Performance Measures Quarterly Report for the period ending 31 March 2013

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 2009 (the Reconciliation Rules), and the Gas Governance (Critical Contingency Management) Regulations 2008 (CCM Regulations), both in terms of activity related to these statutes and the competitive outcomes that they foster. The Report also tracks transmission balancing actions, as a means of informing Gas Industry Co's work on this issue. .

Highlights of the Report:

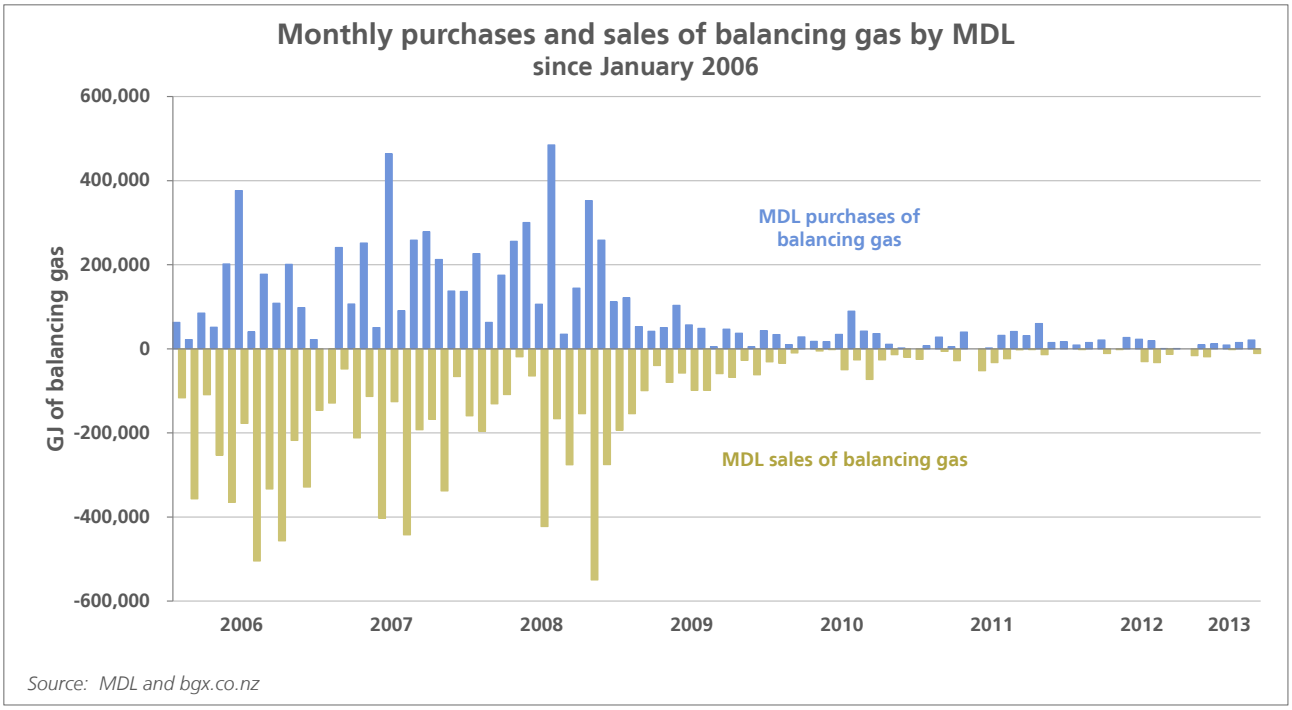
- Secondary balancing gas volumes continue to decline and are a fraction of what they were prior to 2009. Balancing gas volumes averaged less than 20,000 GJ per month in the first three months of 2013.
- Switching has had an uptick in March, after a below-average January. Overall, the average rate of switching remains at about 15%, or about 3,200 switches per month.
- The time required to process switches continues to fall and is now about 5.2 days on average, a fraction of the weeks that switching used to take before the inception of the switching rules.
- Unaccounted for gas (UFG) volumes have been low in the past quarter, consistent with previous years' seasonal trends. On a rolling annual basis, UFG accounts for less than 1% of allocated gas volumes.
- In March, Nova transferred customers from its subsidiary brand Bay of Plenty Energy to the Nova retail brand. There are now eight gas retailer brands. The largest by number of customers continues to be Genesis Energy, followed by Contact Energy, Mercury, and Nova.
- The Herfindahl–Hirschman Index (HHI) is a way of measuring market concentration by using size and number of competing firms. In all regions of the North Island, HHI has decreased in the past four years, reflecting the activities of new retailers entering the market and smaller retailers increasing their market share.
- In terms of market share by gas volumes, Nova and OnGas are the largest retailers, reflecting their focus on the industrial and commercial sectors of the gas market (although Nova also has a presence in the mass market segment).

- Over 95%, of gas consumers are connected to a gate where at least six retailers trade, demonstrating that gas retailers generally are competitive throughout the North Island.

2 Balancing gas volumes

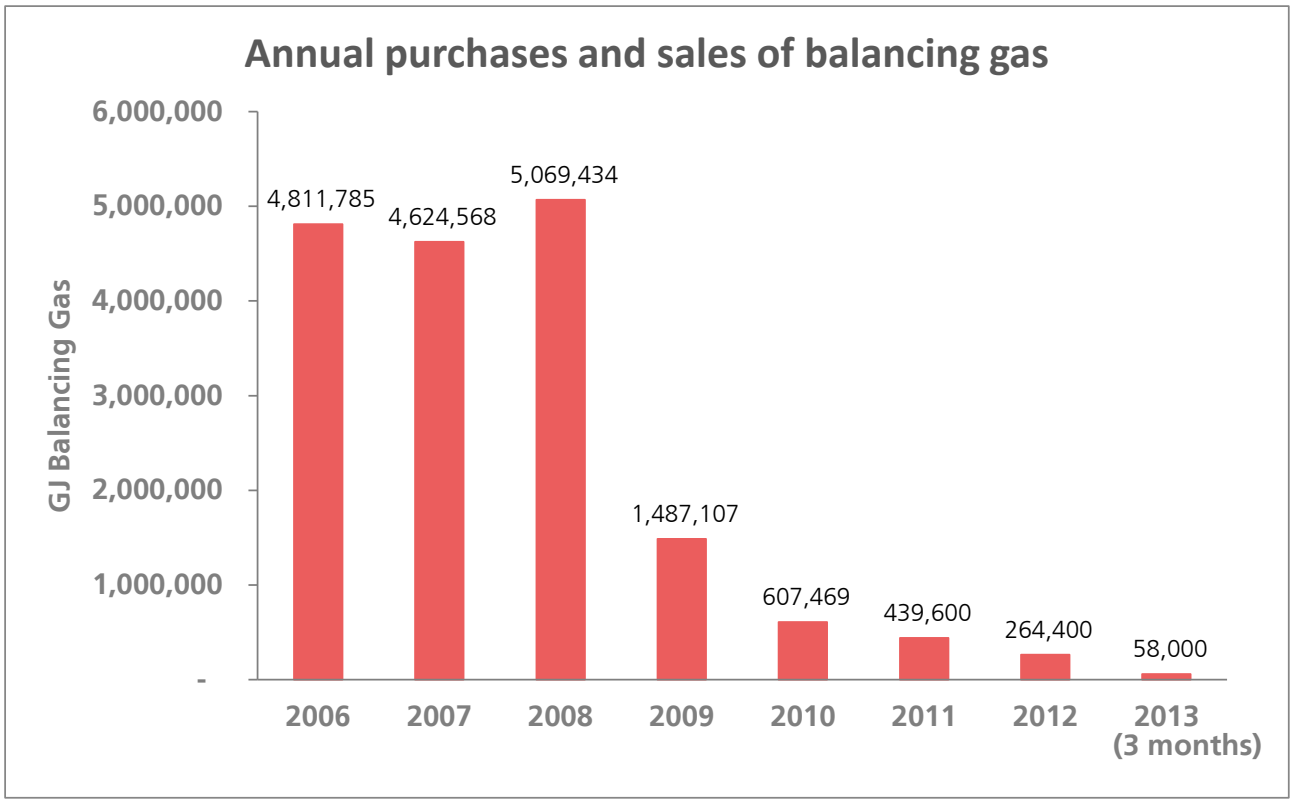
The volume of gas in a pipeline relates to the gas pressure in the pipeline and needs to be maintained below the safe operating pressure limit for the pipeline and above the minimum required to maintain the supply of gas to consumers. On the Maui pipeline, pressures will rise or fall as parties who inject gas into the pipeline over- or under-inject and as parties who receive gas from the pipeline under- or over-take relative to their respective scheduled volumes. When a transmission owner, or operator, manages the gas inventory in a pipeline, it is referred to as *secondary* or *residual balancing*. MDL buys and sells balancing gas in order to manage gas volumes and thus maintain gas pressure within safety and operational limits.

Prior to 2008, secondary balancing services were essentially free to holders of legacy Maui gas contracts, but changes implemented at the end of 2008 to the Maui Pipeline Operating Code, together with the arrangements in the Vector Transmission Code, mean that pipeline users are now responsible for imbalances that they create. In 2009, MDL instituted the Balancing Gas Exchange, an online platform that displays pipeline balance conditions and enables parties physically interconnected to the Maui pipeline to post offers to buy and sell balancing gas. These two changes appear to have provided gas transmission customers with an incentive to self-balance and greater information on which to base their balancing decisions.



The outcome is the significantly reduced volumes of gas needed to be purchased or sold by MDL to balance the Maui pipeline, as can be seen in the chart above.

The chart below summarises balancing gas transactions (both purchases and sales) by calendar year.



