

CHIEF EXECUTIVE'S OVERVIEW

The quarter to 31 December 2016 continues to evidence the mix of opportunities and challenges for the gas sector in New Zealand. Gas continues to provide an important 21 percent of primary energy supply to over 270,000 New Zealand homes and businesses, but three key factors are driving ongoing change.

Firstly, the fall in global oil prices has seen a drop in the upstream investment required to replenish gas reserves. This has been reflected in lower responses to the annual Block Offers in recent years. Long term gas supply/demand scenarios commissioned by Gas Industry Co identify that gas supply conditions will most likely tighten over the next several years due to the current low levels of exploration coupled with relatively high levels of demand. However, it is important to emphasise that the petrochemical sector, which uses nearly half of annual gas supplies, has played an important 'swing' role in responding first to market tightening, and that residential and commercial gas users are accordingly unlikely to be affected in that period.

Secondly, new electricity technologies, such as electric vehicles, solar/photovoltaic panels and imbedded generation are transforming the wider energy sector. Consumer choice from amongst increasingly competitive energy options is a corresponding driver that will affect the role of gas.

Thirdly, as a carbon fuel, gas's role is affected by climate change issues and responses. While gas is already playing a key role globally in reducing coal use, and can offer a lower carbon footprint in New Zealand than traditional applications (e.g. electrical resistance hot water heating), consumer choice and meeting the Government's commitments under the 2015 Paris Agreement will entail further change. In this context, it is important that gas's current and future roles as a carbon fuel are well communicated and understood, rather than (for example) grouping it with other 'fossil fuels'.

Together, these global and domestic factors will entail ongoing change in the role of gas in New Zealand. They form part of Gas Industry Co's annual review of its strategy to *optimise the*

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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

contribution of gas to New Zealand, and background to our FY2018 strategy, work programme and costs. These are discussed further below.

Gas Industry Co will continue to emphasise the important current contribution of gas in New Zealand, and to optimise that contribution in future. We will also seek to differentiate gas's role from that of other fossil fuels, and otherwise help position the industry for the transition to a lower carbon future.

Steve Bielby

HIGHLIGHTS FROM THE QUARTERLY INDUSTRY PERFORMANCE MEASURES REPORT

- Switching rates have been over 18% for more than two years. About 4,200 gas consumers switch gas supplier each month.
- About 84% of customer switches are completed within three business days.
- 61% of residential consumer sites have switched retailer at least once in the past seven years; 65% of small commercial and 79% of large commercial sites have switched at least once.
- Over 99% of gas customers are connected to a gate where seven or more retailers trade, suggesting that the gas retail sector is generally competitive throughout the North Island.
- Average annual unaccounted-for gas (UFG) over the past year stands at about 1.0% (compared with about 2% in 2009).
- Genesis is the largest retailer by customer share and Nova has the largest share of commercial and industrial customers.
- Vector Gas and Nova Energy are the largest retailers by volume market share.

The complete [Industry Performance Measures Report](#) is found on page 6.

DEVELOPMENTS IN THE QUARTER

New gas transmission access code progressing.

Work progressed during the quarter, co-led by Gas Industry Co and new gas transmission system owner First Gas Limited (First Gas)', on the development of a single new gas transmission code.

First Gas published a paper *Single Code Options Paper – Part 2 (SCOP2)* and held a workshop to explore the possible forms that the new Gas Transmission Access Code (GTAC) could take before embarking on the detailed design work required. *SCOP2* also focuses on the scope of decisions that are important to establishing direction for the GTAC and on the IT systems that will implement the new code arrangements.

First Gas has committed to developing a single gas transmission access code to replace the two existing codes – the Maui Pipeline Operating Code (MPOC), and the Vector Transmission Code (VTC). First Gas believes this initiative will ensure that transmission arrangements support gas industry growth through creating a single set of 'end-to-end' transmission access arrangements to transport gas from source to locations throughout the North Island.

As described in *Single Code Options Paper – Part 1 (SCOP1)*, Gas Industry Co's role is to assess the extent to which any new access arrangements will meet relevant legislative and policy objectives, and whether it should recommend any regulations to the Minister.

Further information on the developing work around the GTAC can be found [here](#).

Gas Industry Co finds that primary and secondary gas balancing has significantly improved.

The *Review of Market-Based Balancing (MBB)* was released for industry feedback in November, and provides an assessment of the substantial changes to balancing arrangements a year after their introduction, and after some years of work.

