Downstream Reconciliation - Options

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GAS INDUSTRY COMPANY LIMITED

About Gas Industry Co.

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

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

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

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

Authorship

This paper was prepared by the Market Operations Group

Executive summary

Gas Industry Co commenced a work programme in 2005 that aimed to examine whether the then Reconciliation Code was sufficient to enable satisfactory downstream reconciliation arrangements in the New Zealand gas market. At the time the reconciliation arrangements in place were unsophisticated and relied on independent gas transfer and allocation agents. There was little information transparency and accuracy of data was of concern.

An advisory group was established in 2006 to identify options for improving reconciliation arrangements. Based on that group's work, in 2007 Gas Industry Co recommended to the Minister of Energy and Resources the Gas (Downstream Reconciliation) Rules 2008 ('the Rules'). The Rules went live in October 2008 and represent a significant improvement on the Reconciliation Code. Included in the benefits achieved by moving from the Reconciliation Code to the Rules are that UFG is now allocated more equitably amongst all participants and information transparency has been enhanced leading to an overall increase in the confidence and efficiency of the gas market.

Gas market participants have also benefited from the audit provisions, which identified the misreporting of consumption figures by E-Gas for the 2009/10 gas year. That single event alone ought to provide the industry a permanent benefit of approximately $2.5 million per year by way of reduced UFG costs. It is doubtful the former Code would have identified that misreporting.

Process

Now that the Rules have been in place for three years, it is appropriate that they be reviewed to determine what improvements can be made to them.

The purpose of this paper is to identify possible areas for improvement and to discuss options to address those issues. This review seeks to improve specific aspects of the Rules, rather than fundamentally reviewing the intent and purpose of them. Gas Industry Co is of the view that the Rules themselves are functioning well: they permit the efficient and orderly operation of the downstream reconciliation system for the New Zealand gas market.

Stakeholders are invited to provide feedback on this paper, which will be used to guide the development of any revisions to the Rules and downstream reconciliation processes.

Options for enhancing the Reconciliation Rules

Improving the accuracy of the initial allocation

The data used for the initial allocation vary in quality because not all meters are required to be read every month. While data quality concerns are generally resolved at later allocation phases, balancing costs are apportioned solely on initial allocations and are not revised irrespective of significant variances to allocations at later phases. Submission of low quality data at the initial stage causes

monthly UFG to be volatile, making it difficult for retailers to forecast their allocations. This essentially punishes retailers who provide accurate consumption submissions to the benefit of retailers who provide less accurate data, particularly if those with accurate data are allocated an unfair proportion of UFG and/or balancing gas costs.

Several options are discussed for changing the process for initial allocations. The first option is to provide better information by releasing earlier the seasonally adjusted daily shape values so that retailers can use this information to improve their initial submissions (as well as for the interim and final allocations as is currently the case). A second option is to allocate UFG to causers so that those who are not the causers of UFG will no longer be responsible for a *pro rata* allocation of UFG. The intended outcome of this arrangement would be to incentivise more accurate initial allocations which, by definition, ought to decrease the amount of UFG in the gas system. A third option is to implement a daily allocation system (D+1) as a replacement for the initial allocation. D+1, a method of providing consumption information the day after gas flow, has been investigated by Gas Industry Co in the past but is considered costly to implement. A similar concept called "D+1 light" is discussed as a possible alternative. A fourth option is to change the initial allocation algorithm.

Atypical gas gates

The Rules as drafted assume that for each gas gate there would be a range of time-of-use (TOU) meter and non-TOU sites served by multiple retailers. The allocation algorithm implicitly assumes that sufficient non-TOU load exists such that variations in gas gate and TOU metering accuracy would be insignificant in relation to total gas gate volumes. However, this assumption has proven to be invalid for a range of circumstances and the outcome of those has been that exemptions, from the Rules, have been required. Gas Industry Co does not favour continually granting exemptions for these circumstances, so seeks to draft specific rules to cover them.

Correcting AUFG factors

The Annual Unaccounted for Gas (AUFG) factor, as calculated according to rule 46.3.1, is used to allocate quantities of gas to allocation groups 1 and 2 at each gas gate. The allocation agent is required to determine and publish AUFGs by the first business day of July for the following gas year.

There have been two instances where the data used to calculate the AUFG factor for a gas gate has been found to be erroneous subsequent to the publication of the AUFG factor. As the Rules contain no provision for the correction of published AUFG factors, in the first case the issue was dealt with via the compliance arrangements and in the second instance an exemption was granted that allowed the necessary correction to happen.

The issue for this paper is whether the Rules should be amended to explicitly provide for the correction of AUFG factors when they are found to be incorrect.

Allocation of ongoing fees

The original decision of how best to apportion ongoing allocation costs among retailers was finely balanced between the two options of basing apportionment on allocated volumes or on numbers of ICPs.

The formula in the Rules uses allocated volumes as the basis for apportioning ongoing costs among allocation participants. However, Gas Industry Co has received a request to reconsider the original decision. Given that the original decision was a close call it appears appropriate to reconsider the options and seek feedback.

Compliance related issues

There are two issues that routinely result in the Allocation agent alleging breaches and for which Gas Industry Co has received feedback seeking rule changes – estimated TOU data and late trading notifications. Permitting breach notifications to meter owners is also discussed.

Retailers must provide actual daily energy quantities for consumers in allocation groups one and two. Where retailers are unable to do this, a series of three breaches will be triggered, one for each allocation stage, for the same issue. Four options are discussed for addressing "missing" TOU data with the goal of striking an appropriate balance between reducing the compliance burden to retailers of receiving multiple but identical breach notices with maintaining the incentive to provide actual TOU data. Those options are to eliminate the "triple jeopardy"; to provide a floor for estimated data; to apply a monthly UFG factor to estimated data; and to permit TOU estimates under exceptional circumstances provided a suitable methodology is used.

Where the allocation agent receives late trading notifications – where a retailer has failed to inform the allocation agent they have commenced supply to a customer installation at a gas gate, no longer supply any consumer installations at a gas gate, or has commenced/ceased a transmission services agreement in respect of gas supplied at a gas gate – breach notifications will be issued. An option to reduce this compliance and administrative cost is to require the Allocation agent to cross-reference the Registry or Gas Industry Co monthly summaries before issuing that breach notification.

Process for granting exemptions

Gas Industry Company may exempt any allocation participant from compliance with any of the Rules where, having received an application for exemption from any allocation participant, it considers the exemption is desirable. Gas Industry Co considers that there is a need to review its process for granting exemptions. Three options for addressing this are discussed. The first is to maintain the status quo. The second option is to remove completely the exemption provisions. The third option is to more prescriptively define what will and what will not warrant an exemption.

Next steps

The purpose of this paper is to present and discuss a number of options and invite feedback on them. Submissions are accordingly invited from stakeholders no later than 5pm on 6 February 2012. That feedback will be used to guide the development of any revisions to the Rules and downstream reconciliation process. Any changes to the Rules proposed following submissions on the Options Paper will be included in a Statement of Proposal and submissions will be sought on that. Following assessment of those submissions, rule changes would be included in a recommendation to the Minister of Energy and Resources. Gas Industry Co anticipates releasing a Statement of Proposal by June 2012.

Contents

1 Introduction

1.1 Background

In 2005 Gas Industry Co commenced a work programme that aimed to examine whether the then Reconciliation Code was sufficient to enable satisfactory downstream reconciliation arrangements in the New Zealand gas market, particularly given the emergence of new gas contracts that resulted from the Maui redetermination and as multiple smaller gas fields began producing. The reconciliation arrangements in place at the time were unsophisticated and relied on independent gas transfer and allocation agents. Information transparency and accuracy of data were of concern.

The Gas Allocation and Reconciliation Project Team (GART) was established in 2006 to identify options for improving reconciliation arrangements. A number of problems were identified with the Reconciliation Code but the greatest concern was the unfair risk incumbent retailers assumed for unaccounted for gas (UFG). Incumbent retailers, who were generally either the original retailer or the largest retailer on a network, were responsible for all of the unaccounted for gas on a network after scaling occurred.

Building on the GART's work, in 2007 Gas Industry Co recommended to the Minister of Energy and Resources the Gas (Downstream Reconciliation) Rules 2008 ("the Rules"). The Rules went live in October 2008 and they instituted significant improvements on the Reconciliation Code including fairer allocation of UFG and information transparency both for industry participants and the public. As a result there has been an overall increase in the confidence and efficiency of the gas market.

In 2009 the Rules were amended to make minor technical changes. Those minor changes were not contentious so a streamlined process for implementing changes was possible. In contrast, the current review considers underlying policy settings and the scope of the changes will not necessarily be limited to those that do not affect participants in other than minor ways.

1.2 Process for reviewing the Reconciliation Rules

The review process will encompass the following steps:

- consultation on this Options Paper;
- analysis of submissions;

- identification of reasonably practicable options in respect of those aspects of the Rules and reconciliations processes that warrant change[1];
- preparation of, and consultation on, a Statement of Proposal for changes to the Rules, including an assessment of costs and benefits;
- analysis of submissions;
- incorporation of consultation feedback into the proposal; and
- provision of a recommendation to the Minister of Energy and Resources.

Following any recommendation to the Minister, there will need to be an implementation plan that addresses items such as changes to the allocation agent's system, any changes that allocation participants may need to make to their own systems as a result, and a process for establishing a change-over date for go-live of the changed arrangements.

There also needs to be a degree of flexibility in the implementation plan as Ministerial approval is a prerequisite for any changes to proceed. That being the case, it may be necessary for any amended Rules to contain transitional provisions that provide for changes to be phased in as the allocation agent's and participants' systems are made ready.

Later in this Options Paper there is discussion of the way in which options will be further developed as a result of feedback and, with regard to alternative allocation algorithms, how the results of those analyses will be shared with allocation participants.

1.3 Submissions

Submissions are invited from stakeholders on this Options Paper. Submissions should be provided no later than 5pm on Monday 6 February 2012. Please note that submissions received after this date are unlikely to be considered. Submissions can be made by logging on to the website (www.gasindustry.co.nz), navigating to the Downstream Reconciliation work programme and uploading your submission in the Consultation section[2]. All submissions will be published on the website after the closing date.

The recommended format for submissions is attached as Appendix A and may be downloaded in MS Word format from the Consultation section of the Downstream Reconciliation work programme that can be found on Gas Industry Co's website.

Because submissions will automatically be made available to the public on Gas Industry Co's website following the closing date, submitters should discuss any intended provision of confidential information with Gas Industry Co prior to uploading their submissions.

[1] Note that any change proposal will need to include budget estimates for any required changes to the allocation agent system.
[2] For further information, see Help for New Users on the Gas Industry Co homepage.

2 Background to the need for changes

This section summarises the issues that have been identified by Gas Industry Co and/or allocation participants and for which consideration needs to be given for changes to the rules. Subsequent sections examine these issues in depth and proffer options for addressing the issues.

2.1 Accuracy of the initial allocation

The Rules provide a set of, largely, uniform arrangements to reconcile gas gate injections with consumption by retail consumers. The global allocation method is the core algorithm in the allocation system and operates by:

- determining an annual UFG (AUFG) factor for each gas gate;
- scaling TOU-metered loads in any given month by the applicable AUFG factor;
- calculating the monthly UFG (MUFG) factor (which is the ratio of gas gate injection quantities minus volumes allocated to TOU-metered loads over the sum of retailer consumption submissions for non-TOU-metered loads); and
- scaling retailers' submissions for non-TOU consumption by the MUFG.

Frequency and timing of meter reading affects initial allocation accuracy

TOU-metered loads (allocation groups 1 (AG1) and 2 (AG2)) are required to be read monthly at the end of each month. Non-TOU meters are not required to be read at particular times but:

- allocation group 4 (AG4) meters are required to be read monthly; and
- 90% of non-TOU[3] meters are required to be read at least once every four months; and
- all non-ToU meters are required to be read at least once every 12 months (except in exceptional circumstances).

Given the variability in meter reading frequency for non-TOU consumption among retailers, the data used for the initial allocation are of varying quality. The reason for treating TOU and non-TOU consumption differently in the allocation algorithm is primarily due to this variation of quality.

[3] In practical terms this means ICPs in allocation groups 4 and 6.

To a large extent the data quality issue is addressed three months later, at the interim allocation stage, when the great majority of non-TOU data is based on actual meter reads and historical estimates. Various charges based on the initial allocation results are corrected as the results from later allocation stages are published. One notable exception to this rule is balancing costs, which are calculated using the results from the initial allocation and are not revisited.

Because of the varying quality of non-ToU data submissions among retailers, there is scope for unfairness. Submission of low-quality consumption data at the initial stage will cause MUFG to be erratic, and the allocation of the resulting UFG makes it harder for other more accurate retailers to forecast their likely allocations. That, in turn, can affect their exposure to balancing costs. Section 3 discusses options for addressing this issue and improving the incentives faced by retailers.

2.2 Atypical gas gates

The Rules, as drafted, assume that each gas gate has multiple customers, a mix of TOU and non-TOU sites, and multiple retailers. Implicit in the design of the core allocation algorithm is an assumption that sufficient non-TOU load exists such that differences in metering accuracy between the gas gate meter and the TOU meters at that gas gate will not cause problems.

Once the Rules had gone live the global allocation assumptions were found to be imperfect for some atypical gas gates.

Direct connect gas gates

There are 38 gas gates that provide gas to a single site. Each of the retailers who supply the customer at each of these gas gates has been granted an exemption from the requirements in the Rules to submit data to the allocation agent.[4]

The exemptions have been granted on the basis that the purpose of the Rules would not be furthered by requiring retailers to submit data and, therefore, it would not make sense to incur the costs of reconciling such gas gates.

It should be noted that direct connect gas gates are different from gas gates at which only a single retailer trades but where there is more than one consumer installation. Single retailer gas gates have not been exempted from the Rules, since to do so would reduce transparency and, potentially, lessen competition for customers at those gates.

Section 4.1 reviews this issue and how best to address it.

Gas gates for which the global 1-month methodology is used

There are seven gas gates where the mix of TOU and non-TOU sites is such that the global allocation methodology does not function well. [5] The fixed (percentage) allocation of UFG to the TOU-metered sites can create results that are not representative of actual consumption at those gas gates.

[4] These exemptions, as given effect to by the Gas (Downstream Reconciliation) Rules 2008 (Exemption DR10-03-S: Direct Connect Gas Gates) Notice 2010, will expire on 30 September 2012 as per that Notice.

For example, at a gas gate with net positive UFG on an annual basis, the AUFG factor will be greater than one. If the gas gate has a high proportion of TOU-metered sites, then at times of low load for the non-TOU sites it is likely that the allocation of load to the TOU sites will exceed the gas gate injections.

To ensure that the allocation system produces sensible results, exemptions exist in respect of such gas gates such the allocation agent uses the "global 1-month" allocation methodology. That methodology does away with the distinction between AUFG and MUFG and simply allocates the UFG in any given month (injections minus consumption submissions) *pro rata* with consumption. Options for addressing this situation on a more permanent basis are discussed in section 4.2.

Unmetered gas gates

There is a small number of gas gates (7) that have no gas gate meter. The absence of injection data means that the normal allocation methodology cannot work at these gas gates as one of the essential inputs is missing.

A work-around, implemented by way of exemptions, is being used that permits the allocation agent to take the sum of the consumption data as a proxy for the injection data. By definition, UFG is zero each month for such gas gates, i.e. retailers are simply allocated their respective consumption submissions.