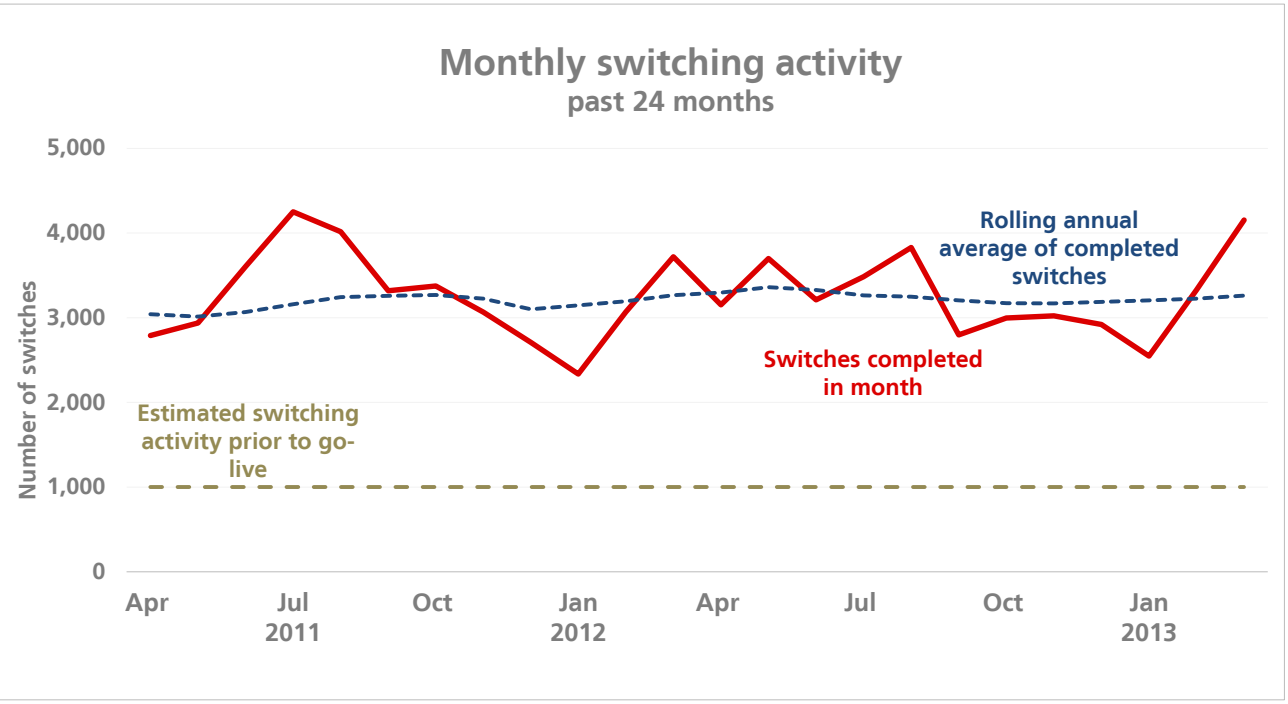
In each of the calendar years 2006, 2007, and 2008, over 4,600,000 GJ of balancing gas were bought and sold by MDL. Since then, balancing gas volumes have decreased each year. In the first three months of 2013, balancing gas volumes have averaged less than 20,000 GJ per month.

3 Switching performance measures

Monthly switching activity

The monthly average switching rate is about 3,200 switches, although the actual number of switches that occur in a month can vary greatly. In March, there was the highest number of switches in a month since the inception of the registry. In contrast, January had a lower than average number of switches.

Overall, the annual churn rate – that is, the percentage of gas customers who switch retailer in a year – is about 15%. 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%.



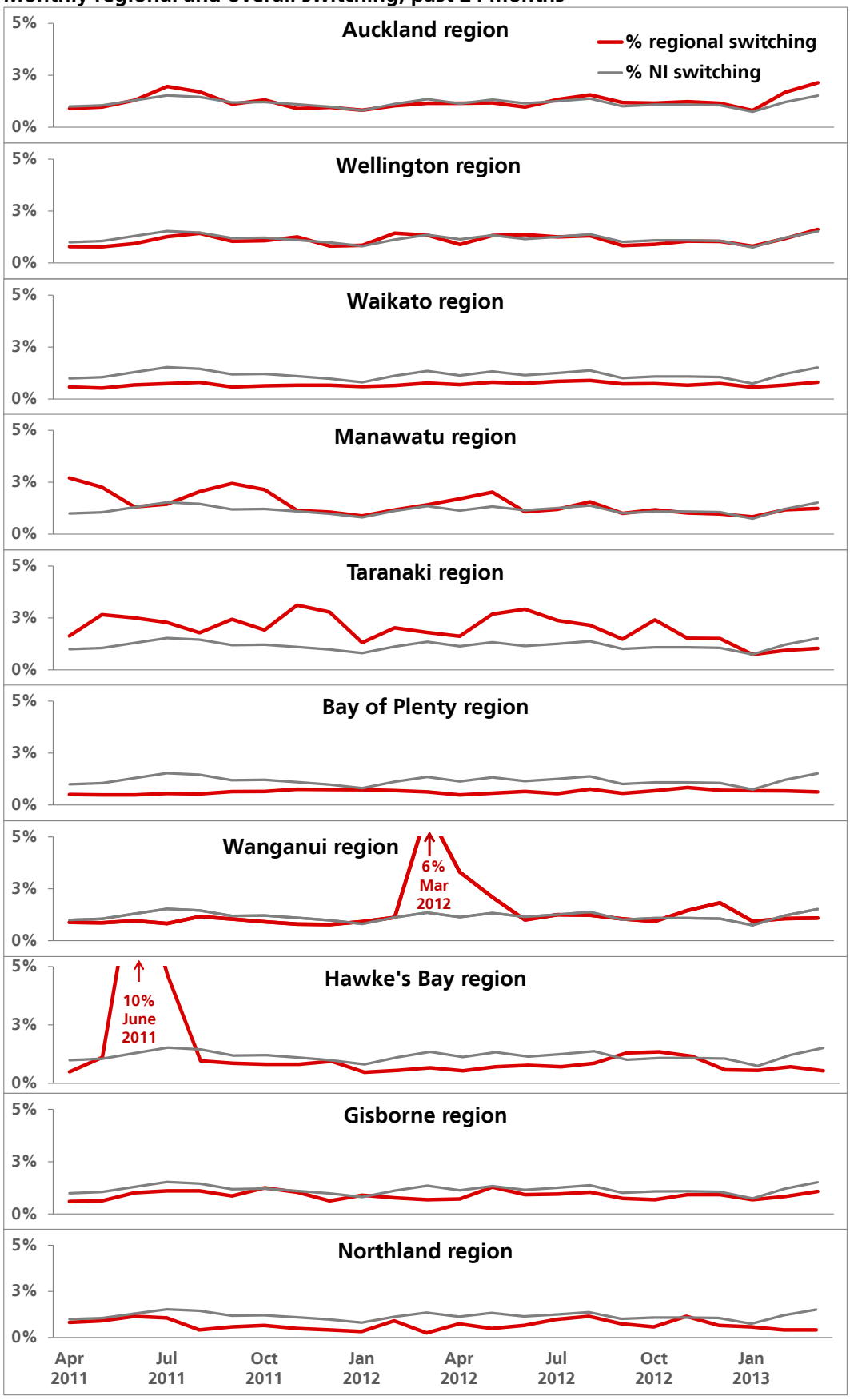
Regional switching activity

The charts below compare regional switching rates with total switching rates. The grey line is the same in all the charts below and shows number of switches (both move switches and standard switches) in a month as a percentage of active-contracted and active-vacant ICPS across all North Island gas consumers. As that line shows, monthly switching varies between about 0.7% and 1.5% per month.

The red line in each chart shows the number of switches in that region as a percentage of ICPs in that region. As might be expected, Auckland and Wellington switching rates tend to be similar to the North Island rates. Differences emerge in the smaller regions, though: in the past 24 months, for example, switching in Taranaki has tended to be higher than the average across all consumers, while switching in Bay of Plenty tends to be lower. There can be short-term fluctuations in switching as well, as evidenced by the spikes in switching rates seen in the Wanganui and Hawke's Bay regions.

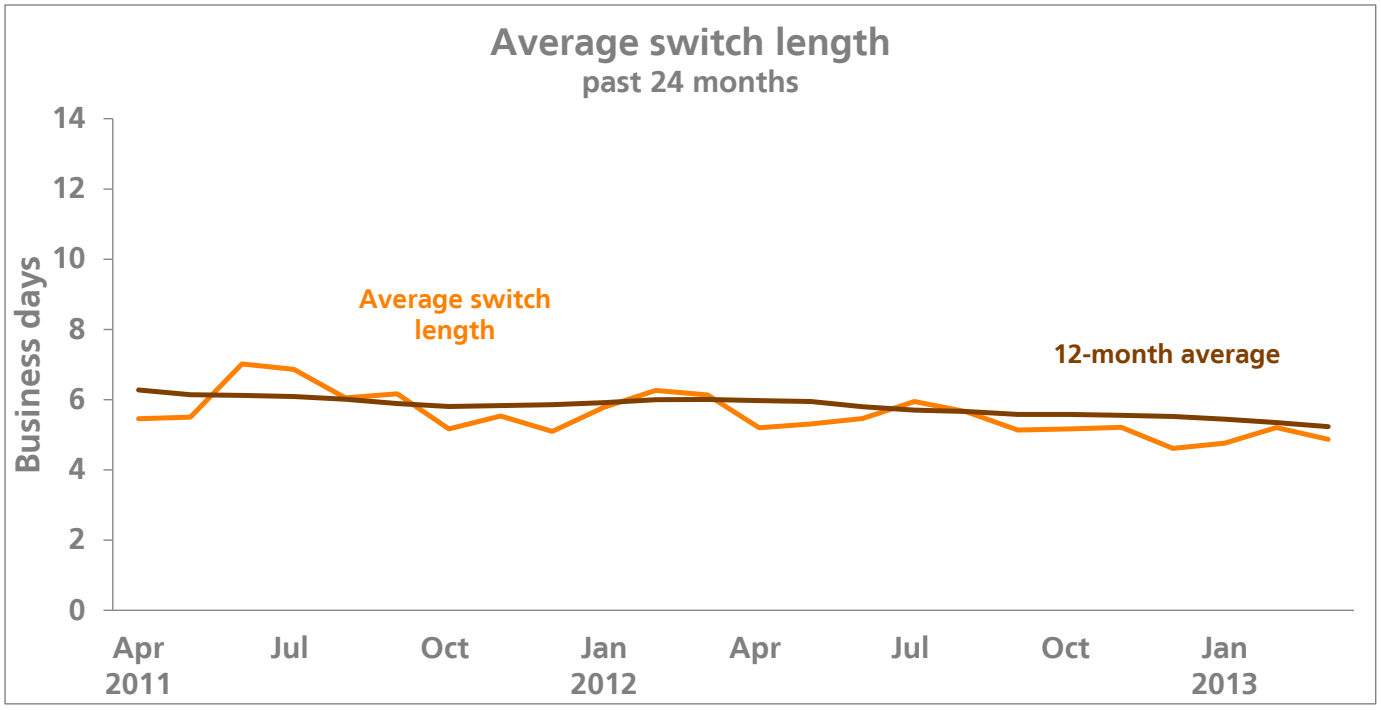
Note that the figures in the chart below do not include transfers of Auckland Gas and Bay of Plenty Energy customers to Nova.