MBB was originally proposed by Maui Development Limited (MDL) in an MPOC Change Request in October 2014. Transmission pipeline balancing had been analysed and debated in the industry since 2005. The history of the work is summarised in Gas Industry Co's *Draft Recommendation on 10 October 2014 MPOC Change Request*.

The *Review* provided a preliminary assessment that primary and secondary balancing has significantly improved, but considers that there is scope for further improvement. An analysis of submissions received and any further work requirements will be published in Q1 2017.

Further information on *MBB* is available [here](#).

Gas Industry Co consults on FY2018 strategy, work programme and costs.

Gas Industry Co has set out its proposed strategy, work programme and levy requirements for the year ended 30 June 2018 (FY2018). The *Consultation on Gas Industry Co FY2018 Statement of Intent and Levy (Consultation Paper)* was published in December for stakeholder submissions.

The work programme includes meeting statutory requirements, such as the administration of existing gas governance regulations, and seeks to address Government and stakeholder priorities through committed and ongoing projects.

The work programme has been developed in consultation with stakeholders and Government. The *Consultation Paper* takes into account stakeholder feedback received on the strategy and draft work programme presented by Gas Industry Co at the company's annual Co-regulatory Forum in November.

The *Consultation Paper* also develops proposals to amend the method for wholesale levy collection, which were initially proposed in a September options paper, *Wholesale Levy Assurance*.

At the completion of the consultation process, a formal recommendation for levy regulations will be made to the Minister of Energy and Resources. The work programme, and an indication of further activities in the two following financial years, will be formally set out in Gas Industry Co's 2018-2020 Statement of Intent, which will be published before the start of the next financial year.

Gas Industry Co welcomes new Director and Shareholders.

At Gas Industry Co's 2016 Annual Meeting on 17 November, shareholders elected OMV Senior Vice President Gabriel Selischi to the Gas Industry Co Board of Directors, as an Industry-Associated Director. Andrew Brown, who retired under the director rotation provisions of the Company's Constitution, was re-elected as an Independent Director.

Mr Selischi replaces Andy Knight, formerly Chief Executive of New Zealand Oil and Gas, who retired from the Board at the Annual Meeting.

Mr Selischi was appointed OMV's Senior Vice President in April 2016. He started work in the oil and gas sector more than 20 years ago with Schlumberger in France. He returned to the sector after several years consulting to the heavy industrial sector and has spent the past decade with Bucharest-based OMV Petrom. His various international positions have taken him to several countries, including South Africa, Algeria and Angola.

Gas Industry Co Chairman Rt Hon Jim Bolger also welcomed two new Gas Industry Co shareholders First Gas and emsTradepoint to their first meeting.

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), through the Work Programme included in the Company's *FY2017-19 Statement of Intent*. An updated summary of progress is included on page 34 of this Quarterly Report.

