



Consultation on rule 37
percentage of error
determination under the
Gas (Downstream
Reconciliation) Rules 2008

Date issued: 9 September 2010
Submissions close: 23 September 2010





About Gas Industry Co.

Gas Industry Co was formed to be the co-regulator under the Gas Act.

As such, its role is to:

- recommend arrangements, including rules and regulations where appropriate, which improve:
 - the operation of gas markets;
 - access to infrastructure; and
 - consumer outcomes;
- administer, oversee compliance with, and review such arrangements; and
- report regularly to the Minister of Energy and Resources on the performance and present state of the New Zealand gas industry, and the achievement of Government's policy objectives for the gas sector.

Authorship

This paper was prepared by Andrew Walker

1

Introduction

Rule 37.3 of the Gas (Downstream Reconciliation) Rules 2008 (the Rules) requires, prior to the beginning of each gas year, Gas Industry Co to determine and publish a percentage of error for the accuracy of the consumption information provided for initial allocation (when compared against consumption information provided for final allocation). This accuracy requirement applies to consumption data for allocation groups three to six.

For the consumption periods in the gas year ending on 30 September 2009, Gas Industry Co determined the maximum percentage of error for the accuracy of the consumption information provided for initial allocation to be $\pm 15\%$.

For the consumption periods in the gas year ending on 30 September 2010, Gas Industry Co determined the maximum percentage of error for the accuracy of the consumption information provided for initial allocation to be $\pm 12.5\%$.

This consultation paper seeks submitters' views on the appropriate percentage of error to be determined by Gas Industry Co for the consumption periods in the gas year commencing 1 October 2010.

Two weeks are being allowed for consultation. Submissions are sought no later than Thursday, 23 September 2010. Submissions can be made by registering on Gas Industry Co's website www.gasindustry.co.nz and uploading your submission, preferably in the form of the submissions template attached as Appendix A to the consultation document.

All submissions will be published on the website after the closing date. For further information, see *Help for New Users of this Website* on the Gas Industry Co homepage. Submitters should discuss any intended provision of confidential information with Gas Industry Co prior to submitting the information.

2

Background and previous decisions

2.1 Policy background

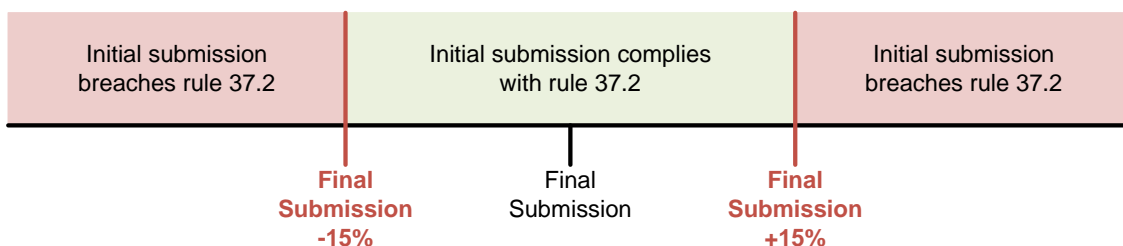
The accuracy of mass market consumption information has been an ongoing issue for the gas industry. Before the Rules were implemented, there was limited information available on how accurate estimates were and hence there was considerable industry support for introducing estimation accuracy criteria as a measure for improving information quality.

A discussion paper in January 2007 noted that estimation accuracy criteria would provide an incentive (previously lacking) for retailers to improve estimation methodologies. The same paper introduced the idea that submissions for the final allocation would serve as the most suitable baseline for a determination of estimation accuracy and, further, that the criteria should be fairly conservative, at least to begin with, given the lack of transparency under the previous regime to provide a sensible measure.

This discussion culminated in the inclusion of rule 37 in the Rules (excerpt provided in Appendix B). This rule sets out the measure of estimation accuracy described above and requires that Gas Industry Co determine, in consultation with participants, the percentage of error on an annual basis.

2.2 Preliminary decision

Following further consultation, the percentage of error threshold was set at $\pm 15\%$ for the first gas year under the Rules. That is, initial submissions for allocation groups three to six must, when aggregated at a gas gate level, fall within 15% of the final submission. This is illustrated in the diagram below.



Submissions on the proposed threshold noted variously that:

- the measure is only appropriate for the initial year
- the measure is the highest level of error that should be allowed
- the error should be subject to exceptional circumstances, particularly where a retailer has a small number of consumers and low associated volumes at a gas gate

In its analysis of submissions, Gas Industry Co noted that the information generated by the Rules will help to provide an objective view of how accurately retailers are managing to estimate consumption information. This would, in turn, allow further refinements of the accuracy measure. Gas Industry Co also appreciated that the introduction of the accuracy measure would likely result in increased compliance costs for retailers. This was taken into account in the setting of the initial 15% error threshold.

2.3 Subsequent decisions

In August 2009 consultation was undertaken on the percentage of error to be applied for the 2009/2010 gas year. Rule 37.4.2 states that Gas Industry Co must have regard to the extent to which retailers are able to comply with the percentage of error, but as no final allocations had yet been performed, compliance could not be tested. Instead, the results of interim allocations for all available months were used as a proxy for the final allocation results.

The analysis showed that out of 2670 submissions, 876 (33%) breached the percentage of error threshold. It also showed that all retailers showed some level of non-compliance, although there was a wide variety in the scale of non-compliance; the most accurate retailer only had 2.5% of submissions outside the threshold, whilst the least accurate retailer had 64.5% of submissions outside of the threshold.

The initial assessment provided in the consultation paper was that it would be appropriate for Gas Industry Co to either retain the 15% threshold for a second year, or reduce the threshold to 10%. The basis for this was the recognition that whilst a tighter measure would ultimately bring benefits to retailers and consumers (in terms of improved allocation practices), a more liberal accuracy percentage was perhaps more appropriate in the short term so as not to place unreasonable compliance expectations on retailers.