Monthly regional and overall switching, past 24 months



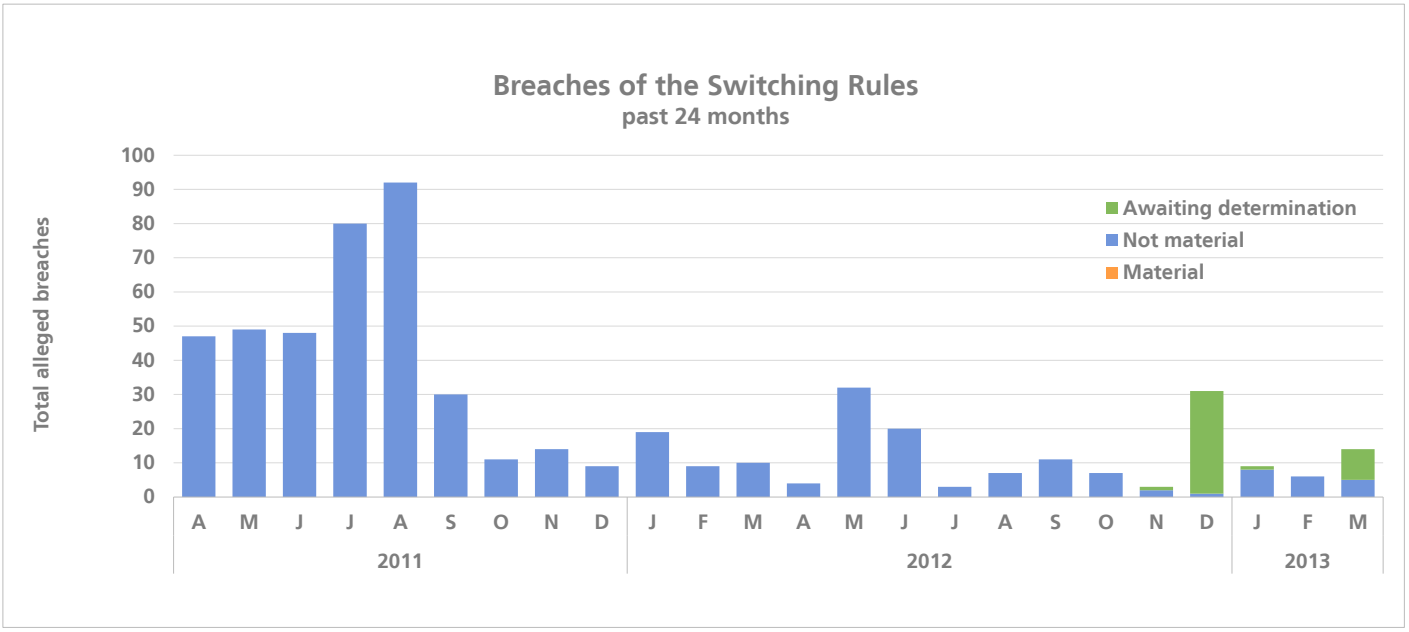
Time to process switches

The chart below shows the average length of time it has taken to process the switch requests that have been received in a month. The average time to process a switch has continued to fall. The twelve-month rolling average switching time now stands at about 5.2 business days. In comparison, switches could take weeks or even months to process prior to the inception of the switching registry.



Number and severity of breaches of the Switching Rules

In the first year after the inception of the Switching Rules, nearly 5,500 switching breaches were alleged. Many of these breaches can be attributed to unfamiliarity with the Rules. Since that first year, the numbers of switching breaches have fallen significantly. The average number of alleged breaches per month has fallen significantly: from 450 in the first 12 months to the current average of fewer than 15 per month.



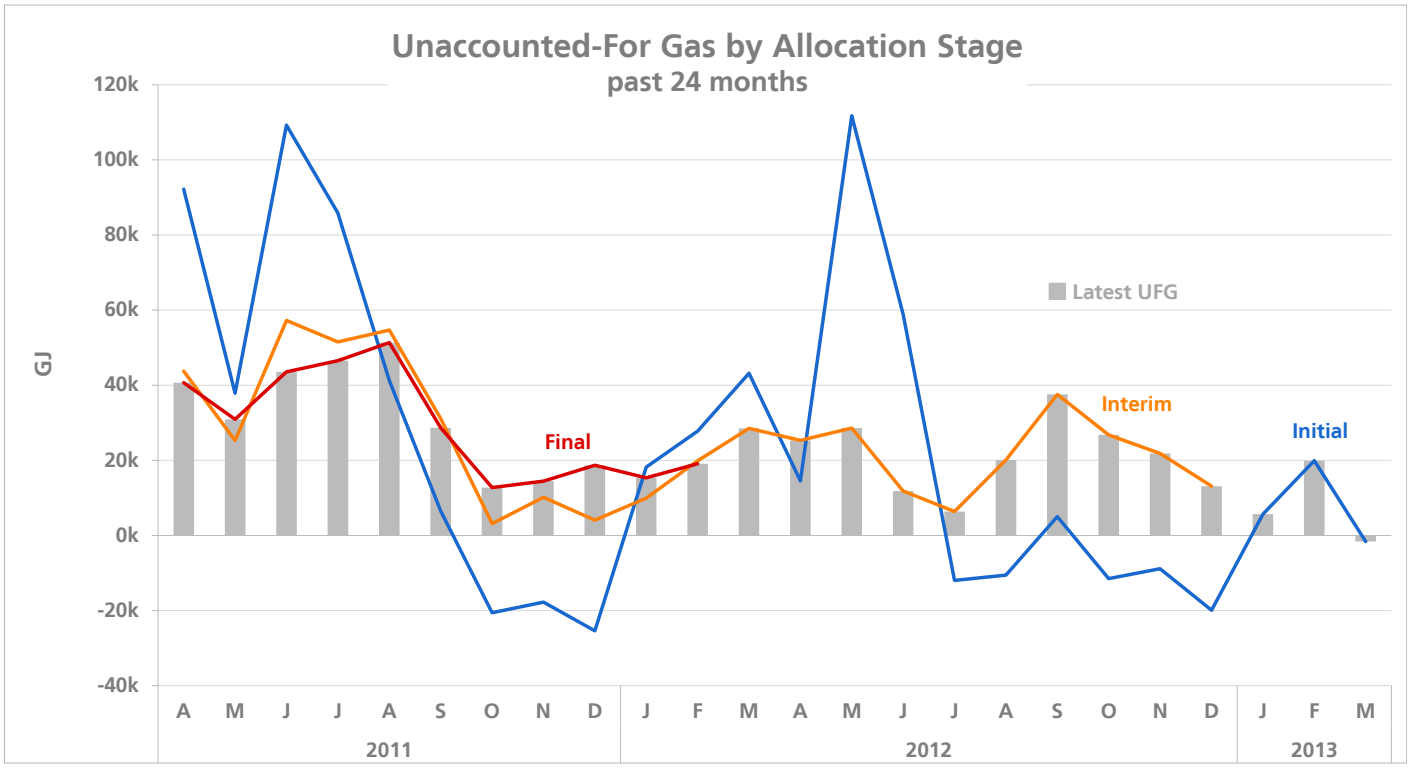
4 Allocation and reconciliation performance measures

Volumes of Unaccounted-for Gas

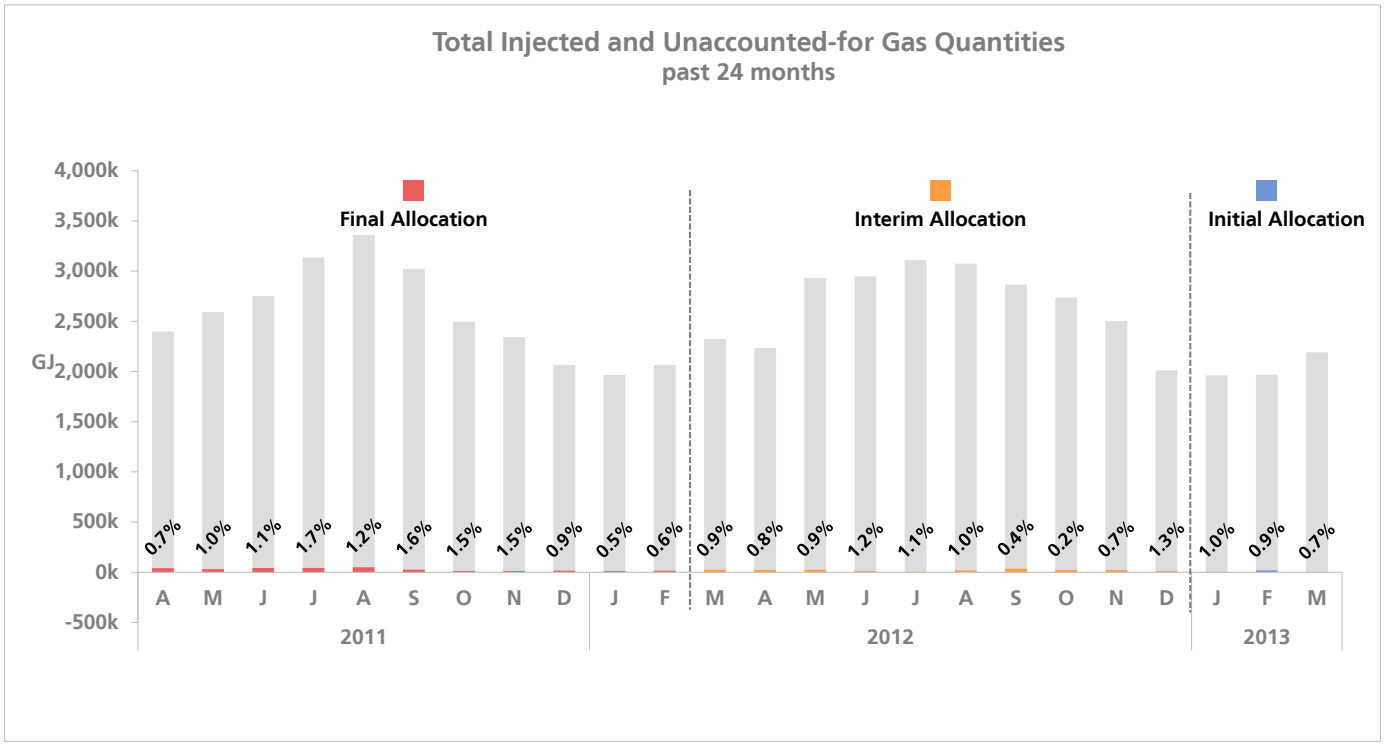
Under the Reconciliation Rules, the amounts of gas that retailers estimate their customers have used are subtracted from the amounts of gas leaving the transmission system. The difference is UFG, which arises from technical losses on the system, metering inaccuracies, and retailer estimation errors. UFG imposes a cost on the market: it is gas that retailers are allocated and must pay for, but cannot sell. Tracking UFG is a way of monitoring these costs and the efficiency of the retail market. This transparency should assist the industry to take steps to reduce UFG where it is efficient to do so.