However, when the exemptions were issued for consultation, some submitters indicated that they did not support the work-around and expressed a preference for gas gate meters to be installed.

There are also a number of gas gates where a meter is installed but the volumes passing through the gas gate are such that the meter is no longer appropriately sized to measure the volume accurately. Exemptions have been used to address these cases but they raise the same issues as unmetered gas gates.

These issues are examined in sections 4.3 and 4.4.

2.3 Correcting AUFG factors

The Annual Unaccounted for Gas (AUFG) factor, as calculated according to rule 46.3.1, is used to allocate quantities of gas to allocation groups 1 and 2 at each gas gate, by retailer, and for each consumption period. The allocation agent is required to determine and publish AUFGs by the first business day of July for the following gas year.

There have been two instances where the data used to calculate the AUFG factor for a gas gate has been found to be erroneous subsequent to the publication of the AUFG factor. As the Rules contain no provision for the correction of published AUFG factors, in the first case the issue was dealt with via the compliance arrangements and in the second instance an exemption was granted that allowed the necessary correction to happen.

[5] Three of these gas gates are currently the subjects of Exemption DR10-04-S, which expires on 30 September 2012

The issue for this paper is whether the Rules should be amended to explicitly provide for the correction of AUFG factors when they are found to be incorrect.

This issue is discussed in Section 5.

2.4 Allocation of ongoing fees

The original decision of how best to apportion ongoing fees among retailers was finely balanced between the two options of basing apportionment on:

- allocated volumes; or
- numbers of ICPs.

The formula in the Rules uses allocated volumes as the basis for apportioning ongoing costs among allocation participants. However, Gas Industry Co has received a request to reconsider the original decision. Given that the original decision was a close call, it appears appropriate to reconsider the options and seek feedback. This matter is discussed in section 6.

2.5 Compliance-related issues

There are two issues that routinely result in the allocation agent alleging breaches and for which Gas Industry Co has received feedback seeking rule changes.

Estimating TOU data

Rules 31 through 33 specify that retailers must provide "actual daily energy quantities" for consumer installations in AG1 and AG2. At times retailers will fail to do this in respect of one or more consumer installations, frequently due to an issue with the data logger such as a flat battery. This will create a series of three breaches, one for each allocation stage, for the same physical issue.

On the one hand this can seem to create an unnecessary compliance burden, particularly as the Market Administrator typically determines that such breaches do not raise a material issue. However, inaccuracies in daily TOU data can, and do, cause issues such as creating negative values in the gas gate residual profile. That, in turn, can have the effect of shifting load allocation from TOU to non-TOU categories. In some instances the distortions introduced can be very high (with non-TOU allocated loads being multiples of the submission volumes).

Breach notifications to meter owners

Under rules 31 through 33, retailers are responsible to provide consumption information for the initial, interim and final allocation periods to the allocation agent. This obligation requires retailers to obtain accurate meter reading data.

Few retailers own or have operational control of the meters installed at their consumer installations. Meter owners are required under rule 27 to ensure that metering equipment complies with NZS5259:2004.

If a retailer cannot meet its requirements under rules 31-33 it is notified of a breach by the allocation agent regardless of whether the cause of the breach was within its control or due to a metering issue beyond its control. The question is whether the Rules should be changed to enable breach notifications to be issued directly to meter owners where the meter owner's action or inaction has given rise to a retailer having to estimate rather than the provide actual consumption data.

Gas gate trading notifications

Rule 39 requires retailers to notify the allocation agent whenever they:

- commence supply to a consumer installation at a gas gate; or
- no longer supply any consumer installations at a gas gate; or
- commence/cease a transmission services agreement in respect of gas supplied at a gas gate.

The allocation agent often alleges breaches of rule 39 where retailers have failed to notify the allocation agent that they have commenced or ceased trading at a gas gate.

There is a pragmatic reason for rule 39. If a retailer has notified that it trades (or has ceased trading) at a gas gate, then the allocation agent knows to expect (or to stop expecting) various data submissions from the retailer in respect of that gas gate (consumption and as billed volumes).

These issues are discussed in section 7.

2.6 Process for granting exemptions

Rule 19 permits Gas Industry Co to grant exemptions from compliance with any of the Rules where, according to Rule 19.2, it considers the exemption is desirable to better achieve:

- the objectives set out in s43ZN of the Gas Act; and
- the purpose of the Rules.

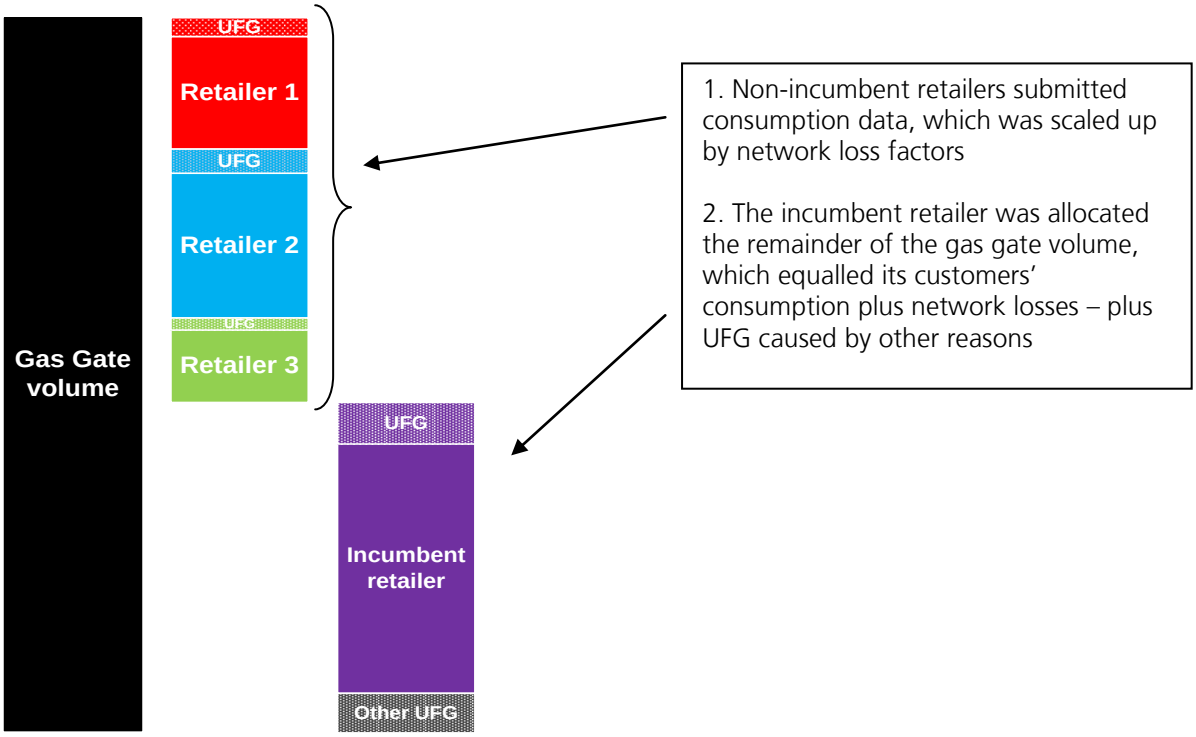
Gas Industry Co considers that there is a need to review the process by which exemptions are granted. This is discussed in section 8.

3 Options for improving accuracy of the initial allocation

3.1 Overview of allocation algorithm

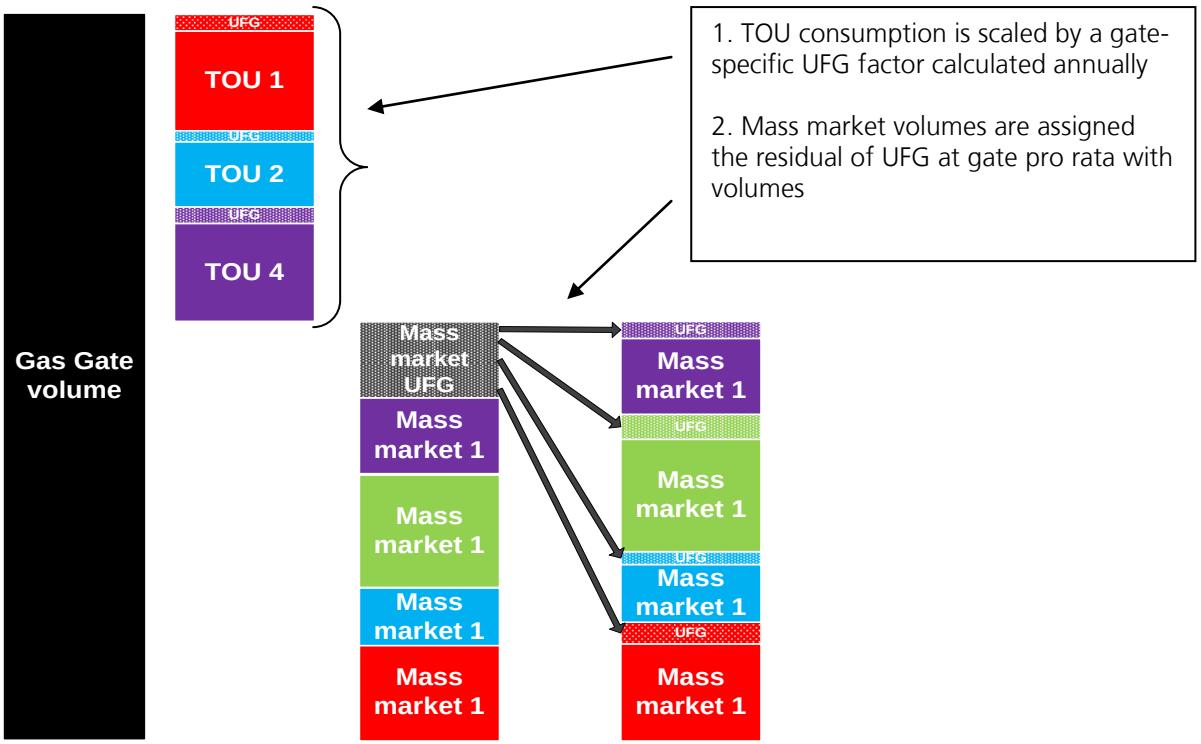
Prior to the implementation of the Rules, allocation of downstream gas quantities was done by the difference method. Under this method, each shared gas gate had an incumbent retailer and one or more non-incumbent retailers. Instead of calculating UFG factors for each gas gate, the method used distribution loss factors supplied by distribution network owners. The non-incumbent retailers were allocated gas volumes equal to their consumption submissions scaled up (or down) by the distribution loss factor. Incumbent retailers were assigned the difference between the measured gate volume and the sum of volumes allocated to non-incumbent retailers.

Figure 1. Reconciliation by difference



Problems with the difference methodology included a lack of appropriate incentives to ensure good quality information was provided by retailers; infrequent and irregular updates of distribution loss factors; and inequitable allocation of UFG variations to the incumbent retailer. These issues were addressed by the introduction of the global allocation methodology under the Rules.

Figure 2. Global reconciliation

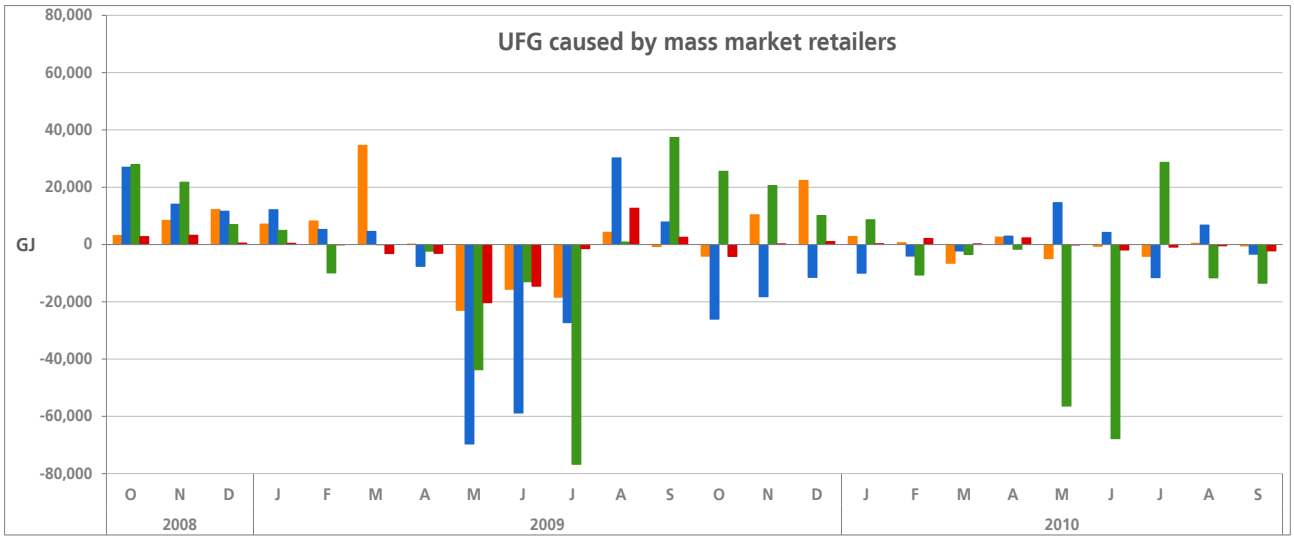


Under this method, all retailers at a gate are treated uniformly. An annual UFG (AUFG) factor is calculated for each gas gate and represents the annual average amount of UFG experienced at the gate, using the most accurate data available. Consumption volumes measured with ToU meters (which tend to be more accurate than mass market meters and are used by large industrial customers) are assigned volumes equal to their submitted volumes scaled by the AUFG factor. The difference between the measured gate volume and the sum of volumes allocated to ToU loads is then allocated to mass market consumption, in proportion to their submitted volumes. In this way, the residual UFG is distributed pro rata with volumes.

3.2 Initial allocation accuracy

Implicit in the global allocation process is the assumption that mass market retailers are roughly equal in their submission accuracy. Experience has shown that this is not the case. The chart below shows the difference between initial and final consumption submissions – that is, the amount of UFG caused by inaccurate data submitted for the initial allocation – for four different mass market retailers.

