

# Performance Measures Quarterly Report for the period ending 31 March 2011

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## 1 Summary

This report provides an update on the performance measures that Gas Industry Co monitors on a regular basis. The purpose of these measures is to track the performance of the Gas (Switching Arrangements) Rules 2008 (the 'Switching Rules'), the Gas (Downstream Reconciliation) Rules 2008 (the 'Reconciliation Rules'), and the Gas Governance (Critical Contingency Management) Regulations 2008 ('CCM Regulations'), both in terms of activity related to these rules and the competitive outcomes that they foster. Because of the timing of the release of this report, data have been included to the end of April 2011.

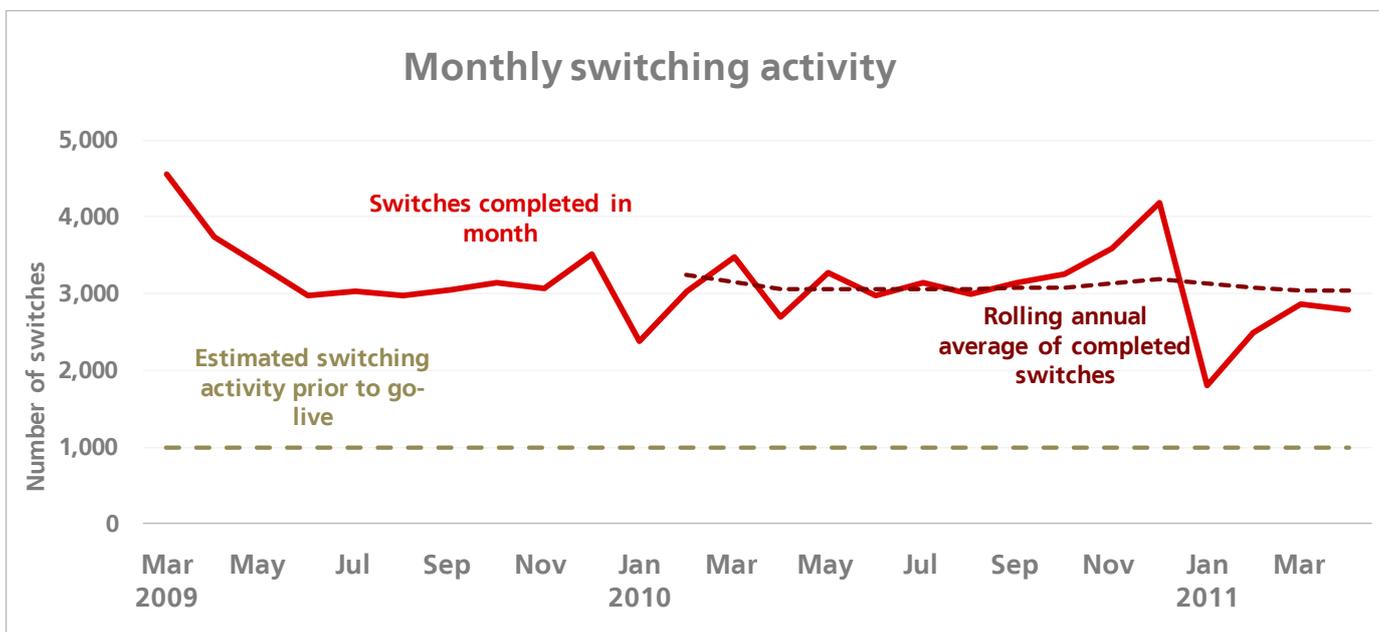
Highlights of the report:

- The level of switching remains at slightly more than 3,000 per month, for an annual churn rate of about 15%. In comparison, the annual churn rate for electricity is about 17.5%.
- The time to process switches has declined, on average by about 50% since the start of the gas registry.
- The incidence of unaccounted-for gas, or UFG, continues to decrease.
- Performance and event audits continue to uncover sources of UFG, which industry participants are taking steps to address.
- A test of the arrangements put into place under the Gas Governance (Critical Contingency Management) Regulations 2008 was successfully completed. The Critical Contingency Operator has identified a number of minor process improvements that would help the curtailment processes to operate more smoothly, and these recommendations are being progressed by industry.

## 2 Switching performance measures

### Monthly switching activity

Switching activity in recent months has been slightly below 3,000 switches per month, though the rolling annual average of monthly completed switches remains at slightly above 3,000 per month. The annual switching rate, also known as churn, is about 15%. This figure compares with the 17.5% annual churn rate in electricity. Prior to the gas registry going live in March 2009, approximately 1,000 switches were processed on a monthly basis, and the annual churn rate was approximately 4.8%.



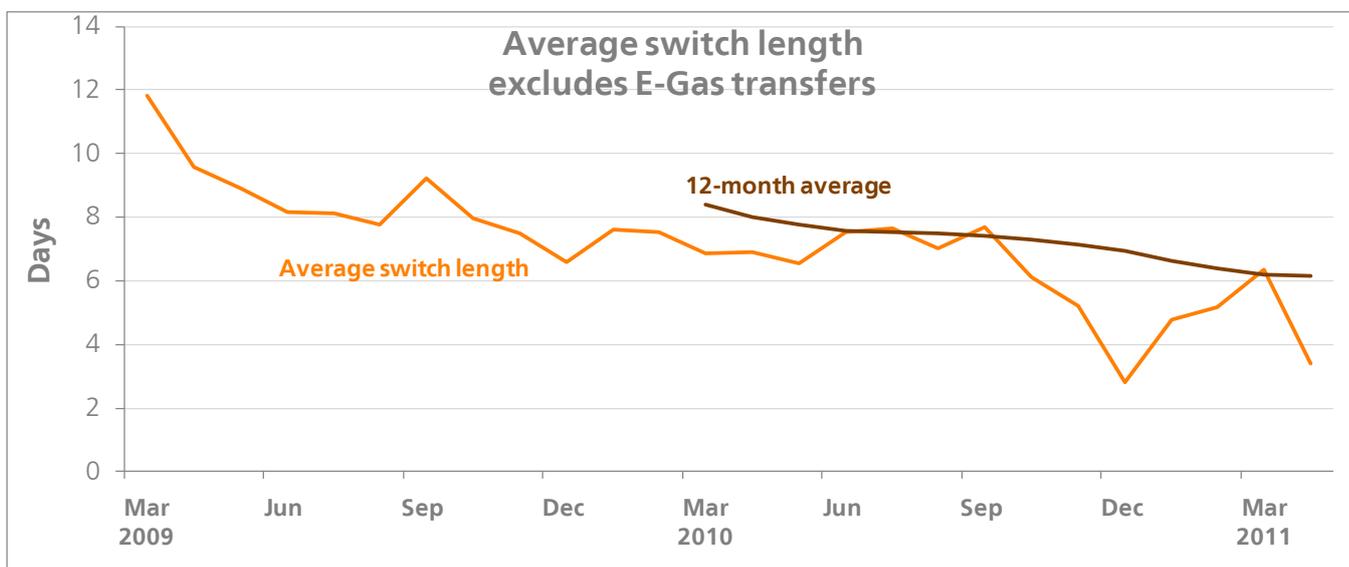
The slightly reduced rate of switching in recent months might reflect the exit from the market of the E-Gas group. That retailer competed aggressively for market share and there was a high rate of churn between E-Gas and Todd retailers. Note that the chart above excludes the transfer of about 6,350 E-Gas customers to Nova Energy in November as a result of Nova purchasing the customer base from BDO, E-Gas's liquidator.

Additionally, the chart includes only switches that occurred on open-access distribution networks; switches from open-access to bypass networks (or vice versa) would not be recorded as a switch in the Gas Registry.