INDUSTRY PERFORMANCE MEASURES

1 OCTOBER – 31 DECEMBER 2016

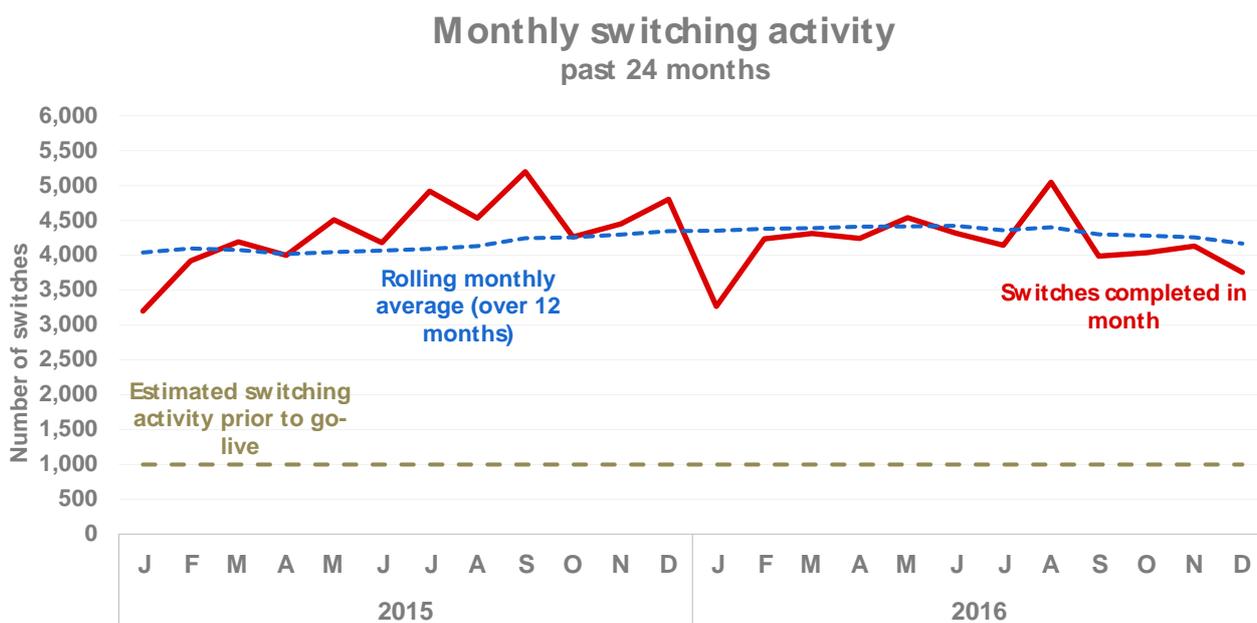
1 Summary

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



- About 4,200 consumers switch gas supplier each month.
- The churn rate for the last 12 months is 18.1%. 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.
- This chart shows the number of switches that have occurred on ICPs that have a status of either active-contracted (ACTC) or active-vacant (ACTV) at the time of switching.

- Note that this chart excludes the transfer of Energy Direct customers to Trustpower in September 2016.
- See Chart A-1 in the appendix for a chart of switching activity since the start of the registry.

