QUARTERLY REPORT

Quarter ended 31 December 2015

From the Chief Executive

As 2016 unfolds, I look forward to engaging with our stakeholders on opportunities and challenges that the year ahead will no doubt bring.

In November last year, we started the process of consulting on our strategy, work programme and costs for our 2016-17 year (FY2017). As always, our work programme is designed to meet our statutory requirements as the industry body under the Gas Act 1992, and to address Government and industry priorities through achievement of work stream deliverables. Our annual Co-Regulatory Forum on 27 November was well-attended, and was followed by written submissions on our *Consultation on Gas Industry Co FY2017 Statement of Intent and Levy*. This paper feeds into our *2017-19 Statement of Intent* (SOI) and annual Levy Regulations.

Industry's input into this process has been excellent over recent years, successfully underpinning the co-regulatory model. Whilst there has been robust debate over a few important issues, the overall result has been a reasonably settled understanding as to strategies, work programmes and flat-to-dropping costs for successful governance of the downstream industry.

Corporate news continues to show significant industry change, and to influence Gas Industry Co's work. The quarter covered by this Report saw the closure of the two Auckland gas-fired power stations, at Southdown and Otahuhu B, continuing the trend in gas's generation role from baseload towards peaking, and more southerly North Island locations. Also important are the conditional sales of the Maui Pipeline and Vector's gas transmission and non-Auckland gas distribution businesses to Colonial First State. This consolidation has potential efficiency benefits both for pipeline users and Gas Industry Co's work, especially in relation to transmission code convergence.

2016 will also see important Commerce Commission work in relation to gas pipelines, including commencement of the reset of price/quality paths. Those matters were discussed at a Commission workshop hosted by Gas Industry Co on 8 December 2015. Gas Industry Co will continue to work closely with the Commission to ensure we are aligned as much as possible.

Contents

Workstream developments during the quarter are summarised in this Quarterly Report. Further details of the developments have generally been reported previously through Gas Industry Co's periodic News Bulletins and are available on our website www.gasindustry.co.nz

Another important aspect of our work in the immediate future is to monitor the newly implemented Market-based Balancing (MBB) regime on the Maui Pipeline, and associated impacts on the emsTradepoint wholesale market. We are currently developing arrangements for this monitoring, including seeking undertakings from relevant participants on the provision of information that will enable us to do this in the most effective meaningful way.

Upstream, the ongoing downturn in international oil prices continues to affect investment. The gas industry in New Zealand is not alone facing these challenges, but a key role for Gas Industry Co in supporting ongoing investment is to maintain assurance that our downstream gas market is well-governed and remains a good 'sink' for future gas finds.

I am confident that our work programme will support the good health of the downstream gas sector, including by enhancing market arrangements for the benefit of participants and consumers. In the past quarter, this is exemplified by the outcome of the most recent independent assessment of retail gas contracts which demonstrated further improvements to retailers' supply arrangements with small customers.

STEVE BIELBY
Chief Executive

HIGHLIGHTS FROM THE QUARTERLY INDUSTRY PERFORMANCE MEASURES REPORT

- Eleven retail gas brands owned by nine different retail companies are active in the gas market. Genesis is the largest retailer by customer share. Nova Energy is the largest retailer by volume market share and has the largest share of commercial and industrial customers.
- Around 99% of gas customers are connected to a gate where eight or more retailers trade, demonstrating that gas retailers generally are competitive throughout the North Island.
- Retail market concentration, as measured by the Herfindahl-Hirschman Index (HHI), has decreased in all regions since 2009. Nationally, the HHI stands at 2,322, in comparison to 3,033 in February 2009 (the start of the Gas Registry).
- The annual rate of gas consumer switching between retailers for the past 12 months is 19.6% compared with 22% in the electricity sector. Switching rates have been over 17% for the past two years.
- 56% of residential consumer sites have switched retailer at least once in the past five years; 64% of small commercial and 72% of large commercial sites have switched at least once.
- In December 2015, the average time for a switch to be completed was 2.45 days; the 12-month average time is 4.4 days.
- Average annual unaccounted-for gas (UFG) over the past year stands at about 1.0% (compared with about 2% in 2009).

See the full Performance Measures Report on page 7.

SUMMARY OF DEVELOPMENTS DURING THE QUARTER

Retail Scheme demonstrates benefits

The latest independent assessment of contracts under the Retail Gas Contracts Oversight Scheme (Retail Scheme) has confirmed improved terms are being offered to small gas consumers, and has again demonstrated the benefits of this voluntary governance arrangement. The *Benchmark Assessment Report - 2015* by Independent Assessor, Palairet Law, is the fourth since the Retail Scheme's introduction in 2010, but the first since the Scheme was amended to provide for three-yearly, rather than annual reviews, as well as the addition of Reasonable Consumer Expectations.

The assessment as at 1 July 2015 concludes with an overall rating of 'Substantial' alignment with the Retail Scheme's 18 outcome-based benchmarks. Although this overall rating is unchanged from the result of the previous full assessment in 2012, a number of retailers have improved their individual ratings, as shown in the table below.

Retail Scheme Assessment Results 2011-2015

Overall Alignment	2015	2012	2011
Full	-	-	-
Substantial	9	6	3
Moderate	1	3	4
Low	-	1	3
TOTAL	**10**	**10**	**10**

The Report was provided to the Minister of Energy and Resources Hon Simon Bridges, who expressed satisfaction at the result of retailers voluntarily complying with the Retail Scheme. He also noted the Retail Scheme demonstrates how a low-cost, non-regulated mechanism can be successful in achieving policy objectives for the gas sector, while adequately protecting the long-term interests of small consumers.

Gas Industry Co acknowledges the high level of engagement by retailers during the 2015 assessment. This confirms that retailers are keen to meet the reasonable expectations of customers.

Gas Billing Factors Guidelines revised following Standard update

In December 2015, Gas Industry Co revised its *Billing Factors Guidelines* to reflect the updated gas measurement Standard NZS 5259:2015, published by Standards New Zealand.

The Standard sets out minimum requirements to improve the accuracy of gas measurement and to benefit industry participants and consumers by providing a means of compliance for meeting performance criteria.

NZS 5259:2015 is available on Standards New Zealand's website.

Registry Operator - Request for Proposal

A joint tender process has been developed between Gas Industry Co and the Electricity Authority (EA) for provision of their respective gas and electricity registry services. Two separate Request for Proposal (RFP) documents were published on the New Zealand Government Electronic Tenders Service (GETS) on 15 January 2016.

By collaborating in this process, the EA and Gas Industry Co can explore the potential benefits of a single provider continuing to perform both roles.

The Gas Registry – the authoritative database of information on gas customer installations and the platform for customer switching – is currently operated and maintained by Jade Software Corporation as Registry Operator under the Gas (Switching Arrangements) Rules 2008.

Release of two Requirements & Procedures Documents

In November 2015, Gas Industry Co published two Requirements and Procedures documents, providing detailed information in the areas of gas measurement, and gas reconciliation across the delivery chain.

The *Gas Measurement – Requirements and Procedures Document* gives an overview of the legal requirements and technical standards that apply to gas measurement, and a description of common industry practice and terminology.

The *Gas Reconciliation – Requirements and Procedures Document* explains how physical flows and commercial transactions in the gas supply chain are reconciled and how the energy quantities used in each commercial transaction are derived. It also provides an overview of the arrangements, including key legislative and commercial documents.

These latest two Documents follow publication of the *Gas Quality – Requirements and Procedures Document* in June 2015. The latter Document gives industry stakeholders an understanding of the legal requirements and industry procedures that manage gas quality.

Gas Story roadshows and stakeholder engagements

In October 2015, Gas Industry Co completed a further series of well-attended *NZ Gas Story* roadshow presentations to industry participants in Wellington, Auckland and New Plymouth. The presentation slides and the full NZ *Gas Story* is available on our website. The roadshows are now an annual event, but presentations can be arranged at other times.

In November 2015, Gas Industry Co's Independent Directors visited major gas users Fonterra and Bluescope New Zealand Steel at their Te Rapa and Glenbrook sites. Independent Directors also visited Vector in Auckland to discuss current issues across its gas businesses, as well as implications for the gas industry arising from new electricity technologies and increasing distributed generation. These visits are valuable in building understanding for Gas Industry Co Directors and staff of how gas is being used in the market place and key issues for participants.

Annual Report published

Gas Industry Co's 2015 *Annual Report* was published in October 2015. The Report highlights the priorities for 2015/16 and outlines the Company's key achievements in 2014/15.

In his foreword, the Chair the Rt. Hon. Jim Bolger noted,

> 'the gas industry in New Zealand continues to be in good health and is making a substantial contribution to the country's energy supply mix and economic wellbeing'.

Annual meeting

Gas Industry Co's Annual Meeting of Shareholders was held on 26 November 2015. Shareholders re-elected Jim Bolger and Keith Davis as Independent Directors. Both Directors retired under the rotation provisions of Gas Industry Co's Constitution and, being eligible, made themselves available for re-election.

Progress against objectives and outcomes

Good progress continues to be made in achieving the objectives and outcomes set for Gas Industry Co and the wider industry in Part 4A of the Gas Act and the Government Policy Statement on Gas Governance 2008 (GPS). An updated summary of progress is included on page 35 of this Quarterly Report.

INDUSTRY PERFORMANCE MEASURES
1 OCTOBER – 31 DECEMBER 2015

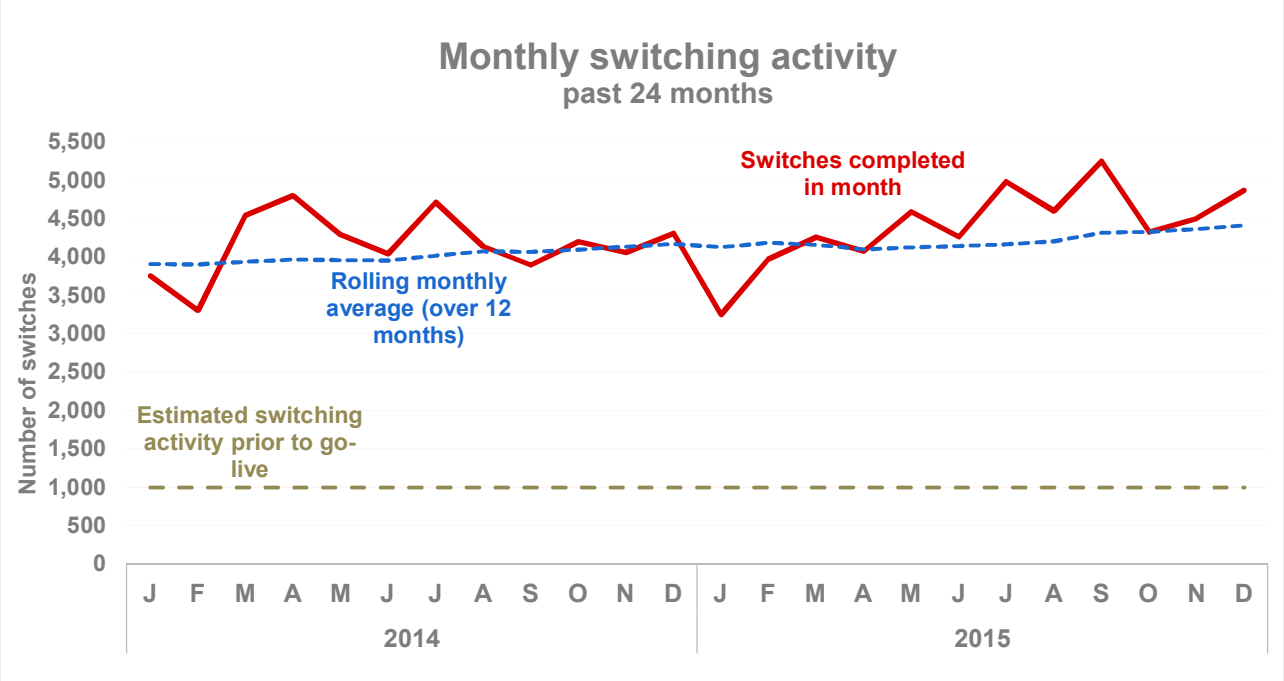
1 Summary

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 governance arrangements 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.

Explanatory details about the charts can be found in the Appendix to this report.

2 Switching performance measures

Chart 1: Monthly switching activity



- Over 4,000 consumers switch gas supplier per month on average.
- The churn rate for the 12 months to December 2015 is 19.6%, one of the highest rates of retail utility switching worldwide. Gas customers can switch retailers for many reasons, but the high level of activity in the gas retail market suggests that customers find changing retailer easy and can put pressure on retailers to offer competitive terms and pricing.