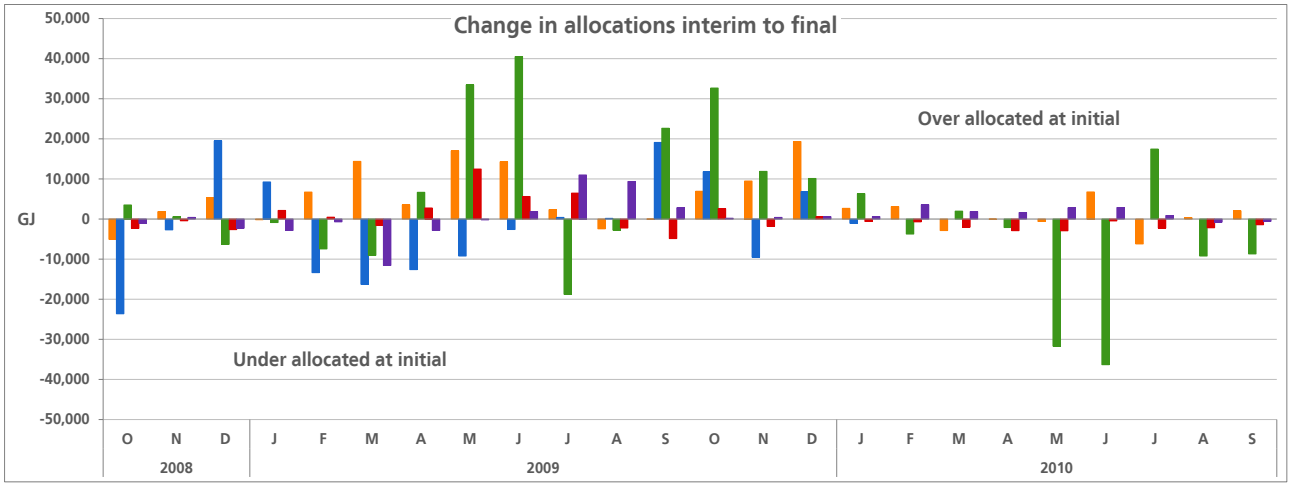
Figure 3. UFG at initial allocation



Given the variability in data quality among allocation participants for their consumption submissions at the initial allocation stage, it is inevitable that *pro rata* allocation of UFG is likely to produce unfair outcomes. As the chart shows, there is a seasonal pattern to the data: a number of retailers tend to under-estimate in autumn/winter and over-estimate in spring/summer.

Those seasonal patterns result in increased UFG (or create negative UFG in warmer periods) at the initial stage. That UFG is, in turn, shared among all retailers in proportion to their respective non-TOU consumption submissions. Where particular retailers are able to provide more accurate consumption submissions they are allocated total volumes of gas that are higher (or lower in the case of months with negative UFG) than the allocations they will get at the interim and final stages. In this case, the initial allocation is unfair to those retailers with more accurate consumption information or better estimation processes. The table below shows the total differences that can occur between initial and final allocations for five different retailers. It demonstrates the magnitude of the swings in allocation volumes that occur because of changes to consumption submissions between the initial and the final allocations.

Figure 4. Changes to retailer allocations



3.3 Rule 37

The Rules do provide some constraints on the maximum degree of inaccuracy that is acceptable. Rule 37 provides that each retailer's initial consumption submission (for non-TOU data) when compared with its final consumption submission should not differ by more than a specified percentage. That percentage is set in advance of each gas year by Gas Industry Co. The percentages set thus far were 15% for the 2008/09 gas year, 12.5% for the 2009/2010 gas year, 10% for the 2010/2011 gas year and 10% for the 2011/12 gas year.

Where the initial and final submissions differ by more than the specified percentage, the allocation agent alleges breaches of the Rules. It is then open to those allocation participants who consider that they have been adversely affected by other retailers' inaccurate submissions to pursue the matter through the compliance process.

In practice, though, settling breaches of rule 37 has proven not to be a simple matter. It is compensating for the effect of the breaches on balancing charges that has proven to be the most challenging aspect of settlement. Although the majority of volume-related costs are washed-up at later allocation stages, balancing costs are levied on the basis of the initial allocation results and are not revisited. Balancing cost information is not public, and retailers who feel that they have received an unfair allocation of balancing costs may have been harmed by more than one other retailer. Both of these aspects mean that bilateral settlement of rule 37 breaches is not a practicable solution in the long term.

This was exemplified in the recent process of the Investigator pursuing settlement of rule 37 breaches in a batch. The settlement, approved by the Rulings Panel in September 2011, covered over 400 different breaches of rule 37 (spanning 14 consumption months) and involved 10 different gas retailers. That settlement was based on a calculation algorithm that attempts to proxy the balancing cost calculations using the more accurate final allocation data rather than the original initial allocation data. However, balancing cost calculations are complicated, and the number of parameters involved in the actual calculations means that the settlement calculations can only ever be approximations.

Although the methodology used in the settlement can be used as a precedent for the future, the fact is that pursuing redress for inaccurate initial allocation submissions is still a lengthy and time-consuming process. The fact that rule 37 breaches are reported some 13 months after the consumption period means that it will take at least that long for any compensation to be paid to harmed retailers. As the Rules stand, they could be construed as creating a perverse incentive – the retailers who are least accurate have little or no incentive to improve the situation and those who are most accurate have no ability to prevent UFG being allocated to them that has been caused by other retailers' inaccurate submissions.

The following sections discuss ways of improving the accuracy of initial allocations. If a change is made to the method for the initial allocation this would obviate the need for rule 37 as currently drafted. However, Gas Industry Co considers that it would be useful retaining rule 37 (or an amended version

of it) for the purposes of statistical reporting as to the performance of any replacement for the initial allocation.

3.4 Accuracy improvement options and issues

The issue of meter reading accuracy was included in a report commissioned from Strata Energy by Gas Industry Co.[6] Retailers who responded to the Strata Energy survey rated meter reading as the factor that has the largest impact on accuracy of consumption information. However, retailers have a broad ability to determine how they will manage meter reading for mass market customers within the constraints imposed by the Rules. For customer installations with less than 10,000 GJ of annual consumption (encompassing AG4 and AG6), retailers must ensure that readings occur once every four months for 90% of such installations, and each such installation must be read at least once every 12 months. Given that AG4 meters must be read monthly, where a retailer has a mix of AG4 and AG6 customers the Rules provide considerable latitude regarding the frequency of meter-reading for AG6 customers.

As a result, retailer strategies for reading non-TOU meters can vary widely in the quality of data they produce and the associated cost. For example, conducting meter readings monthly near the end of the month would produce better information on customer consumption than meter readings that occur once every two months and are distributed across the months. However, a retailer's preferred market niche will, at least to some extent, determine the approach to meter reading frequency and timing.

There may also be opportunities for retailers to improve estimation techniques through better modelling or use of more extensive data sets. Again, though, such improvements would come at a cost.

Other things equal, it would appear that the Rules do not provide strong incentives for retailers to improve the accuracy of their consumption data. The increased costs would be borne by the retailer, while the benefits – in terms of reduced UFG – would largely accrue to other retailers operating at the same gas gates.

3.5 Option 1 – make better information available

When retailers provide consumption information to the allocation agent for their customers belonging to allocation groups 3-6, they must derive that consumption information either from actual readings or from validated register readings using historic estimates, forward estimates, or a combination of forward and historic estimates. There is a process under the Rules for the allocation agent to approve the use of retailer estimates calculated according to either a static deemed profile (for allocation group 3) or a dynamic deemed profile (for allocation group 5).

For allocation groups 4 and 6, daily allocations are determined by the application of gas gate residual profiles (GGRP) which are created by the allocation agent each month in accordance with rule 45. In calculating historic estimates, retailers can use either a flat straight line profile or a relevant seasonal

[6] "Review of consumption information estimation methodology options," http://gasindustry.co.nz/sites/default/files/publications/100527__FINAL_Review_of_consumption_estimation_options.pdf

adjusted daily shaped value (SADSV) to estimate gas consumption between two validated register readings.

The SADSVs are an essential tool for retailers with mass-market customers and are provided monthly by the allocation agent for the preceding month. At present, the allocation agent does not publish the SADSVs until after the initial allocations are due – that is, not until after the fourth business day of the month following the consumption period. This is mainly because TSOs are not required to provide actual injection information until 1200 hours on the fourth business day of the month following the consumption period – essential data for the calculation of SADSVs. Not having the SADSVs available prior to making initial allocations can result in retailers submitting inaccurate initial allocations, particularly if retailers apply a flat estimate profile to a period where there has been a significant change in month-to-month demand (as happened in May 2009 relative to April 2009).

SADSVs for each gas gate are derived from each GGRP for all retailers at that gate for the previous 24 months in which allocations have been performed. Each GGRP is calculated as actual daily energy injection less the daily allocated quantities for allocation groups 1, 2, 3 and 5. By separating the timing for submission of TOU and non-TOU data, it would be possible for the allocation agent to publish the SADSVs ahead of retailers being required to submit their non-TOU data. It is also conceivable that having the SADSVs available will provide retailers with information that could be of material assistance in improving the quality of their forward estimates (at least for those whose load profile reflects the gas gate residual profile).

In short, publication of the SADSV prior to submission of non-TOU data would be expected to achieve two things:

- because the SADSV for the consumption period would be available, rule 35 would require retailers to use the SADSV for creating historical estimates when submitting consumption information for the initial allocation; and
- the relativities between the SADSV for the current period and the most recent consumption months would provide information that could be used by retailers to help in creating better quality forward estimates.

This hypothesis is examined in the rest of this section.

Analysis of option

Estimate without SADSV

As a baseline comparison, we use a simple forward estimation strategy that uses data from the most recent three months to estimate consumption data for the current month. This example is not necessarily the methodology retailers use when constructing forward estimates, but it provides a convenient baseline against which to measure the effect of using the SADSV. The example uses only forward estimates, but, in normal circumstances, retailers' consumption submissions will be made up of a combination of historical and forward estimates.

This example uses data from a large, mass-market retailer that is, arguably, reflective of the make-up of the gas gate residual profile. The estimated consumption volumes are shown by the solid lines in the chart below, and the dashed lines show the actual volumes submitted at the interim allocation. Note that the results are plotted on a logarithmic scale. The chart illustrates that, in most instances, the most recent three months are a poor predictor of consumption in the current month.

Figure 5: Simple forward estimate calculation

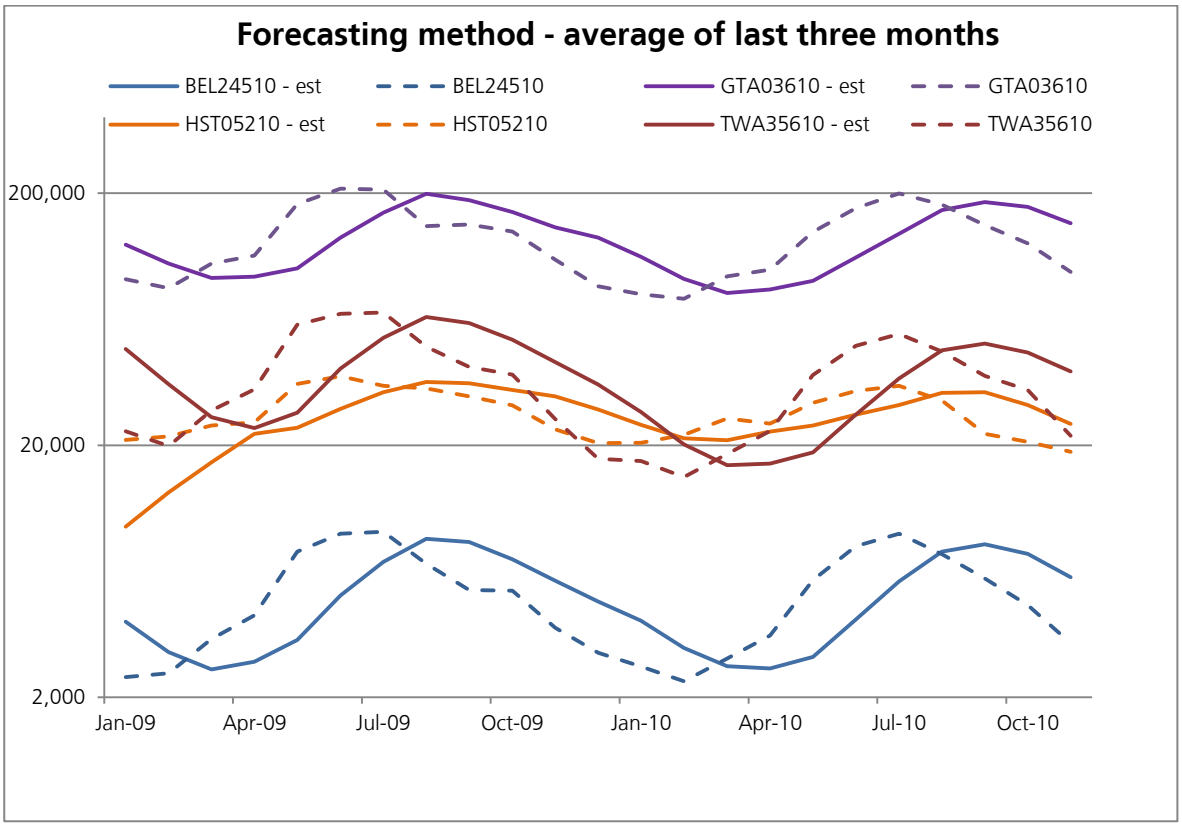
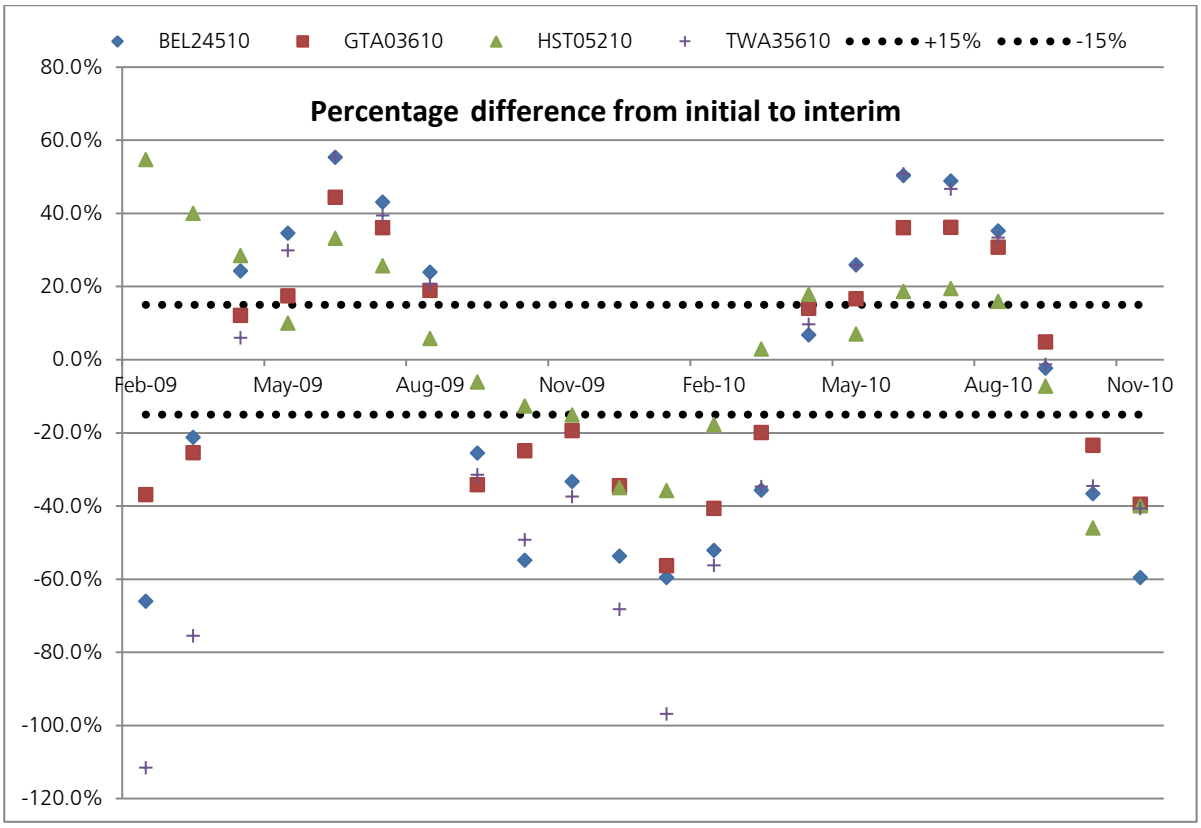


Figure 6 uses the same data as above but shows the percentage difference between the forecast and interim consumption submissions. It shows that in almost all circumstances, the estimated volumes differ from the interim submissions by more than ±15%.