### Time to process switches

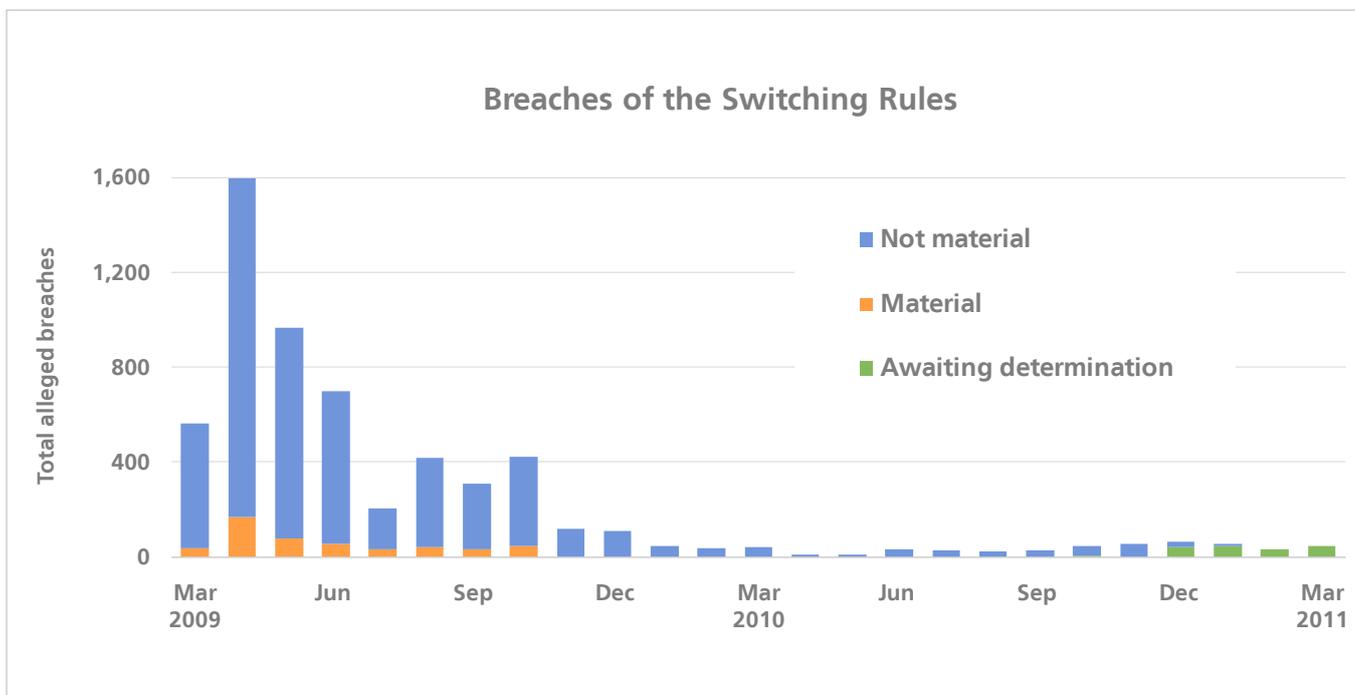
This is a new measure Gas Industry Co is tracking, enabled by a recently added reporting capability of the switching registry. The chart below shows the average length of time it has taken to process the switch requests that have been received in a month. It shows that

processing time has decreased since the inception of the Switching Rules in March 2009 – from 10 to 12 days to an annual average of just over six days.



### Number and severity of breaches to the Switching Rules

The number of switching breaches has fallen significantly since the inception of the Switching Rules, as has the severity of the breaches. The Market Administrator has not determined a breach of the Switching Rules to be material since October 2009.

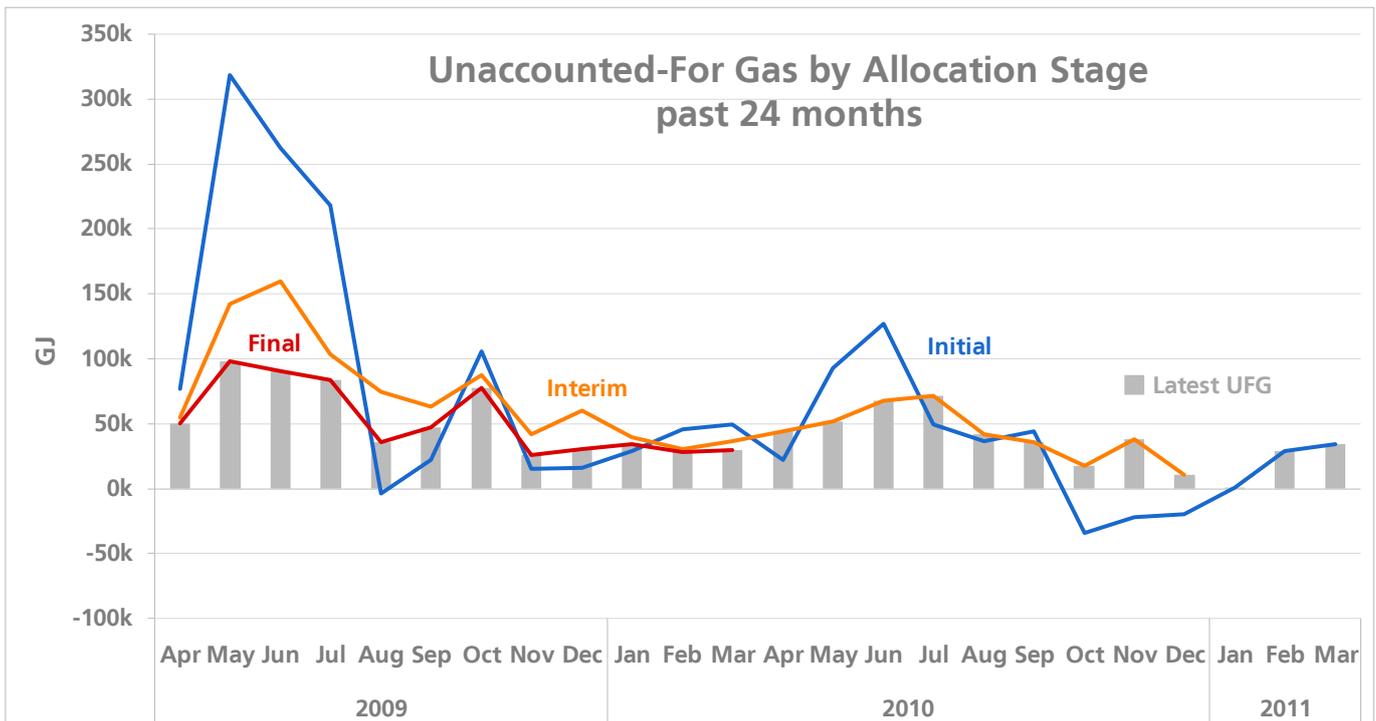


### 3 Allocation and reconciliation performance measures

#### Volumes of Unaccounted-for Gas

This chart compares total UFG quantities by consumption month and allocation stage (initial, interim or final). The grey bars show UFG based on the most recent data available.