Of the six submissions on the consultation, four supported retaining 15%, one supported a reduction to 10% and one had a preference for a 5% percentage of error. A number of retailers recommended the introduction of a gigajoule threshold to remove instances where small changes in submissions create a breach if the retailer's gate volume is also relatively small. Other issues highlighted in submissions included the following:

- Upstream balancing charges are calculated using initial allocation data, and the lack of a wash-up for these charges creates a financial impact on retailers of other's inaccuracy of estimation.
- Producing accurate predictions is difficult, given the volatile nature of gas consumption (due to weather conditions, seasonality etc).
- There is a lack of incentive to improve estimation, due to the current global method of UFG allocation, which treats all retailers equally irrespective of estimation accuracy performance.
- A possible option for improving forward estimates would be for the allocation agent to generate dynamic, forward-looking seasonal shape values.
- There are both high-cost and moderate-cost options for improving estimation accuracy, such as more frequent meter reading and system or process enhancements. The cost of changes to improve estimation accuracy may be offset to some extent by the scope for those changes to mitigate financial risks.

In response to submissions, Gas Industry Co noted that:

- Rule 37 does not authorise additional mechanisms to address exceptions (such as a gigajoule threshold); however, in the consideration of the breach by the market administrator, the quantum of change relative to the size of the submission will go towards the decision of whether the breach raises a material issue.
- The rule 37 accuracy margin, and the Rules in general, should not be used as a mechanism to address problems or flaws in the upstream balancing framework; rather, this should be further explored by transmission system owners and shippers.
- Reducing the percentage threshold would reduce the opportunities for gaming. Further, it is hoped that a tighter threshold would provide greater incentive to improve the accuracy of data.
- Changes to the allocation methodology and the Rules to address the unfairness in allocation of UFG at the initial and the possible early publication of seasonal shape files will be investigated separately to the rule 37 issue.

In light of submissions and the further analysis undertaken, Gas Industry Co considered that a reduction of the percentage error threshold to 10% or lower would, at that stage, likely result in large and undue costs to achieve compliance. The determination was therefore a more modest tightening, to $\pm 12.5\%$.

3

Analysis of available data

As with previous decisions, it is instructive to analyse the available data on retailers' compliance with the rule 37 threshold. Last year's decision on the appropriate level for the percentage error threshold used analysis of submissions for the initial allocation compared with submissions for the interim allocation. This was the best available data at the time, as no final allocations had yet been performed.

For the determination being considered here, there are ten months of final submissions to compare against initial submissions, plus a further nine months of interim submissions, to be used as a proxy for the finals for those consumption periods.

3.1 Alleged breaches of rule 37.2

Final allocations have so far been performed for the consumption periods October 2008 to July 2009, all of which were subject to a 15% percentage error threshold. The breaches of rule 37.2 alleged by the allocation agent for these consumption periods, including a breakdown of whether the breaches were due to an under-estimate or an over-estimate, are shown in Table 1.

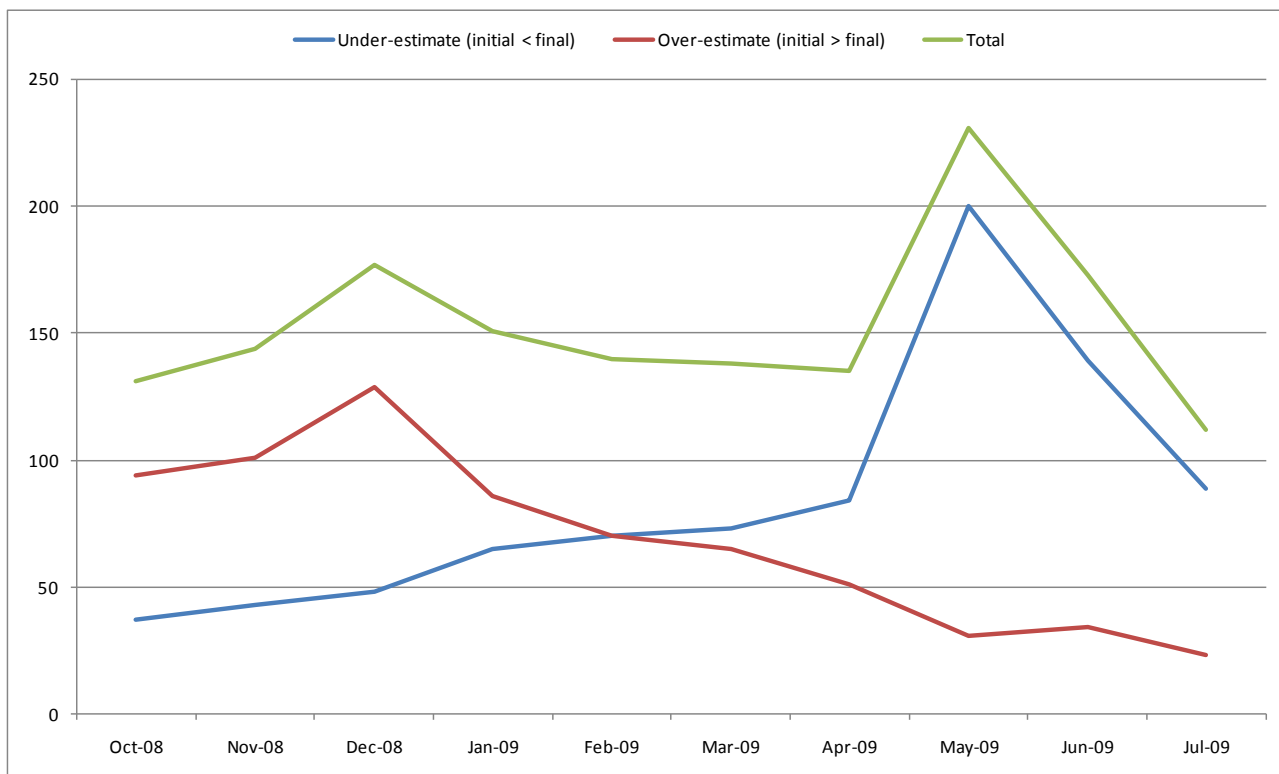
Table 1 Breaches of rule 37: October 2008 to July 2009

Consumption period	Breaches due to under-estimation (Initial < Final)	Breaches due to over-estimation (Initial > Final)	Total
October 2008	37	94	131
November 2008	43	101	144
December 2008	48	129	177
January 2009	65	86	151
February 2009	70	70	140
March 2009	73	65	138
April 2009	84	51	135
May 2009	200	31	231
June 2009	139	34	173
July 2009	89	23	112

Note: Breaches at gas gates that were the subject of the Exemption (DR08-02-S/DR08-04-S: Global 1-Month UFG Methodology) Notice 2009 are included, which explains any minor variations from previously published breach statistics.