Figure 6: Accuracy of estimation method relative to interim results



Forecast scenario using SADSV

Consider an option that uses a retailer's interim data submissions for months m_{-4}, m_{-3} and m_{-2} and the SADSVs for m_{-4}, m_{-3}, m_{-2} and m_0 to predict consumption for month m_0 according to the following formula:

$$C_0 = \frac{C_{-4} + C_{-3} + C_{-2}}{SADSV_{-4} + SADSV_{-3} + SADSV_{-2}} * SADSV_0$$

Where:

$SADSV_i$ is the total of the SADSV values in month i, and

C_i is the non-TOU consumption in month i

The timeline shown in Figure 7 shows how this method could work.

Figure 7: Timeline for submission of data

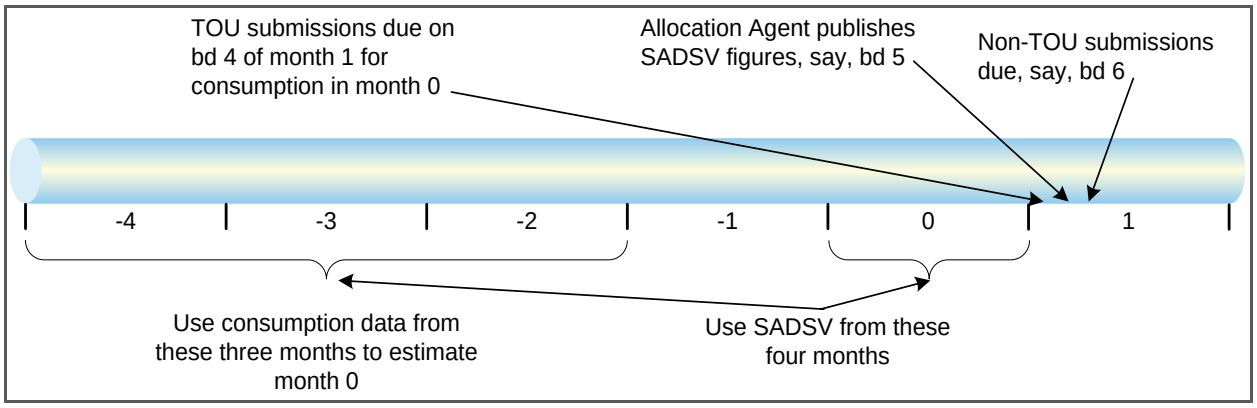
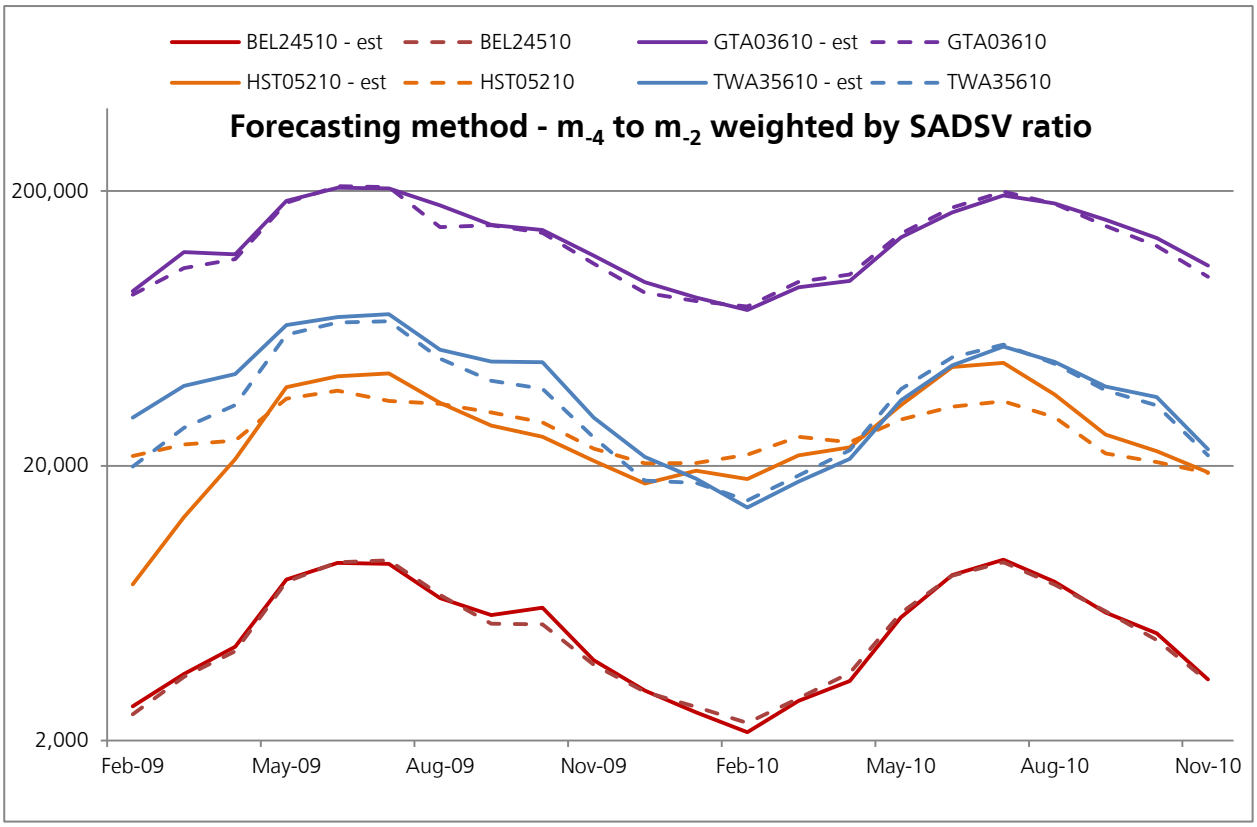


Figure 8 shows the result of using the formula above to create forward estimates for all of a retailer's non-TOU consumption at a range of gas gates. The dashed lines are the interim data submissions. The solid lines are the estimates created by use of the formula. This assumes retailers have data equivalent to interim submissions. Like Figure 5 the results are presented on a log scale.

Figure 8: SADSV used to create forward estimates

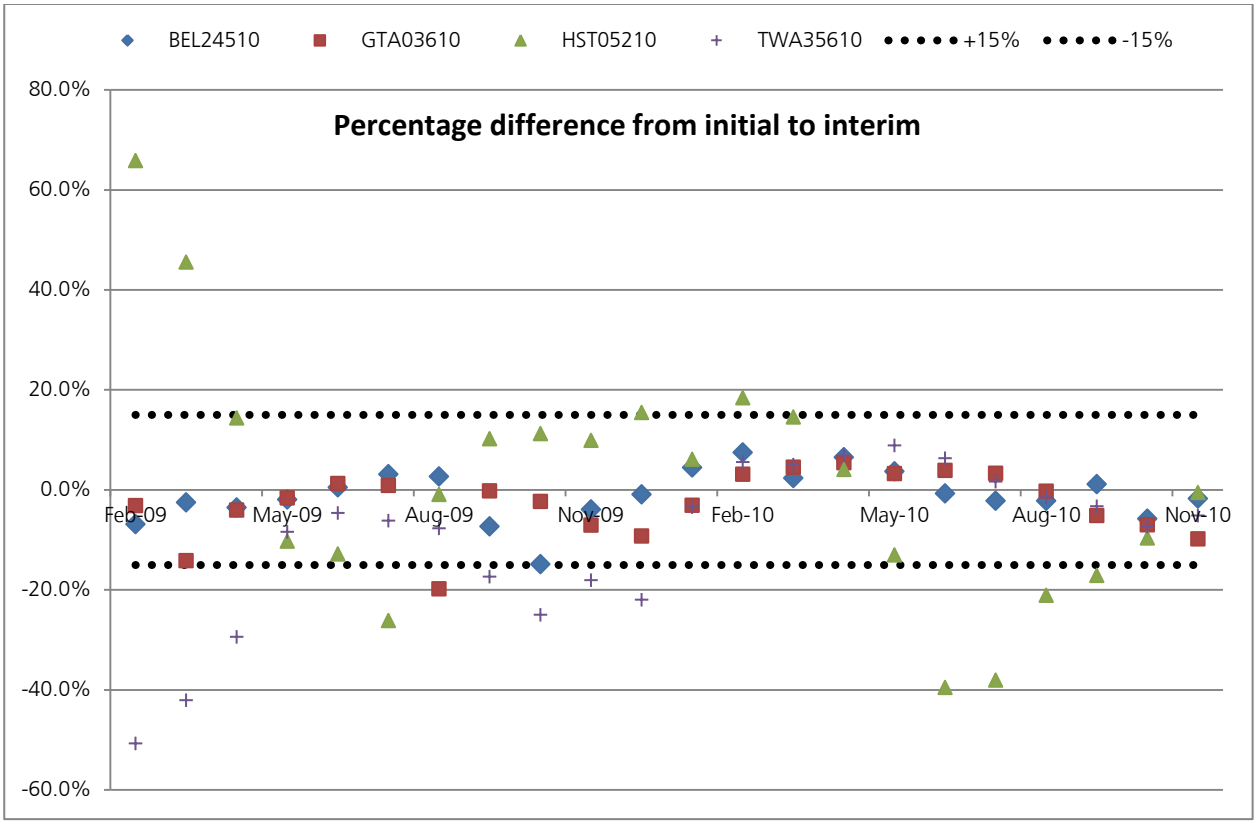


In this analysis, we used data submissions for the interim allocations which, clearly, will not be available to a retailer, in practice, for each of months m_{-4} through m_{-2}. However, it is likely that, by the time of submitting data for the initial allocation of consumption month 0 (on the fourth business day of month $_1$), the retailer will have interim quality data for months m_{-4} and m_{-3} and the data for month m_{-2} should be of reasonably good quality as well.

Although the data used to create the graph were all of interim quality, the graph was constructed entirely of forward estimates. In reality, a retailer would have some proportion of ICPs for which it had metering information in month 0 and for which it could use the SADSV to create historical estimates. This would be expected to improve the correlation between the estimated data and the data that would later result at the interim allocation stage.

Because of the logarithmic scale used to present the results it is not immediately apparent how well, or badly, the estimation formula performs. Figure 9 plots the percentage difference between the estimated numbers and the interim allocation results. This shows that, in comparison to the very simple estimation routine shown in Figure 6, use of SADSVs can help to improve estimation accuracy.

Figure 9: Accuracy of estimation routine



Conclusion

Given that early publication of the SADSV will improve the quality of historical estimates, and acknowledging that using the SADSV may also be able to improve algorithms for forward estimates, we conclude that there is likely to be value in pursuing the option to have the allocation agent publish SADSV prior to retailers being required to submit AG4 and AG6 data.

Timing Issues

However, the timeframes in the Rules were set having regard to other industry processes that depend on the results being published from the allocation agent's system. For retailers to be able to make use of the SADSVs in submitting data for the initial allocation it would be necessary to alter the timing of data submissions and publication of the initial allocation.

Figure 10 shows the current timetable in the Rules for data submissions and publication of the initial allocation. It also shows two alternative approaches (A and B) that would allow for the allocation agent to receive gas gate injection data and ToU submission data so as to calculate and publish the SADSV. Retailers would then have the opportunity to download the SADSV in advance of submitting Allocation Groups 4 and 6 consumption data.

Figure 10: Scenarios for timing of data submissions, SADSV publication and allocation

	Business day 4	Business day 5	Business day 6	Business day 7	Business day 8
Current approach	12:00 TSO submits injection information 12:00 Retailers submit all consumption data	12:00 Allocation agent publishes initial allocation			
Alternative A	12:00 TSO submits injection information 12:00 Retailers provide ToU data	12:00 Allocation agent publishes SADSV		12:00 Retailers submit non-ToU data	12:00 Allocation agent publishes initial allocation
Alternative B	08:00 TSO submits injection information 08:00 Retailers provide ToU data 12:00 Allocation agent publishes SADSV	12:00 Retailers submit non-ToU data	12:00 Allocation agent publishes initial allocation		

Informal discussions with Vector regarding the timing associated with alternative "A" in Figure have indicated that a delay of three business days would be incompatible with preparing and issuing transmission invoices by the 10th day of the month[7]. Such a delay would also jeopardise meeting the due date for BPP invoices of the 14th of the month. The discussion revealed there is also little flexibility with securing earlier submission of gas gate injection data due to practical difficulties associated with validation of those data prior to submission.

Those issues notwithstanding, given that the availability of SADSV for the initial allocation would be likely to make a material improvement in the quality of non-ToU submissions, it does seem worthwhile to consider this issue further. Alternative "B" in Figure suggests advancing the deadline for

[7] At best the 8th business day equates to the 10th calendar day but if the 1st day of the month is on a Thursday or Friday then the 8th business would fall later than the 10th calendar day (and things get progressively worse when public holidays intervene).

submitting data on gas gate injections and ToU data by four hours to 8:00 am on business day four. The allocation agent would use that data to create and publish the SADSVs by 12:00 midday; retailers would be required to provide their non-ToU consumption submissions 24 hours later. The allocation agent would then have until midday on business day six to publish the initial allocation.

Alternative B would have considerably less impact on the timing for transmission invoices (although there are some specific instances that could prove problematic, such as when Good Friday occurs in the first few days of the month). However, the practical issue with alternative B is whether retailers would be able to undertake the necessary processing for historical estimates in the 24 hours this alternative provides.

Q1. Do participants agree that the option of making the SADSV available in advance of AG 4 and 6 initial consumption submissions is worth pursuing?

Q2. Gas Industry Co seeks feedback on the feasibility of staggering the submission of TOU and non-TOU data for the initial allocation and delaying publication of the results of the initial allocation. We also seek an indication of whether retailers would be able to accommodate the 24-hour period for processing and submitting non-ToU data once they received the SADSV.

3.6 Option 2 - preferentially allocate UFG to causers

The purpose of the Rules was to establish uniform processes to enable fair downstream allocation and reconciliation. For the global allocation method to be fair to all allocation participants requires that those participants have a relatively homogeneous mix of customers, practices and data accuracy. Provided such an assumption holds true then allocating UFG in proportion to consumption submissions is likely to be fair to all participants.

As discussed above, the homogeneity assumption does not hold up in practice. Retailers have differing origins and business models and these differences have resulted in a range of approaches to the market. Unsurprisingly, differing customer mixes and differing policies results in a wide range of data quality. This can be seen in the volume and extent of breaches of rule 37.

The range in data quality is also highlighted by the responses to the consultation on setting the accuracy threshold under r37. Mass market retailers tend to express concerns at the costs associated with improving their forecasting performance if the accuracy threshold were narrowed. Retailers who focus on other sectors of the market tend to favour a tightening of the threshold (to as low as ±5%) and express concerns over the unfairness inherent in the current approach.