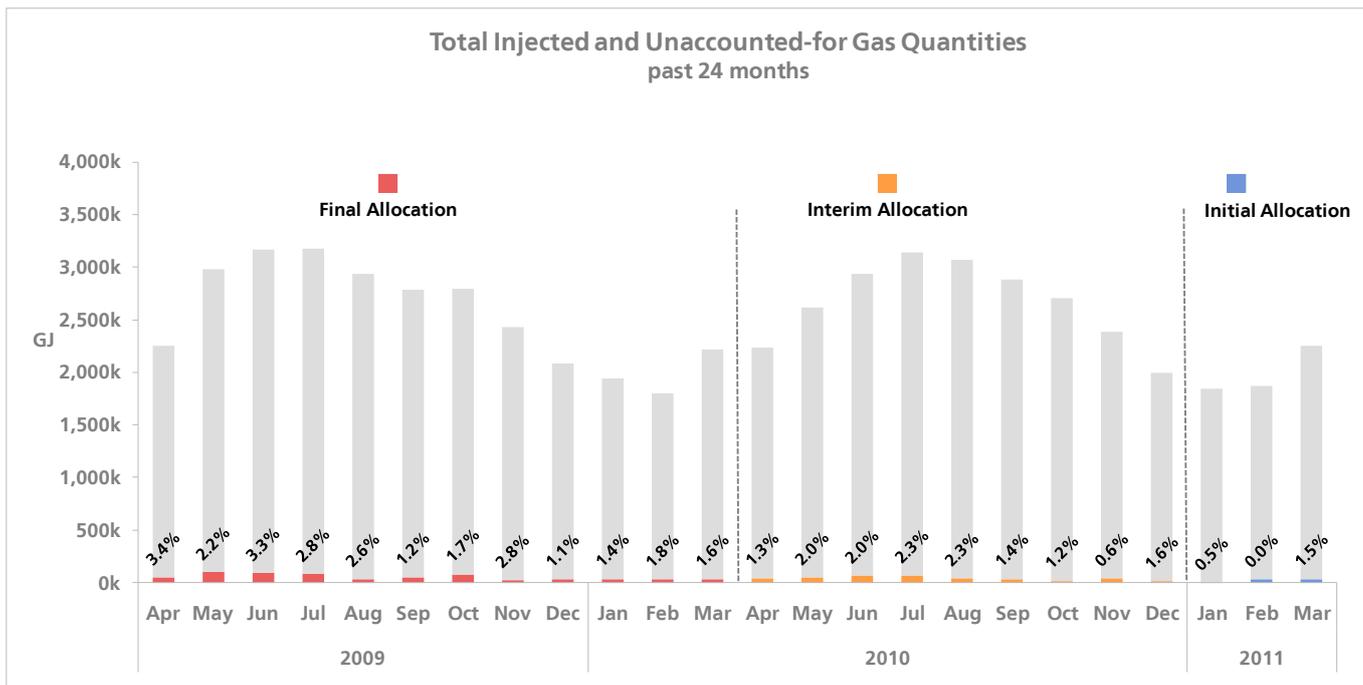
For the 12 months ending March 2010, total UFG was more than 631 TJs. In the most recent year, total UFG was 441 TJs – a decrease of 30%.



The reduction in UFG reflects a number of improvements that have been catalysed by the introduction of formal rules. Gas allocation is now a transparent, rules-based process. The programme of performance and event audits has identified numerous error and measurement issues. The resolution of these issues will help to continue the downward trend in UFG.

This chart shows the amount of unaccounted-for gas in comparison to the total amount of gas consumed each month. The grey bars show gas consumption at allocated gas gates, which follows a seasonal pattern: higher in winter and lower in summer. UFG as a percentage of volume follows a similar seasonal pattern.

UFG accounted for 2.1% of injected gas volumes in the year ending March 2010; in the year to March 2011, UFG was 1.5% of injected volumes.



If UFG were primarily caused by metering inaccuracies, then it would be counter-intuitive for UFG (as a percentage) to show a seasonal trend. One possible explanation is the presence of 'orphan' customers; ie, gas consumers who do not have a gas retailer. Their consumption, by definition, would appear as UFG.

A number of orphan customers have been identified in the course of resolving the remaining E-Gas ICPs on the gas registry. There is no reason to assume that other retailers are immune to this issue. Once customers stop receiving bills from their retailers, they may not be highly incentivised to correct the situation. Given the practical difficulties with identifying orphan gas customers, consideration will be given to how to address this issue in a cost-effective manner.

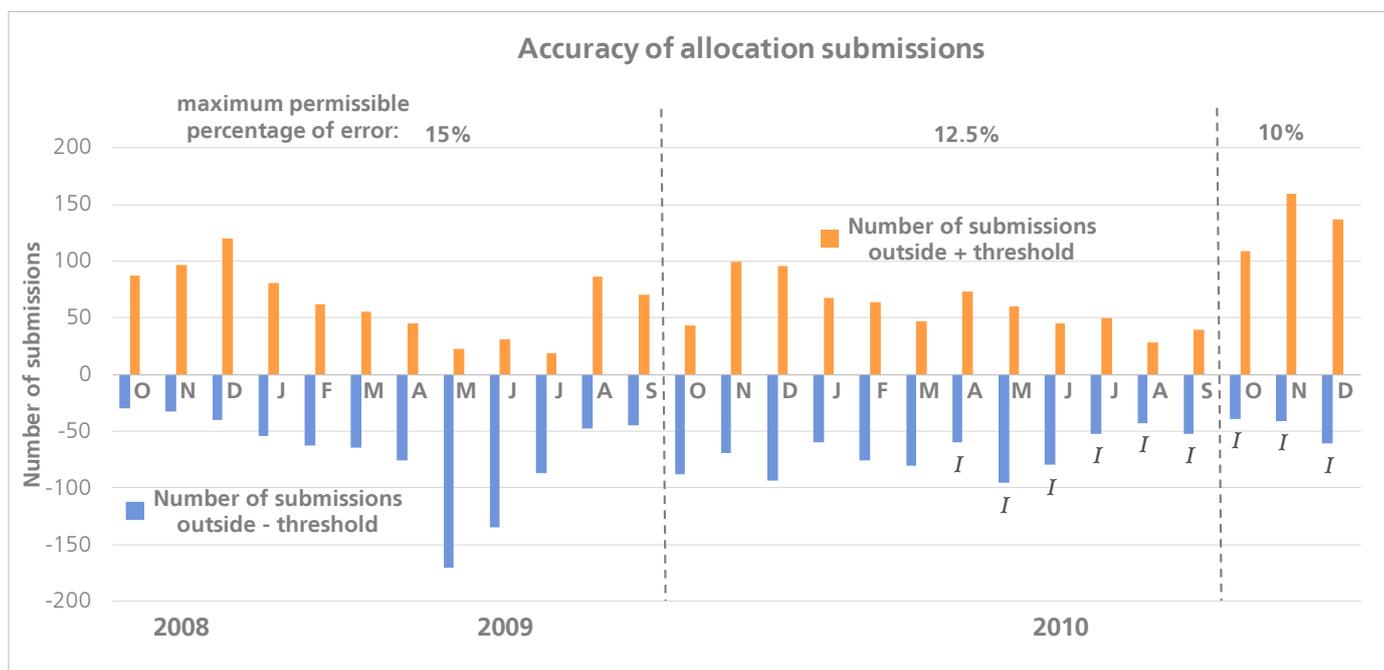
### Accuracy of submission data

The accuracy of initial submissions is important, as balancing and peaking charges on the Vector transmission system are levied on the basis of initial allocation results and are not subsequently washed up. This means that the balancing costs of the UFG created through inaccurate initial consumption submissions fall onto all retailers at the affected gate. To limit

the impact of this effect, the Reconciliation Rules require that initial consumption submissions are within a specified percentage of the final (and most accurate) consumption submissions.