Chart 2: Regional switching activity

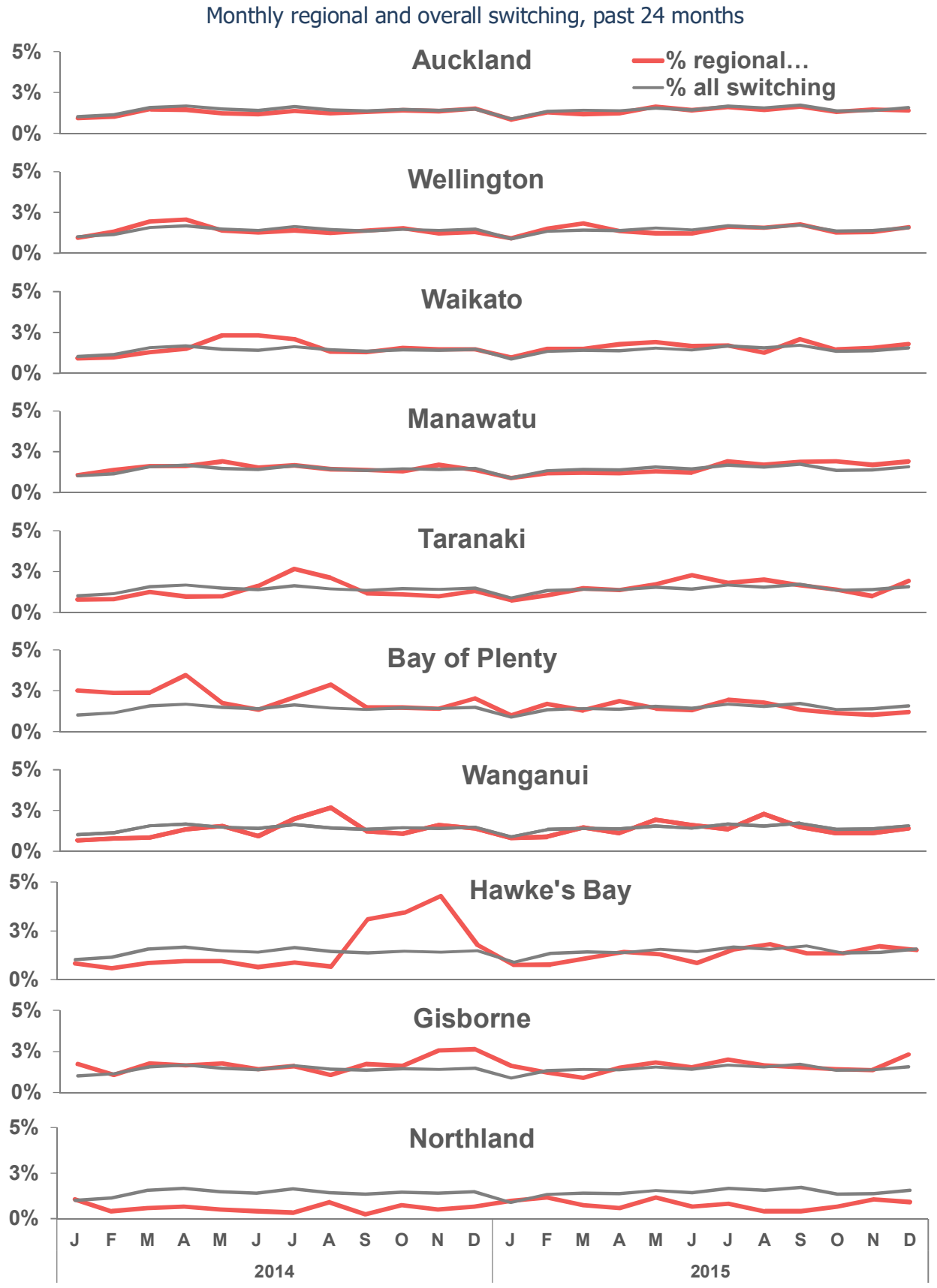
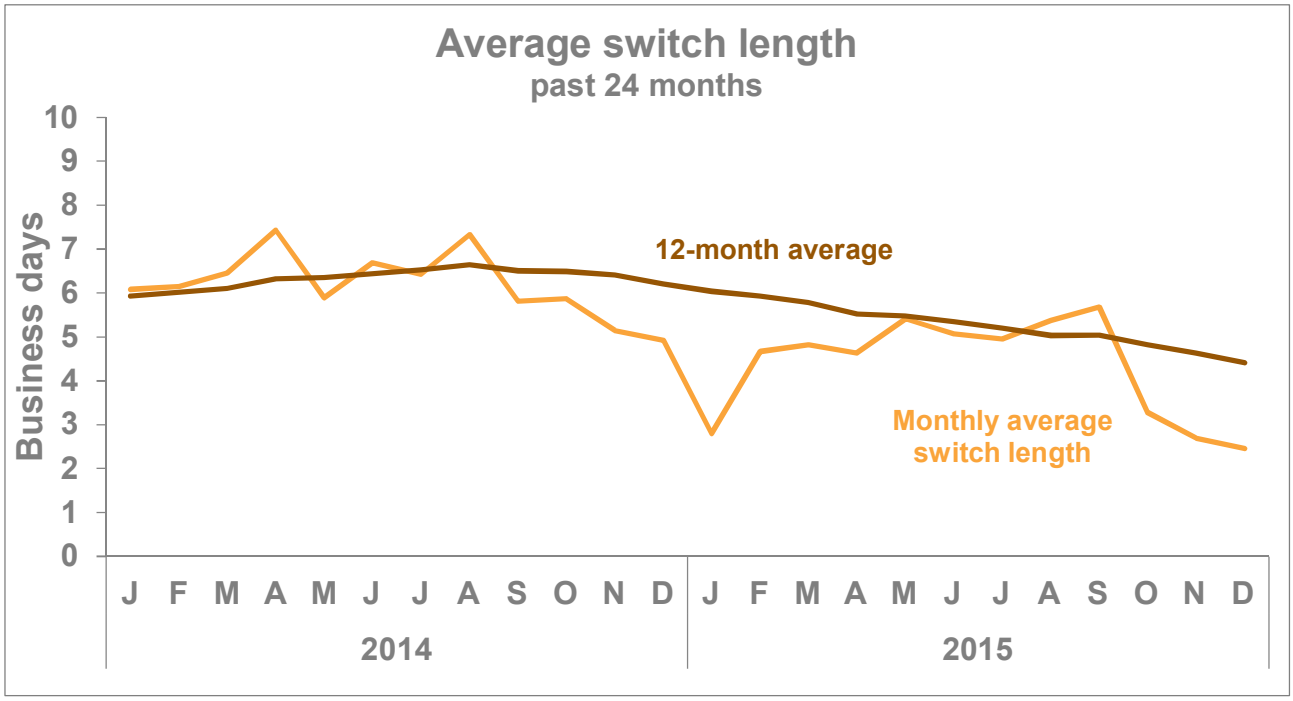


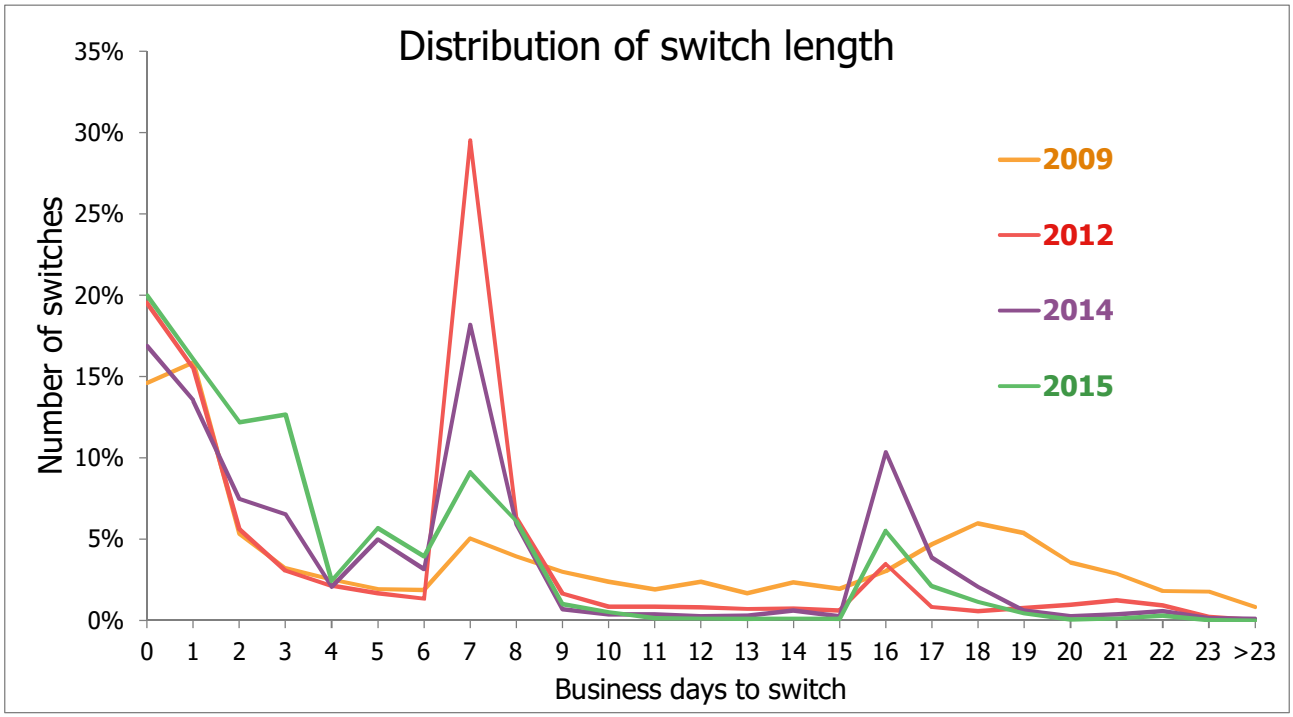
Chart 3: Time to process switches



- December saw the fastest switching time since the start of the registry: on average, switches took 2.45 days to complete.

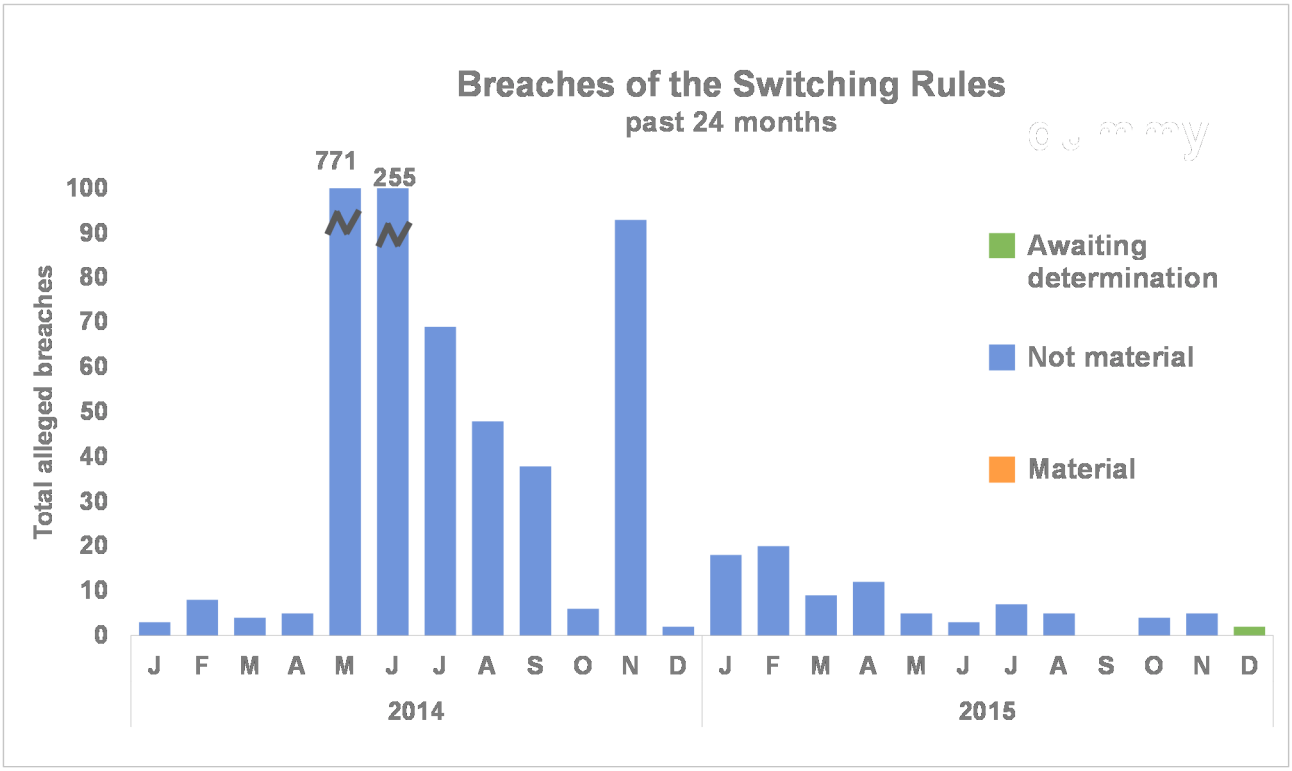
- The 12-month average switching time stands at about 4.4 days.

Chart 4: Distribution of switching length



This chart shows the distribution of switching times for the calendar years of 2009, 2012, 2014, and 2015. As the chart shows, switches are increasingly being completed within three days.

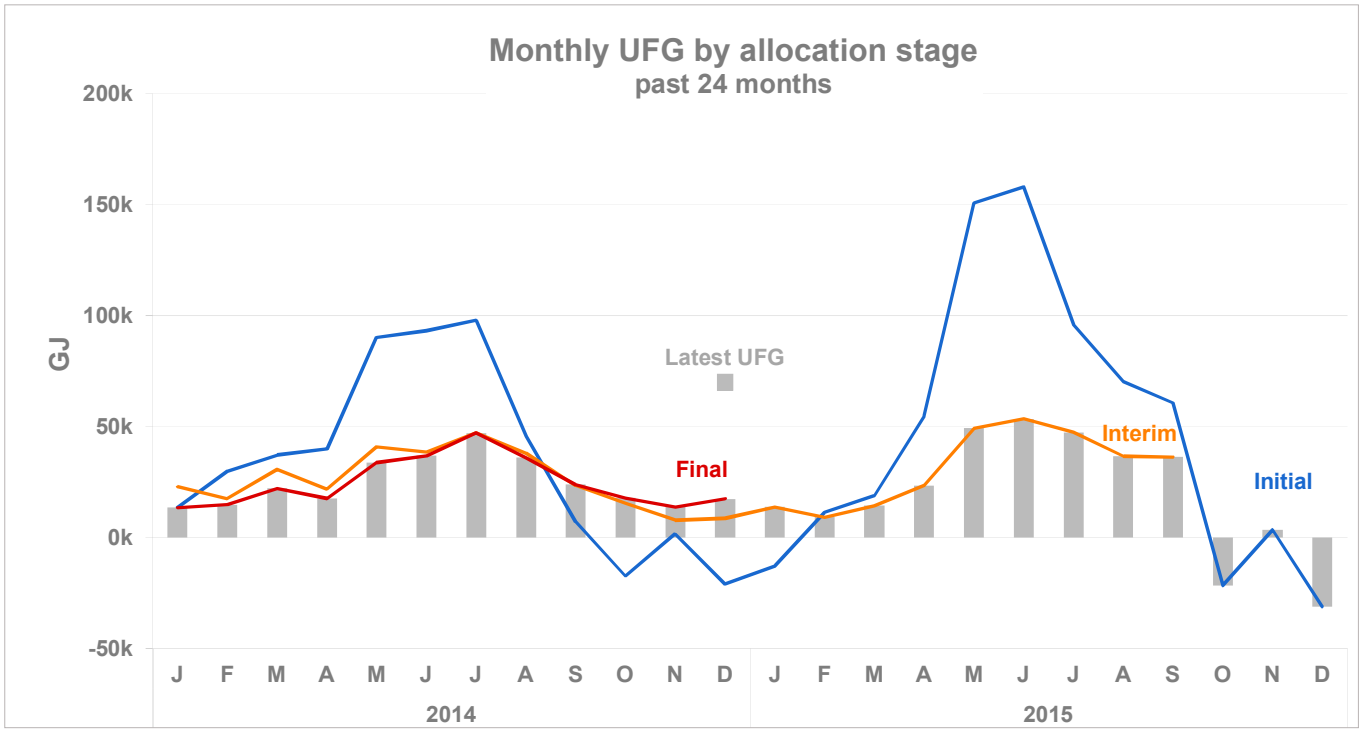
Chart 5: Number and severity of breaches of the Switching Rules



- Most of the breaches in May and June 2014 relate to delays in responding to switching notices by Contact Energy, when it was in the midst of its IT upgrade.
- No switching breaches were alleged for September 2015.