Chart 1 illustrates the trend in breach activity so far, that is, a peak in under-estimation going into winter and a corresponding fall in over-estimates since their peak going into the previous summer. The overall number of breaches per month is at its lowest in July 2009.

Chart 1 Number of alleged breaches: October 2008 to July 2009



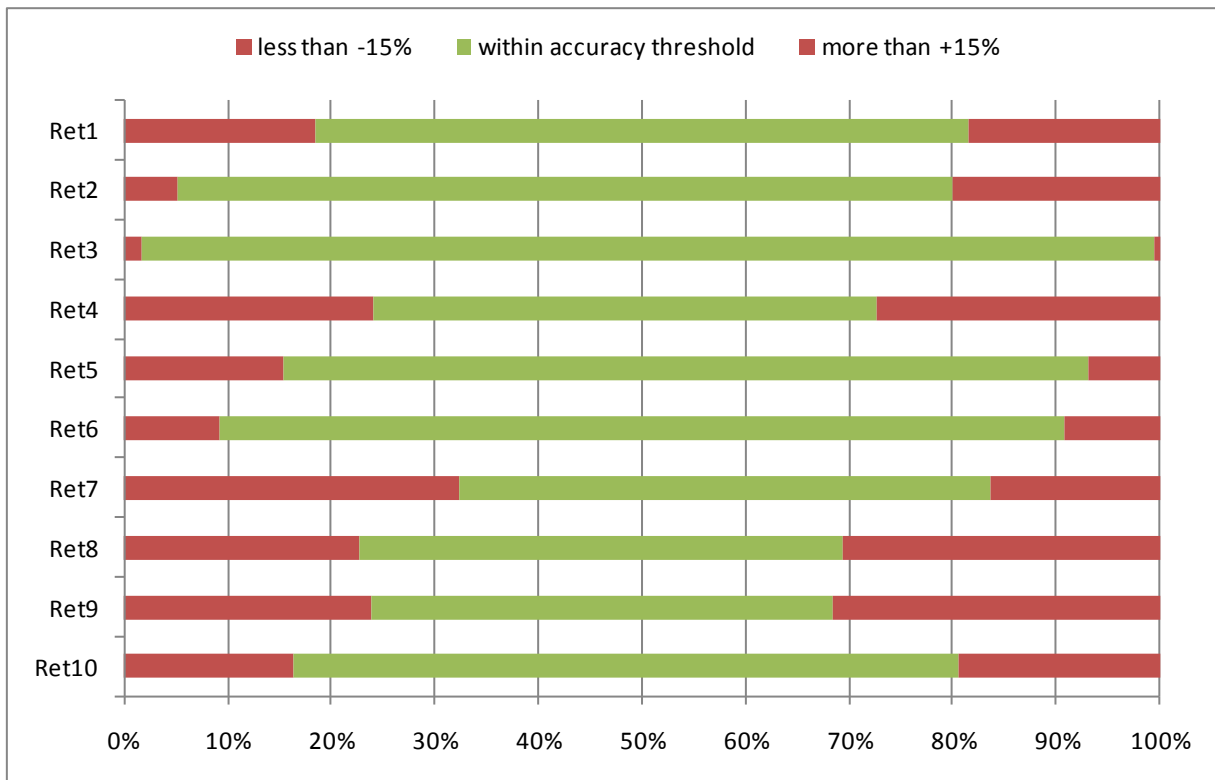
3.2 Retailer performance

Individual retailer performance can be tracked for the breaches alleged so far. Chart 2 shows each retailer’s compliance with rule 37, based on the number of gas gate submissions falling above, below and within the threshold for the period October 2008 to July 2009.

The results echo the findings of last year’s analysis of the initial versus interim comparison. The most accurate retailer complies with rule 37 for 98% of submissions and the least accurate retailer complies for 45% of submissions. It is no surprise that the retailers with predominantly TOU customers, and those who read meters monthly, perform better than mass market retailers with bi-monthly reads.

There is no obvious trend in over- or under-estimation, with most retailers having roughly equal shares of each type of breach (subject to breaches being aggregated over several months to account for the seasonal trend in over- and under-estimation). If retailers were routinely gaming the threshold to underestimate at the initial allocation then this would show up as a greater number of breaches of the lower bound.