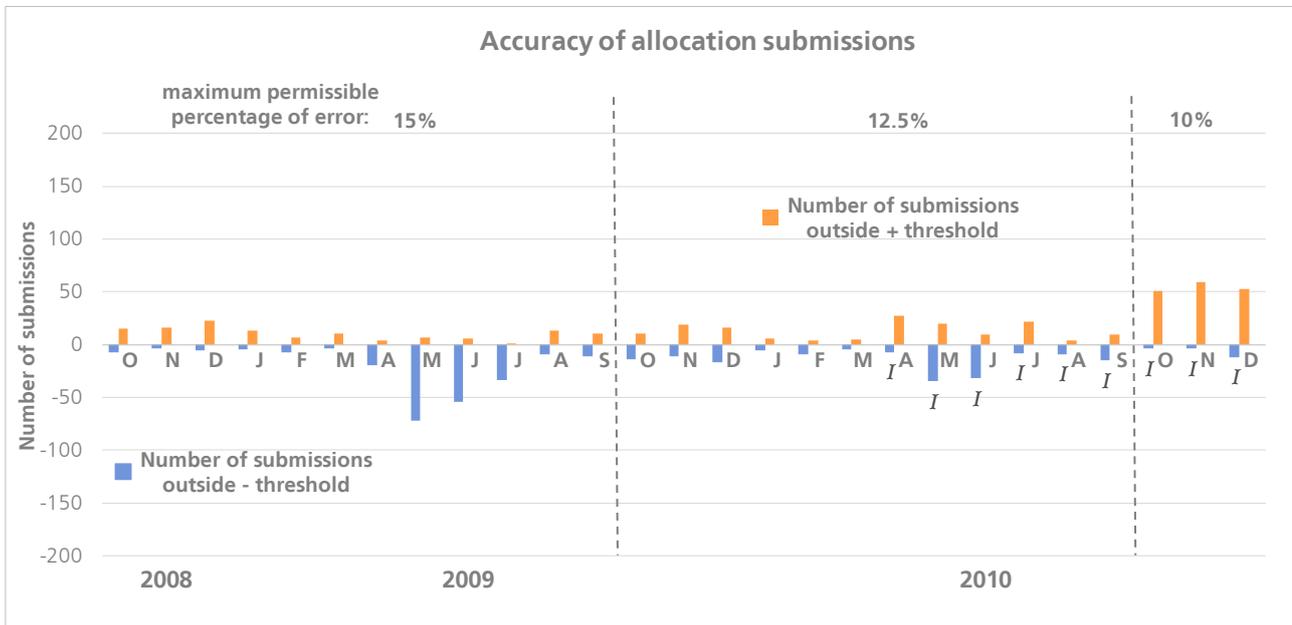
The chart below shows the number of retailer submissions that were outside the maximum permissible error threshold. For this analysis, final submissions were compared to initial allocation submissions for the months they were available (Oct 08 – Mar 10). Other months use interim submissions (in place of final) for the comparison data and are marked with I in the chart below. The percentage of error relevant to the consumption month has been used to measure accuracy: 15% in the 2008-09 gas year, 12.5% in 2009-10, and 10% in 2010-11.

Surprisingly, there has been an uptick in the number of submissions outside the accuracy threshold since October. For the months of October, November, and December 2010, a large number of initial submissions were for volumes more than 10% greater than the volumes submitted at the interim allocation stage. Interestingly, although this effect is due partially to the tightened accuracy threshold that went into effect in October, the lower threshold is only part of the answer, as a large number of potential breaches would also have occurred if the threshold had remained at 12.5% or even 15%.



The market administrator now uses a volume threshold of 200 GJ as a means of differentiating those breaches that are likely to have had a materially adverse effect on other market participants. The chart below shows the number of accuracy breaches that involve gas quantities larger than 200 GJ. As a comparison of the two charts illustrates, there is a significant proportion of accuracy breaches that have involved less than 200 GJ. Deeming

these breaches not material allows industry participants to focus on addressing the harm caused by larger volume estimation errors.

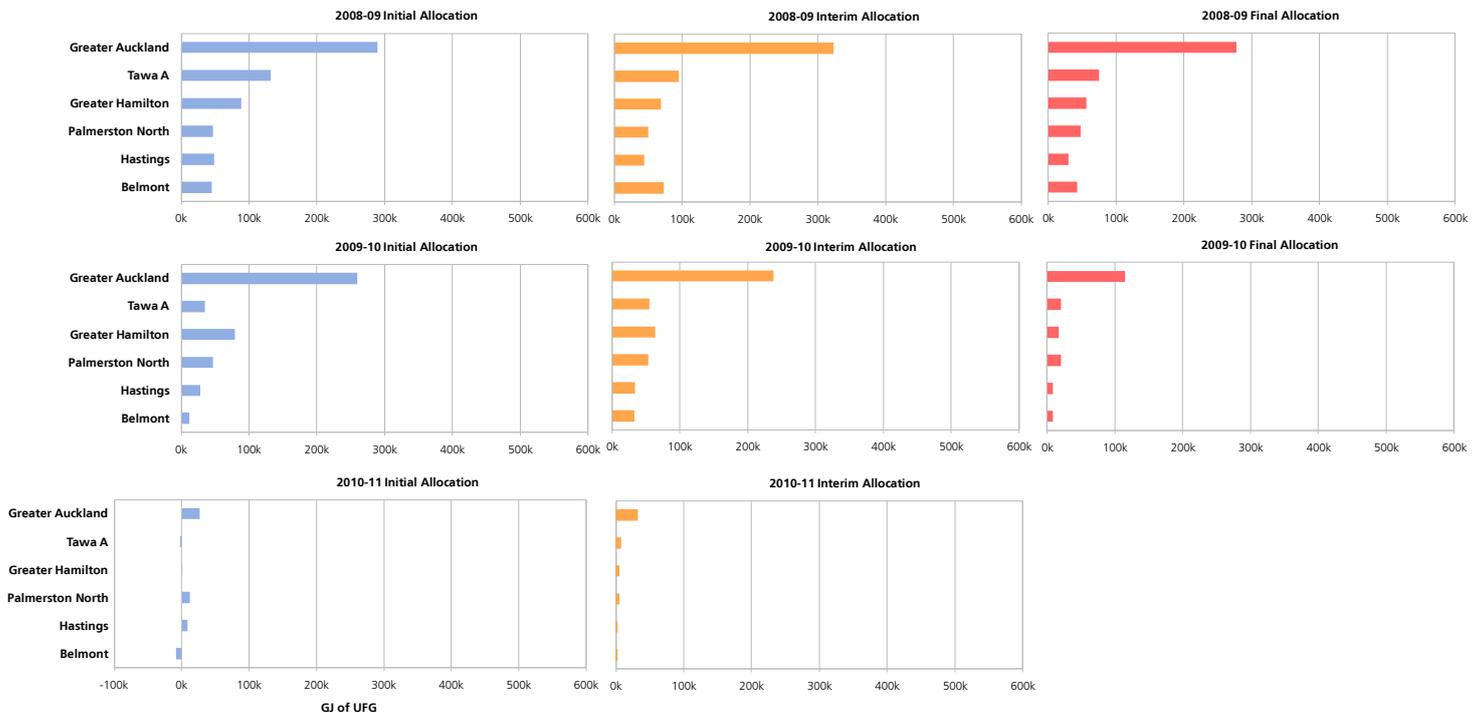


## Gas gates where UFG is the highest

Greater Auckland gas gate continues to be the largest contributor of all the gas gates to UFG volumes, followed by Tawa A, Belmont, Greater Hamilton, and Palmerston North. This pattern is roughly consistent over all three allocation cycles and across gas years, indicating that UFG is a persistent issue at these gates.

All allocations have now been performed for the 2008-09 gas year and are shown in the top row below. For the 2009-10 year, shown in the middle row, initial and interim allocations have been done for all 12 months; as well as the final allocations for October through March 2010. Comparing the initial and interim allocations for those gas years shows a trend of decreasing UFG.

For the 2010-11 gas year, initial allocations have been done for October 2010, and January 2011 through March 2011; and interim allocations for October through December 2010.



## Audits commissioned

### Event audits

There have been two recent event audits into the causes of high UFG. The report of the Greater Hamilton audit is now final and is available on the Gas Industry Co website. That audit found that 29 TJ of the 65 TJ of annual UFG experienced at that gate – about 45% – could be explained by the following causes:

- Incorrectly set up Time of Use meter;
- Inaccurate retailer submissions; and
- Inaccuracies in converting meter readings into energy, particularly the use of erroneous meter pressure and altitude data, and a failure to account for the Joule-Thomson effect.<sup>1</sup>

An event audit of Palmerston North has also been completed and the draft report is with industry participants for comment. Although the conclusions are not final, they are broadly consistent with the findings of the Greater Hamilton audit. In Palmerston North, about 19.7 TJ of the annual UFG of 60.1 TJ (33%) could be explained by:

- Inaccurate retailer submissions;
- Inaccuracies in converting meter readings to energy, as listed above. This audit also highlights the use of inaccurate temperature data; and
- Meter reading errors.