The chart below 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.

Changes in UFG from one allocation stage to another are largely due to mass market retailers' consumption submissions becoming more accurate at later allocation stages. UFG tends to be most extreme at the initial allocation stage: in summer, UFG tends to be negative due to retailers' overestimations of customer consumption; and in winter, UFG tends to be positive due to retailers underestimating consumption. Generally, UFG volumes diminish considerably from the initial to the interim allocation stages. The final allocation stage reflects further minor adjustments to retailers' data, which can result in slightly more or less UFG, as shown by the orange and red lines in the chart below.

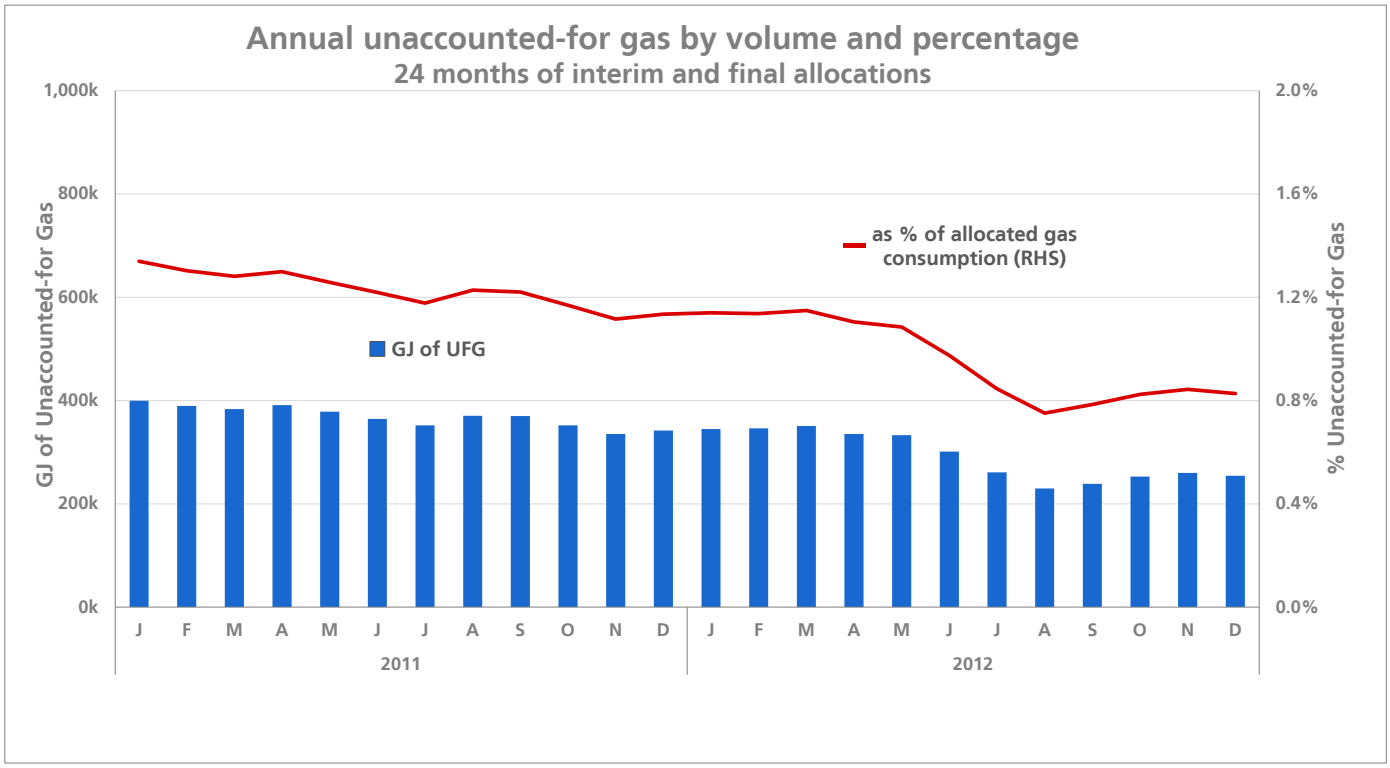


The chart below shows the amount of unaccounted-for gas in comparison to the total amount of allocated gas consumed each month. The grey bars show gas consumption at allocated gas gates, which follows a seasonal pattern: higher in winter and lower in summer. UFG as a percentage of volume follows a similar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



Another way to think about UFG is the amount recorded over a 12-month period. The chart below shows rolling 12-month UFG figures, both as a GJ total and as a percentage of gas consumed. As initial data are often inaccurate, the chart includes only consumption months for which interim or final data are available. The figures in the chart are based on the best data available at the time of publication, so, for example, the December 2012 total is based on ten interim results and two final results, while the December 2011 total is based on twelve final allocation runs.

For the first year after the Reconciliation Rules came into effect, annual UFG was about 2%. The proportion of UFG has been falling steadily over the past two years, and now stands at less than 1%.



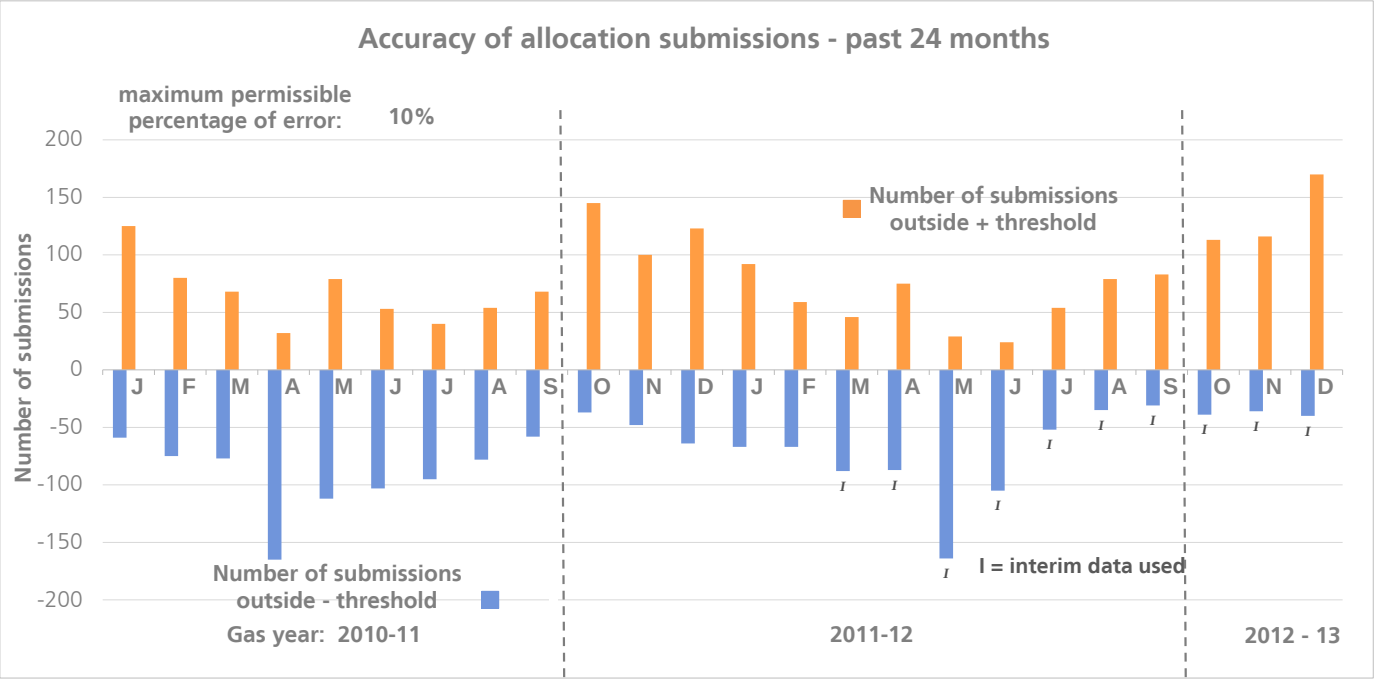
Accuracy of submission data

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 UFG created through inaccurate initial consumption submissions falls onto all retailers at the affected gate and affects their exposure to balancing costs. 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.

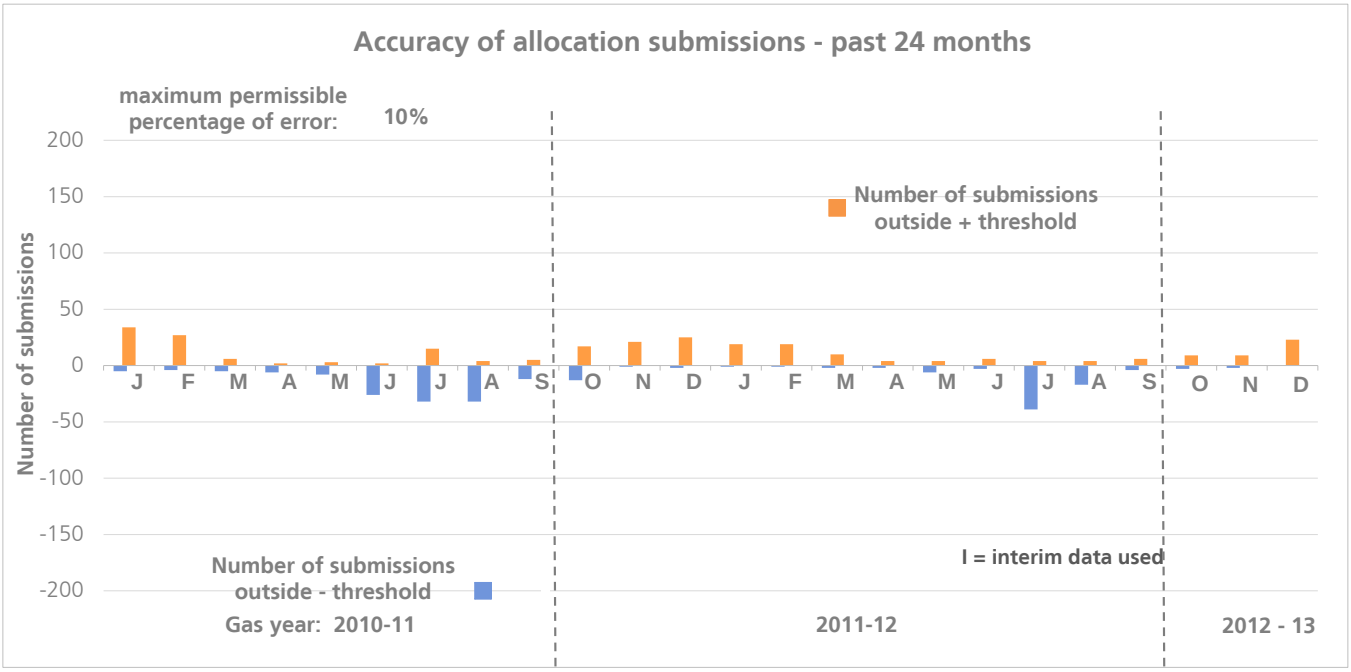
The chart below shows the number of retailer submissions that were outside the maximum permissible error threshold in the last 24 months for which data are available. For this analysis, final submissions were compared to initial allocation submissions for the months they were available (January 2011 –

February 2012). Other months use interim submissions (in place of final) for the comparison data and are marked with '*I*'. The percentage of error used to measure accuracy is 10%.