3 Allocation and reconciliation performance measures

Chart 6: Volumes of unaccounted-for gas (UFG)



- UFG has been negative in October and December 2015, consistent with trends in previous years. (see Chart A-2 in the appendix for a chart of UFG since the start of the Reconciliation Rules).

Chart 7: Percentage of UFG

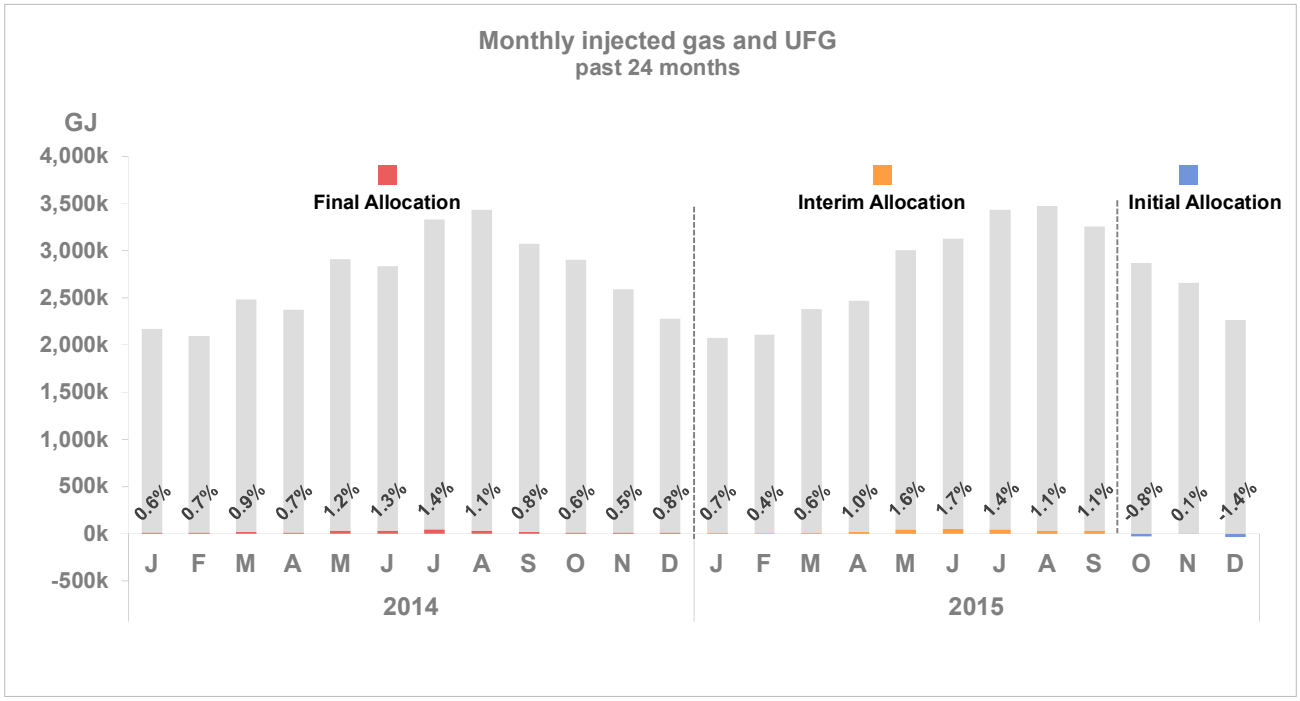
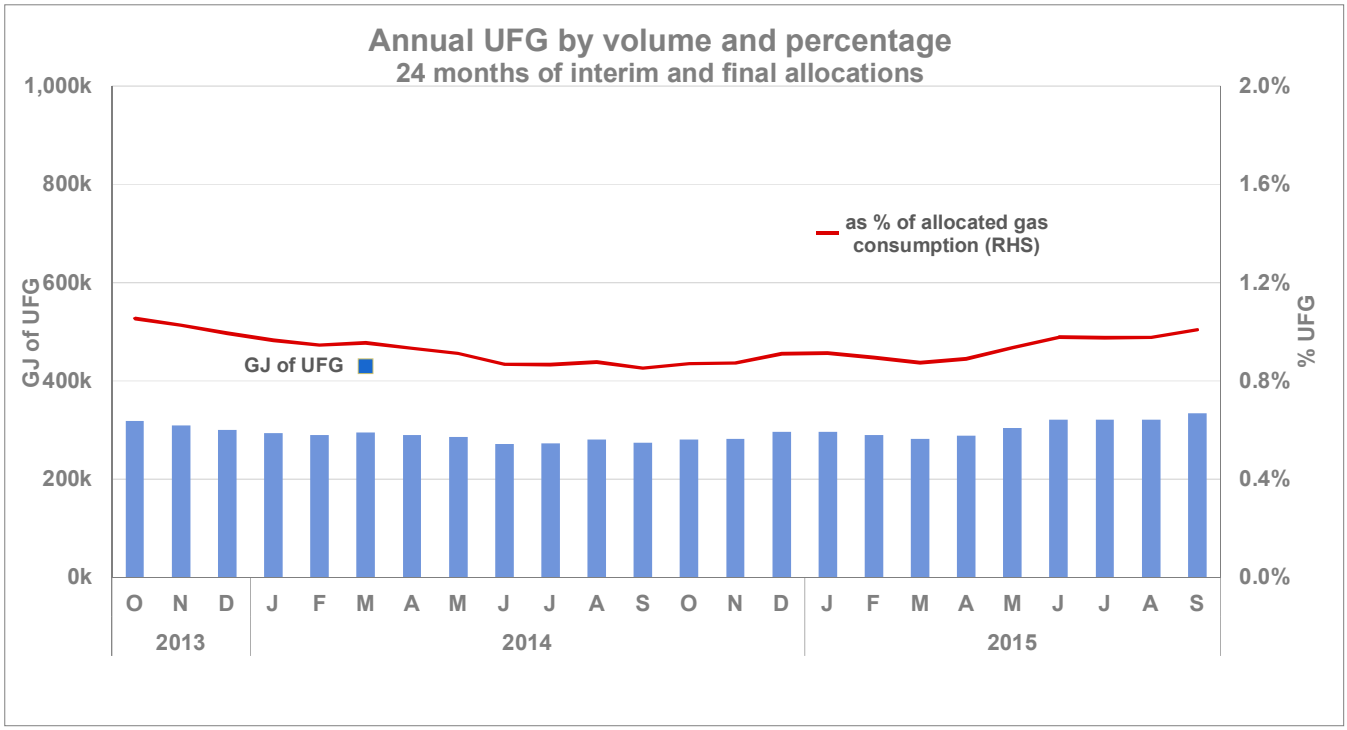
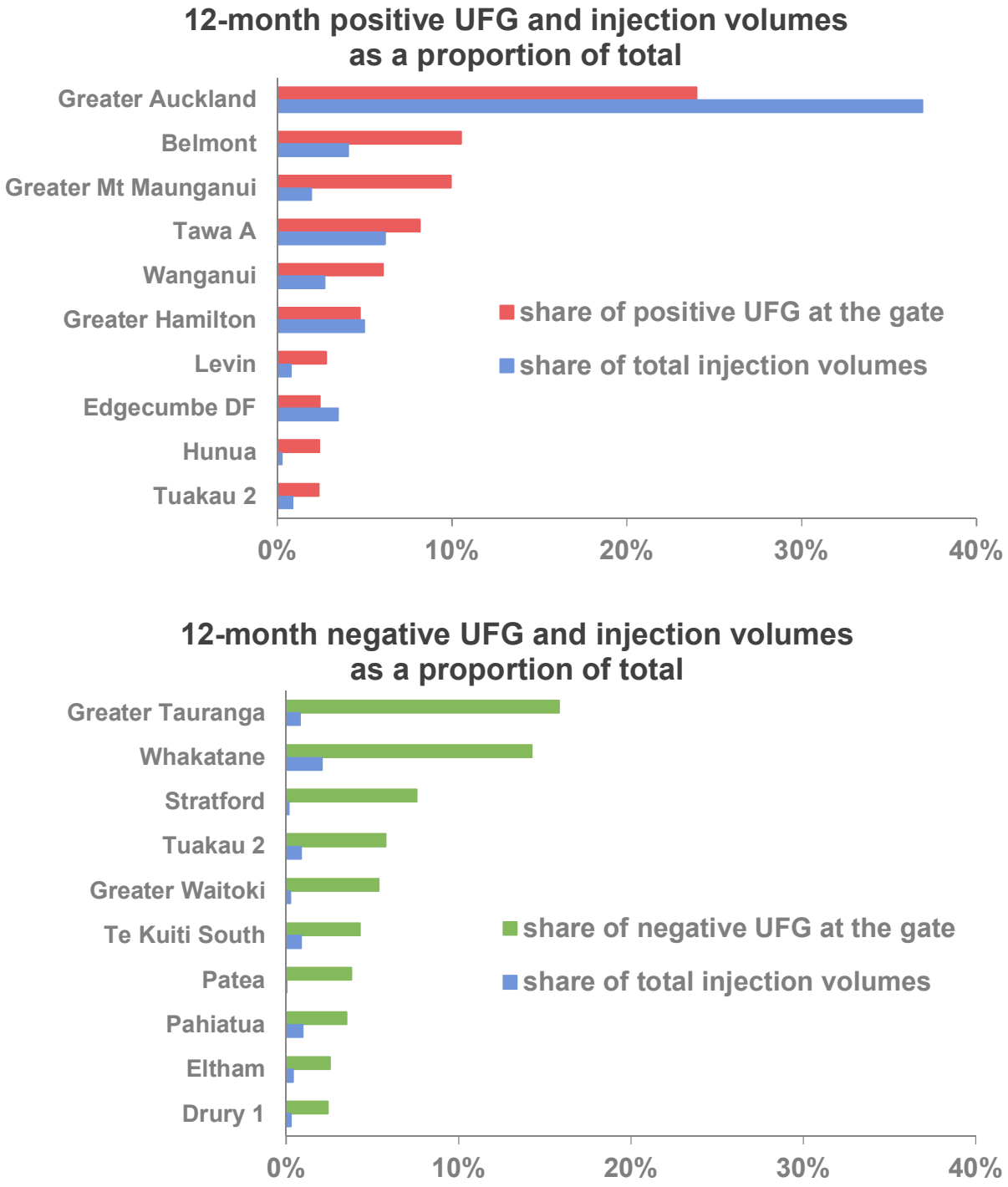


Chart 8: Rolling 12-month UFG



- In volume terms, annual UFG has halved since 2009, decreasing from about 600,000GJ per year to about 300,000 GJ. As a percentage of allocated gas, annual UFG has also halved, decreasing from about 2% per year to about 1%.

Chart 9: Gas gates where UFG is the highest

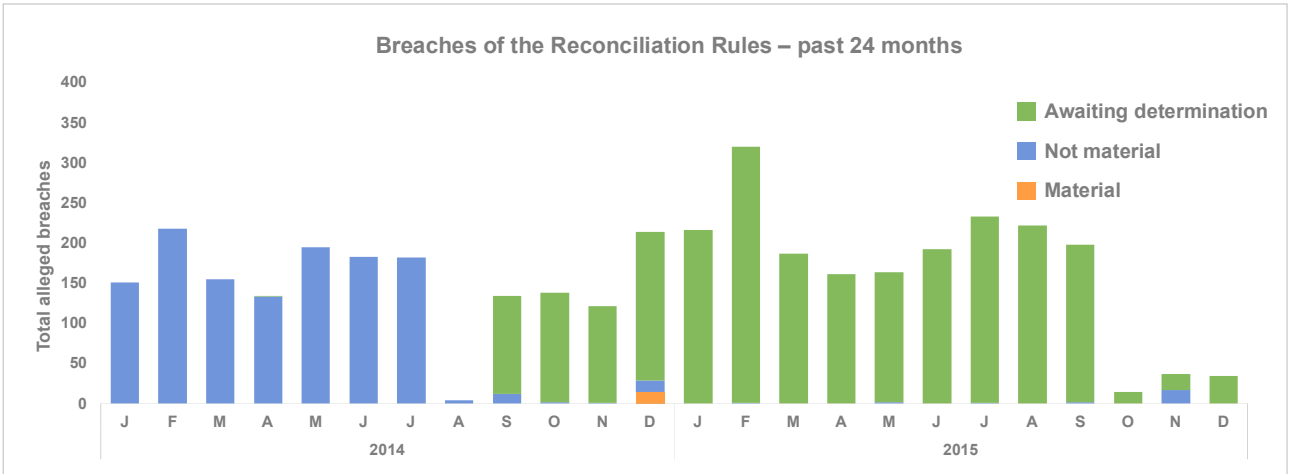


- These charts show the gates that experience the largest share of total UFG, compared to their share of total gas gate deliveries at shared gas gates. These charts use 12 months of the most recent interim and final allocation data available: in this case, October 2014 through September 2015.

- The 10 gates shown in the top chart account for 74% – about 316,000 GJ – of the positive UFG experienced over the past 12 months.

- The 10 gates shown in the bottom chart account for about 65% (about 63,000 GJ) of the negative UFG experienced in the past 12 months. Six of the gas gates shown – Whakatane, Tuakau 2, Te Kuiti South, Pahiatua, Eltham, and Drury – have been determined to be global one-month gates, since, among other things, they have a high proportion of industrial load. The global one-month methodology assigns a share of the actual UFG experienced in a month to industrial consumers, in contrast to the usual calculation method, which assigns industrial load an annual average amount of UFG.