Under- or over-submission by one or more retailers at a gas gate gives rise to UFG that is shared amongst all retailers at that gas gate. Simply put, the cost of poor quality allocation data is socialised among retailers, instead of being borne by the party(ies) responsible. This problem is amplified by the fact that balancing charges are apportioned using data from initial allocations; there is no wash-up for the more accurate interim and final allocations. Arguably, those parties who cause excess UFG have

weak incentives to improve accuracy (at least within the accuracy threshold) and those parties who bear a disproportionate share of UFG have no means to reduce that burden.

The objective of this option is to devise an alternative algorithm for the initial allocation that would mimic more closely the final allocation.

Alternative method—selective allocation of UFG

Prima facie, the global allocation method does not produce results that could be regarded as fair at the initial allocation stage. One way to address the disparity between the costs and benefits of reducing UFG would be to link UFG allocation more closely to each retailer's estimation accuracy.

The method outlined below is designed to skew allocation of UFG towards those who are most likely to be responsible for that UFG on the basis of past submission accuracy. The rationale is that this approach will:

- allocate UFG preferentially to causers;
- incentivise those who are allocated the lion's share of UFG to make an explicit trade-off of between improving systems and processes to reduce their contribution to UFG (thereby both lowering UFG and lessening their exposure to it) or continuing to "wear" the UFG; and
- reduce the unfairness in the current system whereby those who are not the principal causers of UFG nevertheless receive a *pro rata* share of that UFG.

Such an approach would also de-emphasise rule 37 (and potentially eliminate the need for) as the only means of encouraging retailers to provide the most accurate consumption estimates consistent with their business practices.

How might this work in practice? Accuracy in consumption submissions can be determined by comparing retailers' initial submissions with either their interim or final submissions for the same period. Allocating volumes to AG4 and 6 would then follow these steps:

1. Allocation groups 1 and 2 would be allocated as they are now;
2. Consumption submissions for allocation groups 4 and 6 would be scaled up by the AUFG factor;
3. Any remaining UFG would be allocated to mass market retailers in proportion to the size of their submissions and their historical accuracy.

In this way, retailers who have historically caused UFG due to poor estimation at the initial allocation would be allocated the excess UFG (the amount greater than that represented by the AUFG factor).

This approach has the advantage that it is not driven by a single accuracy tolerance set by Gas Industry Co. Instead, each retailer will be able to optimise the trade-offs between improving accuracy and

paying for the UFG it otherwise creates. Retailers whose business model makes their estimation inherently more accurate should benefit from increased predictability of their cost structure (particularly for wholesale and Balancing and Peaking Pool costs[8]).

Defining and testing alternative allocation algorithms

Gas Industry Co considers that there is value in investigating alternative allocation algorithms that can be applied at the initial allocation. By allocating UFG to causers wherever possible, the inherent unfairness of the existing global methodology will be decreased. In addition, the effects on other retailers of breaches of rule 37 are likely to be of lower impact, and that, in turn, will be likely to reduce the compliance burden that would otherwise arise from those breaches. Furthermore, no retailer is subject to an arbitrary standard of accuracy and this should improve overall efficiency.

The suggested way forward is to test the alternative approach by running "shadow allocations". In order to keep costs down this work would be performed in-house. At this stage it is not considered necessary to go beyond producing monthly totals as that will provide sufficient information to compare algorithms with the status quo. The outputs would be:

- an equivalent to the GAR070 report; and
- where data exists, bar charts comparing historical initial, interim and final allocation results with results for initial allocations using the alternative algorithms.

Q3. Do you agree that preferentially allocating UFG to causers is worth investigating as a possible alternative to the global allocation method for the ***initial*** allocation? If not, please provide reasons.

Q4. What is your view of using the difference between a retailer's initial and interim submissions as the measure of accuracy?

Q5. If a rolling average were to be used as the basis for measuring accuracy, how many months would you suggest the average be taken over?

Q6. One suggestion is to define "causers" as the bottom x% of retailers when ranked by submission accuracy. What value would you suggest for "x"?

3.7 Option 3 - daily allocations

Gas Industry Co has previously undertaken work in respect of daily allocations (D+1) as a replacement for the initial allocation. The purpose of that work was to provide shippers with information throughout the consumption month so that they could better manage (balance) the relationship between their respective upstream and downstream positions.

At present, shippers have to wait until the 5th business day following a consumption month before they have comprehensive information on the volumes of gas that have been allocated to them. Given

[8] Balancing and Peaking Pool (BPP) costs as defined in the Vector Transmission Code

that those shippers have to procure upstream supplies throughout the month to meet their customers' needs (and to meet any allocation of UFG), they are each having to guesstimate their respective positions. This guesstimation process is made more difficult by the fact that only about 20% (by volume) of load is measured by meters that can be remotely interrogated (i.e. the meter has telemetry installed).

Although there is macro information available in the form of information at large delivery points, this is of limited use because retailers have unique combinations of customers (large and small industrial, commercial and domestic). Unless a retailer's particular customer mix matches the market norm they cannot assume that the usage by their customers will track the macro movements in demand. Moreover, as the inventory in the Maui pipeline (line pack) moves up or down shippers will not be able to tell whether they should take compensating action as, with no further information, they will not know whether they have contributed to, or ameliorated, any change.

Previous work

Gas Industry Co engaged M-Co[9] to investigate algorithms to create allocation results based on:

- data from the most recent interim allocation that would be used to apportion deliveries among shippers; or
- using current AG1 consumption together with data from the most recent interim allocation net of AG1 consumption to apportion deliveries among shippers.

That work revealed that it would be possible to create allocation results that would have been of a quality roughly similar to current initial allocations. However, it was expected that there would have been considerable cost associated with implementing such a solution and support from shippers was mixed.

One of the challenges for implementing such a solution is the fact that, again due to different market sectors targeted by shippers, the quality of data available to shippers varies greatly. For example, a shipper that focuses on the large-volume end of the market will likely be able to source data electronically and that, combined with a known UFG factor, will provide accurate predictions. In terms of managing its own mismatch position, such a shipper would receive little value from a move to daily allocations. However, to the extent that such a shipper is exposed to the monthly UFG factor (i.e. has non-ToU customers) then it will benefit from arrangements that help to insulate it from the accuracy of other shipper's consumption data submissions,

D+1 "light"

Given that the lack of support for a move to daily allocations revolved around cost, the question is whether a low-cost solution might be possible? Thought has been given to whether daily allocation data could be created that would:

[9] At the time M-Co was the company performing the role of Allocation Agent . The business of M-Co was subsequently purchased by NZX Limited who now performs the Allocation Agent role.

- provide the information on which shippers could self-balance; and
- provide the basis of the BPP calculations and invoicing.

Such an approach would only need to produce data at an aggregated level, i.e. daily data for each of the four balancing and peaking pools, and that would be likely to reduce the complexity and cost of any solution.

There would still be costs associated with such a solution but it is likely that a simpler algorithm would produce acceptable results. At a conceptual level, the approach would involve:

- gathering data for AG1 customer consumption on the previous day;
- estimating AG2 consumption based on consumption history by ICP;[10] and
- deriving the aggregate injections for shared gas gates by using pipeline receipts less deliveries to direct connect gas gates. In this way there would be a comparatively small number of readings that Vector would need to validate on a daily basis.

The allocation process would then:

- aggregate the AG1 readings and AG2 estimates by retailer and scale them by a weighted average AUFG for the pipeline; and
- the residual, i.e. pipeline injections minus ToU allocated quantities, would then be allocated *pro rata* among shippers using previous allocation results (e.g. the last interim allocation or the interim results for the same period in the previous year).

Shippers' ToU and non-ToU allocations would be summed to give their respective volume allocations for that pipeline on the previous day. Shippers could then compare the results with their nominations made the previous day and would have the ability to make corrections to bring their running mismatch closer to zero.

Provided the same numbers were used by Vector Transmission for the BPP calculations, shippers would:

- be given greater control over their exposure to balancing charges; and
- be insulated against the effect of inaccurate estimation by other shippers.

However, at the interim allocation stage the inaccuracies inherent in the D+1 allocation approach would result in step-changes to shippers' running mismatch positions. By definition, this is a zero sum game as the D + 1 process will have allocated all volume across shippers and the interim allocation does the same thing. Thus, the changes brought about by the interim allocation are to redistribute

[10] This would require that data provided to the allocation agent for ICPs in allocation group 2 be collated so that there is a continuous daily consumption history for each of those ICPs. That consumption history would then be used to estimate the previous day's consumption.

those same volumes across shippers but there is no immediate physical effect on the pipeline. However, if shippers use different strategies for managing their mismatch positions then there is the potential for pipeline inventory to shift as they variously take action to rebalance their respective positions. It would be expected that, as shippers became used to a new process in which they had greater control over their exposure to balancing charges, there would be good incentives to maintain reasonably well-balanced positions.

If there is broad-based support for taking this further, then work would be needed to test the accuracy of results and ascertain whether the drift between the results of a simple D+1 approach and the interim results were better or worse than the results from the existing initial allocations. If the drift is no worse than from existing results then it is reasonable to assume the effects of volume wash-ups at the interim stage would have no greater impact than at present.

In addition, consideration would need to be given to the need for gas gate allocations used as the basis of transmission and distribution charges. It would be possible to use the existing initial allocation process to produce those results, but that would have the effect of BPP charges and transmission service charges being based on different numbers (until the results of the interim allocation were published). If shippers thought this to be a problem, then one way to address it would be to break the D + 1 allocations down to a gas gate level, most likely based on the proportions shown by the most recent interim allocation results. It is likely that any gas gate-level apportionment would be significantly less accurate at some gas gates than the existing initial allocation results, though, due to the limited amount of data the D+1 "light" allocations would be based on. However, because the transmission throughput and capacity overrun charges are washed-up at later allocation stages, the inaccuracy would only have a transient impact on these charges.

If it were decided that the results from the existing initial allocation methodology were no longer required, there are still aspects of that process that would need to continue. For example, calculation of the SADSV requires that data be submitted for AG1 and AG2 consumption as well as injection data for the gas gates concerned.

Q7. Do you agree that it is worth investigating the feasibility and cost of implementing daily allocations (D+1) at a pipeline level? Please provide reasons for your answer.

Q8. If D+1 were to be implemented for BPP charges, would it be a concern for your organisation if transmission charges continued to be based on the existing initial allocation methodology.

3.8 Option 4 – "top down" algorithm

The three options discussed above would not change the algorithm used to create the initial allocation, but would provide more information and/or incentivise more accurate initial submissions from retailers using the current system. A fourth option is to implement a "top down" change by amending the initial allocation algorithm to a methodology for daily allocations. The interim and final allocation stages would then be used to refine the accuracy of the initial allocation by applying seasonal shapes.

One option is to allocate mass market volumes based on historical volume-based market shares from the most recent interim allocation. For the initial allocation, the only information required would be injection data and TOU submissions. The allocation agent would calculate the remaining information.

$$initial\ allocation_{aj} = CI_{TOU_{aj}} \times A_{UFG} + \left(injection_j - \sum CI_{TOU_j}\right) \times marketshare_{aj}$$

That is, retailer a's initial allocation at gas gate j is derived from its TOU customers at that gas gate multiplied by the relevant annual UFG figure plus the remaining total gas consumed at gas gate j multiplied by that retailer's market share at the gas gate. The key issue for this algorithm is obtaining TOU data in a timely manner and knowing with a reasonable degree of confidence that the data would be accurate. The latter may require the allocation agent developing shaped data for allocation group 2.

The particular algorithm discussed above would be similar in practice to the implicit algorithm that would be used in the D+1 light method discussed in Option 3 above. However, unlike the D+1 light algorithm, the example used above (or an alternative of it) would apply at a gas gate level as opposed to a pipeline level. Also, a new initial allocation algorithm would not affect the timing of the current allocations like D+1 light would.

Although this paper does not retrospectively analyse the results of different top down algorithms, Gas Industry Co welcomes feedback from industry participants on algorithms it may investigate before releasing a Statement of Proposal. If industry participants support changing the initial algorithm then Gas Industry Co may test different options using historical data before issuing a Statement of Proposal.

Q9. Do you agree it is worth investigating changing the initial allocation algorithm? Does your organisation have any suggested algorithm(s)?

4 Atypical gas gates

In section 2.2 it was noted that there are a number of gas gates that either do not fit the parameters for application of the global allocation methodology or for which the purpose of the Rules would not be furthered by applying the rules to those gas gates. These matters came to light during the implementation phase or shortly after go-live and, given the urgency at the time, they were addressed by way of exemptions granted variously under rules 19-22 (standard exemptions) or rule 81 (transitional exemptions).

Many exemptions remain in place[11] and it is considered that, as part of reviewing the Rules, consideration should be given to making explicit provision within the Rules for atypical gas gates so as to reduce reliance on, and the work involved in maintaining, exemptions.

4.1 Direct connect gas gates

The inclusion of direct consumers and non-shared gas gates in the downstream allocation and reconciliation process was signalled as early as the January 2007 discussion paper, where the concept of "downstream reconciliation" was defined in this context:

> "downstream" reconciliation refers to allocation and reconciliation of gas transferred at "gas gate stations" where the high pressure transmission pipelines interconnect with low pressure distribution pipelines or major end users[12]

In this respect, the Rules provided an intentional departure from the limited application of the previous Reconciliation Code to shared gas gates only. The policy intention behind this approach was based on the desire for transparent and objective quality information being available on all gas gates, including at single user or direct consumer gas gates, particularly given the absence and poor quality of information available under the previous industry reconciliation arrangements.

However, when seeking exemptions in respect of direct connect or single retailer gas gates, some allocation participants questioned the value of the Rules applying to direct consumer and non-shared gas gates. However, other allocation participants submitted that the application of the Rules to all gas gates is desirable to ensure all retailers are treated in the same way and to minimise the possibility of barriers to accessing a gas gate.

[11] The list of exemptions granted under the Reconciliation Rules may be found on Gas Industry Co's website at http://www.gasindustry.co.nz/work-programme/market-administration/exemptions.

[12] http://www.gasindustry.co.nz/sites/default/files/consultations/tristan.meo@gasindustry.co.nz/Discussion_Paper_-_Reconciliation_of_Downstream_Gas_Quantities_3.pdf – see para 2.23

The starting point as to what gas gates are covered by the Rules (as currently drafted) is driven by the definition of gas gate as set out in rule 5 of the Rules:

> ***gas gate*** means the point of connection between –
>
> (a) a transmission system and a distribution system; or
>
> (b) a transmission system and a consumer installation; or
>
> (c) two gas distribution systems; or
>
> (d) a group of gas gates, as determined and published by the industry body, treated as a single gas gate for the purposes of these rules;

Hence where the Rules outline obligations or processes in respect of a gas gate, this definition applies. Whether a gas gate is shared or otherwise does not determine whether allocations will occur under the Rules at a gas gate – the determinant is simply whether it is a point of connection of the nature outlined in the definition.

In the absence of any exemptions, the allocation processes provided for apply to all gas gates (including the submission of injection and consumption data, application of global methodology, the generation of allocation quantities and the publication of allocation reports and information).

Sub clause (b) in the definition includes a point of connection between a transmission system and a consumer installation – this includes gas gates with direct consumers to the transmission system. Similarly, for non-shared (i.e. single retailer) gas gates, these are treated the same as shared gas gates for the purpose of the Rules.

Generic exemptions that were sought

Retailers applied for exemptions covering:

- direct connect gas gates; and
- single-retailer gas gates at which there were multiple customers.