Chart 2 Individual retailer accuracy performance: October 2008 to July 2009

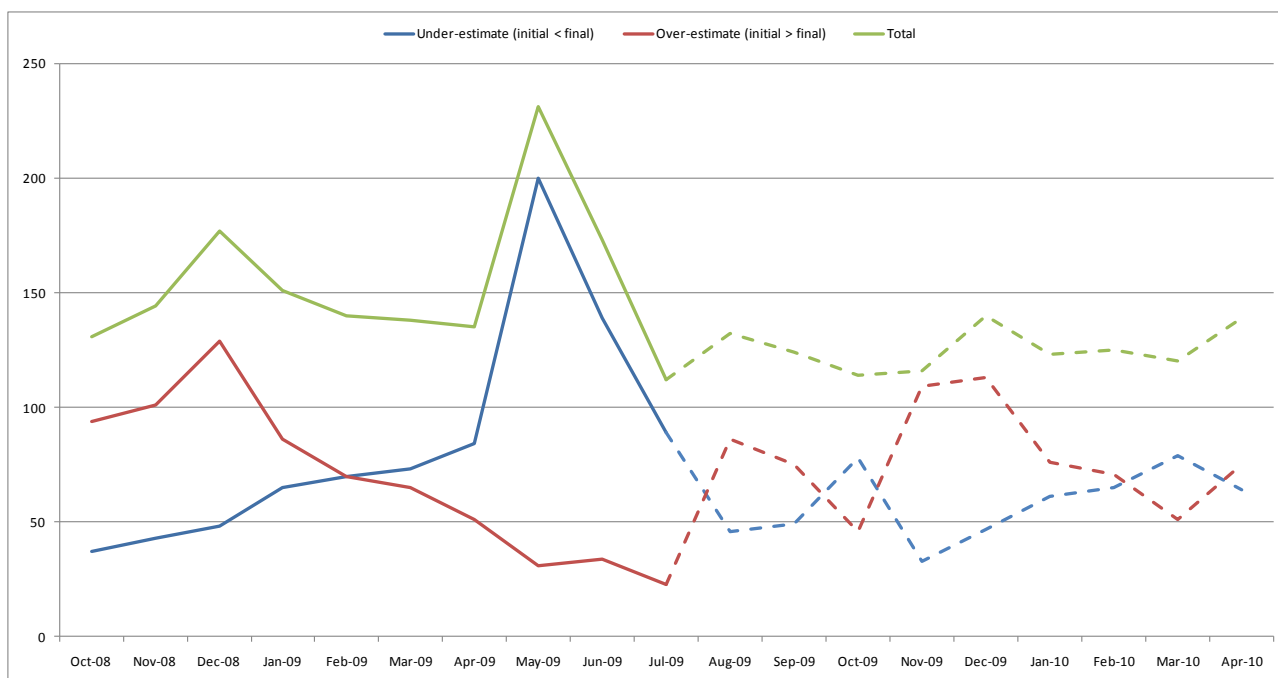


3.3 Forecasted breaches: August 2009 to April 2010

Using a comparison of initial and interim submissions it is possible to forecast the likely trend in breach activity in the period August 2009 to April 2010. The calculation of breaches incorporates the change in the percentage threshold from 15% to 12.5%, which effects consumption periods from October 2009 onwards.

Chart 3 continues the data displayed in Chart 1, extending the time period by the months for which interim submissions are available. The total number of breaches flattens out considerably following the winter 2009 peak and remains steady throughout the spring and summer period, albeit at lower monthly levels than the previous year (typically 20% less per month, year-on-year). Over-estimates again overtake under-estimates for the summer period—highlighting the seasonal lag in many retailers’ estimation methodologies—but switch back again by March.

Chart 3 Actual and forecasted breaches: October 2008 to April 2010



Note: Solid lines indicate actual data, broken lines indicate forecasted breaches based on a comparison of initial and interim submissions and with 12.5% threshold applied from October 2009

3.4 Application of a materiality threshold

In response to last year’s submissions, Gas Industry Co noted that rule 37 does not provide for a materiality threshold to remove breaches, but that the market administrator would have regard to the size (in gigajoules) of the breach, when determining materiality. Further, Gas Industry Co has recently formed the view that, under rule 19, it may exempt allocation participants from complying with rule 37 for ‘breaches’ under a certain gigajoule size.

Given that a common submission on tightening the percentage error threshold was that it would increase compliance costs (in terms of the costs of improving estimation accuracy in order to comply *and* the costs of dealing with the breach process where the rule was breached), it is useful to look at the effect and means of introducing a materiality threshold on the incidence of breaches.

Materiality threshold by way of rule 19 exemption

Under rule 19, the industry body is empowered to exempt allocation participants from complying with all or any of the Rules (on the application of an allocation participant).

Gas Industry Co has formed the view that an exemption (i.e. for all allocation participants with consumer installations in allocation groups 3 to 6) that exempts the relevant participants from complying with rule 37 for ‘breaches’ under a certain gigajoule size would reduce compliance costs significantly while still ensuring that the majority of the harm caused by breaches of rule 37 is still addressed. Based on breaches to date, a 200GJ threshold would nominally remove around 80 per

cent of breaches by number, yet would retain the larger breaches (i.e. the vast majority of volume) which are more likely to have impacted other participants.

If submitters respond favourably to this exemption proposal, then Gas Industry Co intends to circulate an appropriate application form for industry participants to fill out to apply for the exemption. At this stage, Gas Industry Co believes a 200GJ materiality threshold would be appropriate (see “Potential materiality thresholds” section below).

Please note that this exemption would only apply to rule 37 breaches going forward, breaches that have already been alleged will still need to be assessed by the market administrator.

Materiality threshold imposed by market administrator

This is an alternative scenario, which could apply if there is a lack of support for an exemption and could also apply to breaches already alleged. If a materiality threshold was introduced by the market administrator, the breaches falling under that threshold would still be reported by the allocation agent. It would be the market administrator who could exercise her discretion to not pursue the breaches on the basis that, given their size, they have had no material impact. Since the breaches are still alleged and circulated, each participant would have the opportunity to indicate if they have been impacted by a breach that fell under the threshold.

Potential materiality thresholds

Charts 4 to 9 in Appendix C illustrate the effect on the number of breaches of applying various breach thresholds and materiality thresholds. Charts 4 to 6 show the effect of various gigajoule thresholds being applied when the breach threshold is 15% for 2008/2009 and 12.5% for 2009/2010. Charts 7 to 9 show the effect of the same gigajoule thresholds applied if the breach thresholds had been set at 10% for the first two gas years under the Rules. This is to illustrate the extent to which the tightened breach threshold would be offset by the application of a materiality threshold. Table 2 summarises the data in Appendix C, giving the average number of breaches per month for each combination of thresholds.