Correction of these errors should reduce annual UFG factors at those gas gates. Given the success in identifying causes of UFG through audits, Gas Industry Co will continue to commission event audits as a means of targeting those gates with higher than normal AUFG factors.

### **Performance audits of retailers**

The baseline performance audits of Genesis Energy and Mercury Energy under the Reconciliation Rules are now complete and are available on the Gas Industry Co website. Performance audits of the remaining retailers have been scheduled and will be completed by the end of June.

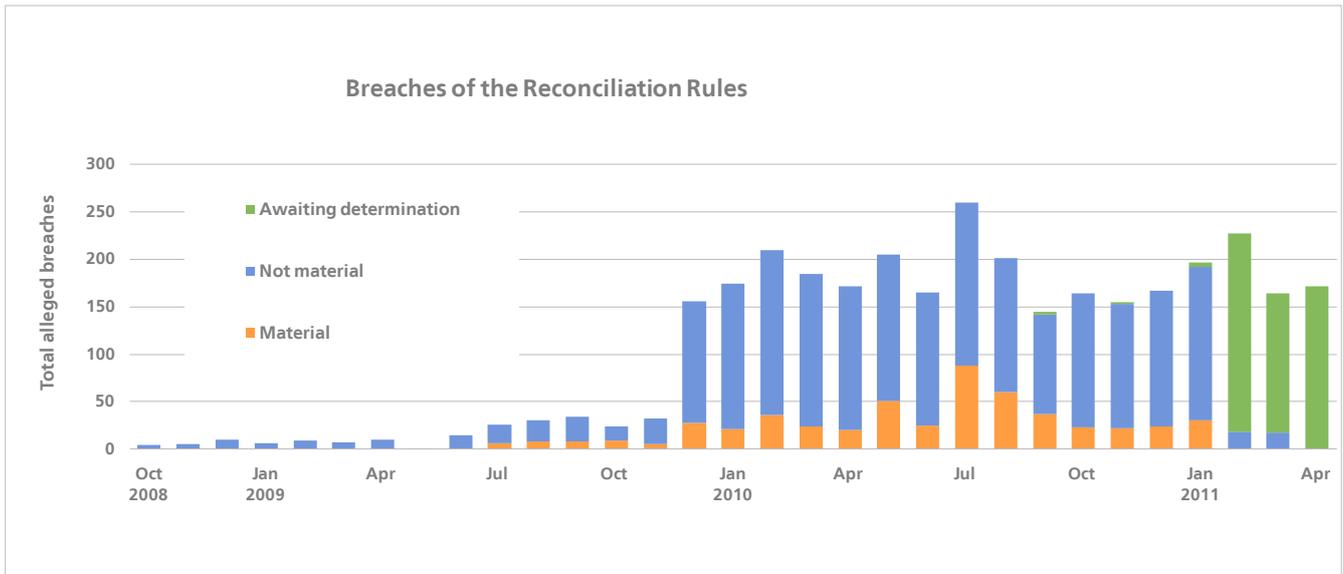
The performance audits have highlighted some of the same factors found in the event audits; particularly the use of inaccurate factors in converting meter readings into energy. Some of these inaccuracies appear to arise from poor data management by distributors, meter owners, and retailers in the gas registry. Gas Industry Co intends to conduct audits of registry data in order to address these data weaknesses. Gas Industry Co is also progressing a guideline note on energy conversion factors that will serve as a consistent point of reference for all retailers in achieving best practice in their energy conversion calculations.

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<sup>1</sup> As the pressure of the gas drops from the pressure at the meter inlet to the metering pressure, there is a corresponding temperature drop, which in turn affects the energy content of the metered gas.

## Number and severity of breaches of the Reconciliation Rules

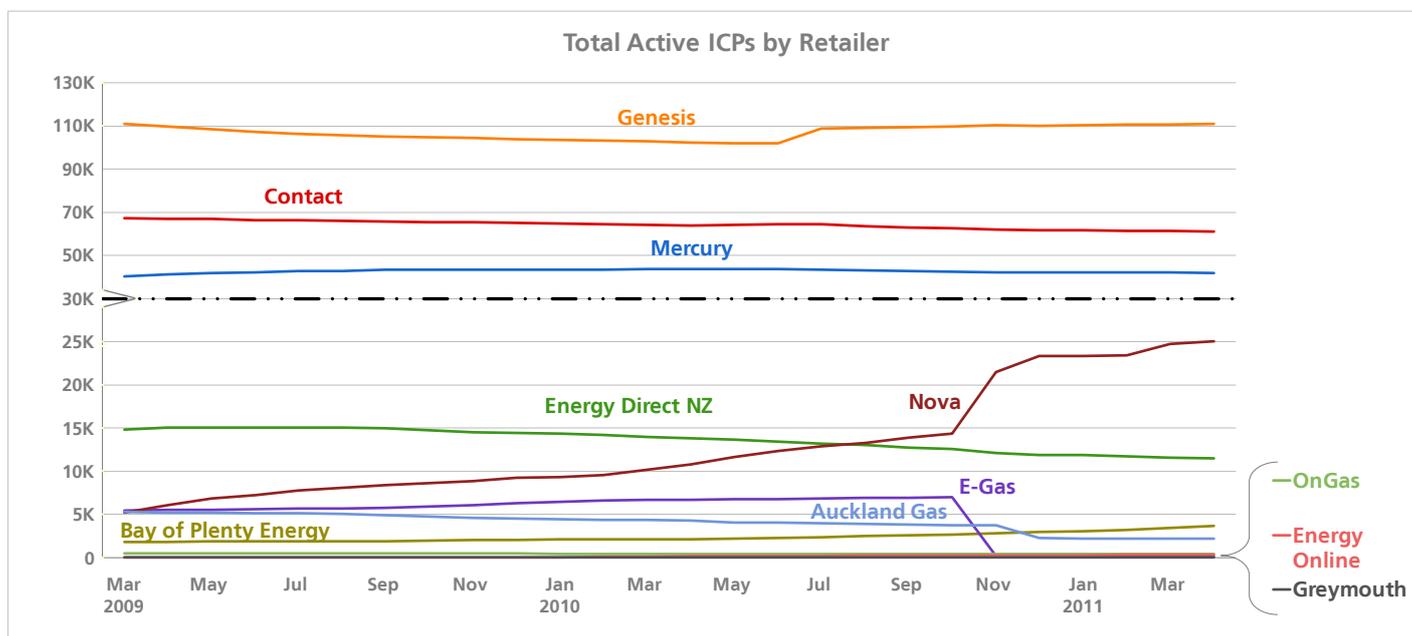
The marked increase in alleged breaches from December 2009 onwards represents breaches of rule 37. This is the rule that requires the accuracy of consumption information provided at the initial allocation stage to be within a specified tolerance level of the information provided at the final allocation stage. July 2010 stands out in particular in this regard and represents the month that the poor consumption estimations for May 2009 were alleged as breaches.