In both instances the justifications typically were that:

- all UFG at such gates would be allocated to a single party and, therefore, no purpose would be served by application of the allocation processes set out in the Rules;
- applying the allocation processes at such gates would increase the workload of retailers, transmission system owners and the allocation agent;
- the true costs of the allocation agent would not be signalled to the industry and, as a result, the increased costs could potentially be passed on to customers.

The outcome of consultation, submissions analysis and Gas Industry Co's internal deliberations was to grant exemptions in respect of direct connect gas gates but not to grant exemptions in respect of single retailer gas gates. The distinction between the two types of gas gate reflected concern over

transparency and competition issues. The fact that customers can switch retailers (most particularly now that the Gas (Switching Arrangements) Rules 2008 are in place) means that the transparency created by the Rules is a valuable factor in fostering a competitive market. The conclusion was that exempting single retailer gas gates would create information asymmetries and those, in turn, would risk lessening competition at such gas gates.

Aligning the rules with current practice

The Rules have been operating since October 2008 and Gas Industry Co and allocation participants have amassed considerable experience with those rules. At this juncture it is appropriate to review whether the existing exemptions for direct connect gas gates have caused any adverse effects regarding the purpose of the Rules.

Gas Industry Co is not aware of any adverse effects that have arisen as a result of the global allocation methodology not being applied to direct connect gas gates. The balance of the Rules still apply to those gas gates. For example, transmission system owners are still required to supply the gas gate injection information.

Given all of the above it can be concluded that it is both appropriate and desirable to continue the current arrangements in respect of such gas gates. There are two options available to address this:

1. continue to use the exemptions process but grant the exemptions for longer periods so as to minimise the administrative costs; or

2. modify the Rules so as to recognise that gas gates meeting the criteria should not be subject to the global methodology.

Gas Industry Co considers that it is not best practice to rely on exemptions on an ongoing basis. Use of exemptions is appropriate where unforeseen circumstances arise and there is not time to consult on altering the Rules. This was the case when the Rules were being implemented but the opportunity now exists to change them. Note that the process for granting exemptions is discussed later in Section 8.

The preferred option would be to change the Rules to:

- define "direct connect" gas gates;
- exclude retailers from:
  - application of the global allocation methodology at such gas gates;
  - consequential rules associated with the global methodology (e.g. provision of data for the annual reconciliation under rule 52); and
  - liability for ongoing fees in respect of those gas gates; and
- exclude the allocation agent from associated obligations in respect of those gas gates.

Q10. Do you agree that the purpose of the Reconciliation Rules would not be better served by having retailers who trade at direct connect gas gates subject to the global allocation methodology? If not, please provide your reasoning.

Q11. If you agree with Q10, do you also agree that the Reconciliation Rules should be amended as described above so as to obviate the need for exemptions in respect of direct connect gas gates?

4.2 Application of global 1-month methodology

Under the previous Reconciliation Code there were a number of gas gates for which, instead of the difference methodology, the global 1-month methodology was used for reconciling and allocating gas amongst retailers. Prior to go-live of the Rules, applications were received from Contact Energy and Genesis Energy for exemptions to allow the continuation of the global 1 month methodology at six gas gates. The exemption would require using the monthly UFG factor for consumer installations in AG1 and AG2 rather than the annual UFG factor as prescribed by the Rules. Those exemptions were granted and have been in effect ever since.

Rationale for application of the global 1-month methodology

The global 1-month methodology is used because these gas gates have either one or a small number of very large customer loads on the gates and that distorts the gate shapes for the remaining small customers. Put another way, the majority of UFG at such gas gates has to be due to differences between the gas gate TOU metering and the dominant load TOU metering and not due to the relatively small amount of non-TOU load. Application of the global allocation methodology specified in the Rules would create instances where the AG1-AG6 allocated UFG would be greater than the customer volumes submitted.

Throughout the policy process of developing the Rules, Gas Industry Co actively engaged with industry on whether a global, difference or 'in between' allocation methodology was appropriate. Different options were considered and the final outcome was that the Rules strike an 'in between' position. This 'in between' process was developed largely in response to the lack of transparency regarding (then) current allocation information and questionable quality of any information that was available. The methodology in the Rules provides substantially fairer allocation than the differencing method that was the default position under the Reconciliation Code.

The decision made by Gas Industry Co was to develop in the Rules efficient and effective arrangements for a 'typical shared gas gate'. Based on the information available, the load split at a typical gas gate consists of approximately 50% TOU (AG1 and AG2) consumption, 25% small business (AG4) consumption, and 25% mass market (AG6) consumption.

Gas Industry Co anticipated throughout the policy development process that the standard methodology applied in the Rules may not be the most efficient or fair methodology to apply at gas gates where the load split varied widely from the 'typical' load split. From a policy perspective it was decided that such atypical gas gates could each separately be considered through an exemption

process. Gas Industry Co further considered that the policy decisions sitting behind the allocation methodology in the Rules may need to be revisited in a few years' time, i.e. once accurate allocation information was available under the new regime.

Making provision for global 1-month in the Reconciliation Rules

Given that it is not proposed to alter the core approach to allocation embodied in the Rules, the reasons for applying the global 1-month methodology at gas gates with particular characteristics continue to exist.

Gas Industry Co has not identified an alternative approach that would better achieve the purpose in the Rules. As a result, it is logical to make explicit provision in the Rules for the global 1-month allocation methodology. The process could allow for approval to be granted by the industry body for that methodology to be applied at gas gates that meet the criterion that there is a preponderance of TOU load (typically 90% or more of the load at the gas gate).

The preferred option would be to augment the Rules by:

- providing for the global 1-month allocation methodology;
- mandating an application and approval process;
- specifying the criteria for approval; and
- providing for a periodic review process so that gates no longer meeting the criteria revert to using the global methodology.

Q12. Do you agree that the global methodology fails to produce acceptable results at gates that have a very high proportion of TOU load?

Q13. Do you agree with the proposal to incorporate within the Reconciliation Rules provision for a framework for application of the global 1-month methodology at gas gates that meet specific criteria? If not, please provide your reasons and your suggested alternative approach to addressing the shortcomings of the global methodology in such circumstances.

4.3 Unmetered gas gates

There are seven gas gates that do not currently have gas measurement systems installed. This means that the transmission system owner (Vector) cannot meet rules 41-42 which require:

- submissions to the allocation agent of daily injections at the gas gate for each day of a consumption period in respect of each of the initial, interim and final allocations; and
- publication of the previous day's (unvalidated) injection quantities for the benefit of retailers who trade at a particular gate.

During the development of the allocation system functional specification, Vector indicated that it would be unable to comply with these obligations in respect of a small number of gas gates on Vector's transmission system that did not have meters. They were as follows:

Papakura No.3 PAP06603	Kuku KUK22401
Wellsford WEL18301	Te Horo THO22701
Oakleigh OAK18601	Waverley WVY23601
Matapu MTP20601	Okoroire Springs OKS32801
Pungarehu 1 PGU13101	

Under the previous industry allocation arrangements, the incumbent allocation agent provided Vector with the daily allocated quantities (calculated on a pro-rata basis) by email for each unmetered gas gate and Vector would then load those into OATIS as the daily injection quantities. The (then) allocation agent created those numbers from the consumption data provided by retailers.

Exemption granted

This issue was addressed by granting a transitional exemption that:

- exempted Vector from providing injection information at those gates; and
- provided for the allocation agent to estimate the gas gate injection information by aggregating the consumption information provided by retailers trading at each of those gas gates.

The effect of such an exemption is that no downstream UFG is measured at each of these unmetered gas gates. This means that any UFG that would otherwise exist at these gas gates will instead appear as transmission system UFG and be shared across all transmission system users. Because there will be less information available to retailers at these gas gates, it is also been suggested that there will be a reduction in the ability to detect inaccurate consumer metering.

The transitional exemption was granted with the following condition:

> No later than 3 months prior to the expiry of this exemption, transmission system operators with unmetered gas gates will provide a report to Gas Industry Co setting out the estimated costs and benefits of, and any other relevant information on, the provision of meters at those gas gates.

Further information and consultation

Vector provided information to Gas Industry Co that included estimates for supply and installation of gas measurement systems at each of the gas gates. With regard to benefits, Vector was of the view that there were no substantive benefits that would justify the cost of installation. This view was underscored by the fact that consumption quantities at most of the gas gates were small. Vector also pointed out that the exemptions in respect of those gas gates would simply be a continuation of the status quo that existed under the previous industry arrangements.

Gas Industry Co re-consulted on the exemption to determine whether it should be extended beyond June 2009. The outcome of that process was a revised exemption that:

- extended the exemption in respect of seven of the nine gas gates to 30 September 2010;
- in the case of the Waverley (WVY23601) and Papakura No 3 (PAP06603) gas gates extended the exemption to 30 November 2009; and
- required Vector to provide, no later than 1 October 2009, a detailed breakdown of the costs of installing a meter and associated equipment at each of these latter two gas gates.

In its decision, notified to participants, Gas Industry Co stated that:

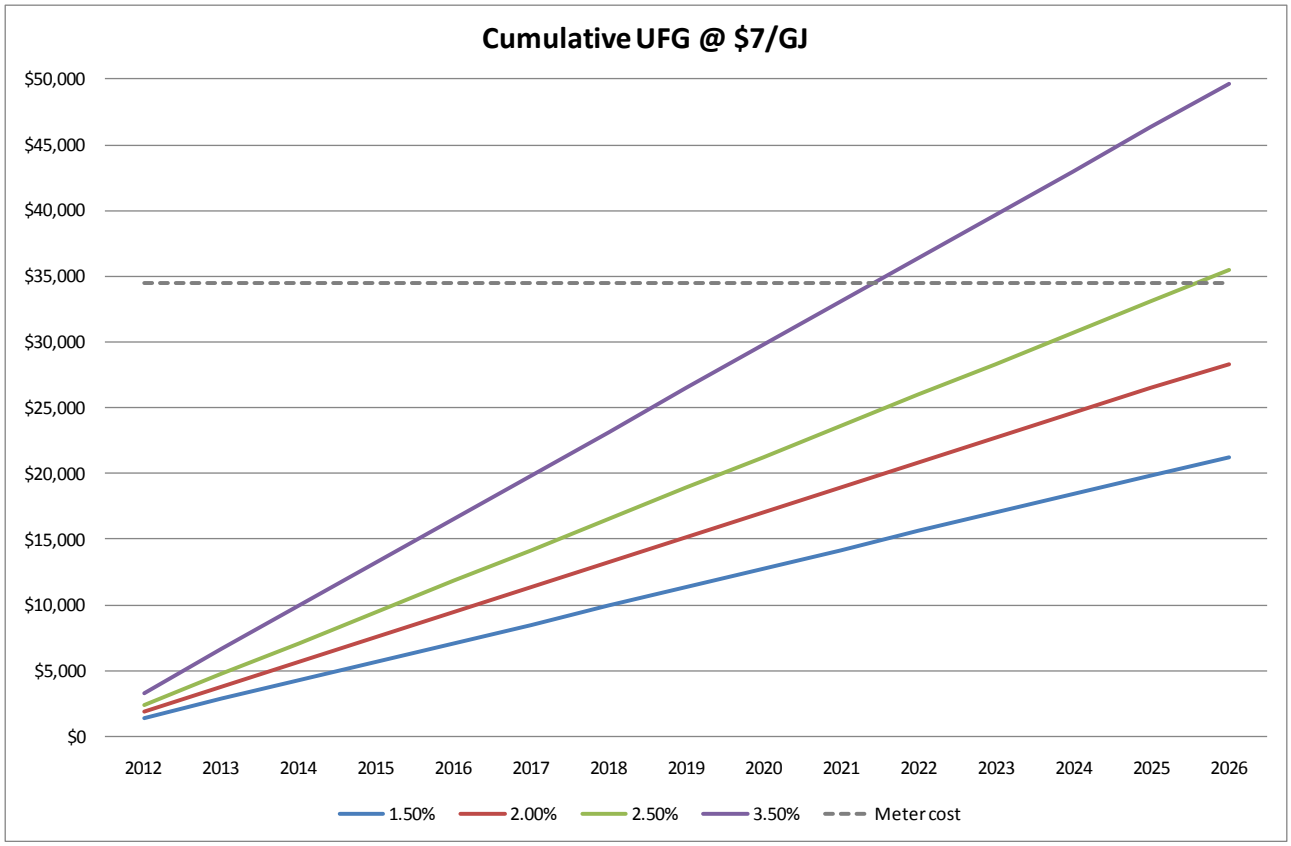
> - it was considered that the costs of installing a meter at Waverley WVY23601 were insignificant and that a meter should be installed as soon as possible to ensure future compliance;
> - at Papakura No 3 PAP06603, the cost of installing a meter was significantly higher and it was determined that this exemption should be considered as part of a policy on unmetered gas gates.

Vector's exemption application, and subsequent information provided, propounds the argument that the lack of a meter at certain gates does not necessarily undermine the purpose of the Rules. Submissions from other allocation participants have put forward views that range from all gas gates being required to have meters (the current position in the Rules) to relaxing the requirement in the Rules for gas gates that exhibit on small volumes.

Figure 1 compares the cost of installing a meter at Papakura No 3 (estimated by Vector at $34,510) with the cumulative value of UFG that, if not identified, will be "socialised" among shippers. Given that, absent a gas gate meter, we do not know the rate of UFG at that gas gate, the graph uses annual average rates from 1.5% through 3.5%. Ignoring return on investment, simply to pay back the cost of meter installation inside 15 years requires that the rate of UFG be at least 2.5%. In the most recent set of AUFG factors published by the allocation agent, 24 of 84[13] gas gates had AUFG factors greater than 1.025.

[13] The seven unmetered gas gates have been removed from the total.

Figure 11: Indicative value of unaccounted-for-gas



The general tenor of submissions on this issue has shown that (with the exception of Vector) parties consider that meters should be installed at all gas gates. This view is consistent with the Rules as drafted. By definition, the purpose of the Rules is defeated at those gas gates for which there is no ability to measure injection quantities.

As of November 2011, Vector had installed a meter at Waverley and had decommissioned the Papakura No 3 gas gate. Regardless, the discussion above is still relevant for the purposes of the Options paper particularly as seven gas gates remain unmetered.

Compliance implications

The Rules rely on the metrics from the gas gate meter to be able to measure the extent of UFG and, in particular, short- or long-term deviations from what might be regarded as the norm. Without the information provided by a gas gate meter there is only limited ability to identify and investigate any issues of non-compliance in respect of data submitted by retailers.

Options

Gas Industry Co considers there are three options for consideration:

- **Status quo**—continue the current arrangement whereby exemptions from the Rules are granted on a case-by-case basis. This option is not preferred as a long term solution. As discussed in section 8, Gas Industry Co's current thinking is to tighten the circumstances where exemptions would apply

and to permit them only where either a suitable substitute is available (that meets the purpose of the Rules) or in exceptional circumstances.

- **Strict compliance**—for the purpose of the Rules to be fulfilled requires that injection quantities must be measured independently of consumption information provided by retailers. If the existing exemptions were revoked (with appropriate notice) then meters would need to be installed at each of the existing unmetered gas gates.