Chart 10: Number and severity of breaches of the Reconciliation Rules



- The very low level of alleged breaches in August 2014 can be attributed to the Allocation Agent omitting rule 37 breaches in its reporting that month. The Allocation Agent alleged the outstanding breaches in February 2015.

- Over 98% of alleged breaches of the Reconciliation Rules in the past year have occurred in relation to rule 37 – the rule that requires initial consumption information submitted by retailers to be within a percentage of accuracy of the consumption information submitted for the final allocation.

- It has proven efficient for the Market Investigator (or, more recently, Gas Industry Co) to attempt to reach a settlement on 12-month batches of rule 37 breaches, which is why there are a large number of breaches awaiting determination.

Audits commissioned

Event audits

Gas Industry Co has commissioned an event audit to investigate the higher than average levels of UFG experienced at Greater Mt Maunganui (GMM08001) and Greater Tauranga (GTT07701). The auditor identified that the primary cause of higher than normal UFG at one gas gate and negative UFG at the other was due to a group of 152 ICPs that were associated with the wrong gas gate. There was also a small number of ICPs that were outside of the Bay of Plenty region that had been allocated to one or other of these gas gates. Those errors are being fixed by the gas distributor. The auditor estimated that correcting the ICP allocations would have reduced the negative UFG at Greater

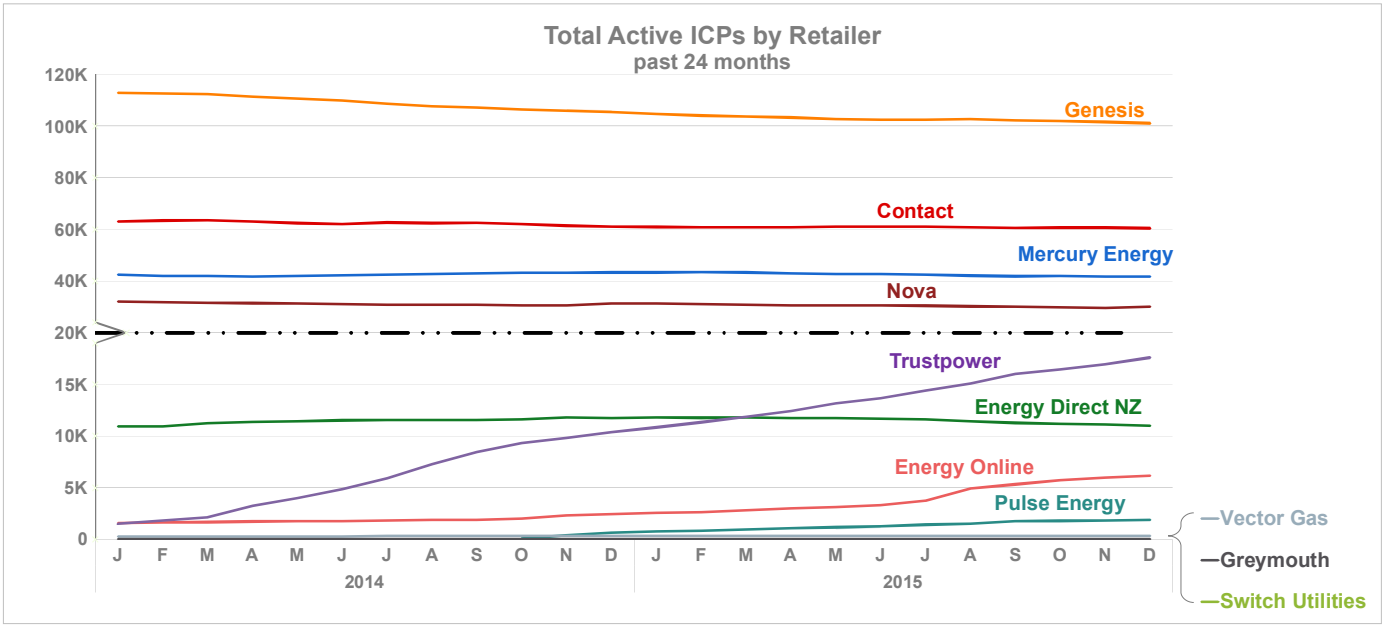
Tauranga by 1,394 GJ in the September consumption period (and the Greater Mt Maunganui UFG by a corresponding amount).

Performance audits

The second round of retailer performance audits is complete and audit reports are available on the Gas Industry Co website.

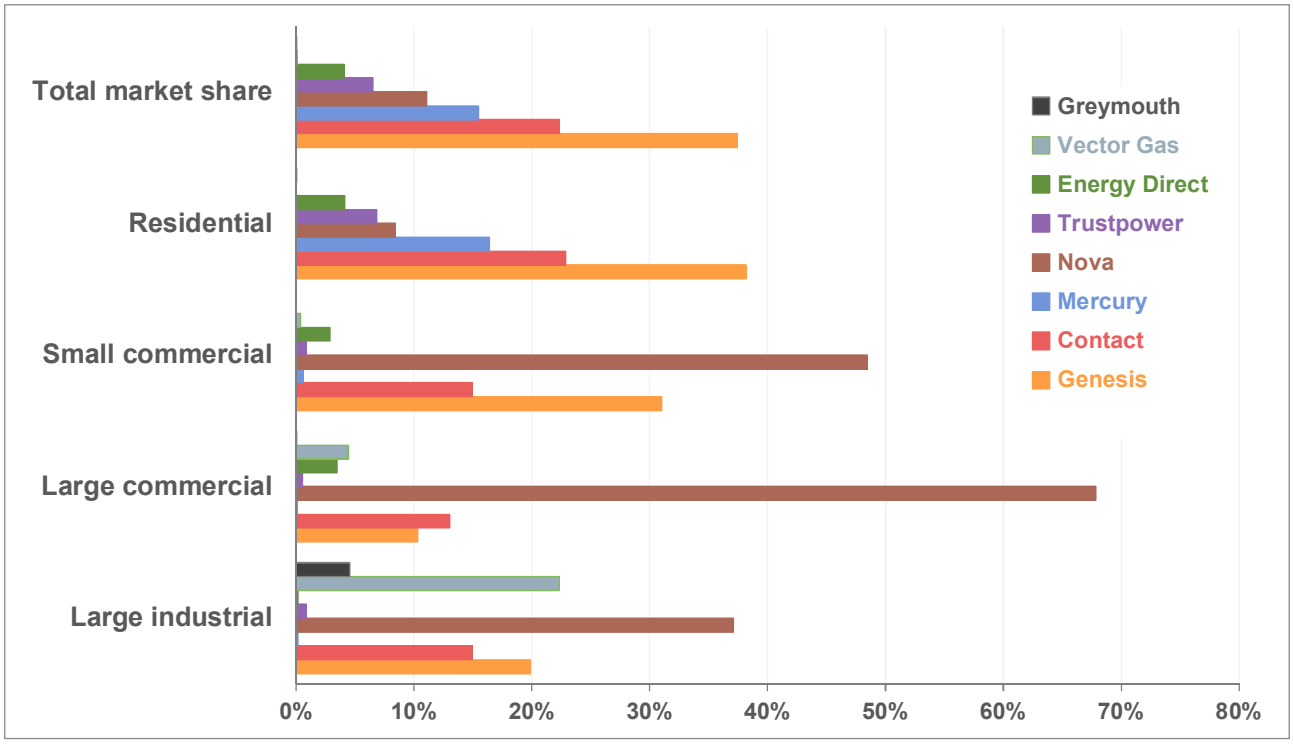
4 Market competition performance measures

Chart 11: Market share of ICPs by retailer



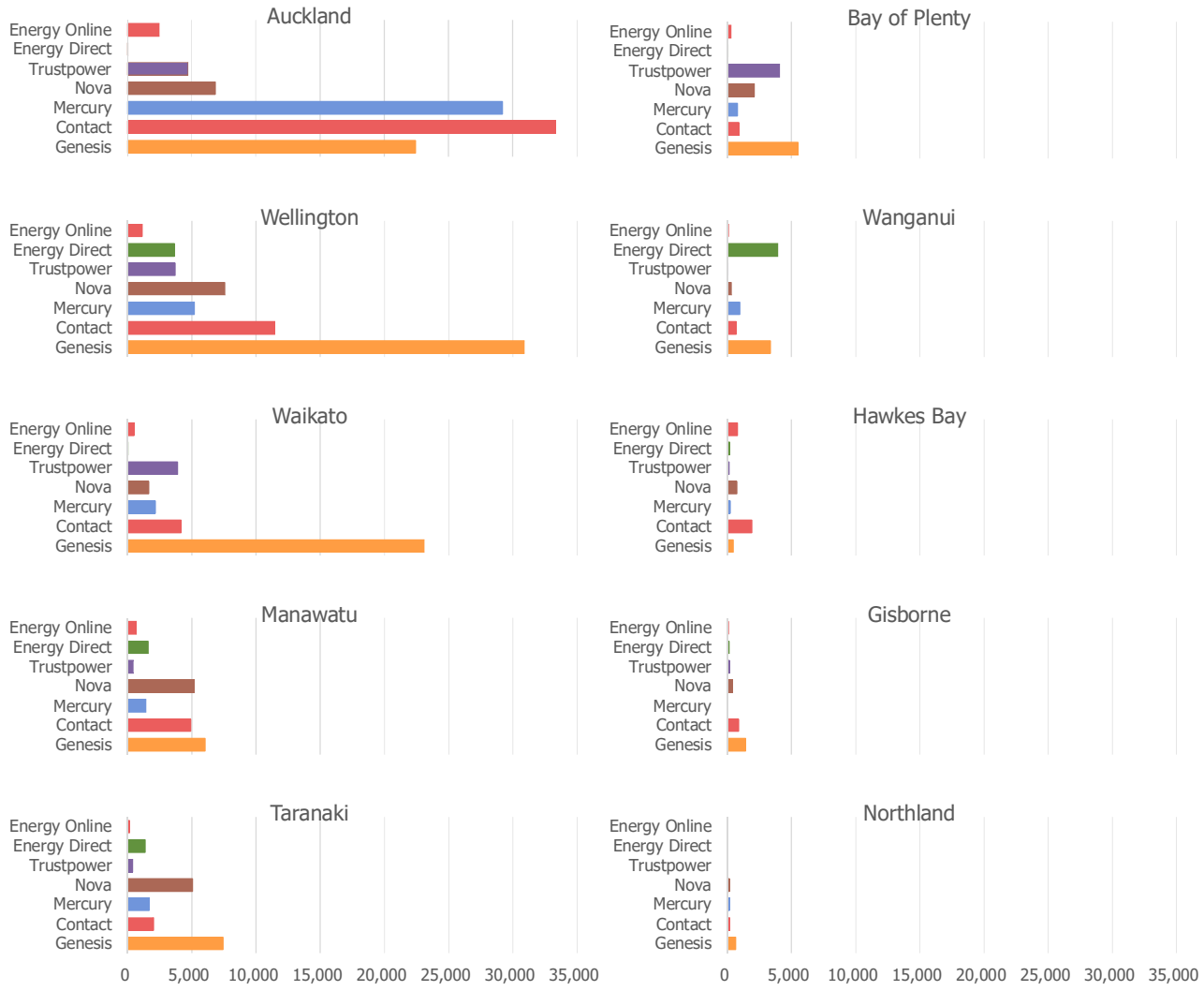
- There have been a number of new entrants to the retail gas market in the past few years:
  - Switch Utilities in July 2015;
  - Pulse Energy in October 2014; and
  - Trustpower in November 2013, following the company's acquisition of Energy Direct in July 2013.
- There are now 11 distinct retail brands, owned by nine different retail companies (Energy Direct is owned by Trustpower; Energy Online is owned by Genesis Energy).

Chart 12: Customer market share by consumer segment



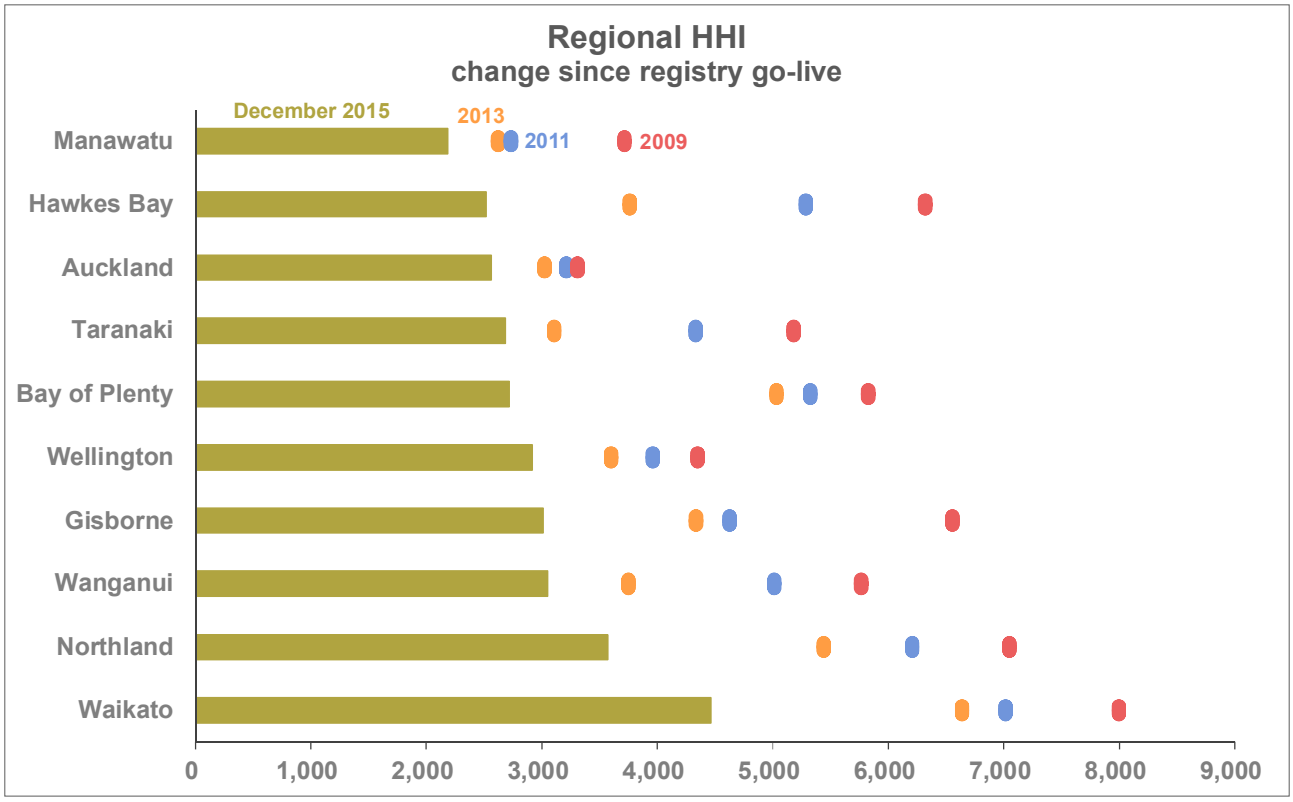
- In this chart, consumer segment is determined by the load shedding category listed on the gas registry for each consumer site.
- The chart includes the retail brands that have more than 3% of market share in a category. Energy Online, Pulse Energy, and Switch Utilities, with 2.4%, 0.7%, and 0.004% of the residential market, respectively, are not shown on the chart.