## 4 Market competition performance measures

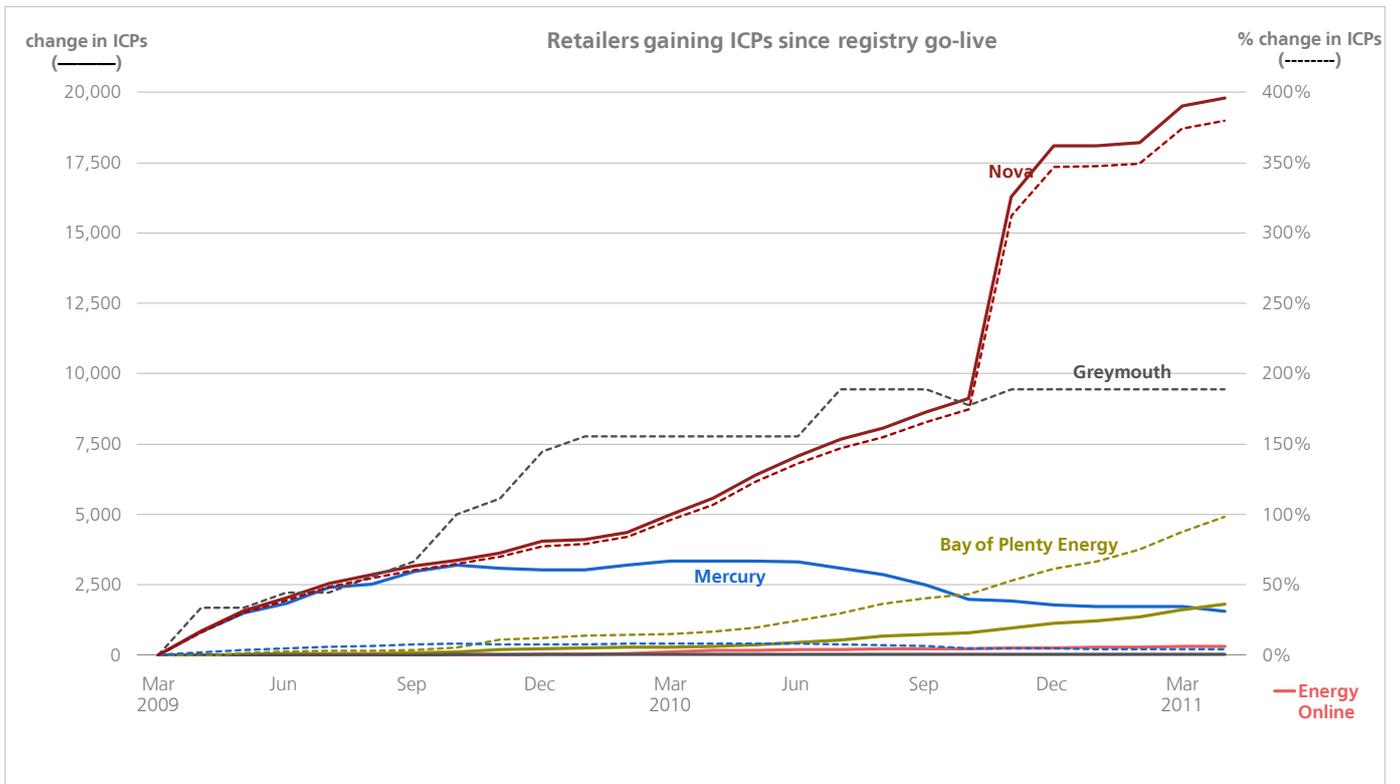
### Market share of ICPs by retailer

This quarter, Nova has continued to increase its market share (measured by number of ICPs), following the acquisition of the E-Gas customer base late last year. Other changes in market share have been more gradual: since the start of the gas registry, Mercury has steadily gained customers, while Contact and Energy Direct have been slowly losing customer market share. Genesis's customer numbers have remained roughly the same. The increase in Genesis ICPs shown in July 2010 reflects a reclassification by that participant of Active Vacant ICPs (status ACTV) to Active Contracted (ACTC).

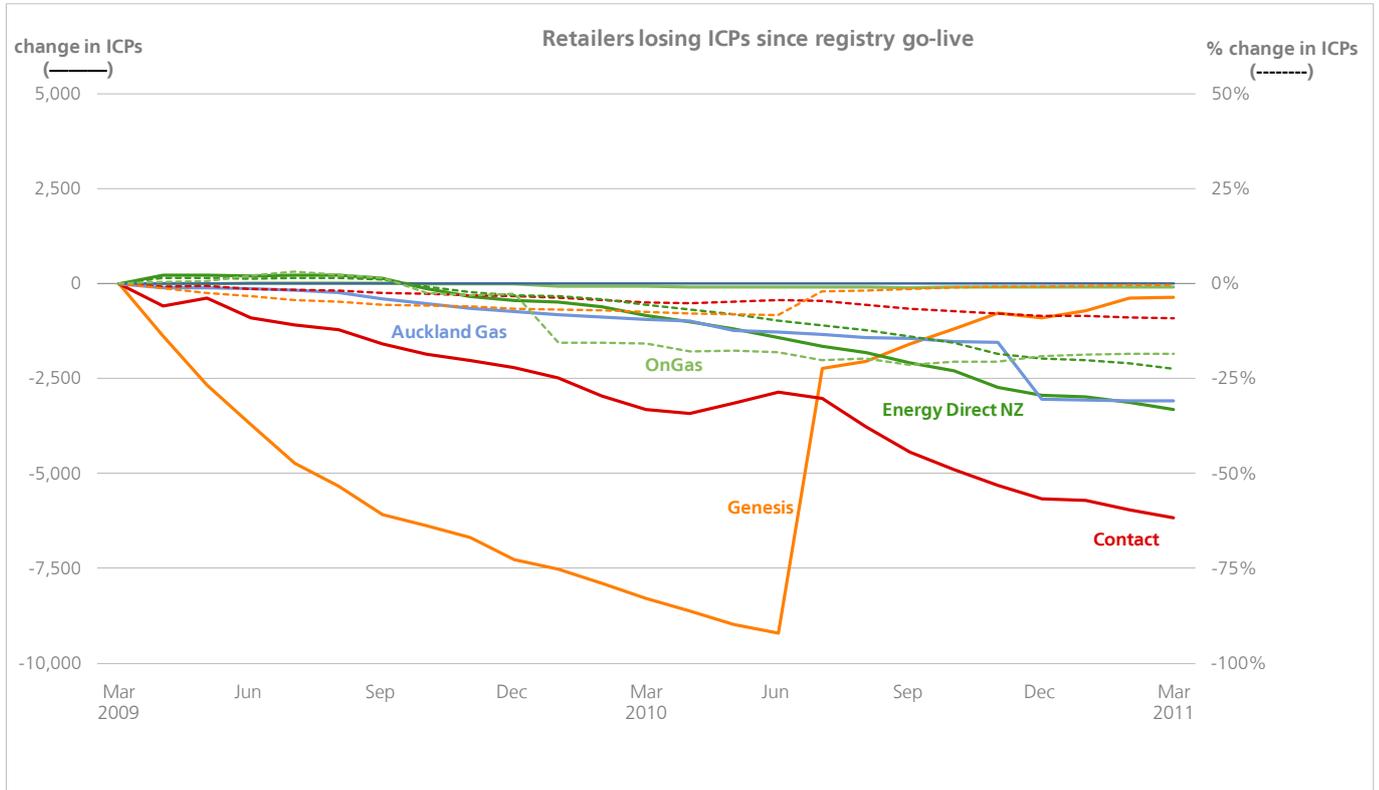


The two charts below are drawn from the same data set. The solid lines represent the change in numbers of ICPs, and the dashed lines show the percentage change in ICPs relative to March 2009. The first chart includes retailers who have gained ICPs since March 2009, and the second includes retailers who overall have lost ICPs since go-live.

The first chart below illustrates Nova’s increase of 20,000 ICPs since March 2009, an increase of over 350%. Greymouth and Bay of Plenty Energy have also experienced increases of 100% or more, but on relatively small customer bases. Mercury has added about 1500 ICPs to its customer base, an increase of about 4% for this large retailer. Energy Online, a new entrant retailer, has gone from no customers over 300.



The chart below shows the retailers who have lost market share in ICP numbers since go-live. For clarity, it excludes data from E-Gas, which exited the market in November of last year. As noted above, the extent of the decline in Genesis ICPs – and the recovery in July 2010 – reflects a misclassification and then correction of ICP statuses.