There is a pattern of retailers oversubmitting in October through January (shown by the orange bars), which corresponds with the negative UFG seen at the initial allocation stage in the preceding charts. Retailers also tend to undersubmit in the months of April through June (as seen in the blue bars), which corresponds with the high levels of UFG experienced in those months.



The market administrator 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.

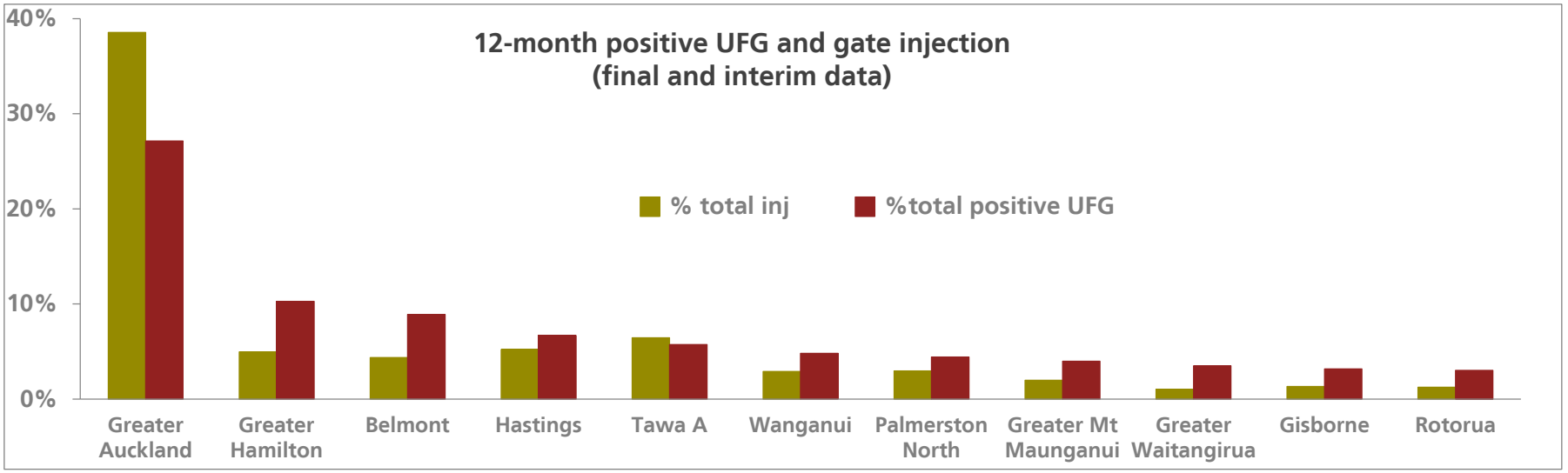


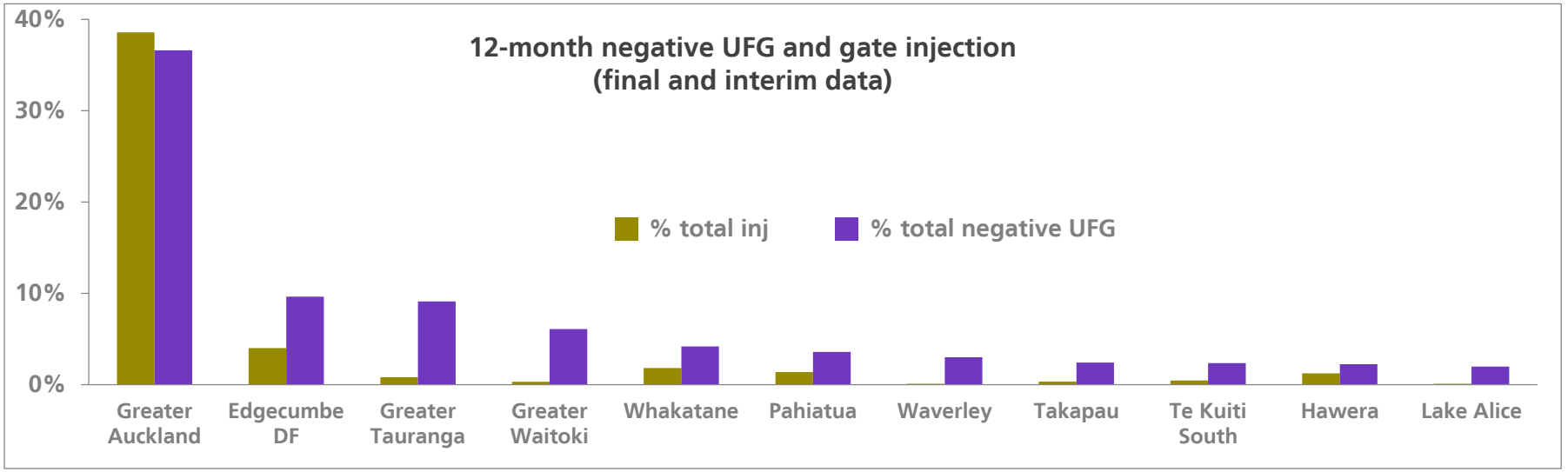
Gas gates where UFG is the highest

The charts below show the gates with the largest volumes of positive and negative UFG over the 12 months from January 2012 to December 2012, according to the most recent (final and interim) data. In those 12 months, a net of 254,489 GJ of UFG has been allocated: 364,981 GJ of positive UFG; and 110,491 GJ of negative UFG.

The first chart below shows that about 82% of positive UFG has occurred at the eleven gas gates shown. For context, the chart also shows the percentage of total gate injections each gate represents; that is, the proportion of total gas consumption that is drawn from those gates. The chart shows, for example, that nearly 40% of gas from shared gas gates was consumed in Greater Auckland, but less than 30% of positive UFG occurred there. Conversely, Greater Hamilton accounted for about 5% of gas consumption but 10% of positive UFG.

The second chart concerns negative UFG. The eleven gates shown account for 81% of the negative UFG experienced in the twelve months; and again the percentage of gate injections is shown for each of the gates.


12-month positive UFG and gate injection
(final and interim data)
40%
30%
20%
10%
0%
% total inj
%total positive UFG
Greater Auckland
Greater Hamilton
Belmont
Hastings
Tawa A
Wanganui
Palmerston North
Greater Mt Maunganui
Greater Waitangirua
Gisborne
Rotorua


12-month negative UFG and gate injection
(final and interim data)
40%
30%
20%
10%
0%
% total inj
% total negative UFG
Greater Auckland
Edgecumbe DF
Greater Tauranga
Greater Waitoki
Whakatane
Pahiatua
Waverley
Takapau
Te Kuiti South
Hawera
Lake Alice

Audits commissioned

Event audits

There have been no event audits commissioned in the past quarter.

Performance audits

There have been no performance audits commissioned this quarter.

Number and severity of breaches of the Reconciliation Rules

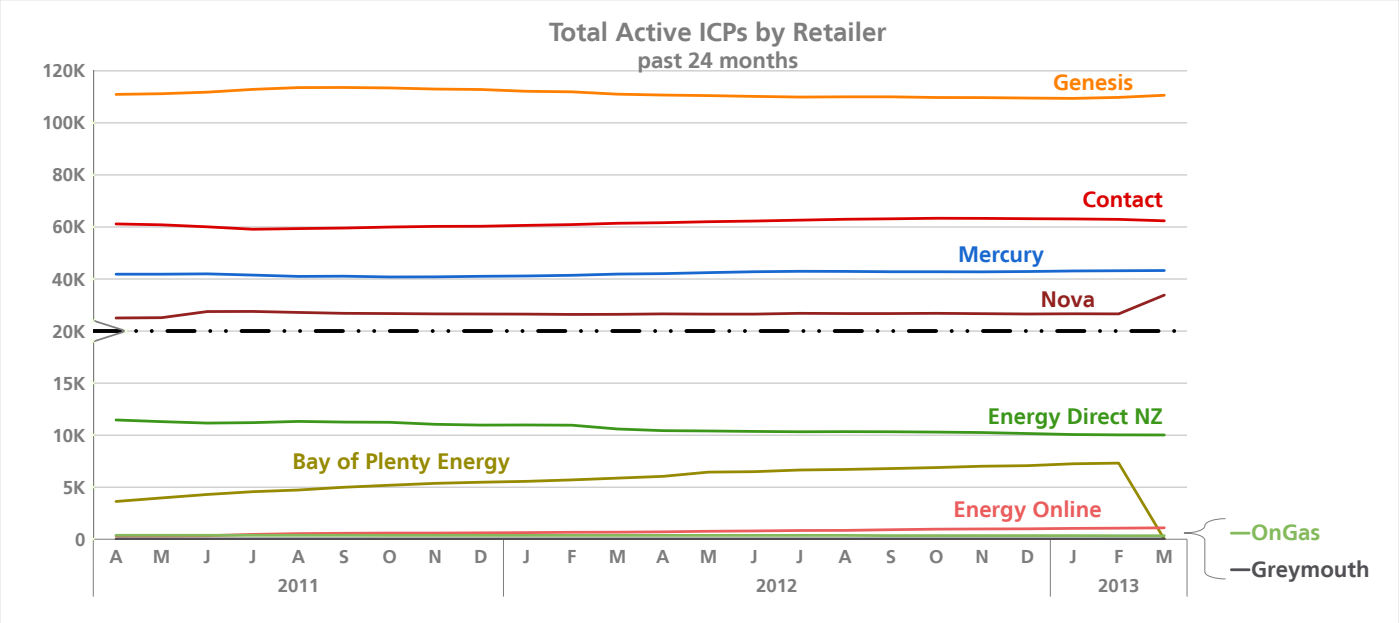
On average, about 85% of breaches alleged under the Reconciliation Rules relate to rule 37, the rule that requires the accuracy of consumption information provided at the initial allocation stage to be within a specified tolerance level of the information provided at the final allocation stage.