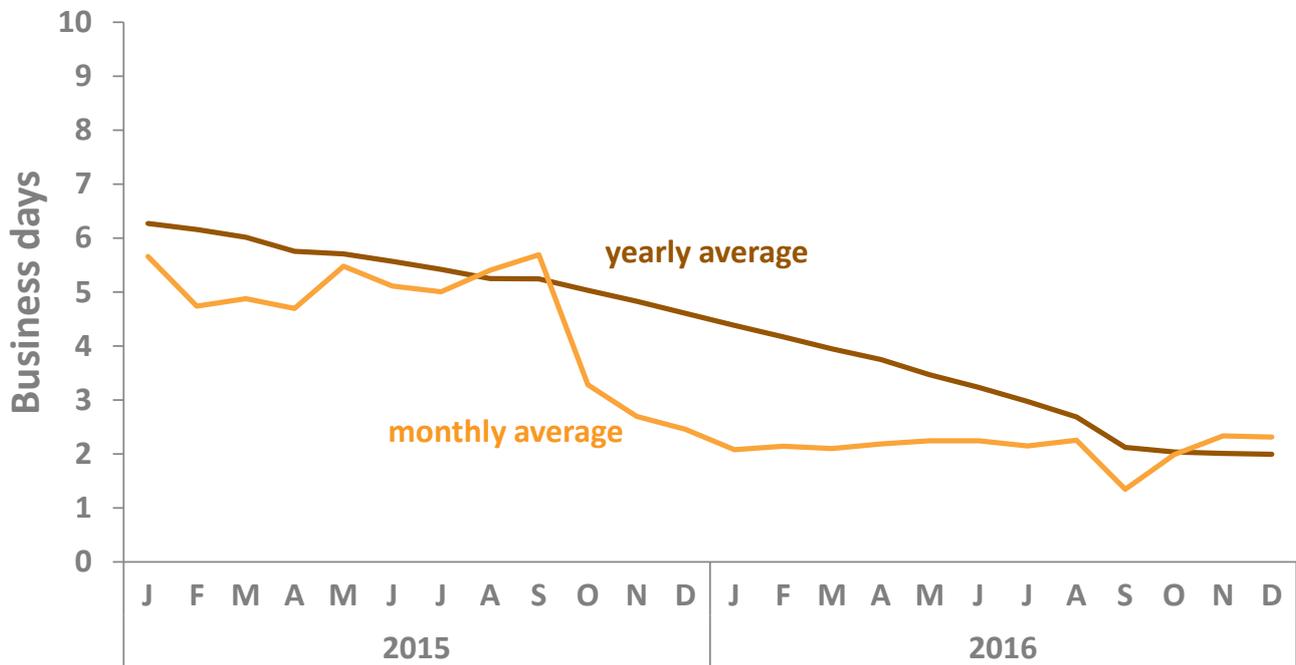
Chart 2: Regional switching activity

Monthly regional and overall switching, past 24 months



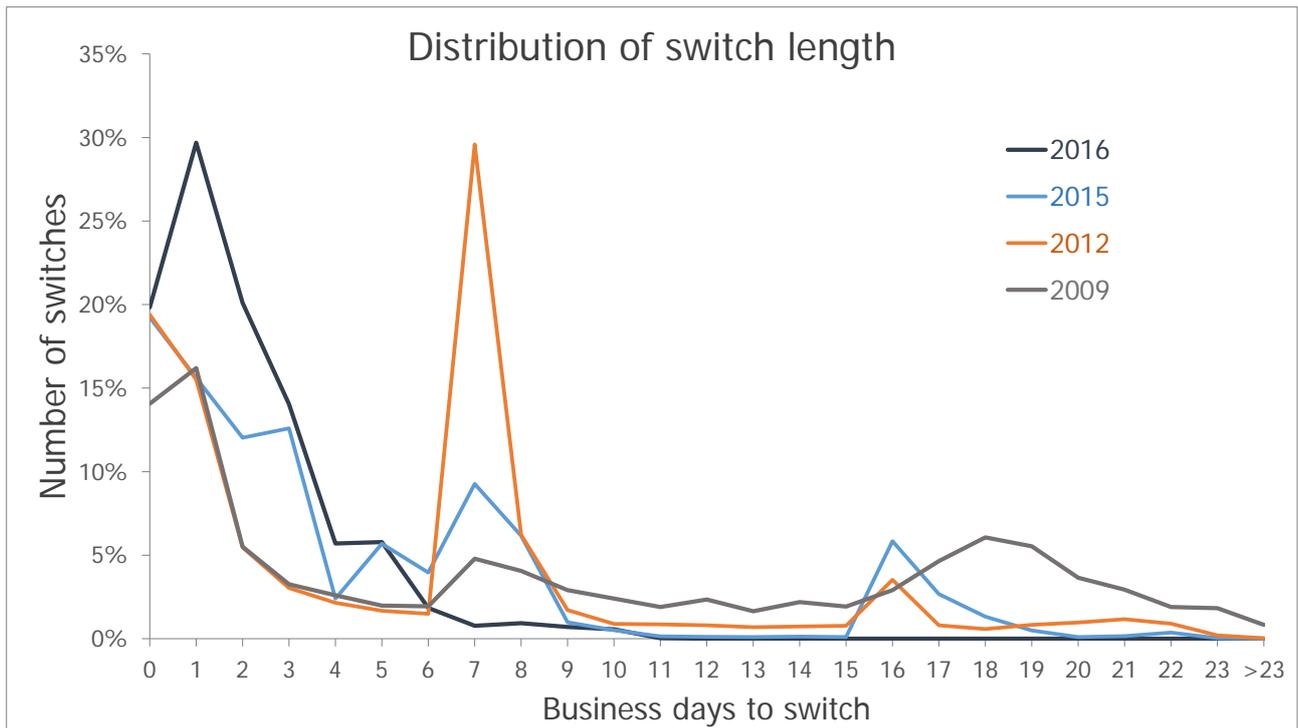
Chart 3: Time to process switches

Average switch length past 24 months



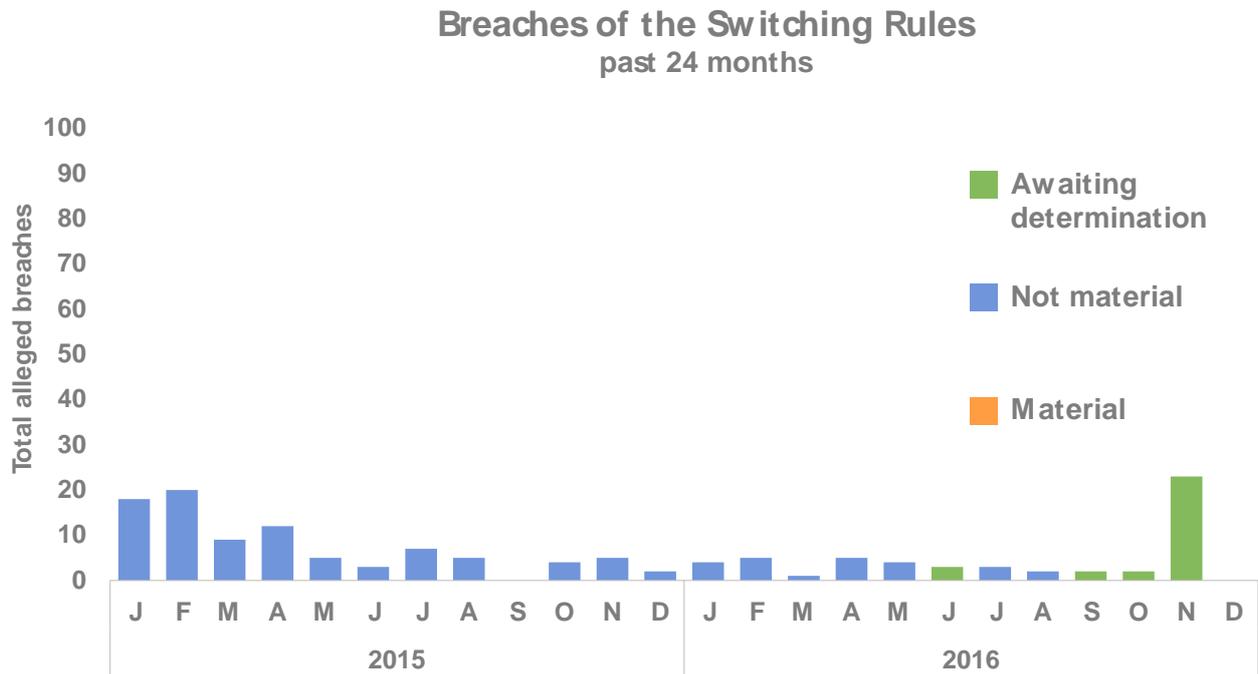
- Switching times have fallen markedly in the past two years. At the start of 2015, switches took a little over six days, on average. It now takes about two business days for a switch to be completed.
- Data are for switches of ICPs with a status of either active-contracted (ACTC) or active-vacant (ACTV) at the time of switching.