Chart 12a: Customer market share by region



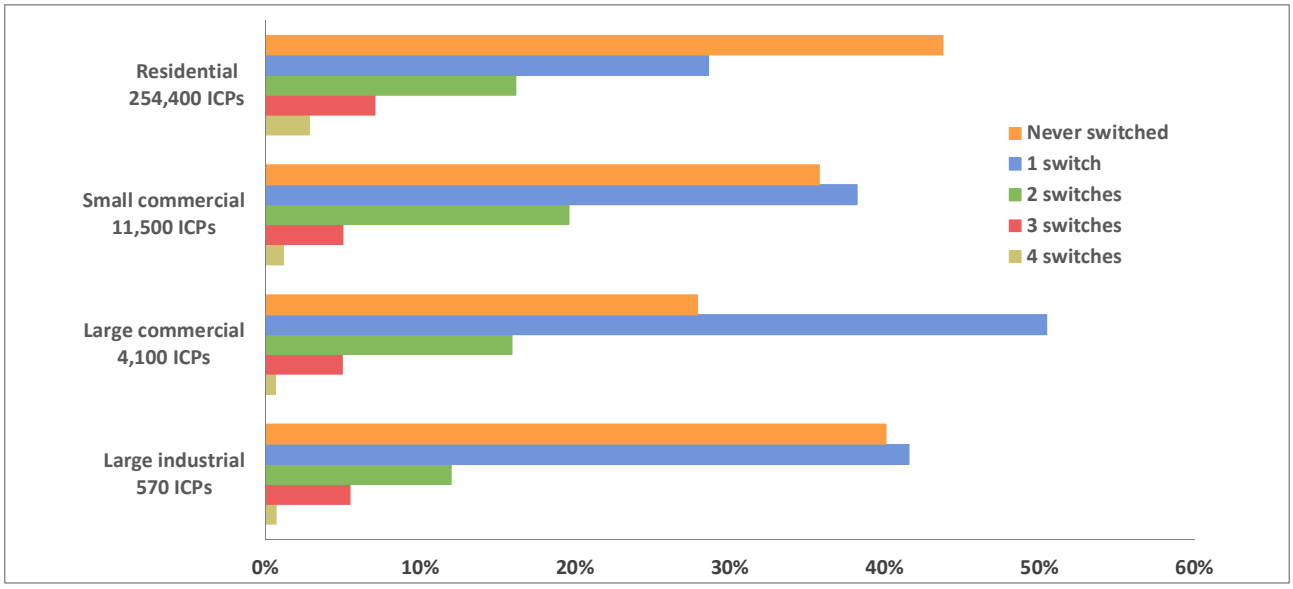
- This chart shows the number of ICPs for each retailer in each geographical region. The retailers shown each have over 1% of total customer market share.

Chart 13: Herfindahl–Hirschman Index (HHI)



- The HHI has decreased in all regions since 2009, indicating that the retail market is becoming less concentrated across the North Island.
- Nationally, the HHI stands at 2,322, in comparison to 3,033 in February 2009 (the start of the registry).

Chart 14: Switching by consumer sites since 2008

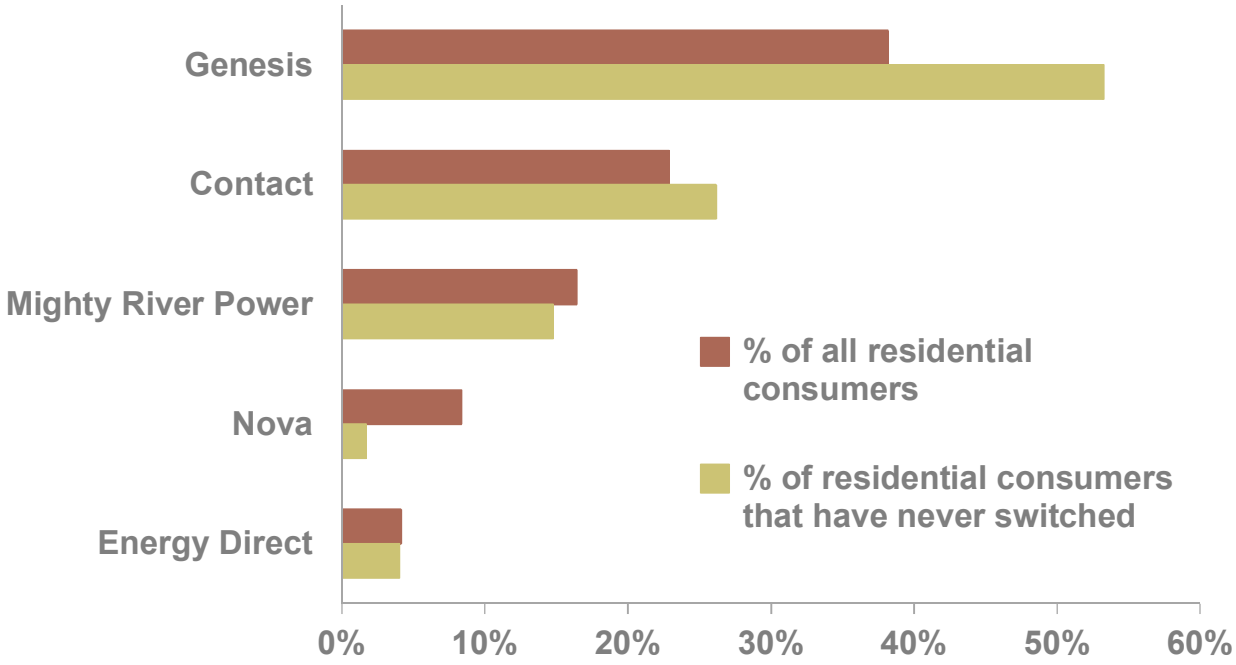


As with Chart 12, consumer sites in this chart and Chart 15 are categorised based on the load shedding category recorded in the gas registry.

- 56% of residential consumer sites
- 64% of small commercial sites
- 72% of large commercial sites; and
- 60% of large industrial sites

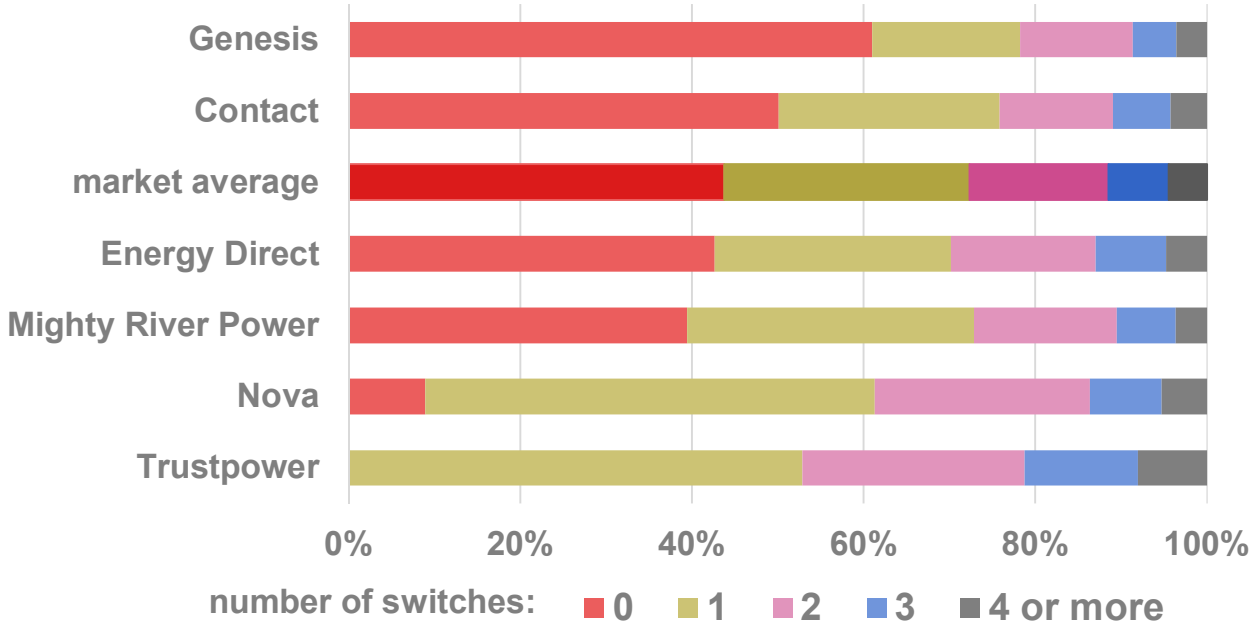
have switched retailer at least once since the start of the gas registry (March 2009).

Chart 15: Residential consumer sites that have never switched



- This chart compares retailers' market share of all residential consumers with their share of residential consumers that have never switched. It shows, for example, that Genesis has about 38% of the total residential market, and about 53% of the residential consumers that have not switched retailer since the start of the gas registry in March 2008.
- The chart excludes Trustpower, Pulse Energy, and Switch Utilities, as all of their customers have made at least one retailer switch.

Chart 15a: Residential customers by number of switches



- This chart provides another way to think about residential customer switching. The third bar repeats the data on residential switches from chart 14 above: 44% of residential consumer sites have never switched retailer; 29% have switched once; 16% have switched twice; 7% three times, and 3% four times.
- The other bars enable comparison with retailers' residential customer bases. 61% of Genesis customers, for example, have never switched; the proportion is 50% for Contact customers.
- In contrast, Trustpower has built its customer base entirely through switching: 53% of its customers have switched once; 26% twice; and 13% three times.