It has proven efficient for the Market Investigator to attempt to reach settlements in yearly batches of rule 37 breaches. In September of last year, the Rulings Panel approved a settlement of a batch of rule 37 breaches relating to consumption months December 2009 to March 2011 (and alleged February 2011 to May 2012). The next batch of rule 37 breaches will likely be determined by the Market Administrator later this month and in May, when the Market Administrator has 12 months of rule 37 breaches to consider.

5 Market competition performance measures

Market share of ICPs by retailer

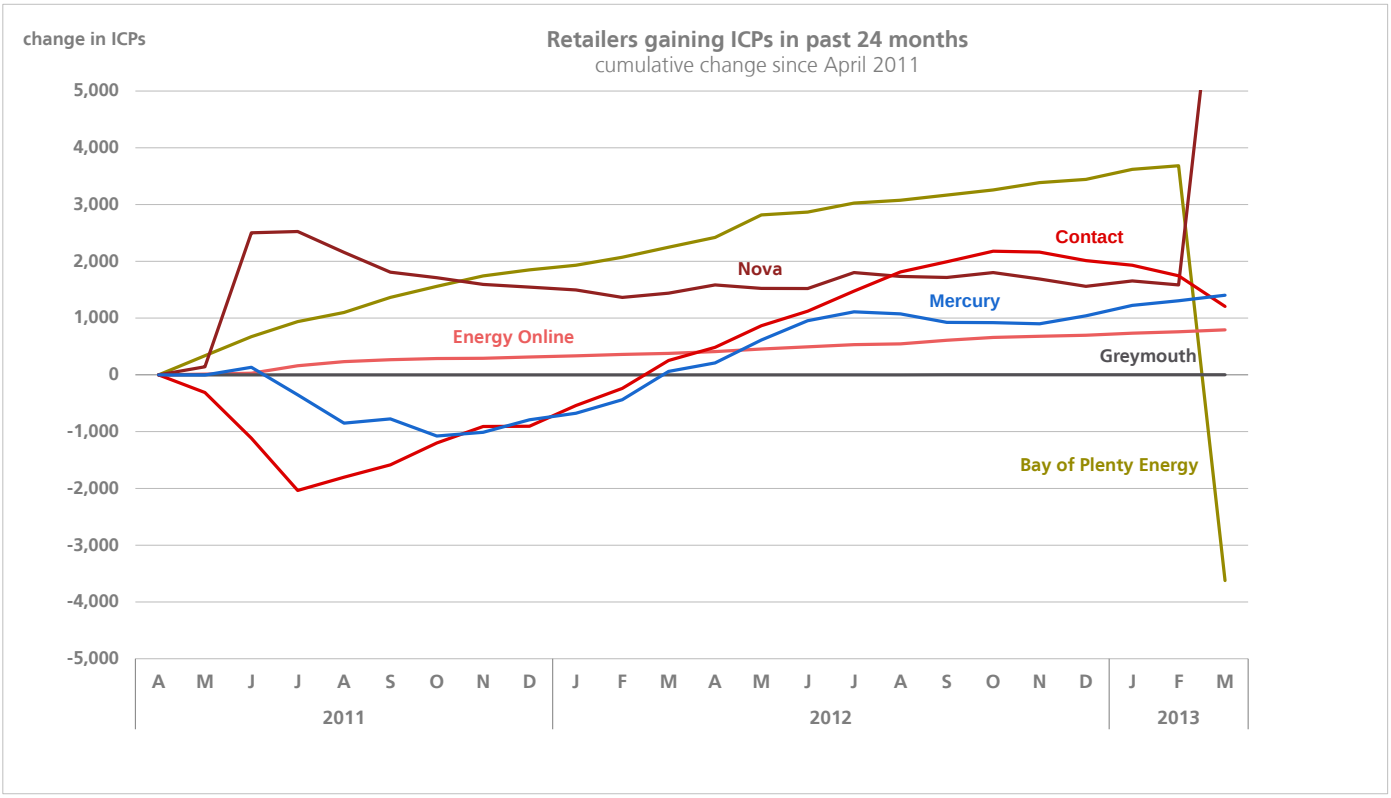
In the past quarter, Nova transferred all of its ICPs under the Bay of Plenty Energy brand to its Nova brand. There are now eight different gas retail brands in the market. There have been no major movements in market share among the other retailers.

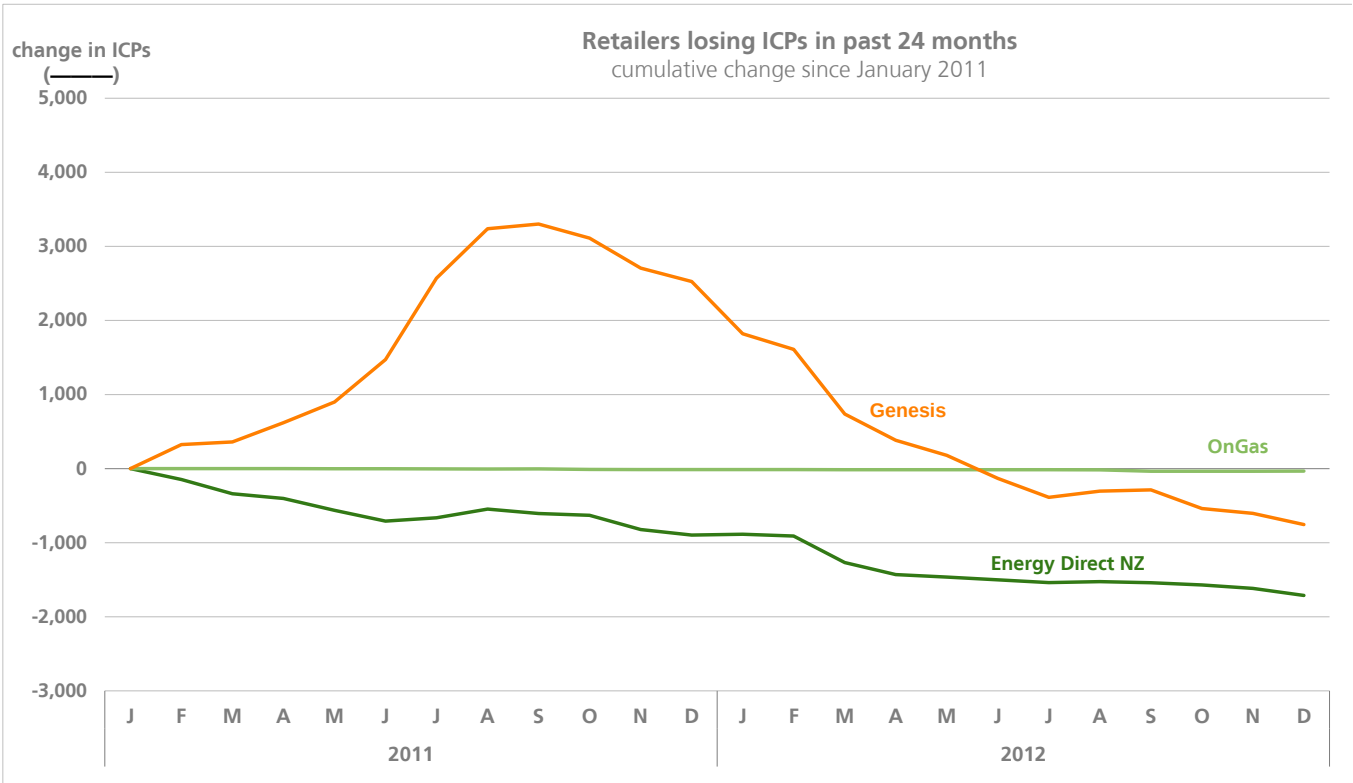


The two charts below are drawn from the same data set. Both show the cumulative changes in ICPs over the past two years; the first chart shows retailers who gained customers over that time; the second is retailers who have lost customers.

As noted above, Nova has now assimilated the Bay of Plenty Energy brand, though prior to that change, both Nova and Bay of Plenty were gaining customers. Contact Energy and Mercury Energy have overcome earlier customer losses and show an overall net gain over the past two years. Energy Online has gone from about 300 customers two years ago to over 1,000 customers today.

The three retailers with net losses of customers over the past two years are shown in the second chart.


change in ICPs
Retailers gaining ICPs in past 24 months
cumulative change since April 2011
5,000
4,000
3,000
2,000
1,000
0
-1,000
-2,000
-3,000
-4,000
-5,000
A M J J A S O N D J F M A M J J A S O N D J F M
2011
2012
2013
Contact
Nova
Mercury
Energy Online
Greymouth
Bay of Plenty Energy