Table 2 Average monthly breaches with various materiality and breach thresholds applied

Materiality threshold	Breach threshold for first two gas years	
	15%/12.5%	10%/10%
No threshold	134	175
50GJ	49	68
200GJ	24	35

The status quo position is the top left figure of 134 breaches per month. Tightening the threshold to 10% (top right figure) would increase average monthly breaches by 31%, but if a 200GJ materiality threshold was introduced as well (bottom right figure), the net effect would be a 74% reduction in

the average number of monthly breaches alleged (or found to be material if the threshold is imposed by the market administrator rather than by exemption).

3.5 Observations

Improvements in compliance

Before rule 37 breaches were alleged it was difficult to measure a retailer's estimation accuracy, or any improvements thereof. We are still in a position where we do not have 12 months of results to use as a baseline for each retailer's performance. However on the basis of results accumulated so far, and projected using interim allocation data, there is some evidence that the number of breaches of the threshold is falling based on year-on-year comparisons. Gas Industry Co also has anecdotal evidence from retailers that estimation accuracy is being addressed through system changes and improvements. Although there is a lag between any action taken to improve estimation methodologies and an identifiable improvement in results, the anecdotal evidence appears to correlate with the observed data.

Effect of tightening threshold for 2nd year

Though the interim allocation submissions are not a perfect proxy for the final submissions¹, there is no evidence from the analysis undertaken that the tightening of the threshold to 12.5% has caused a significant increase in non-compliance. Chart 3 shows that, on the contrary, breach levels in the period October 2009 to April 2010 are around 20% lower than the same period in the previous gas year (with the higher threshold).

Individual retailer compliance

Mass market retailers continue to have the highest proportion of breaches of the accuracy threshold.

Significance of May 2009

May 2009 is the consumption period with the highest number of breaches so far, as was to be expected given the colder than average temperatures and subsequent high levels of UFG experienced at the initial allocation. This highlights the fact that many retailers use a retrospective measure for forward estimation (for example a function of long-run average temperatures for the particular month, or the use of consumption for the same period in the previous year as a predictor). This necessarily means that the estimation algorithm works best when temperatures throughout the month are close to average temperatures for that month.

One method of mitigating the effect of the invariable inconsistency of the weather is for the allocation agent to publish the seasonal adjustment daily shape values in advance of the submissions deadline for the initial allocation. This proposal, put forward in the Strata review of retailer estimation methodologies, is currently being investigated as part of the policy review of the Rules.

¹ 85% of submissions for the interim allocation consist of at least 95% historic estimates and 90% of submissions for the final allocation consist of at least 95% historic estimates. There is therefore only minimal scope for a significant change in submission quantities.

Application of materiality threshold

Applying a materiality threshold, to remove breaches where the difference between initial and final submissions is small in gigajoule terms, greatly reduces the number of overall breaches. The reduction in breaches due to the application of a materiality threshold is more significant than the increase in breaches due to a tighter breach threshold.

4

Proposal for percentage error

4.1 Proposal for 2010/2011 gas year

Based on previous decisions and submissions, and the analysis undertaken above, Gas Industry Co's initial assessment is that a $\pm 10\%$ percentage error threshold would be appropriate for the gas year beginning 1 October 2010. Subject to industry response, Gas Industry Co will also consider granting an exemption from compliance with rule 37.2 for breaches under a certain gigajoule size.

4.2 Reasons in support of proposal

Primary aim of rule 37

The primary aim of rule 37 is to ensure that the consumption information provided for the initial allocation is as accurate as possible. The relatively conservative threshold set for the 2008/09 gas year took into account the paradigm shift of the new reconciliation arrangements and the lack of transparency in estimation accuracy information. Gas Industry Co has always intended to tighten the threshold given more experience with the Rules and, given that they are entering their third year of operation, the proposed 10% threshold is consistent with this view.

Capturing the market impact of inaccurate submissions

The financial harm caused by inaccurate initial submissions is reflected in the balancing charges which are levied based on allocated volumes and are not revisited after the initial allocation. The only means to seek compensation for balancing charges incurred as a result of other retailers' inaccurate submissions is through the compliance process. By tightening the accuracy threshold for breaches, a greater degree of inaccurate submissions are captured by the compliance regime, so the scope for compensation is wider and the operation of the rules fairer.

Materiality threshold

Gas Industry Co seeks submitter's comments on the implementation of an exemption which effectively implements a 200GJ materiality threshold on future breaches of rule 37. The analysis in section 3.4 suggests that a 200GJ threshold would nominally remove around 80 per cent of breaches by number, yet would retain the vast majority of breach volumes which are more likely to have impacted other participants.

Additionally, the market administrator may shortly implement a 200GJ materiality threshold on existing breaches of rule 37.

Other work being undertaken to address compliance

Gas Industry Co appreciates that some participants have concerns over the cost of complying with a tighter threshold and of dealing with the compliance process where the rule is breached. A number of options are being pursued which will hopefully address this workload, provide a means to enable better estimation and provide a greater incentive to improve performance. Gas Industry Co is investigating:

- whether the early publication of SADSVs by the allocation agent (via exemption or rule change) could help retailers in their production of historic and future estimates. SADSVs reflect actual gas flows for the consumption period so may provide a more accurate measure than a retrospective algorithm; and
- the effectiveness of an alternative to the current initial allocation methodology, which would allocate UFG based on each retailer's estimation accuracy performance in recent months. Such a methodology would provide an even greater incentive to improve estimation of consumption information.

4.3 Questions for submitters

Q1: Do submitters support the determination of a $\pm 10\%$ percentage of error for consumption periods in the 2010/2011 gas year under rule 37.3? Please provide reasons for your preference and indicate your views in respect of each option.

Q2: Do submitters consider the information available since go-live indicates that a change to the existing percentage of error is appropriate or not? Please provide reasons.