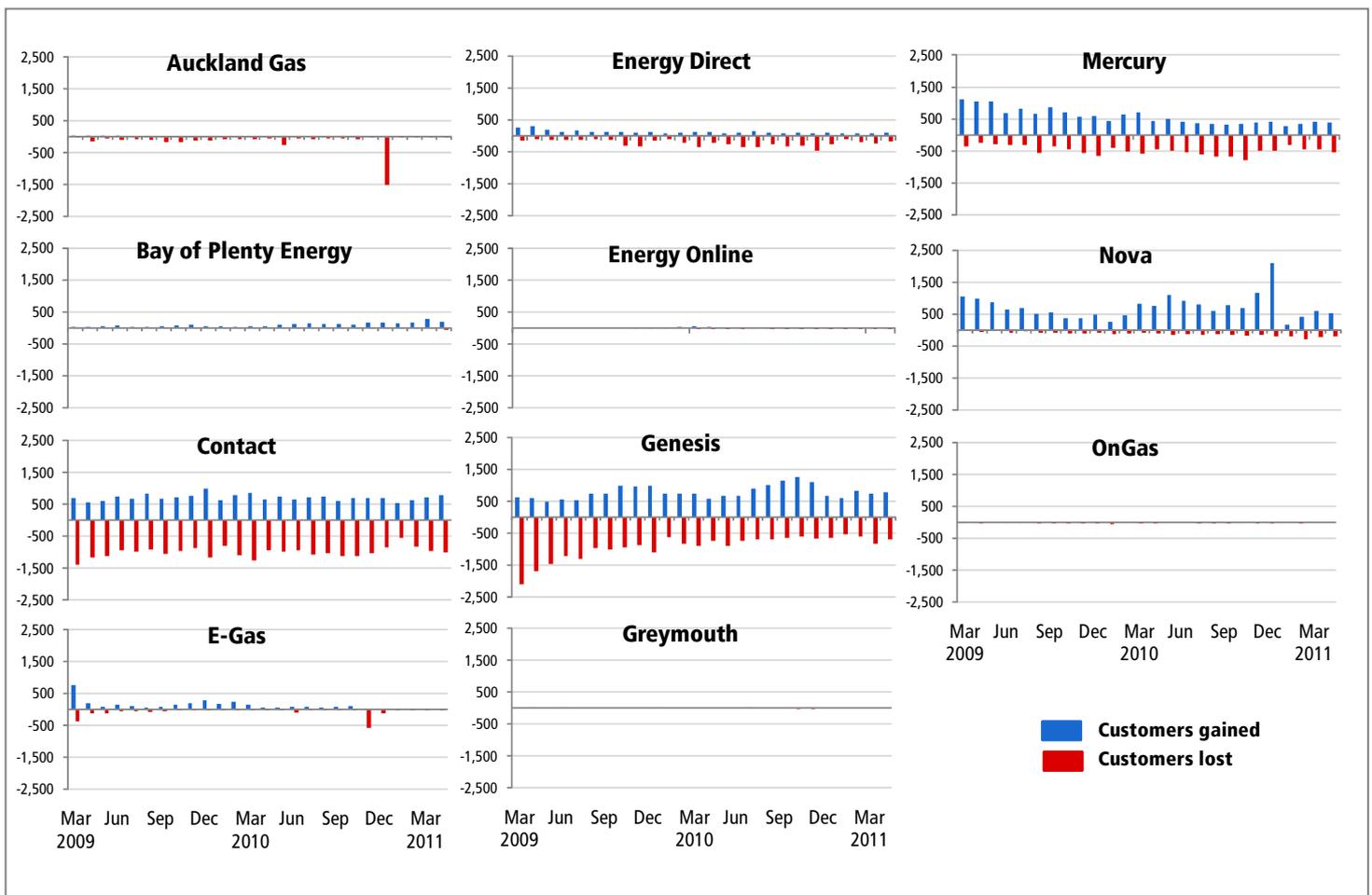
Note that both of the charts above include data from ICPs on open-access distribution networks only; information about ICPs on bypass networks is not available in the Gas Registry.

## Switching activity by retailer

This is another chart enabled by recent changes to the switching registry. The blue bars show the number of customers gained by the retailer each month, and the red bars show the number of customers lost.

As shown by these charts, although the net changes in number of customer ICPs may not change significantly from month to month for some retailers, there is a lot of underlying switching activity, particularly for the mass market retailers Contact, Genesis, and Mercury. Note that these charts exclude the bulk transfer of ICPs from E-Gas to Nova.

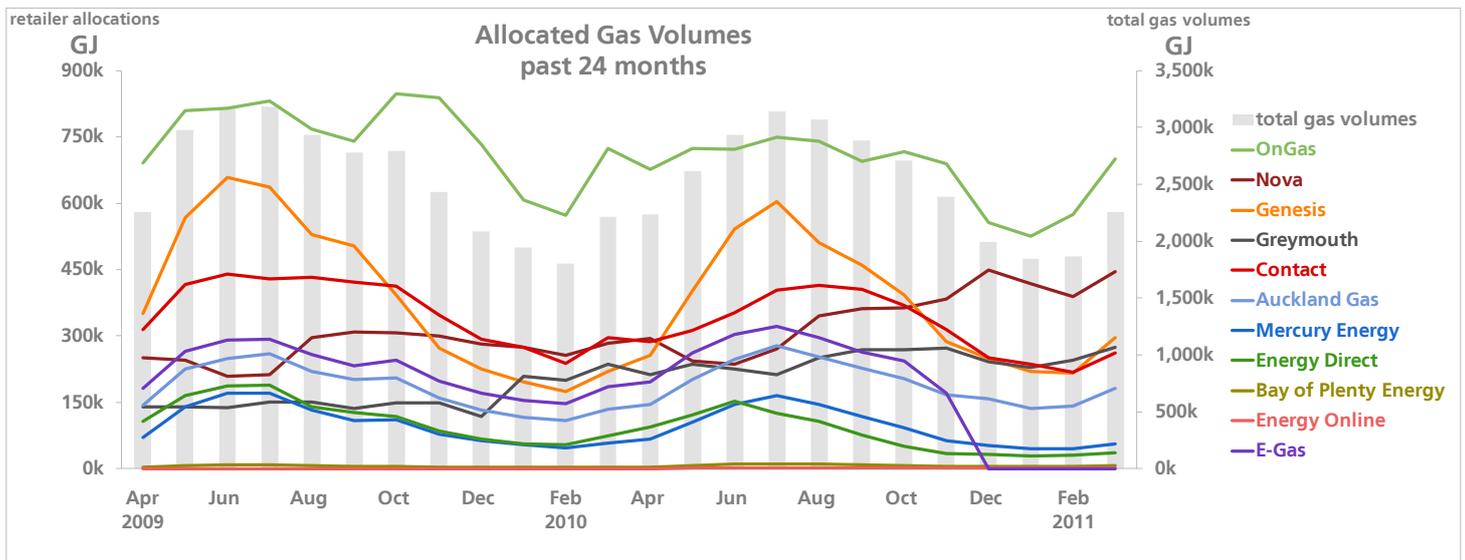
## Switching activity by retailer



## Allocated gas volumes

This chart shows the gas volumes allocated to retailers at shared gas gates over the past two years. This is gas consumed by industrial, commercial, and residential customers, but it excludes gas volumes from direct connect gas gates; that is, from gas gates that supply a single customer directly from the transmission system. For this reason, gas volumes supplied through direct connect gas gates to such industrial sites as thermal power stations, oil refinery, and paper and chemical factories are not included in the chart below. Volumes from these direct-connect gas gates are attributed directly to consumers, rather than to retailers.

Although OnGas is relatively small in terms of its market share of ICPs, it has about 30% of the market in terms of gas volumes, reflecting the large proportion of commercial and industrial customers that it serves. The next largest retailer for the past several months has been Nova. This increase in allocated volumes can be explained by its acquisition of the E-Gas customer base as well as its large summer peaking load.