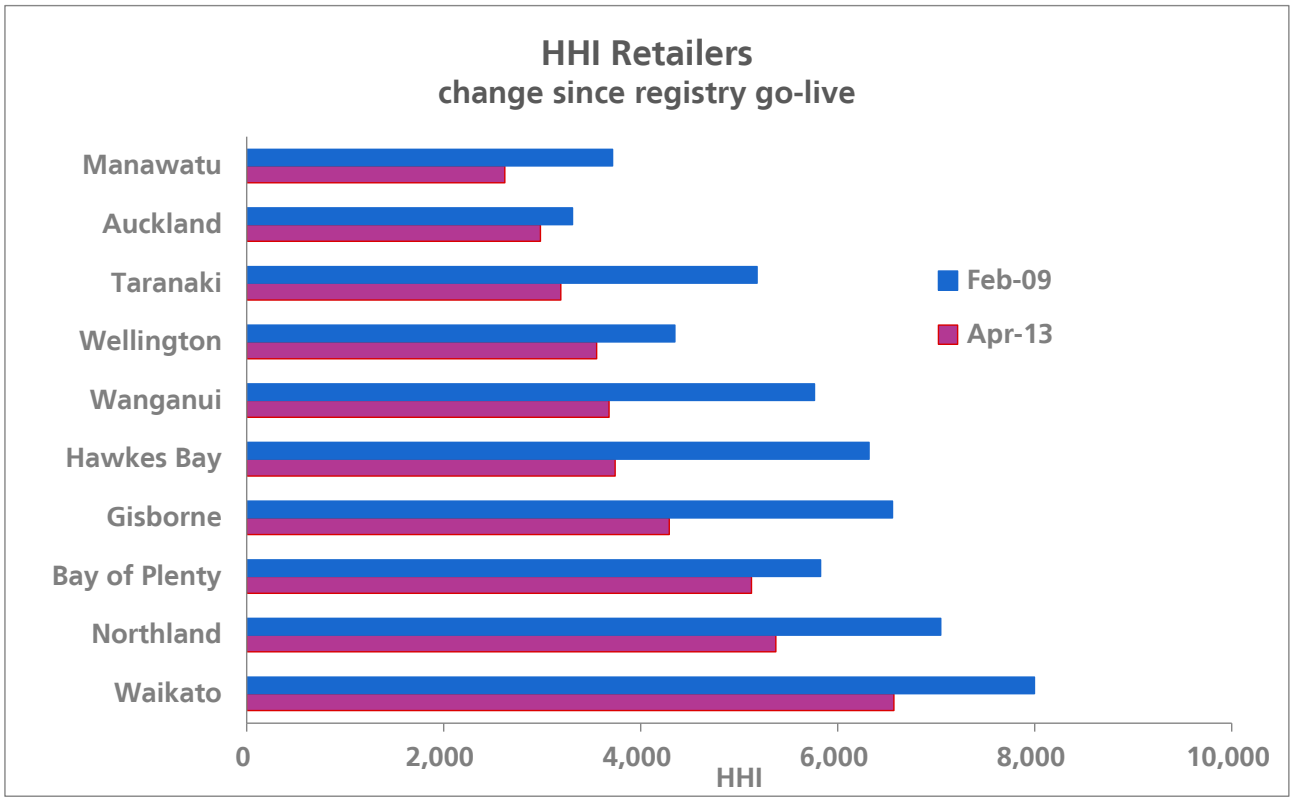
Note that all three of the ICP share charts above include data from ICPs on open-access distribution networks only; information about ICPs on bypass networks is not available in the Gas Registry.

Herfindahl–Hirschman Index

The Herfindahl–Hirschman Index (HHI) is one way of measuring market concentration by using size and number of competing firms. The index ranges from 0 to 10,000. A low score indicates a low level of market concentration, which arises when there is a large number of small firms in the market, each with a small proportion of market share. Conversely, an HHI score of 10,000 represents a market with a single retailer. The measure is used because market concentration is often inversely related to market competition; that is, the more retailers there are, the greater is the competition for customers.

The chart below shows the HHI of the retail gas market as at the time the registry went live, in February 2009, and as of 1 April 2013. In all regions, the HHI has decreased, indicating that the retail gas markets in these regions have become less concentrated.

Until 1992, when the new Gas Act disestablished local exclusive franchise areas, gas retailing occurred through local vertically-integrated monopolies. With the consequent onset of retail competition, and as in the electricity sector, these former monopoly providers became 'incumbents', subject to competing retailers vying for customers in their areas. In most regions, there is still a dominant retailer, but the decrease in HHI shows that they have become less dominant in the past four years, as new retailers have entered the market and smaller retailers have increased their market share.



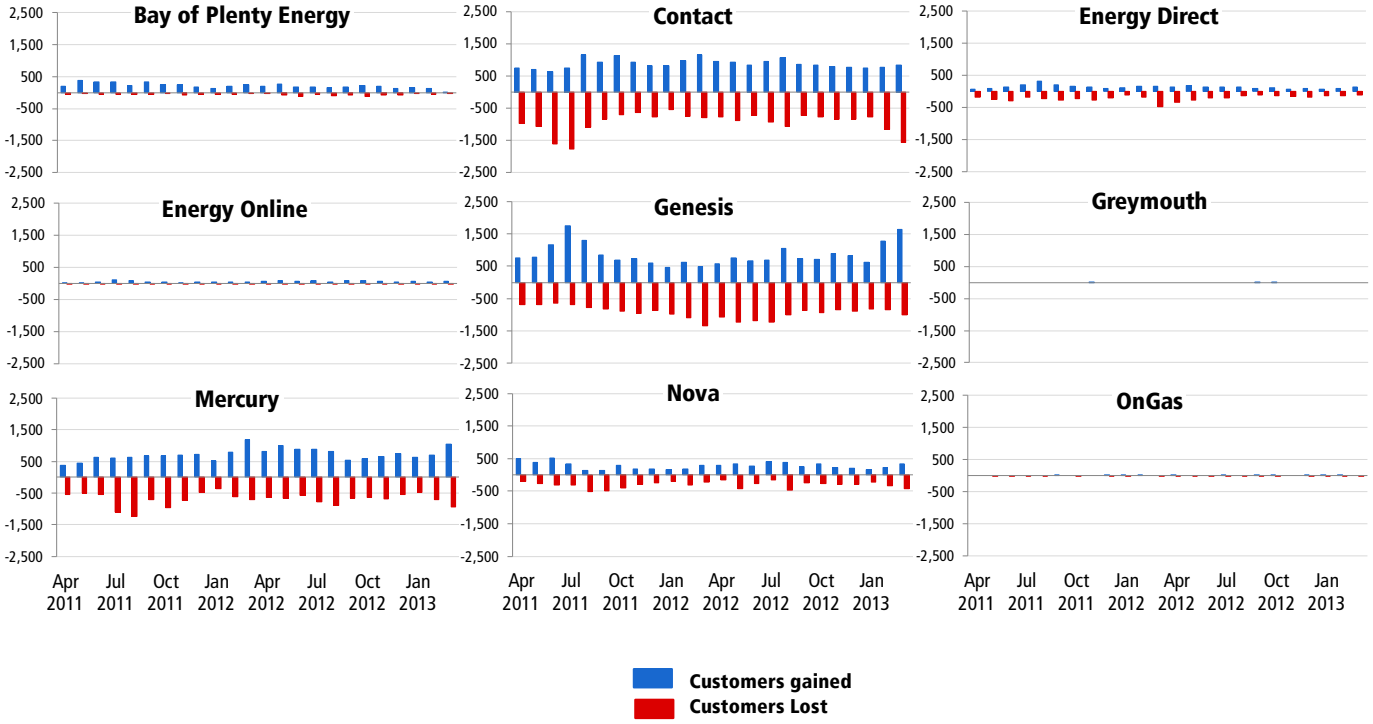
Switching activity by retailer

This chart shows the numbers of ICPs gained and lost by retailers over the past two years. The blue bars show the number of customers gained by the retailer each month, and the red bars show the numbers 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 the figures in the chart below do not include transfers of Auckland Gas and Bay of Plenty Energy customers to Nova.

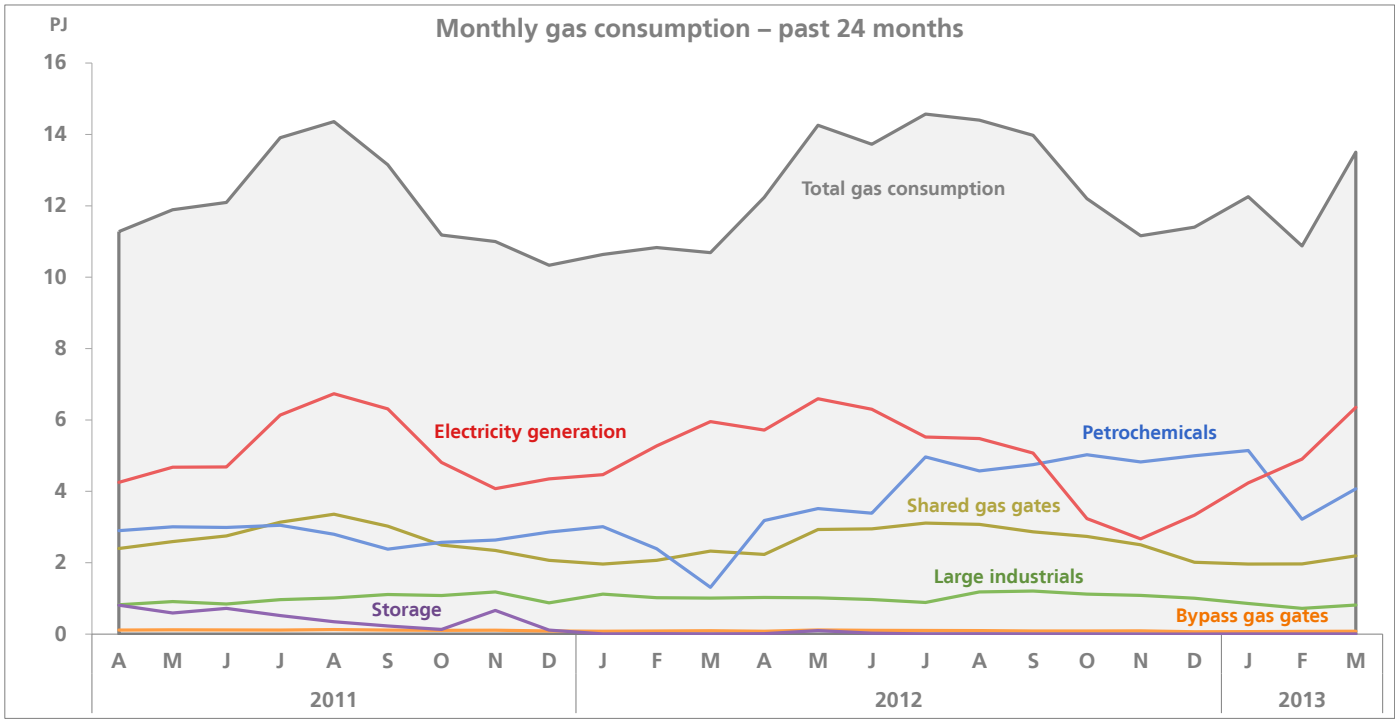
Switching activity by retailer



Total gas volumes

The chart below shows the total amount of gas consumed over the past two years by all gas users. The top grey line shows total consumption; the coloured lines provide a breakdown by type of use.