Q3: In respect of the proposal for the percentage of error, do submitters have any comments or information in relation to the following matters?

- The primary aim of ensuring consumption information provided for initial allocation is as accurate as possible when compared with consumption information provided for final allocation.

- The extent to which retailers are able to comply with the percentage of error for the accuracy of consumption information provided for initial allocation

- Any expected costs that would be reasonably incurred by retailers to achieve compliance with the percentage of error for the accuracy of consumption information provided for initial allocation

- Any other matters relevant to Gas Industry Co's determination

Q4: Do submitters support an exemption for all percentage of error breaches that are less than 200GJ outside compliance with rule 37.2? Please provide reasons.

Appendix A Recommended format for submissions

To assist Gas Industry Co in the orderly and efficient consideration of submitters’ responses, a suggested format for submissions has been prepared. This is drawn from the questions posed in the body of this consultation paper. Submitters are also free to include other material in their responses.

Submission from:..... (company name and contact)

Question	Comment
<p>Q1: Do submitters support the determination of a $\pm 10\%$ percentage of error for consumption periods in the 2010/2011 gas year under rule 37.3? Please provide reasons for your preference and indicate your views in respect of each option.</p>	
<p>Q2: Do submitters consider the information available since go-live indicates that a change to the existing percentage of error is appropriate or not? Please provide reasons.</p>	
<p>Q3: In respect of the proposal for the percentage of error, do submitters have any comments or information in relation to the following matters?</p> <ul style="list-style-type: none"> •The primary aim of ensuring consumption information provided for initial allocation is as accurate as possible when compared with consumption information provided for final allocation. •The extent to which retailers are able to comply with the percentage of error for the accuracy of consumption information provided for initial allocation. •Any expected costs that would be reasonably incurred by retailers to achieve compliance with the percentage of error for the accuracy of consumption information provided for initial allocation. •Any other matters relevant to Gas Industry Co’s determination. 	
<p>Q4: Do submitters support an exemption for all percentage of error breaches that are less than 200GJ outside compliance with rule 37.2? Please provide reasons</p>	

Appendix B Rule 37

37. Accuracy of consumption information for initial allocation

- 37.1** This rule applies to consumption information at a **gas gate** provided to the **allocation agent** for **consumer installations** in **allocation groups** 3 to 6 in respect of a **consumption period**.
- 37.2** For a **consumption period**, the accuracy of the consumption information provided by a **retailer** under rule 31 for **initial allocation** must, when compared with the consumption information provided by that retailer under rule 33 for **final allocation**, fall within the percentage of error determined and **published** by the **industry body** under rule 37.3.
- 37.3** Prior to the beginning of each **gas year**, the **industry body** must, after consulting with **allocation participants**, determine and **publish** the percentage of error for the accuracy of the consumption information provided for **initial allocation** to be applied to the **consumption periods** in the following **gas year** in accordance with rule 37.2.
- 37.4** In making its determination under rule 37.3, the **industry body** must have regard to the following matters:
- 37.4.1** The primary aim of ensuring consumption information provided for **initial allocation** is as accurate as possible when compared with consumption information provided for **final allocation**;
- 37.4.2** The extent to which **retailers** are able to comply with the percentage of error for the accuracy of consumption information provided for **initial allocation**;
- 37.4.3** Any expected costs that would be reasonably incurred by **retailers** to achieve compliance with the percentage of error for the accuracy of consumption information provided for **initial allocation**; and
- 37.4.4** Any other matter it considers relevant to its determination.