Chart 16: Switching activity by retailer

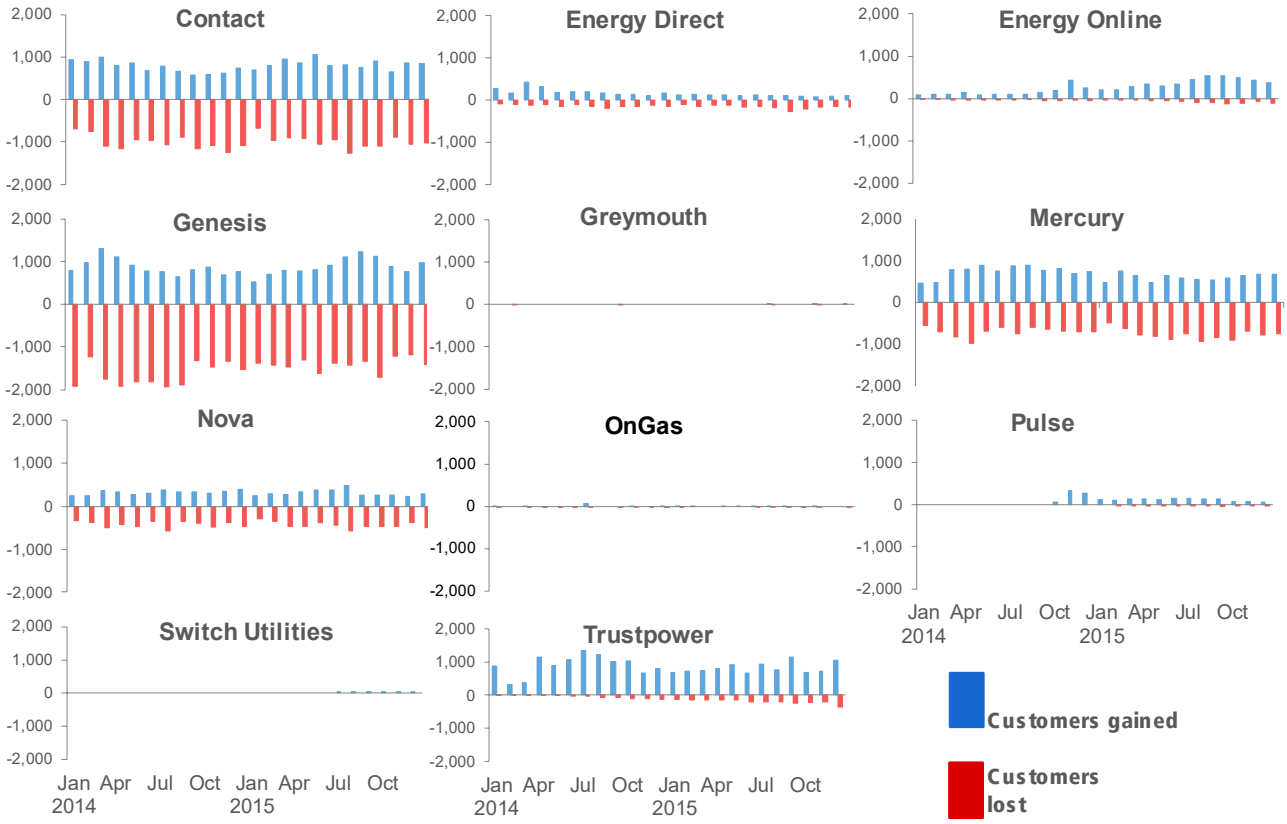
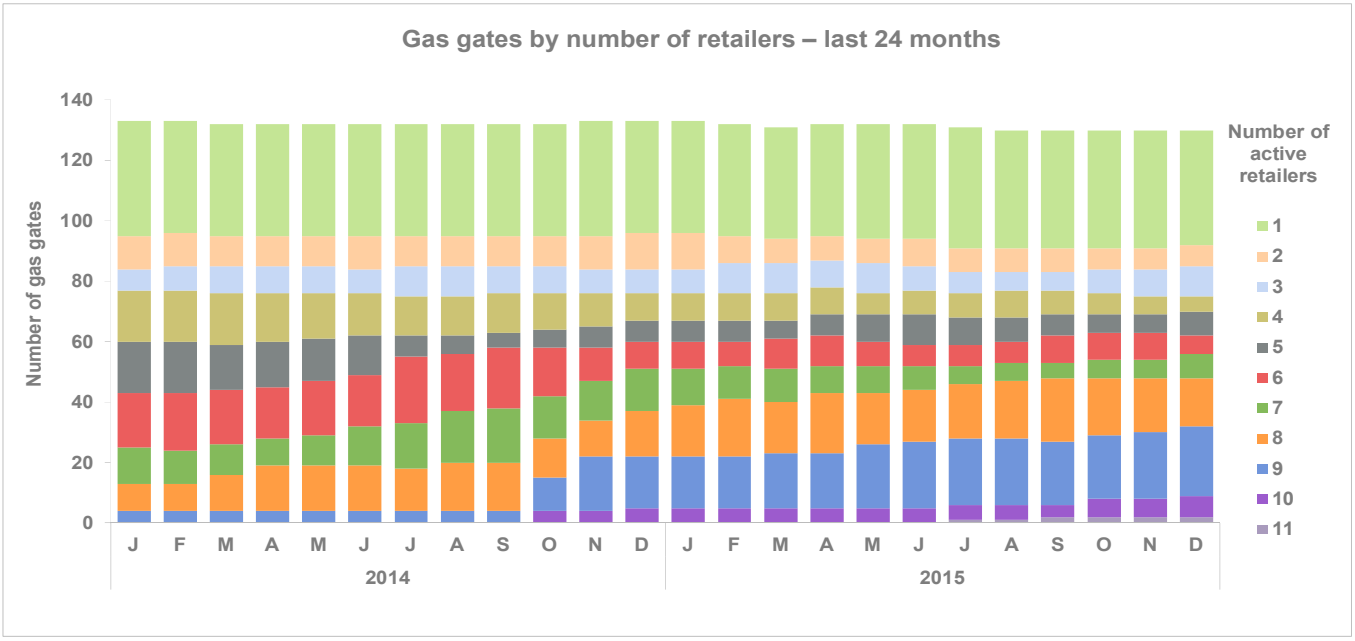
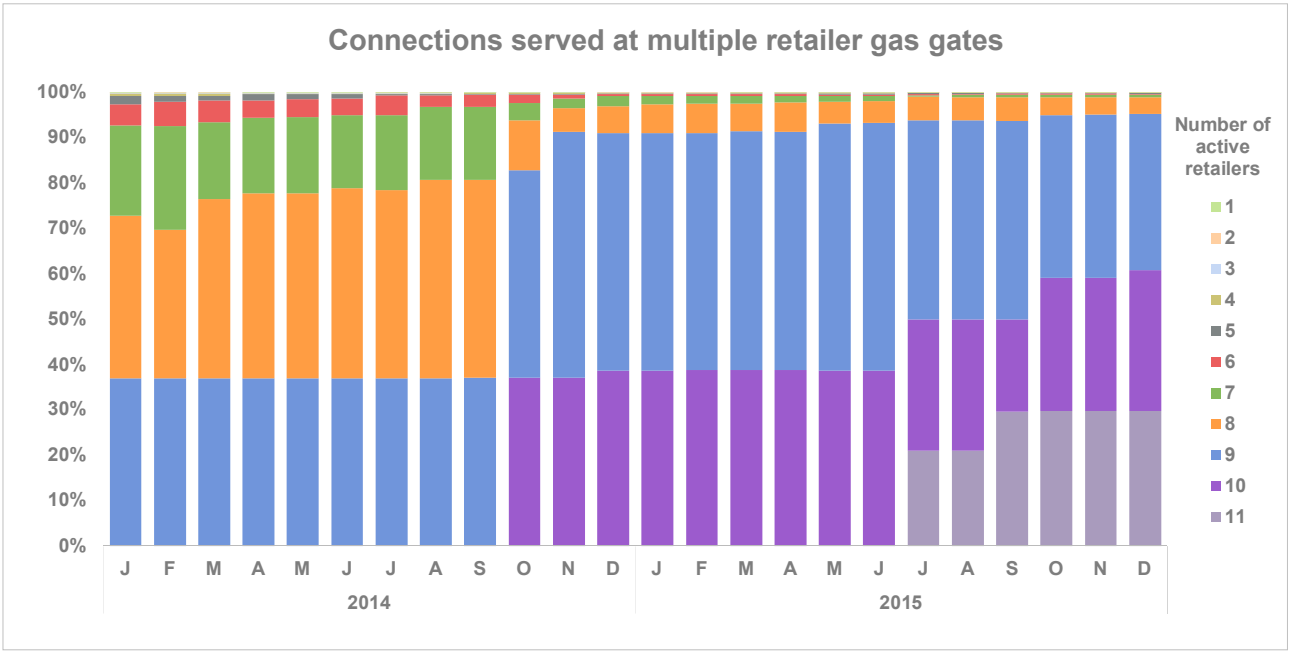


Chart 17: Gas gates by number of retailers



- Due to Switch Utilities entering the retail gas market in July 2015, there are now 11 retailers trading at some gas gates. The gates with all 11 retailers are in the Greater Auckland area.
- The chart also shows the step change due to Pulse Energy's entry into the retail gas market in October 2014.

Chart 18: Connections served by multiple retailers



- Nearly 99% of gas consumers are connected to a gate where eight or more retailers trade.

Chart 19: Total gas volumes

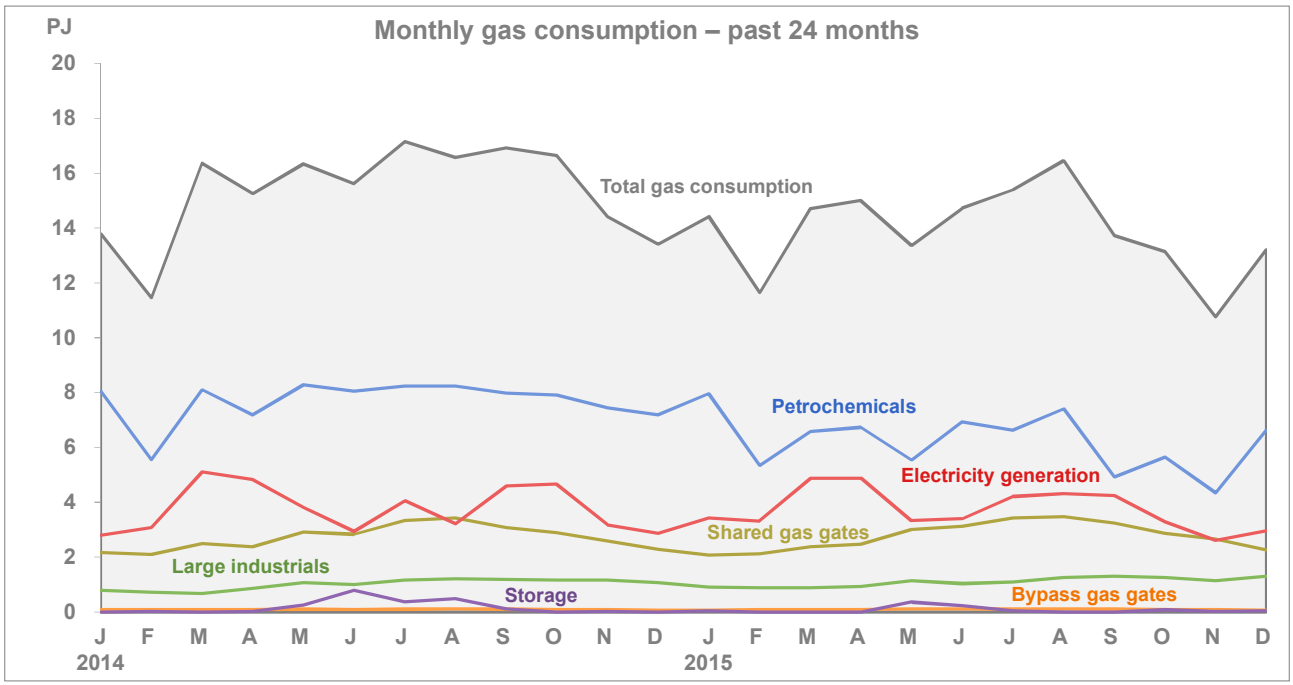
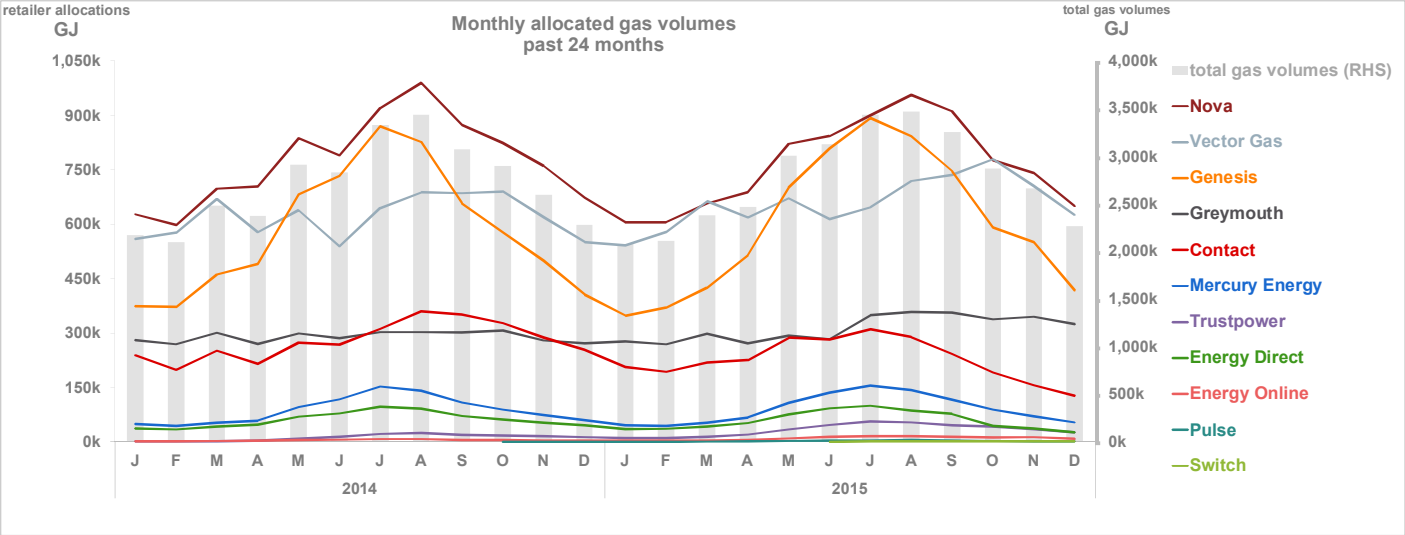
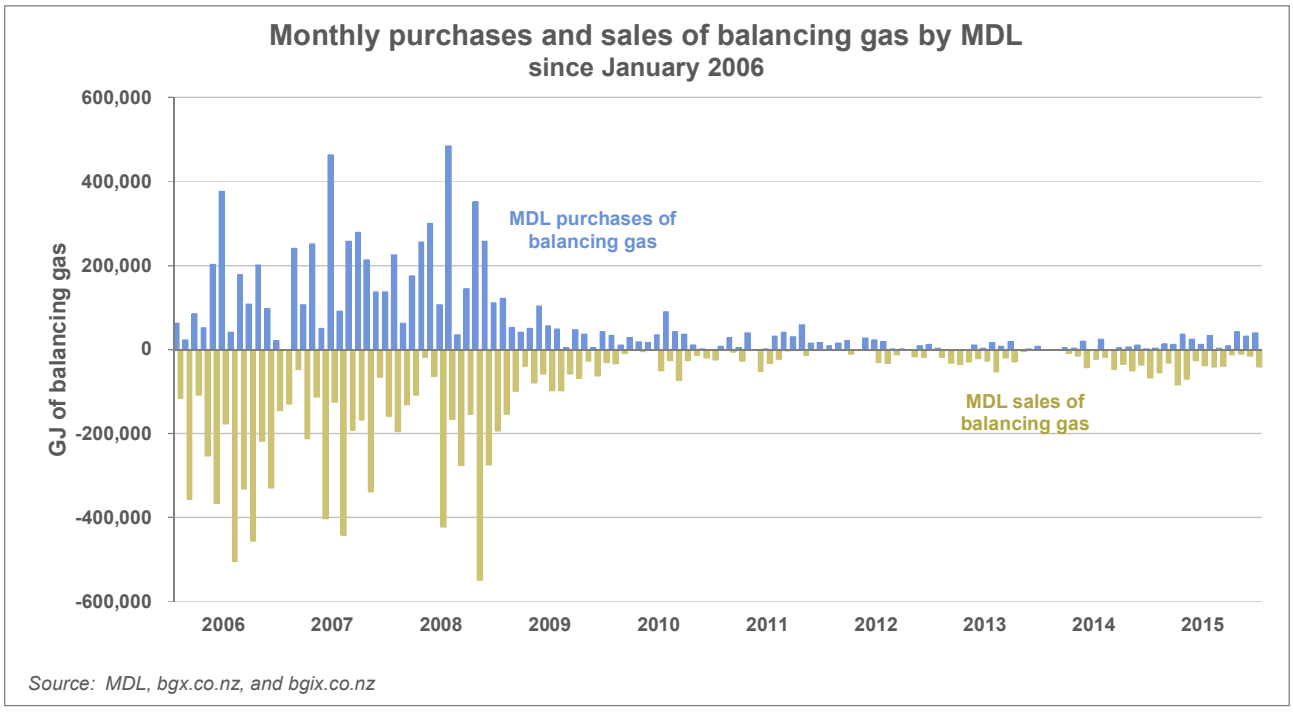