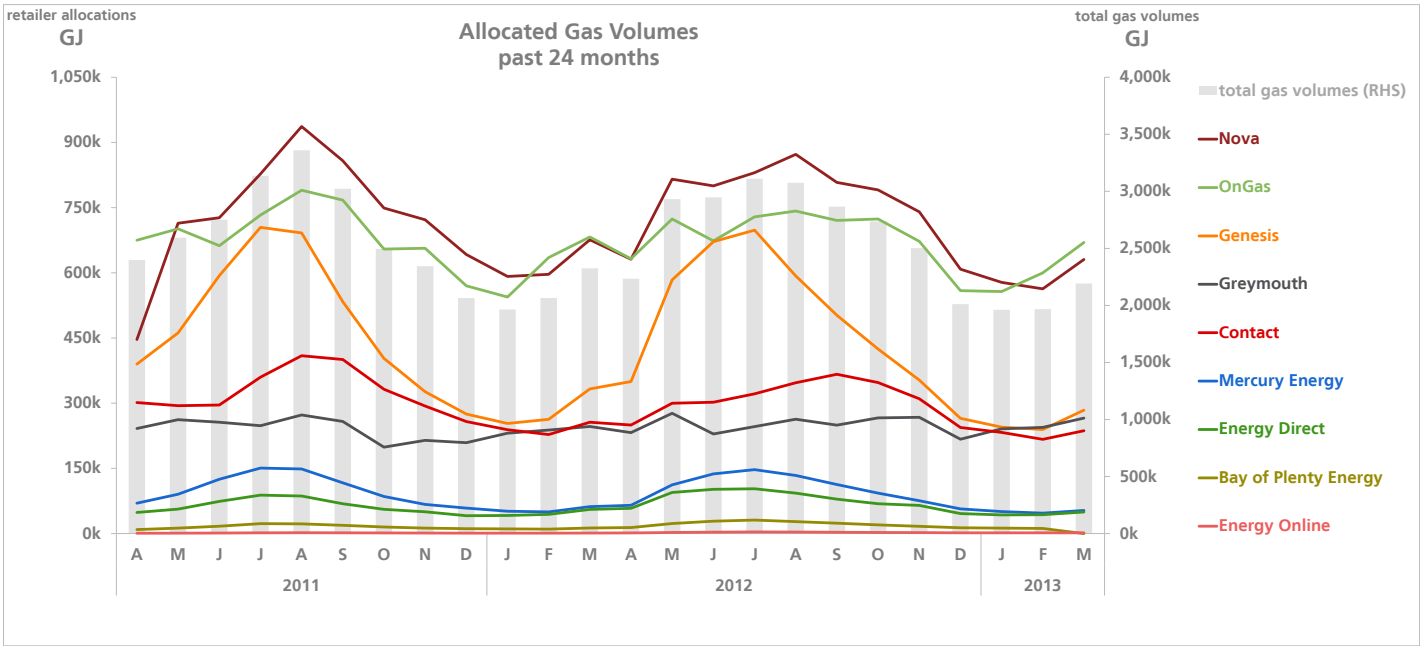
- The red line shows the seasonal peaks and troughs in gas used for thermal electricity generation.
- Consumption for petrochemicals is shown in blue.
- The green line represents volumes of gas used by large industrials, including steel, wood products, dairy processing, and oil refining.
- The purple line shows the volumes of gas going to storage.
- The orange line represents gas used by consumers connected to the private pipelines owned by Nova.
- The tan line shows the amount of gas used by customers connected to shared gas gates. This represents the majority of commercial and residential customers. There is a seasonality trend to the consumption, higher in winter and lower in summer. These allocated gas volumes are broken down by retailer in the next section.



Allocated gas volumes

This chart shows the gas volumes allocated to retailers at shared gas gates over the past two years. This includes 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.

Nova Energy is the largest retailer by allocated volumes, followed by OnGas. Genesis, the third largest retailer by volume, has a load profile that peaks in winter and troughs during the summer. Contact, Mercury, and Energy Direct all show similar – but less pronounced – winter peaking patterns. Greymouth's share of allocated gas, in contrast, is relatively steady throughout the year, reflecting its position as largely a supplier to industrial loads.

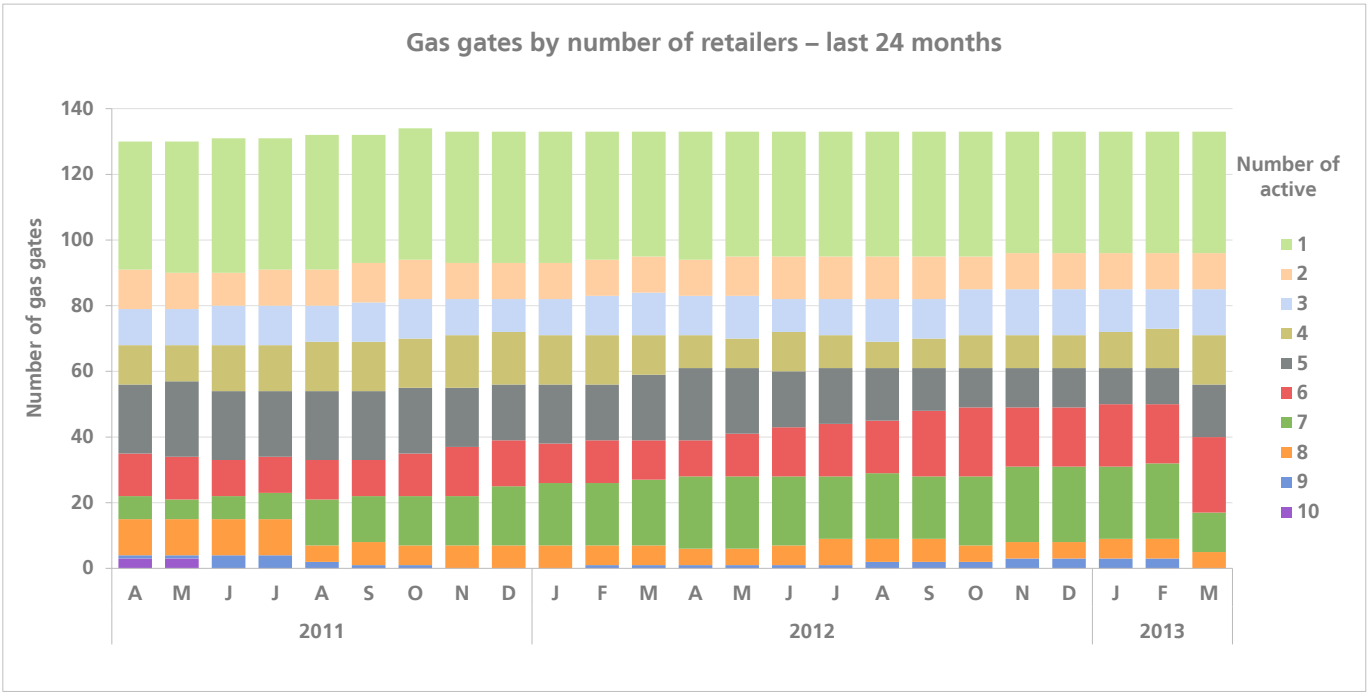


The data are from a mix of allocation stages: Final through February 2012; Interim for March 2012 through December 2012; and Initial for January 2013 through March 2013.

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 is the potential competition for customers.

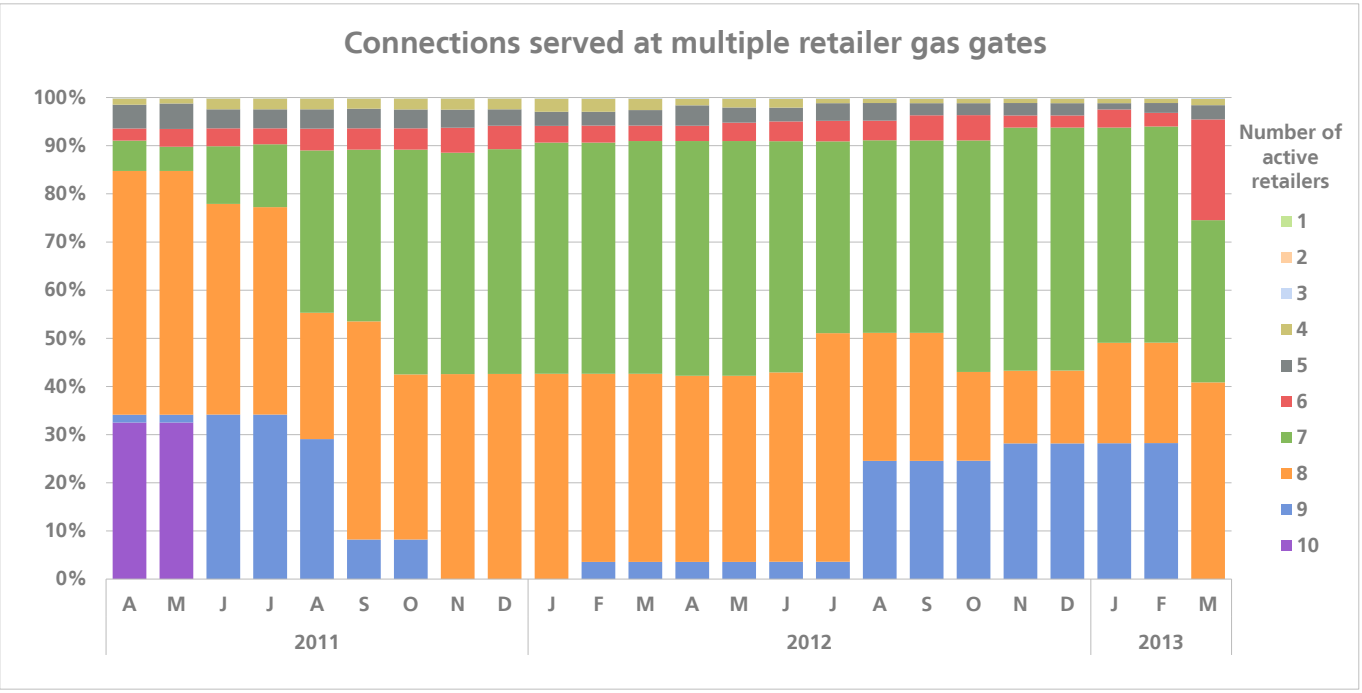
The biggest change in the past quarter is the step change resulting from the amalgamation of Bay of Plenty Energy with Nova, shown in March 2013.



Connections served by multiple retailers

This chart plots the proportion of gas customers who are served from the gas gates in the chart above; that is, customers served at gas gates where multiple retailers trade.

This chart also shows the March 2013 step change caused by the amalgamation of Bay of Plenty Energy into Nova; it also shows the amalgamation in June 2011 of Nova and Auckland Gas. Still, over 95% of gas customers are connected to a gate where least six retailers trade.



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.

6 Critical Contingency Management performance measures

There were no critical contingencies in the previous quarter. A test exercise of the critical contingency management arrangements was held on 20 March, consistent with the requirements of the CCM Regulations. A copy of the Critical Contingency Operator's report on the exercise is available on the CCO website (using Explorer, go to www.oatis.co.nz; click the Critical Contingency Operator button; the report is under the Publications menu).