Chart 4: Distribution of switching length



- This chart shows the distribution of switching times for the calendar years of 2009, 2012, 2015, and 2016.
- The chart shows the change in switch length over time. In all years, there were some switches that took place within two days. In 2009, over half of switches took at least seven days to complete. By 2012, three-quarters of switches took place in seven days or less. In 2015, there was a shift to completion within three days. In 2016, 84% of switches were completed within three days.

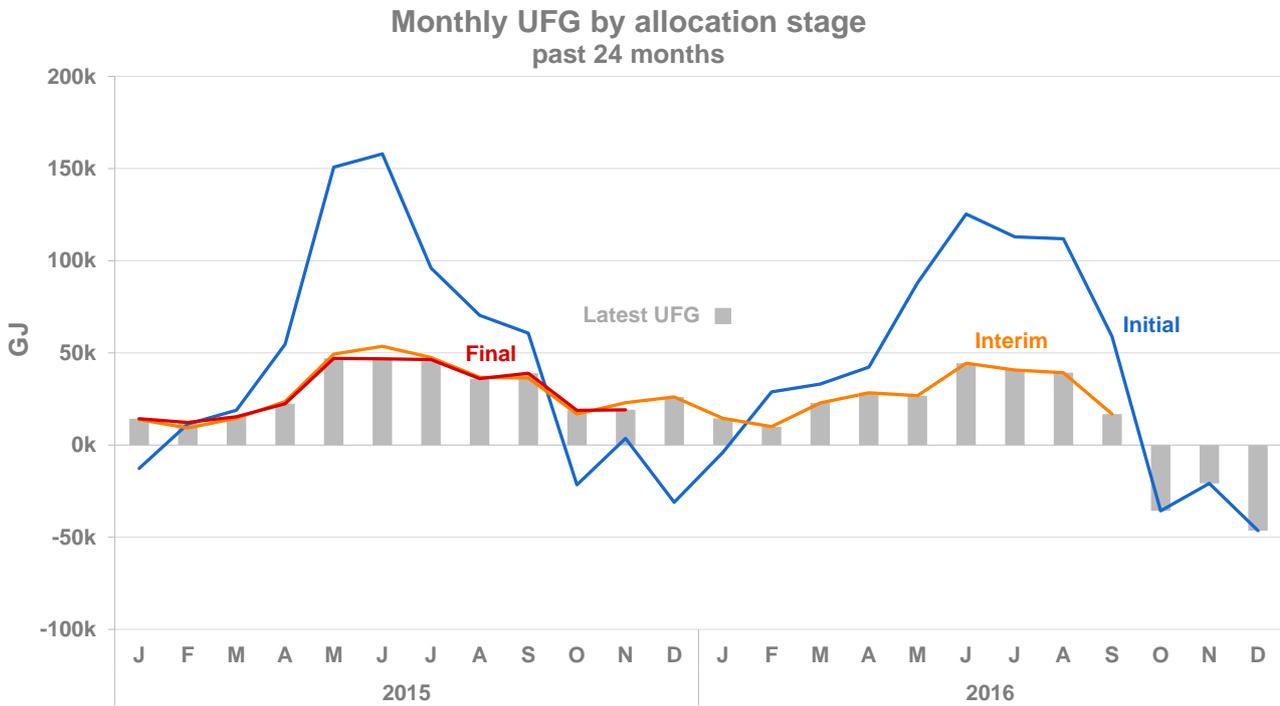
Chart 5: Number and severity of breaches of the Switching Rules