- **Materiality threshold**—it would be possible to incorporate a mechanism within the Rules that would allow for gas gates to be unmetered subject to those gas gates meeting certain criteria. For example, where gas gate volumes are very small (as measured by aggregate consumption quantities) participants may consider it unnecessary to measure injection quantities as any resultant UFG would be miniscule. However, given that there are gas gates with meters where the injection volumes are less than those for existing unmetered gas gates, Gas Industry Co would be concerned to ensure that any materiality threshold did not cause a reduction in the number of gas gates with metering equipment.

On balance, Gas Industry Co's view is that it is preferable to have gas measurement systems at all injection points, i.e. it favours the strict compliance option.

Q14. Do you consider that all gas gates should have gas measurement systems installed? If not, please provide reasons. If you consider that there should be a threshold below which gas gate meters are not necessary, please describe both the threshold and the basis of measurement (e.g., monthly (average or peak) or annual volumes.

4.4 Oversized meters

Vector has also been granted an exemption for two gas gates where the gas gate meter is no longer appropriately sized for the current flow conditions. The gas gates are Flockhouse FLH21901 and Te Teko TTK3060. The exemption was granted based on the following reasons.

(a) Gas quantities at these gas gates are unable to be measured accurately, due to the meters being oversized for the small amounts of gas now flowing at the gas gates.

(b) Given the costs to replace the meters at these gas gates and the variability of the gas flows, it is considered reasonable that an exemption be granted to enable more accurate injection quantities to be used in allocations at these gas gates.

(c) An alternative arrangement has been provided for the allocation agent to use consumption information provided by retailers under the Rules to estimate the injection quantities at the affected gas gates.

The way in which the exemption is implemented is the same as that for unmetered gas gates, i.e. the allocation agent uses the sum of the consumption information to estimate the injection quantity. This raises the same questions as were considered in section 4.3. As a result, it is proposed to treat these gas gates with oversized meters in the same way as unmetered gas gates for the purposes of this policy review.

Q15. Do you agree that, for the purposes of the review of the Reconciliation Rules, gas gates with oversized meters should be treated in the same way as gas gates that do not have meters installed? If not, please provide reasons.

5 Correcting AUFG factors

The Annual Unaccounted for Gas (AUFG) factor, as calculated according to rule 46.3.1, is used to allocate quantities of gas to allocation groups 1 and 2 at each gas gate, by retailer, and for each consumption period. The Monthly Unaccounted for Gas (MUFG) factor, as calculated according to rule 46.3.2, is used to allocate quantities of gas to allocation groups 3-6.

The Rules were originally drafted to take into account the assumption that a higher level of meter accuracy could be expected from allocation groups 1 and 2 than from allocation groups 3-6. The outcome of that assumption is that allocation groups 3-6 will wear the cost of allocation groups 1 and 2 meter issues or metering inaccuracies should they occur because of the way MUFG is calculated.

There have been two instances where the data used to calculate the AUFG factor for a gas gate has been found to be erroneous subsequent to the publication of the AUFG factor. As the Rules contain no provision for the correction of published AUFG factors, in the first case the issue was dealt with via the compliance arrangements and in the second instance an exemption was granted that allowed the necessary correction to happen.

The issue for this paper is whether the Rules should be amended to explicitly provide for the correction of AUFG factors when they are found to be incorrect. Gas Industry Co welcomes feedback on whether industry participants consider an explicit rule is required that will enable the correction of AUFG factors.

Q16. Do you think Gas Industry Co should consider making an explicit rule to enable correction of AUFG factors or should the exemption process be relied upon?

6 Allocation of ongoing fees

Currently, ongoing costs for the allocation system are funded through fees collected on the basis of retailers' respective market shares as measured by allocated volumes. Gas Industry Co has been asked to review the cost allocation as part of the review of the Rules.

Background

In the January 2007 discussion paper it was proposed that any development costs for the reconciliation arrangements would be funded through the levy, with ongoing allocation costs funded through an "ongoing fee" charged to retailers based on numbers of ICPs. The paper also noted that many of the "one-off" costs, such as for setting up new gas gates and deemed profiles, would continue to be covered by the allocation agent's standard charges and invoiced directly to the relevant retailer.

A number of submitters disagreed with the suggestion that the ongoing fee be calculated based on numbers of ICPs and considered that it would be more equitable to retain the existing practice of charging allocation fees based on volumes.

This issue was discussed further in the statement of proposal released in 2007. Appendix 3 of the statement of proposal compared cost allocation based on ICPs and volumes using the criteria listed below.

- Economic efficiency – the charging structure should encourage, and not detract from efficient market behaviour;
- User/causer/beneficiary pays – where possible costs should be allocated on a basis where the those causing the costs or benefiting from the costs will pay;
- Rationality – where costs are allocated to participant classes there should be a strong connection between the participant class and the costs being recovered;
- Simplicity – the fee structure should be simple to apply and understand;
- Equity – users in similar situations should pay similar amounts;
- Sufficiency – the fee structure should generate sufficient revenue to recover the costs.

The evaluation concluded that, with the exception of the "beneficiary pays" criterion, the two options ranked equally. The document stated:

> However, a volume based approach would appear to better align with the 'beneficiary pays' principle, given that the competition benefits are expected to be strongly correlated to volumes.

However, that analysis only took into account of benefits arising from improved competition as a result of more accurate and transparent allocation processes. On reflection, the analysis should also have taken into account the benefits to incumbent retailers of the switch from reconciliation by difference to the global methodology mandated by the introduction of the Rules.

As discussed in Chapter 3, under the Reconciliation Code the difference method of allocation meant that incumbent retailers were allocated the bulk of UFG at a gas gate. The global methodology under the Rules allocates UFG to all retailers at a gas gate in proportion to their volumes. This methodology is a more equitable way of allocating UFG. Incumbent retailers have benefited from the changes as they are no longer responsible for all the excess UFG at a gas gate.

Given the benefits of the move to the global methodology largely accrued to (previously) incumbent retailers, the statement of proposal should have factored that into the analysis of cost allocation. Had that been done, the conclusion would likely have been different due to the two largest incumbent retailers also holding the greatest market shares as measured by number of ICPs.

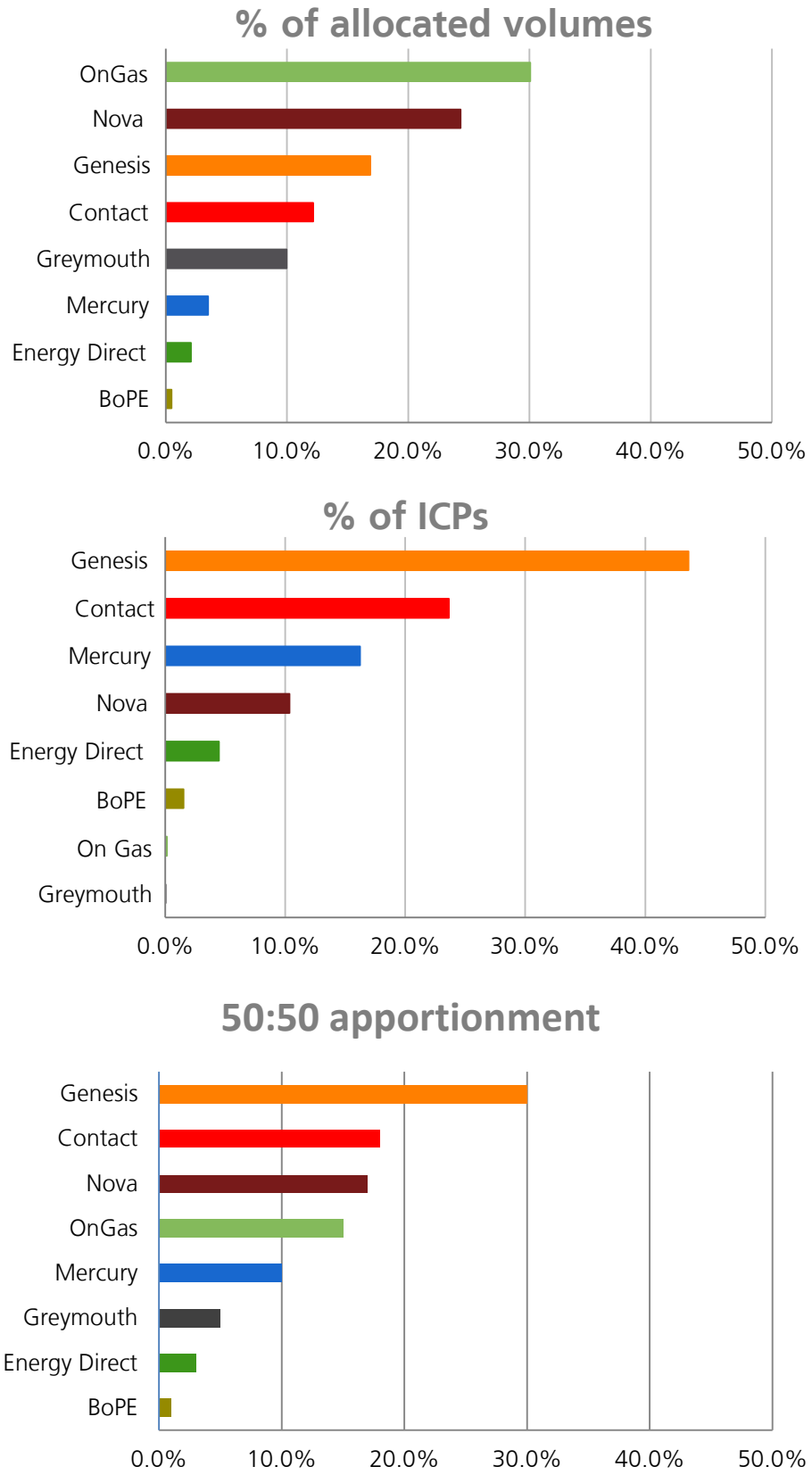
The benefits of the allocation system accrue to all participants. This is clearly seen by considering the ongoing benefits created by the E-Gas situation whereby the industry will save approximately $2.5 million per year by way of reduced UFG. However, TOU customers (and their retailers) arguably only require two of the three allocation stages and then only if estimates are given at the initial stage. Mass-market customers cause the need for the third allocation stage because of the requirement to only provide actual meter reads once every twelve months. Therefore, to the extent that the costs faced by the allocation agent are created by having three allocation stages, one third of the allocation system costs are caused solely by mass-market customers (and their retailers).

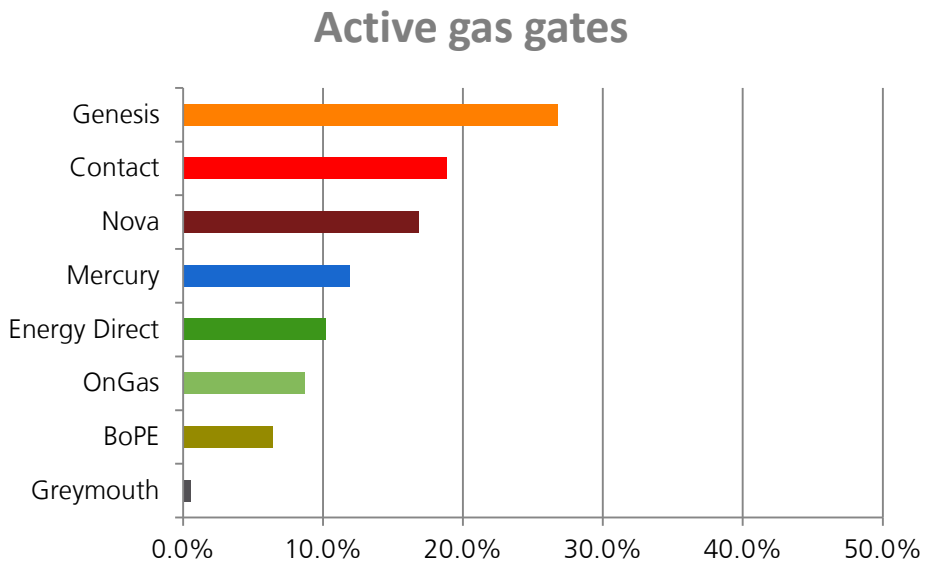
Options

The two options considered in the original statement of proposal were to allocate costs on market share as measured by customer numbers or allocated volumes. A third option is to apportion costs based on a combination of allocated volumes and number of ICPs. A fourth option is to base cost allocation on the number of gates where retailers trade.

Figure 12 shows the approximate cost percentage outcomes of these four options for different retailers using recent data. Note that the upper chart (% of allocated volumes) reflects the status quo.

Figure 12: Allocation of ongoing costs by volume share, ICP share, 50:50 mix of ICP/volume share and by gas gates traded at





On the basis that there is no compelling evidence that either of the first two options is superior, Gas Industry Co favours the third option and proposes that half of the ongoing costs be allocated in proportion with a retailer's allocated volumes and the other half be allocated in proportion with the retailer's share of active ICPs (i.e. ICPs that have a status of ACTC or ACTV on the gas registry).

The fourth option, apportionment by gas gates traded at, has the potential to incentivise retailers to consolidate where they trade and may act as a barrier to entry for new retailers.

Q17. Do you agree that the way in which ongoing costs are apportioned among retailers should be changed to a 50:50 mix of volume and ICP numbers? If not, please provide your preferred apportionment method with supporting reasons.

7 Compliance-related issues

The allocation agent is required to report breaches of the rules that it identifies. There are frequent reports in the areas of:

- estimated ToU data by retailers; and
- late trading notifications by retailers.

These are discussed in this section. Section 7.3 below discusses inserting a rule that would enable breaches issued directly to meter owners.

7.1 Estimated data for ToU sites

Rules 31.1, 32.1, and 33.1 each require that the responsible retailer provide

> Actual daily energy quantities for each **consumer installation** in **allocation groups** 1 and 2

The effect of those rules is that, for a given consumption period, where ToU data are unavailable and needs to be estimated there will be three breaches alleged by the allocation agent (one for each of the initial, interim and final allocations). This can cause unnecessary work for retailers and the Market Administrator.

Rule 30.3 requires a retailer to "*provide its best estimate of consumption information*" in situations where it cannot provide actual ToU data. However, that rule also makes clear that provision of estimated data does not mean a retailer has complied with the requirement to provide "[a]*ctual daily energy quantities*".

Allocation processes for ToU and non-ToU data

Although the allocation methodology is referred to as "global", it is only global in the sense that consumption within each allocation group is allocated globally but allocation groups themselves may be allocated differently. For example, allocation groups 1 and 2 are allocated by scaling each retailer's submissions by the AUFG factor. By contrast, allocation groups 3 through 6 are allocated UFG based on the MUFG factor.

The reason for the different approaches is due to the presumption that the quality of the data are different:

- AG1 and AG2 consumption data are derived from daily readings, i.e. the data are derived from actual daily consumption;
- AG3 consumption data are estimated daily from data derived by applying a static deemed profile to monthly register readings;
- AG4 consumption data are monthly consumption estimated from register readings taken each month;
- AG5 consumption data are estimated daily data estimated from a dynamic deemed profile using register readings that are not required to be recorded monthly; and
- AG6 consumption data are estimated from register readings that are not required to be taken each month.

Thus, AG1 and AG2 data should have the highest quality with AG5 and AG6 data expected to be of the lowest quality (although this will depend on the frequency with which a particular retailer obtains register readings).

The AUFG factor for a given gas gate is static for all allocation stages throughout a gas year[14] whereas the MUFG factor changes each month and also changes at each allocation stage.