Chart 20: Allocated gas volumes



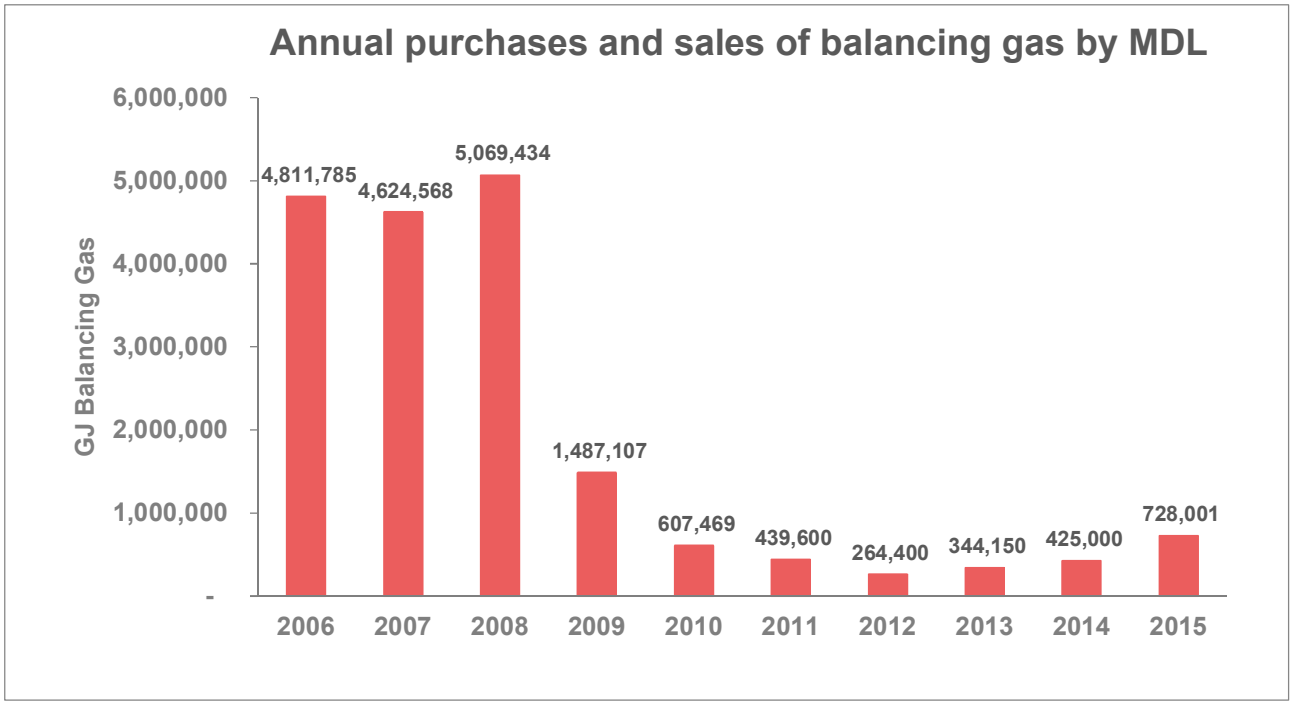
- The data are from a mix of allocation stages: Final through December 2014; Interim for January 2015 through September 2015; and Initial for October through December 2015.

Chart 21: Balancing gas volumes



Source: MDL, bgx.co.nz, and bgix.co.nz

Chart 22: Annual volumes of balancing gas



October 2015 saw the first month of Market Based Balancing (MBB). This new set of arrangements is designed to more accurately target the costs of secondary balancing (i.e. balancing undertaken by the transmission operator) to parties who are out of balance. Given that the new system has had little time to settle down and for the pipeline users to become familiar with it, it is too early to draw any conclusions on its effectiveness. However, as the transmission operator is required to "cash-out" excess imbalance on a daily basis it is likely that we shall see an uptick in secondary balancing activity. That change may explain the increase in the 2015 purchases and sales of balancing gas by MDL in Chart 22.

5 Critical Contingency Management performance measures

There were no critical contingencies in the previous quarter.

Glossary

Critical contingency	A state of emergency on the transmission system characterised by falling or extremely low gas pressures. In such situations, the critical contingency operator has the authority to require consumers to stop using gas in order to balance the system, as set out in the Gas Governance (Critical Contingency Management) Regulations 2008.
Direct connect consumers	Large industrial consumers who are supplied gas directly from the transmission system via a dedicated gas gate.
Distribution system	System of lower pressure pipelines conveying gas from the transmission system to consumer sites.
Gas gate	A place where gas leaves the transmission system. Gas gates (most commonly) lead to distribution systems, which supply a number of different consumers. Some gas gates are direct connects, meaning that they supply a single large industrial consumer. A few gas gates supply private gas networks, which supply the customers of a single retailer.
Herfindahl–Hirschman Index (HHI)	Measure of market concentration. Generally, markets in which the HHI is between 1,500 and 2,500 are considered moderately concentrated. Markets with an HHI of greater than 2,500 are considered highly concentrated. For more information, see the Appendix.
ICP	Installation Control Point: the point where a consumer installation is connected to the distribution system. Used to describe a consumer site.
Move switch	A switch where the retailer supplying gas to a consumer site is changed to another retailer at the request of an incoming tenant or homeowner.
Reconciliation	The processes by which the volume of gas leaving the transmission system is allocated on a gate-by-gate basis to retailers with consumers at those gates; governed by the Gas (Downstream Reconciliation) Rules 2008. Reconciliation is done on a monthly basis, and each consumption month is calculated three times: in the month immediately after consumption month *(initial allocation)*; four months after consumption month *(interim allocation)*; and 13 months after consumption month *(final allocation).*

Registry	Database of information on consumer sites, including metering information, associated gas gate, and responsible retailer. Used to facilitate efficient and accurate switching.
Standard switch	A switch where a gas customer decides to switch the retailer that supplies its existing location.
Switching	The processes by which the retailer supplying a customer site is changed to another retailer, governed by the Gas (Switching Arrangements) Rules 2008.
Transmission system	System of high pressure pipelines that convey gas from gas processing facilities to a distribution system or to a direct connect consumer.
Unaccounted-for gas (UFG)	The difference between the amount of gas leaving the transmission system and retailers' estimates of their consumers' consumption. It is made up of technical losses on the system, metering inaccuracies, and retailer estimation errors. For more information, see the Appendix.

Appendix – Explanatory notes

1 Introduction

This appendix provides context and additional information about the industry performance measures contained in the body of the report. Section numbering is consistent with the main report.

2 Switching performance measures

All of the switching charts include 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. The charts also exclude bulk transfers of customers associated with events such as retailer amalgamation or the purchase of a retail customer base. Specifically, the charts exclude the transfer of E-Gas customers to Nova Energy in November 2010 and the amalgamation of Auckland Gas (June 2011) and Bay of Plenty Energy (March 2013) with Nova Energy.

Chart 1: Monthly switching activity

Prior to the gas registry going live in March 2009, there were approximately 1,000 switches per month, and the annual churn rate was approximately 4.8%.

Since registry go-live, switching rates have quadrupled to over 4,000 per month. The churn rate (defined as the number of switches in 12 months divided by the total number of gas consumers) has varied in that time from 14% to over 19%. By comparison, electricity switching rates vary from about 16% to about 20%.

For context, the chart below shows customer switching trends since March 2009, when the registry went live.

Chart A- 1: Monthly switching since March 2009

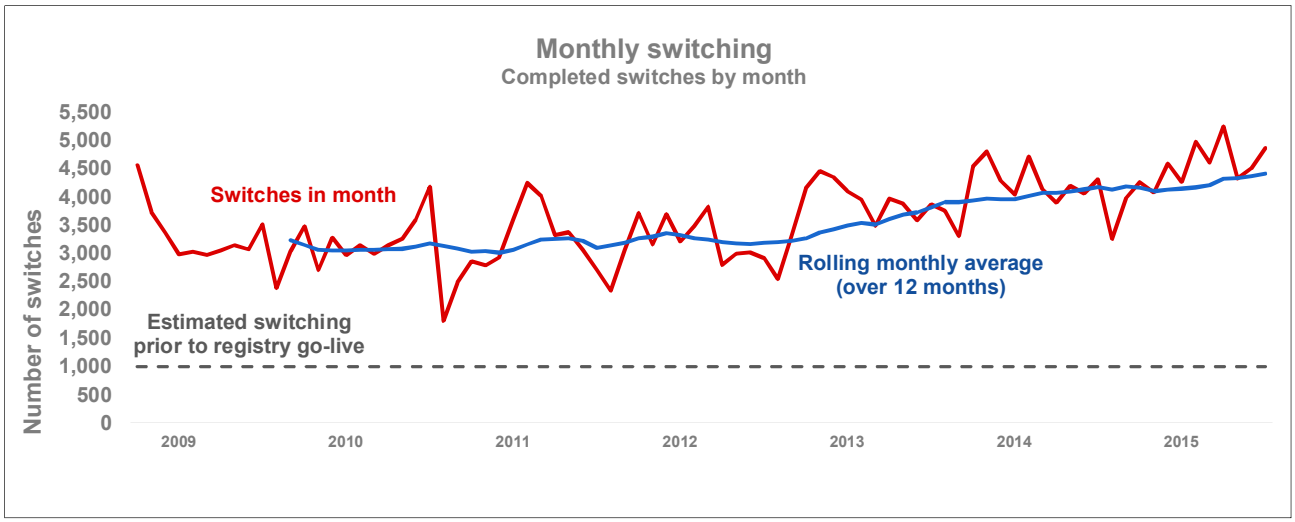


Chart 2: Regional switching activity

These charts compare regional switching rates with total switching rates. The grey line is the same in all the charts and shows the number of switches in a month as a percentage of active customer sites (that is, customer sites that either have a contract with a retailer or that recently had a contracted consumer but is temporarily vacant) across all North Island gas consumers. The data include both move switches (where a property is switched at the request of an incoming tenant or homeowner) and standard switches (where a gas customer decides to switch the retailer that supplies their existing location). As that grey line shows, monthly switching generally involves between about 0.7% and 1.7% of total North Island gas customers in a month.

The red line in each chart shows the number of switches in that region as a percentage of ICPs in that region. Auckland and Wellington switching rates tend to be similar to the North Island rates, since a large proportion of gas customers are located in those regions. Differences emerge in the smaller regions and show both long-term trends and the effects of regional marketing campaigns.

Chart 3: Time to process switches

The time to process switches has fallen markedly since the commencement of the Switching Rules and the associated inception of the gas registry. Prior to those events, switching could take weeks or months to complete. Once the registry went live, switching times dropped to about 10 days, and since then, switching times have dropped further, to an average of less than 4.5 business days.

Chart 4: Distribution of switching length

These charts show the distribution of switching length since the start of the gas registry by calendar year. Since the start of the registry, switches have tended more and more to occur either in zero or one day; or in seven days. Switches taking zero to two business days generally are move switches (where a property is switched at the request of an incoming tenant or homeowner), while the majority of switches taking seven business days are standard switches (where a gas customer simply decides to switch the retailer that supplies their existing location). The Switching Rules stipulate that, for a standard switch, the new retailer can request a switch date that is not less than seven business days after the inception of the switch, and in most cases this request must be honoured by the existing retailer. This provision may explain the large proportion of switches being completed in seven business days.

Chart 5: Number and severity of breaches of the Switching Rules

Most breaches of the Switching Rules are alleged by the registry operator, though a few have been alleged by other market participants.

3 Allocation and reconciliation performance measures

Chart 6: Volumes of unaccounted-for gas (UFG)

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 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.

For context, the chart below shows UFG trends since October 2008, when the Reconciliation Rules went into effect.

Chart A- 2: UFG since October 2008

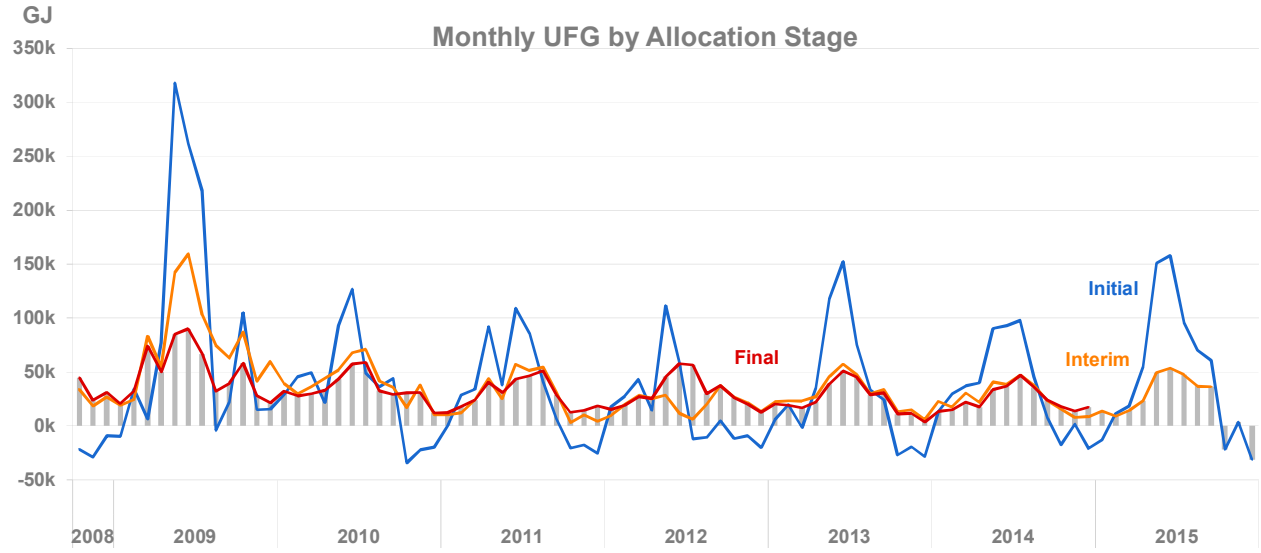


Chart 7: Percentage of UFG

This chart shows the amount of UFG in comparison with the total amount of allocated gas consumed each month. The grey bars show gas consumption at allocated gas gates, while the coloured bars show UFG volumes, by allocation stage. The labels show the percent of UFG as a proportion of total allocated gas.

Chart 8: Rolling 12-month UFG

Another way to think about UFG is the amount recorded over a 12-month period. This chart shows rolling 12-month UFG figures, both as a GJ total and as a percentage of gas consumed. That is, each data point shows the amount of UFG recorded for that month and the preceding 11 months. 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.

For the first year after the Reconciliation Rules came into effect, annual UFG was about 2%. Average UFG is now about 1.0%.

Chart 9: Gas gates where UFG is the highest

These charts show the gates with the largest volumes of positive and negative UFG over 12 months, according to the most recent final and interim data.