- Most of the Switching Rules breaches reported each month are alleged by the registry operator.
- In contrast, bulk of the breaches from November were alleged as a result of performance audits commissioned under the Switching Rules.

3 Allocation and reconciliation performance measures

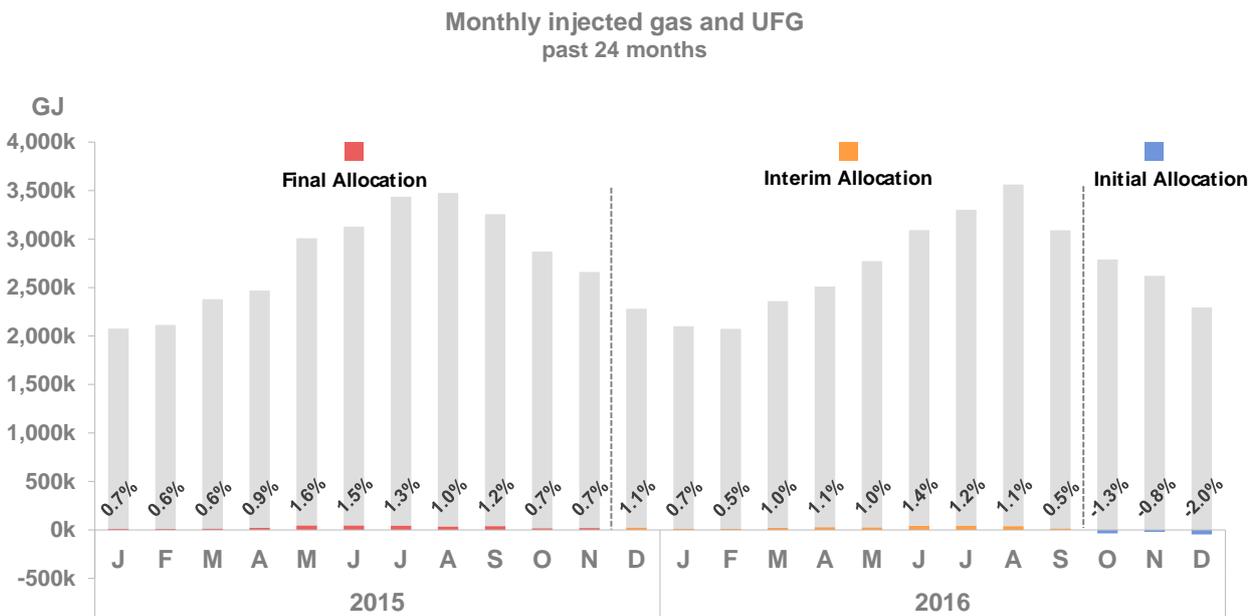
Chart 6: Volumes of unaccounted-for gas (UFG)



- As with previous years, UFG in the spring and summer months has been negative. The UFG generally becomes small but positive with the more accurate data used in successive allocation stages.
- Note that this chart uses the initial allocation produced by the allocation agent at the end of the month, not the D+1 allocation results.¹
- See Chart A-2 in the appendix for a chart of UFG since the start of the Reconciliation Rules.