Treating AG1 and AG2 allocations differently from AG3 through AG6 can be justified on the basis of differences in the quality of the data. However, it is questionable whether that distinction is appropriate where data for sites within AG1 or AG2 are being estimated. Indeed, where ToU data are being estimated, there is considerable scope for increased volatility in the level of UFG at a gas gate for that consumption period due to the fact that sites in AG1 or AG2 are the high volume gas consumers. This effect can be quite marked at smaller gas gates where ToU sites can be the dominant load at the gas gate.

Accordingly, the "favoured nation" status for AG1 and AG2 data can only be justified where ***actual*** ToU data is being supplied to the allocation agent.

Options for addressing missing ToU data

There is a tension between altering the Rules so as to reduce the compliance burden on retailers and maintaining a strong incentive to provide actual ToU data. The options presented below aim to strike a balance between these two objectives.

Option 1: Eliminate the "triple jeopardy"

A relatively simple change would be to alter the Rules so that where estimated ToU data are provided at an allocation stage only one breach would be alleged (i.e. provision of estimated data at subsequent allocation stages for that ICP/consumption month would not be regarded as a breach).

[14] The exception to this is where the AUFG factor is revised part-way through a year due to significant changes in the underlying data – a relatively rare event.

Such a change would address the current concern that each time a retailer supplies estimated rather than actual data, it is subject to alleged breaches at each of the initial, interim and final allocation stages.

However, this option does have the potential to weaken the existing incentives for retailers to provide actual data for subsequent allocation stages. In certain circumstances a retailer may not be able to obtain actual data in time for the initial allocation. A frequent example of this is where the battery for the data-logger runs flat during the month and the data are, therefore, unable to be retrieved. In such a case, and given the requirement to provide data to the allocation agent by business day four, a retailer has no option but to provide estimated data. However, once the battery is replaced it is sometimes possible for the data to be retrieved from non-volatile storage and actual data submitted for the interim and final allocations.

Option 2: Provide a floor for estimated data

There have been situations where data for ToU sites have been estimated as zero and yet the plant has been running. This is undesirable as any actual consumption will manifest as UFG and be assigned to non-ToU load at the gas gate.

A relatively simple way to address this situation would be to set a floor value for any estimated data for an ICP where data needs to be estimated. For the most recent 30 days prior to actual data not being available for an ICP a retailer would calculate the average consumption for:

- business days C_B; and
- non-business days C_N.

For each day in the current consumption period for which data needed to be estimated for that ICP, the estimate would be required to be no less than C_B for business days and C_N for non-business days. Given that the allocation agent would have time series data for each ICP it would be relatively easy for estimates to be checked against the floor.

For data estimates that breached the floor value there are two options for addressing that, either:

- allege a breach and have that dealt with, in the first instance, by the Market Administrator; or
- authorise the allocation agent to substitute the breaching data with the relevant calculated floor value and inform the participant of any such adjustments.

Option 3: Apply monthly UFG factor to estimated data

This option requires that one accept the proposition that applying the AUFG factor to ToU data is applicable only in cases where actual, not estimated, ToU data are provided.

Where a retailer wishes to submit a mix of actual and estimated data for a ToU site this would be done by submitting the actual data as normal (i.e. in allocation group 1 or 2) and the estimated data in allocation group 3.

Under the algorithm mandated in the Rules, the allocation agent would apply the AUFG to the actual data and the MUFG to the estimated data. Thus, to the extent that the estimated data would have had the effect of moving the MUFG away from what it would have been had actual data been available for all days, this option would allocate at least some of the UFG thus created to the retailer submitting the estimated data. This would be expected to sharpen the incentive on the retailer to estimate accurately.

There is a small catch to this option. Introducing AG3 data would also have the potential to distort the SADSV series for a gas gate whenever data for a month contained estimates. However, that could be addressed by altering the way in which the SADSV are derived (in effect decoupling that calculation from the current method which simply uses the gas gate residual profile for the SADSV).

Option 4 – permit TOU estimates in some circumstances provided an appropriate estimation methodology is used

Where TOU data cannot be supplied due to a metering issue, it may seem somewhat punitive to breach retailers for not providing actual TOU data. It might be practicable to enable retailers in some circumstances to provide estimated TOU data without being breached as long as they can satisfy Gas Industry Co that an appropriate estimation methodology has been applied and that the reason(s) for not providing actual TOU data will be promptly rectified.

There are two options for identifying the circumstances that would justify retailers not providing actual TOU data. The first would be to create an explicit list of scenarios and to include these in the Rules. The scenarios would include, for example, where there has been a metering failure such that the data cannot be provided. The second option is to require retailers to apply to Gas Industry Co for a waiver of the requirement to provide actual TOU data. A waiver will only be granted where Gas Industry Co is convinced that the retailer in question has encountered a material problem such that actual TOU data cannot be provided.

If a retailer was permitted not to provide actual TOU data as a result of either option mentioned above, the breach waiver would be conditional upon providing a suitable estimation methodology for the TOU data as and when requested. If no methodology were provided or an unacceptable methodology were provided then the retailer would receive a breach notice as per the Rules at present.

The choice of an appropriate estimation methodology would be at the discretion of the retailer. However, in order to be deemed appropriate, the estimation methodology ought to produce results consistent with historical consumption patterns of the TOU site including any seasonal adjustments.

Gas Industry Co considers that if an estimation methodology is accepted as a replacement for actual TOU data then a time limit would apply for that methodology being accepted before breaches would recommence. A time limit of ten business days is proposed. That is, a retailer would have ten business days to rectify any material issue causing it to be unable to provide actual TOU data.

Q18. Do you agree that AG1 and AG2 data should only be treated preferentially when actual TOU data are being supplied? Of the options identified, some could be implemented as a package. Which option(s) do you prefer for addressing missing TOU data? Do you believe that there are other options worth considering?

7.2 Breach notifications to meter owners

It may be the case that exceptional circumstances cannot be rectified by retailers because they do not have control over what may have caused the need for a waiver of providing actual TOU data. For example, the issue may have been caused by a meter owner.

Rule 27 is the only rule that directly relates to meter owners. That rule places a general obligation on meter owners to ensure that all metering equipment used to collect that volume information complies with NZS5259:2004.

There are other rules that relate to meters but place the onus for compliance on retailers. This is particularly so in relation to the provision of estimated consumption information by retailers because of metering equipment failures. Under rules 31-33 retailers are responsible for providing consumption information for the initial, interim and final allocation periods to the allocation agent. Often retailers do not have operational control of the meters installed at their consumer installations. If a retailer cannot meet its requirements under rules 31-33 because of a meter issue, the retailer will still be notified of a breach by the allocation agent.

As the Rules are currently drafted, retailers face the incentive to ensure compliance with rules 31-33, yet in some circumstances metering issues out of the retailers' control have caused the breach of the rule and the meter owner rather than the retailer who is able to remedy the metering fault.

Gas Industry Co welcomes feedback on the merits of inserting an additional clause to the Rules that enables the allocation agent to issue a breach notification directly to meter owners if that meter owner has not expediently worked to address metering issues when made aware of such issues by a retailer.

A contrary argument is that such a clause is not necessary at all as retailers are best placed to ensure their meter owners comply with their directives. Retailers who have received a breach notice from the allocation agent are free to make appropriate arrangements with their meter owners if a meter issue has caused that breach notice.

Gas Industry Co also seeks comment on the extent to which the general obligations of retailers as set out in rule 28 should be transferred to meter owners. On the face of it, meter owners are in a better

position to ensure that metering equipment is installed and interrogated correctly. That said, retailers should have obligations to inform meter owners of any concerns that they have with metering equipment.

Q19. Do you agree that meter owners should have more obligations under the Rules? Do you agree that some of the obligations placed on retailers would be more appropriately placed on meter owners?

7.3 Late trading notifications

Rule 39 requires retailers to notify the allocation agent whenever they:

- commence supply to a consumer installation at a gas gate; or
- no longer supply any consumer installations at a gas gate; or
- commence/cease a transmission services agreement in respect of gas supplied at a gas gate.

The allocation agent often alleges breaches of rule 39 where retailers have failed to notify the allocation agent that they have commenced or ceased trading at a gas gate.

There is a pragmatic reason for rule 39. If a retailer has notified that it trades (or has ceased trading) at a gas gate, then the allocation agent knows to expect (or to stop expecting) various data submissions from the retailer in respect of that gas gate (consumption and as-billed volumes). The question for the purposes of this review is whether an improvement can be made, either to the Rules or perhaps to the Registry, such that the allocation agent receives timely information on trading notifications therefore enhancing the accuracy of downstream reconciliation and upholding the integrity of the Rules.

Gas Industry Co welcomes feedback from industry participants as to why they are sometimes unable to provide timely trading notifications to the allocation agent. Gas Industry Co is aware of a number of circumstances that have given rise to late trading notifications in the past including allocation agent retailer checks not being carried out or failing to pick up that the retailer is trading at a new gas gate, backdated switches of ICPs, communication breakdowns between distributors and retailers and supplementary agreements between retailers and transmission services agreements still being under negotiation at the time the retailer first supplies gas at a gas gate.

One potential option is for the allocation agent to make a change to its systems. Assuming the Registry is in an acceptable order, the allocation agent may query the Registry to check whether a retailer is, or has begun/ceased, trading at particular gas gates. The allocation agent may also cross-reference possible late trading notifications with the monthly summary Gas Industry Co provides showing which retailers are active at which gas gates for that month.[15]

[15] See http://gasindustry.co.nz/work-programme/market-administration/monthly-statistics-reports

Q20. If you have been or are regularly notified of a breach of rule 39 by the allocation agent, is there a problem you can identify with the Rules or with the Registry that could be changed without compromising the intent of the downstream reconciliation process that would reduce the incidence of those types of breaches?

8 Process for granting exemptions

Under rules 19-22 Gas Industry Company may exempt any allocation participant from compliance with any of the Rules where, having received an application for exemption from any allocation participant, it considers the exemption is desirable to better achieve:

- the objectives set out in s43ZN of the Gas Act; and
- the purpose of the Rules.

Gas Industry Co considers that there is a need to review its process for granting exemptions and whether the current process for granting exemptions remains optimal given that the Rules have been in operation for some time.

Background

The purpose of the Rules is unambiguous. The Rules are to:

> "…establish a set of uniform processes that will enable the fair, efficient, and reliable downstream allocation and reconciliation of downstream gas quantities."

However, when the Rules were first introduced, there was a range of matters that needed to be addressed by way of exemptions. While not ideal, the exemption process was a pragmatic way of dealing with unforeseen circumstances pending rules changes to address the underlying issue or as a way of allowing allocation participants a degree of breathing space to achieve full compliance. For example, the issues discussed above in Section 4 should resolve specific concerns with the Rules for atypical gas gates.

Thus, the exemption provisions were originally intended as a transitionary measure to enable participants familiarity with the operation of and sufficient preparation for the implementation of the Rules, particularly where specific circumstances at "go live" would have created obvious compliance problems with the Rules (e.g. unmetered gas gates). Given the Rules have now been in operation for three years, Gas Industry Co considers there is little need to continue the exemptions for these purposes. Instead, the Rules should be amended to address issues that are currently being handled by way of exemptions.

Gas Industry Co is of the view that the exemption provisions should only be used when:

- a reasonable substitute is available that achieves the intent of the downstream reconciliation process; or
- in exceptional circumstances when Gas Industry Co must alter the allocations to achieve reasonable allocation results where they may otherwise not be feasible.

This view is consistent with the drafting in rule 19.1 which says that the industry body may approve an exemption on any terms and conditions that it thinks fit. Given this interpretation, Gas Industry Co considers that there are three options worth discussing for the purposes of reviewing the Rules.

Option 1: Status quo

On one hand, the exemption provisions provide a useful "out" clause for parties who discover unusual or unforeseeable circumstances that would likely result in on-going breach notifications in the absence of a successful exemption application.

On the other hand full and equal compliance with the Rules ensures that the purpose of the Rules is met, reduces compliance and administrative costs and ensures a level playing field for all participants. Several participants have raised this concern in submissions on past exemption applications.

Option 2: Remove the exemption provisions from the Rules

Arguably, in order to achieve full compliance with the Rules and ensure the purpose of the Rules is met, the exemption provisions could be removed. Participants would be required to fully comply with the Rules in full or risk receiving breach notifications from the allocation agent.

While this option would likely impose up-front compliance costs, particularly for TSOs, it could be reasonably argued that it is neither fair for all parties nor aligned with the intent of the Rules to grant exemptions from the Rules purely on the basis of imposed compliance cost.

The downside to this option would be to close the right to apply for an exemption in unforeseeable circumstances that may arise in future – and particularly if there are implementation issues with any of the potential changes to the Rules that arise from this Options paper.

Option 3: Prescriptively outline circumstances that will and will not warrant an exemption

Given the possible downsides with the options above, a middle ground option might be desirable that combines the ability to apply for an exemption in exceptional circumstances while otherwise requiring full compliance with the Rules.

Given the nature of the application process, Gas Industry Co would retain the discretion to approve or decline an exemption application. However, a rule change to amend rules 19 and 20 to prescriptively outline what constitutes an exemption is now possible. Gas Industry Co welcomes feedback on what the industry considers would be an "exceptional circumstance" and whether the exemption provisions require more prescription.

Q21. Do you agree that exemptions should only be permissible where there is a reasonable substitute available that achieves the intent and purpose of the Rules or in an "exceptional circumstance"? What sort of situations do you believe would warrant an "exceptional circumstance"?

Q22. If Gas Industry Co removes the exemption provisions, are there specific circumstances or situations that you believe warrant consideration for specific rule amendments now so as to remove the requirement for a future exemption?

9 Conclusion

Gas Industry Co will use the feedback it receives on this paper to determine which options will proceed to a Statement of Proposal. Once that review process is completed, it is unlikely that there will be another review of the Rules in the near future. Gas Industry Co therefore welcomes feedback at this point from industry participants on issues that have not been discussed in this Options Paper but that are considered worth reviewing.

Gas Industry Co reminds participants that any additional feedback should align with the Purpose of the Rules otherwise it is unlikely to be considered.

Gas Industry Co intends to issue a Statement of Proposal in June 2012. An indicative timetable is shown below.

Milestone	**Date**
Downstream Reconciliation – Options Paper Submissions close	6 February 2012
Downstream Reconciliation – Statement of Proposal Call for submissions	June 2012
Development of Rule changes completed	June 2013
Go-live of new Rules	October 2013

Before the Rules were created, an advisory group called the Gas Allocation and Reconciliation Team (GART) was formed to consider, amongst other matters, how to draft the Rules so that they would reflect the policy decisions made in transitioning from the Reconciliation Code to the Rules. Gas Industry Co considers that a similar advisory group would be useful for considering how to implement the policy decisions made as an outcome of this review and welcomes feedback from participants if this view is shared.

Q23. Given the Rules are unlikely to be reviewed again, are there other issues you would like Gas Industry Co to consider before a Statement of Proposal is released for consultation? Please be specific with your suggestion(s) and where possible provide supporting evidence.

Q24. Do you agree with the proposed timeframe for implementing any rule changes?

Q25. Do you consider that creating an advisory group similar to the GART is worthwhile for the purposes of developing rule changes as a result of this policy review?

Glossary

SADSV	Seasonal adjustment daily shaped values
TOU	Time of use - refers to a gas measurement system that records register readings on a daily basis
UFG	Unaccounted for gas