Appendix C Application of a materiality threshold

Chart 4 15% and 12.5% breach thresholds and no materiality threshold applied

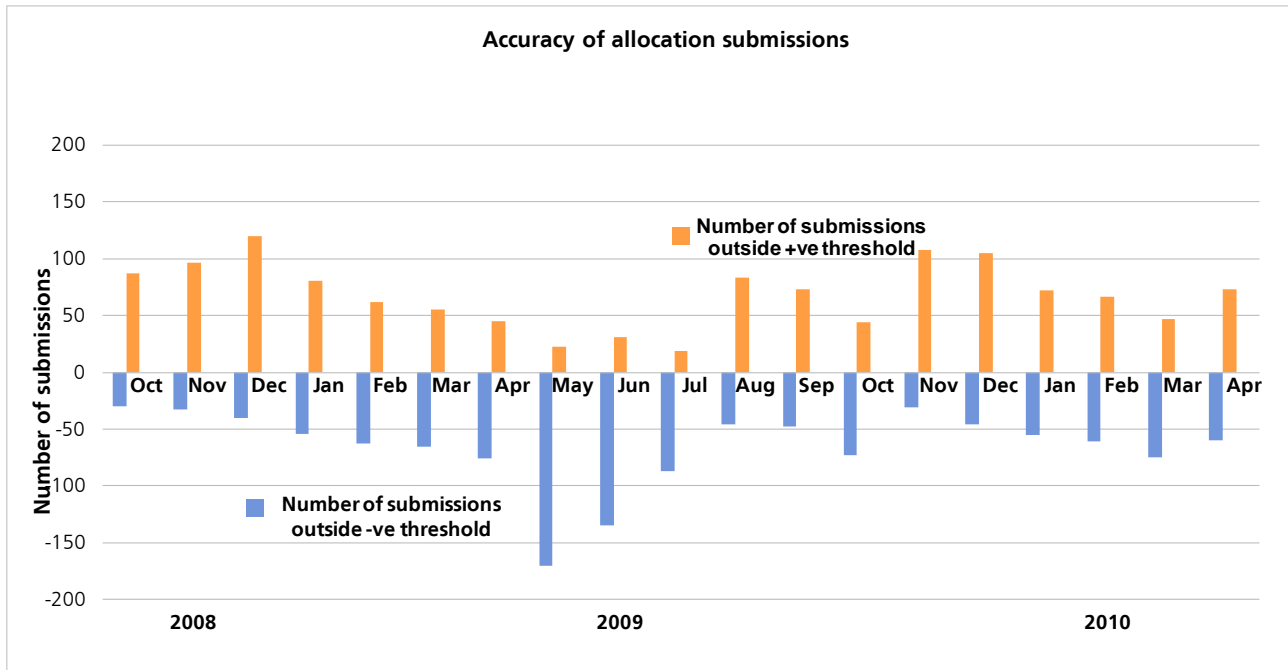


Chart 5 15% and 12.5% breach thresholds and 50GJ materiality threshold applied

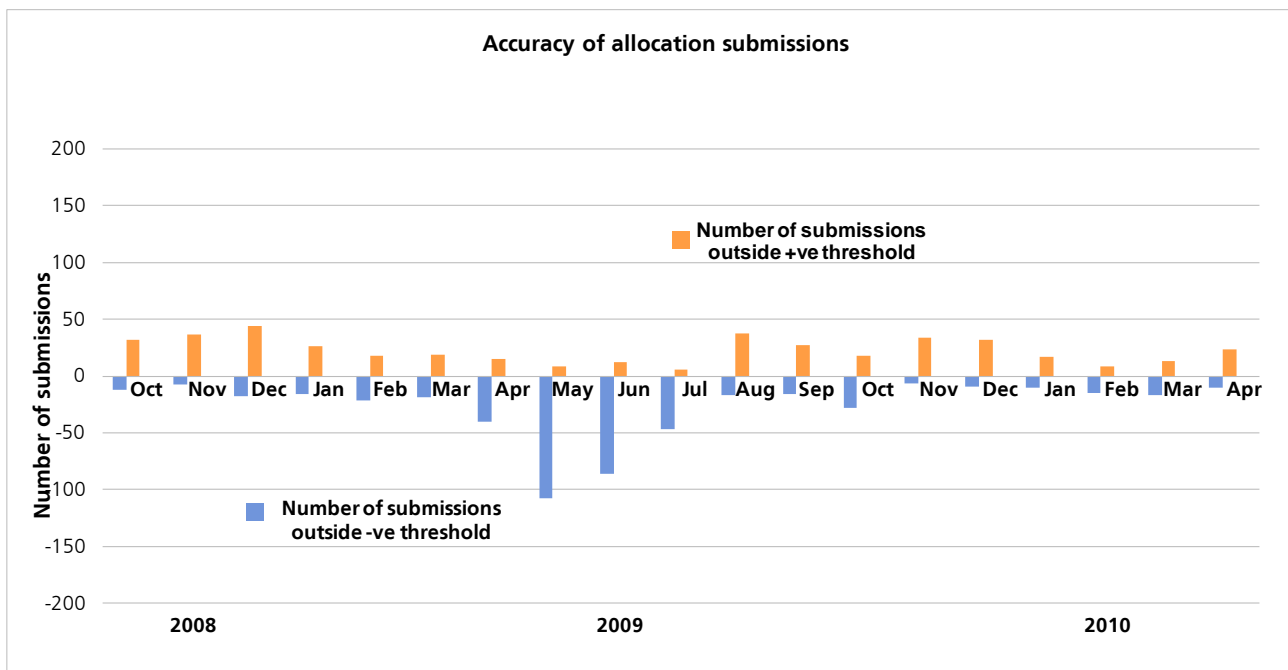


Chart 6 15% and 12.5% breach thresholds and 200GJ materiality threshold applied