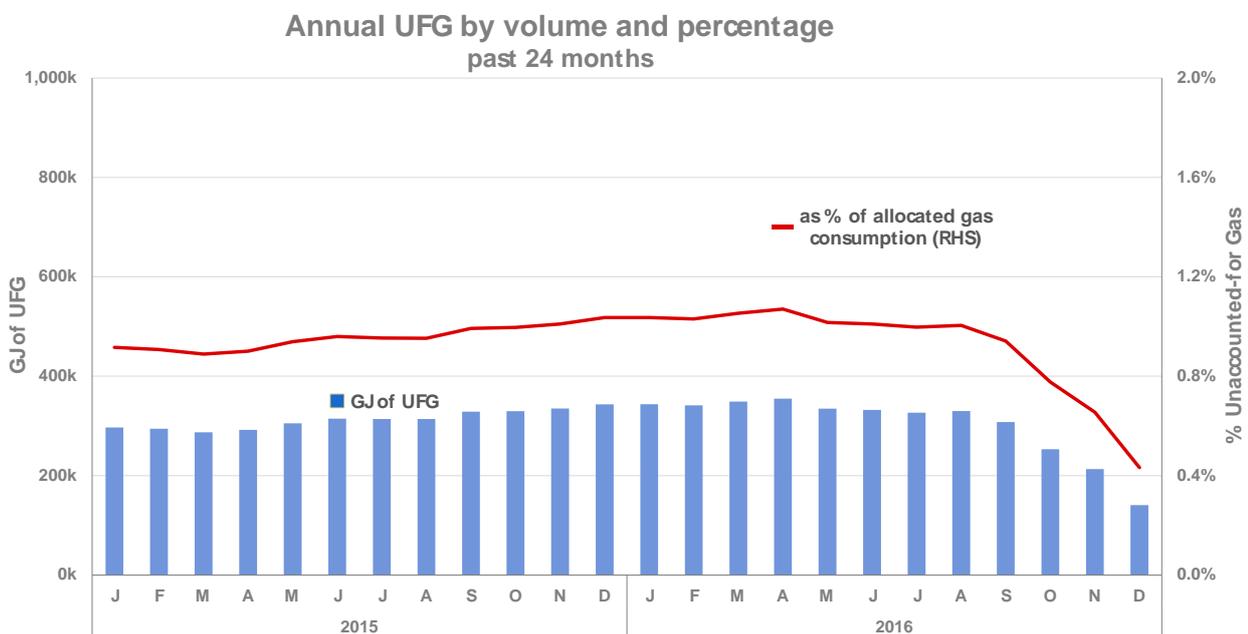
¹ The initial allocation produced by the Allocation Agent is a “bottom up” approach whereby each of the retailers submits data based on a combination of actual meter readings (historical estimates) and consumption estimates since the last meter reading (forward estimates). In that context, UFG is a meaningful measure of the difference between the aggregate estimates and the volumes that have entered the network. By contrast, D+1 is a system for dividing the network volumes among retailers and that process does not produce UFG figures that are comparable with the bottom-up approach to allocation.