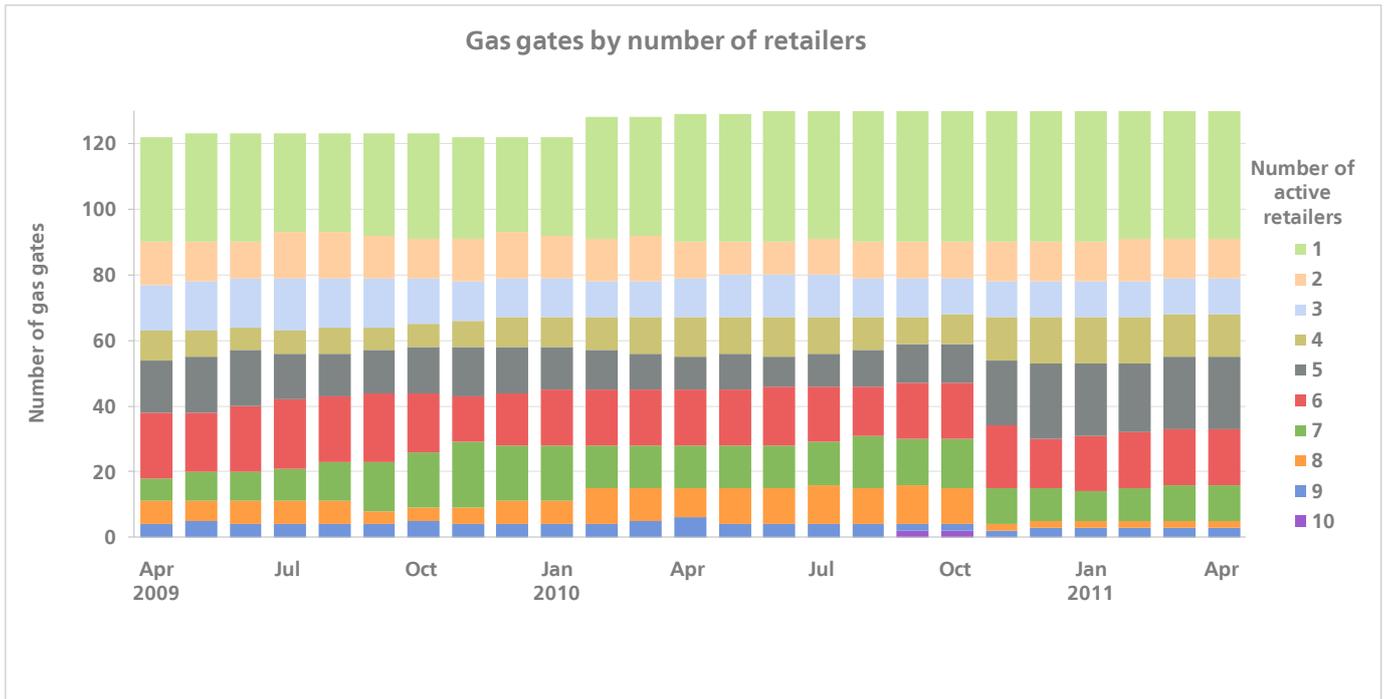


The data are from a mix of allocation stages: Final through March 10; Interim for April 10 through December 10; and Initial for January 11 through March 11.

## Gas gates by number of retailers

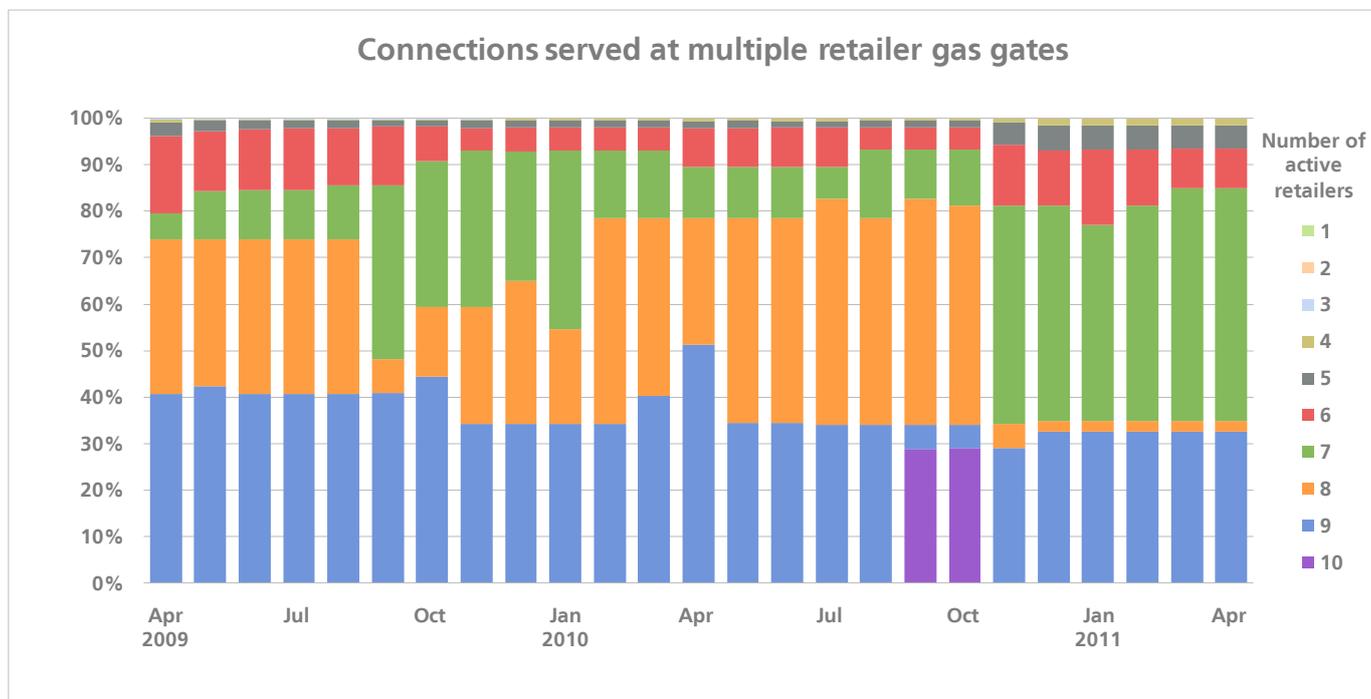
This chart shows, by month, numbers of gas gates by the number of active retailers. The greater the number of retailers that trade at a gas gate, the greater the potential competition for customers.

As of April 2011, there are 79 gas gates at which three or more retailers trade, about the same as last quarter.



## Connections served by multiple retailers

There has been an increase in the number of connections served at gas gates where seven or more retailers trade, from 77% in January to 85% as of April 2011.



Note that the above chart includes data from ICPs on open-access distribution networks only; information about ICPs on bypass networks is not available in the Gas Registry.

## 5 Critical Contingency Management performance measures

There have been no critical contingency events since the last quarterly report.

In March, the Critical Contingency Operator (CCO) held an exercise to test transmission system owners' critical contingency management plans and to ensure that the contact details in those plans and the contact details maintained by retailers are current. Transmission system owners, interconnected parties, shippers, retailers, and large consumers were reasonably requested by the CCO to participate in the exercise.

The pipeline scenario used for the test exercise was that a transmission pipeline just south of Foxton was punctured, causing a large release of gas. The de-pressurisation of the pipeline then caused adjacent main line valves to close automatically, causing a complete isolation of the transmission system south of the incident, including the delivery points supplying the greater Wellington region. The CCO simulated giving curtailment instructions to large users

on the isolated pipeline in order to maintain supplies from remaining system linepack in the isolated section.

In his report on the test exercise, CCO considers that the regulations, the key documents (Information Guide, Communications Plans and Critical Contingency Management Plans), supporting processes and deployed communications worked well together, achieved the purpose of the regulations and demonstrated compliance with the Regulations. The report goes on to make a number of recommendations for process improvements that would help the curtailment processes to operate more smoothly. These recommendations include refining system pressure threshold values and streamlining the manner in which contingency notices are produced and published. The CCO also recommends that gas distributors and retailers jointly develop formal processes and/or agreements for liaison during a critical contingency or events confined to the distribution network.