The first chart shows the 10 gas gates that had the highest volume of UFG, in terms of the percentage of total positive UFG experienced over the same time period. As a comparison, the chart also includes the percentage of total gate injections each gate represents; that is, the proportion of total gas consumption that is drawn from those gates.

The second chart shows negative UFG compared with gate injections.

Chart 10: Number and severity of breaches of the Reconciliation Rules

Most breaches of the Reconciliation Rules are alleged by the Allocation Agent. Over 98% of alleged breaches of the Reconciliation Rules in the past year relate to rule 37 – the rule that requires initial consumption information submitted by retailers to be within a percentage of accuracy of the consumption information submitted for the final allocation. Rule 37 breaches tend to be considered and settled in yearly batches.

4 Market competition performance measures

Chart 11: Market share of ICPs by retailer

This chart shows the number of active contracted customer sites associated with each retailer over the past two years, as recorded by the gas registry.

Chart 12: Market share by consumer segment

This chart shows market share by consumer type, as shown in the gas registry. Note that the chart shows retailers that have more than 3% of the market share of any category.

Chart 12a: Market share by geographical region

This chart shows the number of customers served by each retailer by geographical region. For simplicity, the charts include only those retailers with over 1% of total customer market share.

Chart 13: 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 are 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, and the more that market share is spread among them, the greater the competition for customers is thought to be.

As a point of reference, the United States Department of Justice considers markets in which the HHI is between 1,500 and 2,500 to be moderately concentrated. Markets with an HHI of greater than 2,500 are considered highly concentrated.[1]

The bars in the chart shows the HHI of the retail gas market as at December 2015; for comparison, the HHI for 2009, 2011, and 2013 are also shown. 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, these former monopoly providers became 'incumbents', subject to competing retailers vying for customers in their areas. (A similar change occurred in the electricity sector). In most regions, there is still a dominant retailer, but the decrease in HHI shows that they have become less dominant in the past six years. With the introduction of the Switching Rules, new retailers have entered the market and smaller retailers have increased their market share.

Chart 14: Switching by consumer sites since 2008

This chart shows the proportion of active contracted consumer sites by the number of times they have switched since the start of the registry, broken down by consumer type (as indicated by load shedding category in the registry).

Chart 15: Residential consumer sites that have never switched

This chart shows, for the residential consumer sites that have not switched retailer in the past year, the proportion served by each retailer, compared to that retailer's market share of residential consumers.

Chart 15a: Residential customers by number of switches

This chart breaks down retailers residential consumers by the number of times they have switched and compares those proportions with switches for the residential consumer market as a whole.

Chart 16: 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.

[1] http://www.justice.gov/atr/public/guidelines/hhi.html accessed 1 May 2014.

Chart 17: Gas gates by number of retailers

This chart shows, by month, numbers of gas gates by the number of active retailers. In this case, an active retailer means a retailer that has at least one active contracted ICP at that gas gate. About 38 gas gates are direct connect gates, meaning that they serve only one consumer, generally a large industrial consumer, and can have only one retailer active at that gate.

The majority of gas gates – 98 at last count – serve multiple consumers. The greater the number of retailers that trade at a gas gate, the greater is the potential competition for customers.

Chart 18: Connections served by multiple retailers

This chart plots the proportion of gas consumers who are served from the gas gates in the chart above; that is, consumers served at gas gates where multiple retailers trade. This chart shows, for example, that while ten or eleven retailers are active at only a handful of gas gates, those gates tend to be the largest ones, since about half of all gas consumers are connected at these gates.

Chart 19: Total gas volumes

This chart 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 variability of gas usage for thermal electricity generation.
- Consumption for petrochemicals is shown in blue.
- The tan line shows the amount of gas used by consumers connected to shared gas gates. This represents the majority of commercial and residential consumers. There is a seasonality trend to the consumption, higher in winter and lower in summer.
- 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.

Gas used by consumers connected to distribution pipelines is allocated by retailer and shown in the next chart.

Chart 20: Allocated gas volumes

This chart shows the gas volumes allocated to retailers at shared gas gates over the past two years, i.e. gas gates connected to a network that supplies multiple consumers. This includes gas used by industrial, commercial, and residential consumers, but it excludes gas volumes from direct connect gas gates; that is, from gas gates that supply a single consumer directly from the transmission system. For this reason, gas volumes supplied through direct connect gas gates to such industrial sites as thermal power stations, the oil refinery, and paper and chemical factories are not included in the chart.

The grey bars in the chart show total volumes of allocated gas (using the right-hand scale); company volumes are denoted by coloured lines and use the left-hand scale. The bars show the seasonality of gas consumption: higher in winter and lower in summer, and many of the retailers show similar patterns in their allocated volumes. Nova Energy is generally the largest retailer by allocated volumes. Genesis 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.

5 Balancing gas

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 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*. Maui Development Limited (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 the costs associated with secondary balancing are generally recovered from pipeline users. 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 since 2009.

Note that, on 1 October 2015, MDL introduced market-based balancing on the Maui pipeline, wherein welded points are cashed out at the end of each day for imbalances over a tolerance limit. Balancing gas transactions are now posted on the Balancing Gas Information Exchange, bgix.co.nz.

Chart 21: Balancing gas volumes

This chart shows the purchases and sales of balancing gas by MDL by month since January 2006.

Chart 22: Annual volumes of balancing gas

This chart uses the same data as chart 21, but the data are shown as annual volumes of total purchases and sales.

PROGRESS TOWARDS OBJECTIVES AND OUTCOMES
1 OCTOBER – 31 DECEMBER 2015

This report provides an update of progress towards objectives and outcomes for Gas Industry Co the gas industry, as set out in the Gas Act 1992 and the April 2008 Government Policy Statement on Gas Governance, particularly as implemented through the Company's FY2016-2018 Statement of Intent.

Project	Rationale	Activity	Status
Strategic Goal: Efficient Use of, and timely investment in infrastructure			
Transmission Pipeline Balancing	• Improved industry arrangements. Gas industry participants and new entrants are able to access transmission pipelines under reasonable terms and conditions.	• Assess balancing market developments. • Provide advice to Minister on balancing market developments as appropriate.	• MDL's MPOC Change Request introducing market-based balancing, which was supported by GIC in its final recommendation of April 2015, took effect on 1 October 2015. GIC will undertake a post-implementation review of MBB after 12 months.
Interconnection	• Improved industry outcomes. Gas industry participants and new entrants are able to access transmission pipelines under reasonable terms and conditions.	• Monitor two new interconnection arrangements on each open access transmission pipeline (Vector, MDL). • Review transmission pipeline interconnections and consult on any issues by the end of 2013. • Investigate the extent, if any, of issues relating to access to private pipelines.	• No new interconnections in the quarter. Continue to monitor any new connections and related activity.

Project	Rationale	Activity	Status
Strategic Goal: Build efficient, competitive, and confident gas markets			
Rule Changes	• Improved industry governance through regular review of existing arrangements and recommending changes where appropriate.	• Maintain rule change registers. • Review industry feedback on options paper on Reconciliation Rules. • Review the effectiveness of the CCM Regulations following any events/exercises.	• A pilot of day-after (D+1) allocations and daily BPP information delivery is continuing. • The Minister has approved changes to the Switching Rules and Gas Registry, and to the Switching Rules and Reconciliation Rules relating to retailer insolvency. • Following consultation on proposed switching and reconciliation thresholds under the Compliance Regulations, GIC has implemented the thresholds regime, and the Market Administrator has issued Guidelines under rule 19A.
Gas Quality	• Maintain an acceptable standard of gas quality. • Ensure costs of gas quality incident are met efficiently. • Achieve improved transparency on gas quality incidents.	• Ongoing review of industry arrangements for managing gas quality. • Consider options for improving gas quality arrangements.	• *Gas Quality: Requirements and Procedures Document* has been issued and will be reviewed and updated by GIC as required. GIC to monitor any remaining quality issues.

Project	Rationale	Activity	Status
Insolvent Retailer Arrangements	• Following recommendation to revoke 2010 temporary Insolvent Retailer Regulations, consider whether generic regulatory solution is required to address retailer insolvency.	• Prepare Issues and Options paper for industry consultation.	• Gas Retailer insolvency management framework is now complete. • The Minister accepted GIC's recommendation that permanent backstop regulations are not necessary, and approved minor changes to each of the Switching and Reconciliation Rules that facilitate the gas retailer insolvency management regime. • GIC has issued its Final Decision Paper and accompanying drafting instructions to support any future process to manage a retailer insolvency.
Gas Distribution Principles	• Improved industry outcomes. Gas industry participants and new entrants are able to access distribution pipelines on reasonable terms and conditions. • Ensure consistency in distribution services arrangements.	• Monitor and report annually to Minister on status of distribution arrangements. • Develop and publish distribution contract Principles. • Encourage publication of network services agreements. • First assessment of contracts conducted as at 1 February 2013. Arrangements not progressed as well as expected, but positive indication from industry as to completion. • Report on second assessment of distribution contracts issued in May 2014. Overall alignment improves from 'Moderate' to 'Substantial'.	• GIC is monitoring distributors/retailers progress with the signing of new distribution contracts. • Review in March 2016.

Project	Rationale	Activity	Status
Transmission Code Change Requests	• Ensure ongoing relevance and efficiency of multilateral terms of access to transmission pipelines. • GIC has different roles in relation to MPOC and VTC changes. It has a contractual role to review proposed MPOC changes. It has no contractual role in relation to VTC changes, but may choose to make submissions to Vector and its shippers on proposed VTC changes.	• Process each MPOC change request in accordance with the Memorandum of Understanding (MoU) between MDL and GIC. • Consider each VTC change request and make a GIC submission to Vector and its Shippers where warranted. • The MPOC Amendment Process Change Request proposed by MRP was not supported by GIC in its October 2015 Final Recommendation. The VTC Congestion Management Change Request proposed by Vector was commented on in a June 2015 submission by GIC. The proposed change has been withdrawn by Vector. This was the first under an amended VTC Change Request Process in which GIC no longer has an appellate role but is able to make submissions.	• No current change requests
Compliance	• Statutory role under the Compliance Regulations. • Improved industry operations through provision of a compliance and dispute resolution process for industry participants.	• Oversight of Gas Governance (Compliance) Regulations 2008.	• Gas Industry Co continues to fulfil its role as Market Administrator under the Compliance Regulations. • Breach activity has been low; a positive indicator of industry compliance.

Project	Rationale	Activity	Status
Customer Issues	• Enhanced consumer benefits through complaints process for small gas customers.	• Liaise with the Electricity & Gas Complaints Commission (the approved complaints scheme), and other relevant regulators to remain aware of consumer complaint issues.	• Regular liaison with the Electricity & Gas Complaints Commission and other relevant regulators. Gas-related inquiries and complaints statistics included in GIC's Annual Report.
Retail Contracts	• Enhanced consumer outcomes by providing clarity around the respective roles and obligations of consumers and industry participants involved in the supply of gas to small users.	• Administer the Retail Gas Contracts Oversight Scheme. • Annual assessment of alignment of retail contracts with contract Benchmarks. • Report to Minister on the results of the 2012 assessment.	• Results from the fourth assessment of retailers' standard published contracts with small consumers as at 1 July 2015 were published in October 2015 and shows further improvements in alignment with the contract benchmarks. • Since the Retail Scheme's introduction in 2010, retailers' overall rating has increased from 'Moderate' to 'Substantial' alignment with the benchmarks.
Transmission Pipeline Capacity	• Improved consumer outcomes by addressing short and long-term competition issues arising from the North Pipeline capacity constraint. • Enhanced industry/consumer outcomes by improved level, and quality, of information on which to base business/energy use decisions.	• Address by regulatory and/or non-regulatory options any lessening of competition due to transmission constraints. • Implement the Gas Transmission Investment Programme (GTIP). • Improve the quality and availability of pipeline security standards and supply/demand information. • Promote changes to commercial and regulatory arrangements so the GTIP objectives can be met.	• GIC's 2015 *Options for Improvement Paper #2* (OP2) proposed developing a vision for converged transmission arrangements, a concept that received wide support in submissions Timing and process being influenced bytransmission pipeline sales.).

Project	Rationale	Activity	Status
Strategic Goal: Deliver effectively on accountabilities			
Downstream Reconciliation	• Statutory role under Reconciliation Rules. • Improved industry arrangements and consumer outcomes through the objective of fairly allocating, and reducing, unaccounted-for-gas (UFG) and its associated costs.	• Oversight of Gas (Downstream Reconciliation) Rules 2008.	• Updated Billing Factors Guidelines published in December 2015. • Gas reconciliations performed each month. • Long-term UFG has flattened out at approximately 1%.
Switching and Registry	• Statutory Role under Switching Rules 2008. • Efficient retail market and improved consumer outcomes by facilitating market contestability through customer switching between retailers.	• Oversight of Gas (Switching Arrangements) Rules 2008.	• Registry Amendments Project post-implementation activities have included data cleansing processes and monitoring of retailers' switching accuracy. • Customer switching facilitated through Rules and Gas Registry processes. • Switching statistics report issued monthly.
Performance Measures	• Improved industry and consumer outcomes through the provision of public information on industry performance. • Monitor the effectiveness of governance arrangements.	• Determine and publish information on each gas governance arrangement that has been implemented.	• Performance measures computed and reported quarterly.

Project	Rationale	Activity	Status
Industry Facilitation	• Facilitate nexus between industry and Government. • Maintain informed industry participants and other stakeholders.	• Facilitate, influence and communicate with the industry and Government. • Liaise with other regulatory bodies, agencies and associations with responsibilities and interests encompassing the gas industry.	• *NZ* Gas Story fourth edition released December 2015. • Gas Story roadshow presentations held in October 2015 in Wellington, Auckland and Taranaki (continuing the practice started in 2014). • Regular liaison with MBIE, Electricity Authority, and other relevant regulators.
Critical Contingency Management	• Statutory role under Gas Governance (Critical Contingency Management) Regulations 2008. • Improved industry outcomes through increased market confidence in industry's ability to manage critical events.	• Manage Critical Contingency Operator (CCO) via service provider agreement. • Review effectiveness of the Regulations following any events/exercises. • Operate critical contingency pool following an event. • Critical contingency management exercise (Exercise Validation) was conducted on 24 June 2015.	• CCO activities monitored and reviewed quarterly.