (formerly PEPANZ):
<https://www.energyresources.org.nz/publications/submissions/upstream-outage-information-disclosure-code/>

at its second reading) proposes to increase the civil pecuniary penalty that the Rulings Panel may order to a maximum of \$200,000.

None of these provisions apply to the voluntary Code so the protection they offer affected parties is absent.

Table 1 Assessing comparative advantage

		Information available to the party exercising the right.	Incentives faced by the party exercising the right.	Respective capabilities and expertise of the party in exercising the right.
Specification of information to be disclosed	Voluntary Code	The parties to the voluntary code have good knowledge of what information is available and what would benefit them. They may be less knowledgeable of what information would benefit downstream entities	Strong incentive to specify information of benefit to voluntary code parties relative to cost of supplying that information. Weak incentives to specify information that benefits wider market	Only the parties know what the planned and unplanned outages are
	Regulated approach	Reliant on information from the parties. Possibly have more insight into on how the information is used	Required to weigh the costs and benefits of information disclosure on all affected parties. Incentive to over specify information as do not bear the cost.	Reliant on information from the parties but may be more knowledgeable of what information would benefit downstream parties
Monitoring whether information is disclosed	Voluntary Code	The individual parties have the ability to self-monitor but not so clear they can monitor the other parties.	Driven by risk of reputational damage to ensure compliance with the scheme is monitored.	Only able to self-monitor to see if information is available when it is most needed.
	Regulated approach	Only able to monitor after the fact which may be too late to ensure benefits are achieved.	Represent all affected parties and are motivated to carry out monitoring	Only able to enforce release of information after the fact.
Enforcing compliance with disclosure requirements	Voluntary Code	The individual parties have the ability to test self compliance but not the other parties.	Individual parties driven by risk of reputational damage to ensure all of the parties are complaint.	It is not clear the parties have the ability to enforce the rule on all parties.
	Regulated approach	The regulator has the capability to enforce compliance after the fact.	Represent the interests of all parties and not just the parties to the multilateral contract	This is one of the GIC's roles and they have the capability to enforce compliance?

Assessment

Summary of analysis:

- Specification of information to be disclosed: A regulator is more likely to see that the disclosed information reflects the benefits to the wider market. The voluntary mechanism does not necessarily have the incentive to be sure that the defined information disclosure represents the interests of all affected parties.
- Monitoring of whether information is released: A regulator may not be able to tell if the information being released is fulsome according to the Rules. In a voluntary scheme the individual parties are better able to determine that compliant information is being released but may not have the same ability to monitor the other parties' compliance
- Compliance with disclosure requirements: The regulator has a strong incentive, a mandate and the capability to enforce compliance. The voluntary parties do not appear to have any enforcement regime. ...

Hence, we conclude that the regulated regime is likely to be closer to the goal of information being disclosed where the economic benefits of doing so exceed the economic costs of disclosure, than the voluntary regime. Because the regulated regime would be closer to this objective, it would provide more of the benefits of information disclosure set out in our original report

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About Sapere

Sapere is one of the largest expert consulting firms in Australasia, and a leader in the provision of independent economic, forensic accounting and public policy services. We provide independent expert testimony, strategic advisory services, data analytics and other advice to Australasia's private sector corporate clients, major law firms, government agencies, and regulatory bodies.

'Sapere' comes from Latin (to be wise) and the phrase 'sapere aude' (dare to be wise). The phrase is associated with German philosopher Immanuel Kant, who promoted the use of reason as a tool of thought; an approach that underpins all Sapere's practice groups.

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Glossary

AEMC	Australian Energy Market Commission
Ahuroa	Ahuroa Gas Storage Facility (AGS)
EA	Electricity Authority
EPR	Electricity Price Review
eTp	emsTradepoint
ERA	Energy Resources Aotearoa, formerly known as PEPANZ
Gas Act	Gas Act (1992)
GIC	Gas Industry Company
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, now known as Energy Resources Aotearoa (ERA)
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
Upstream Disclosure Code	Upstream Gas Outage Information Disclosure Code 2020. Also referred to as the "Code" in this paper.

Upstream Parties	Parties that have ceded to the Upstream Disclosure Code are collectively referred to as “Upstream Parties” in this paper.
VTC	Vector Transmission Code
VWAP	Volume weighted average price

ABOUT GAS INDUSTRY COMPANY

Gas Industry Company 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 Company 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:
5:00pm Thursday, 26 August
2021

SUBMIT TO:
consultations@gasindustry.co.nz

ENQUIRIES:
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