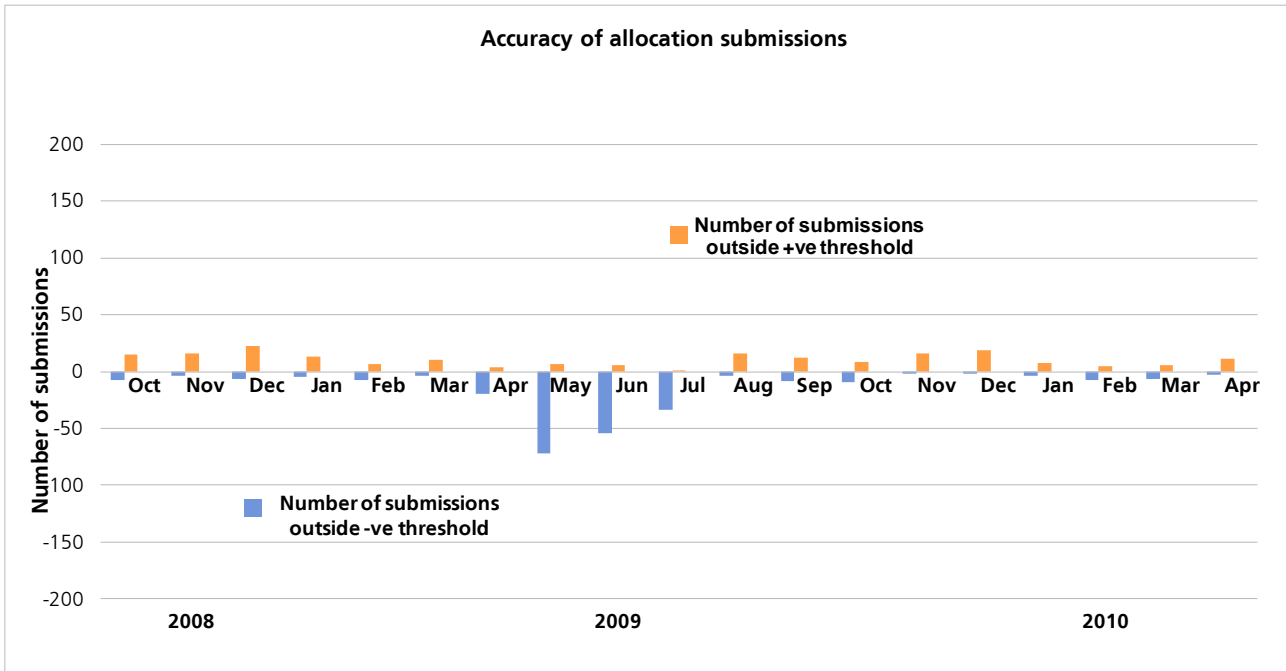


Chart 7 10% breach threshold and no materiality threshold applied

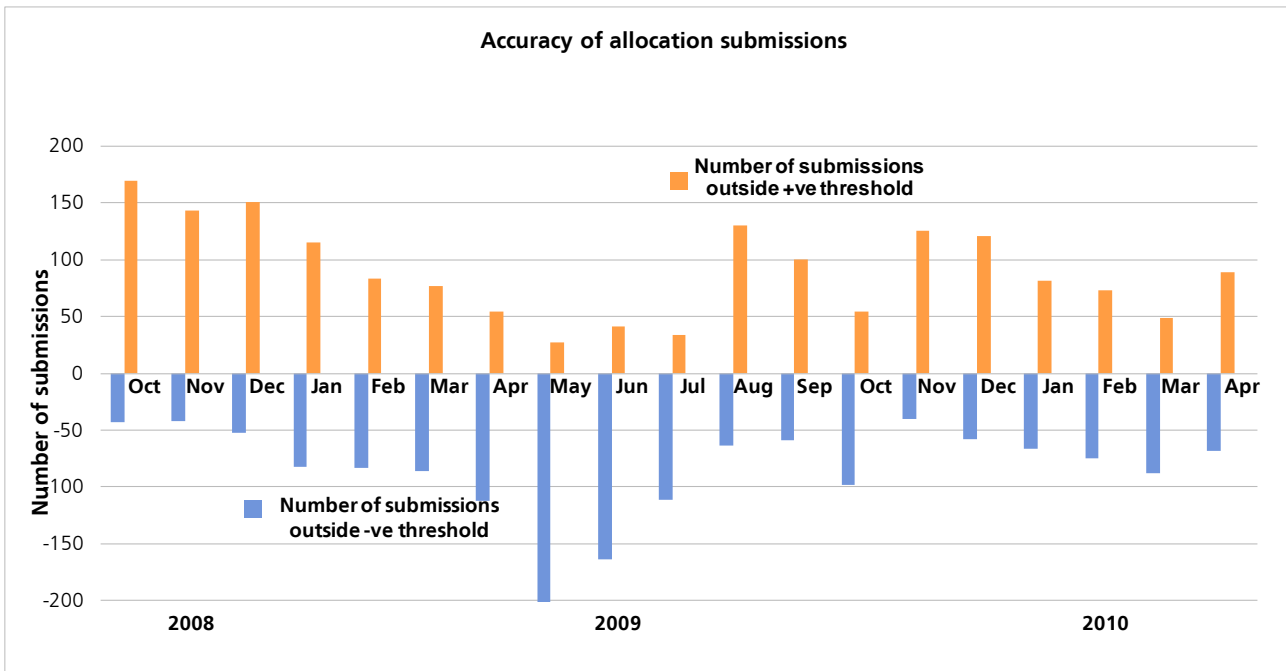


Chart 8 10% breach threshold and 50GJ materiality threshold applied

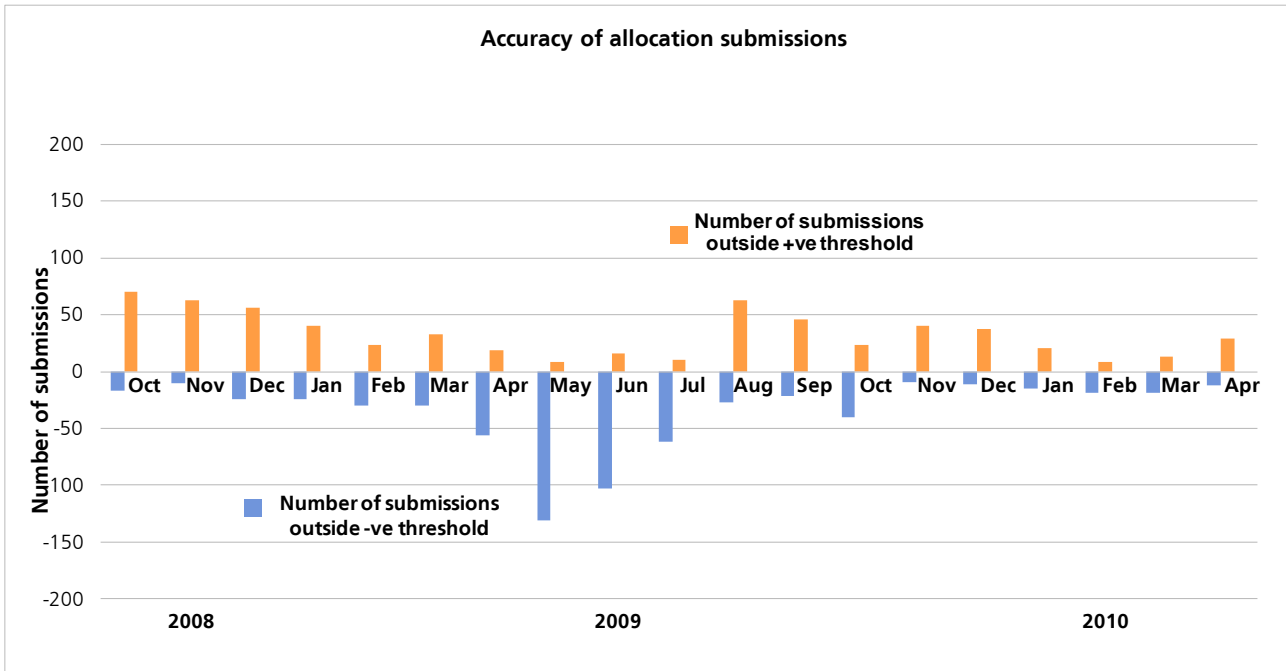


Chart 9 10% breach threshold and 200GJ materiality threshold applied