Chart 7: Percentage of UFG



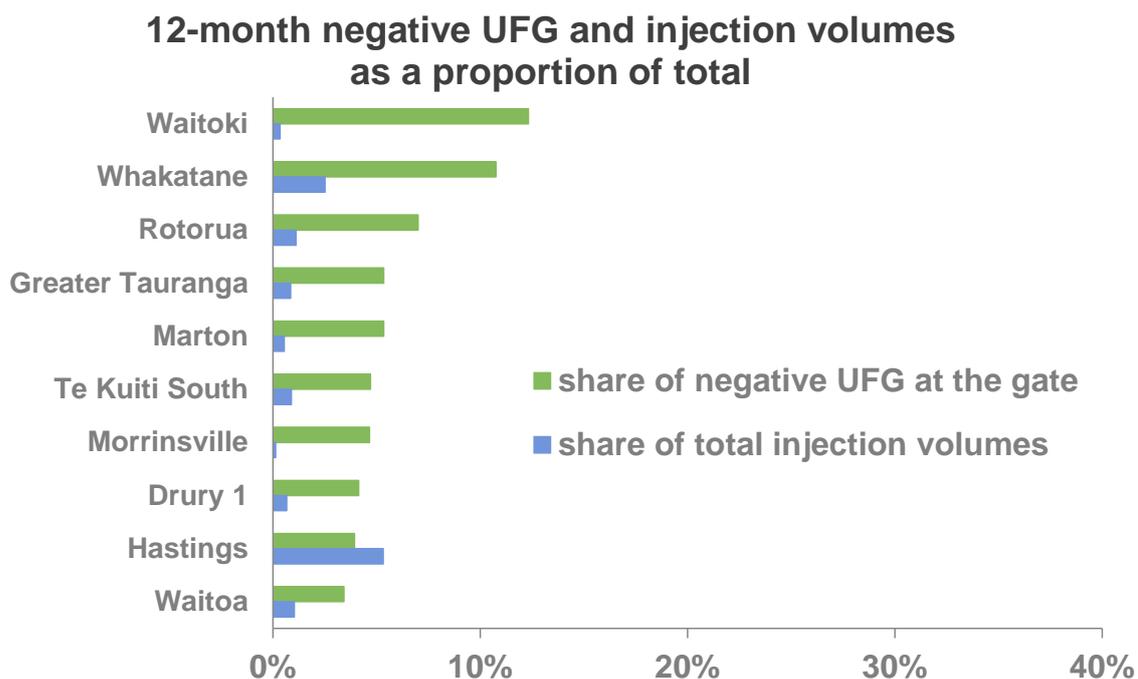
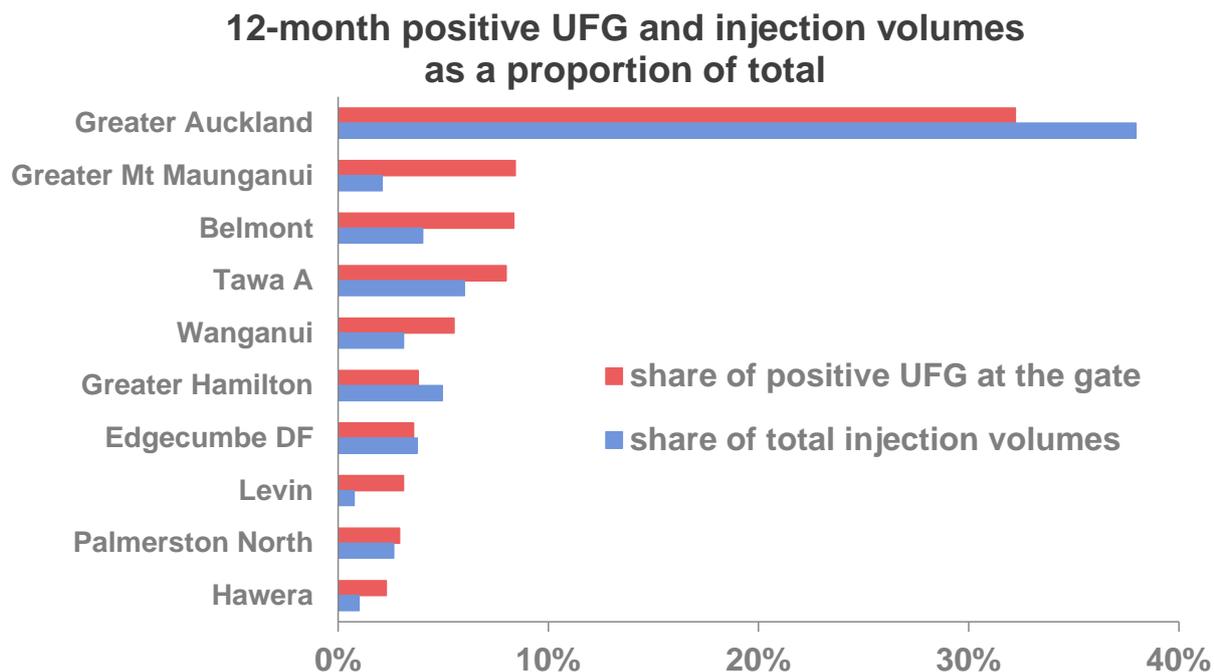
- UFG tends to be higher as a percentage when total volumes are high. This trend most likely due to UFG attributable to mass market consumption.

Chart 8: Rolling 12-month UFG



- In volume terms, annual UFG has decreased dramatically since 2009, when UFG was about 600,000 GJ per year. It now stands at approximately 310,000 GJ, about 1.0% of allocated gas consumption.

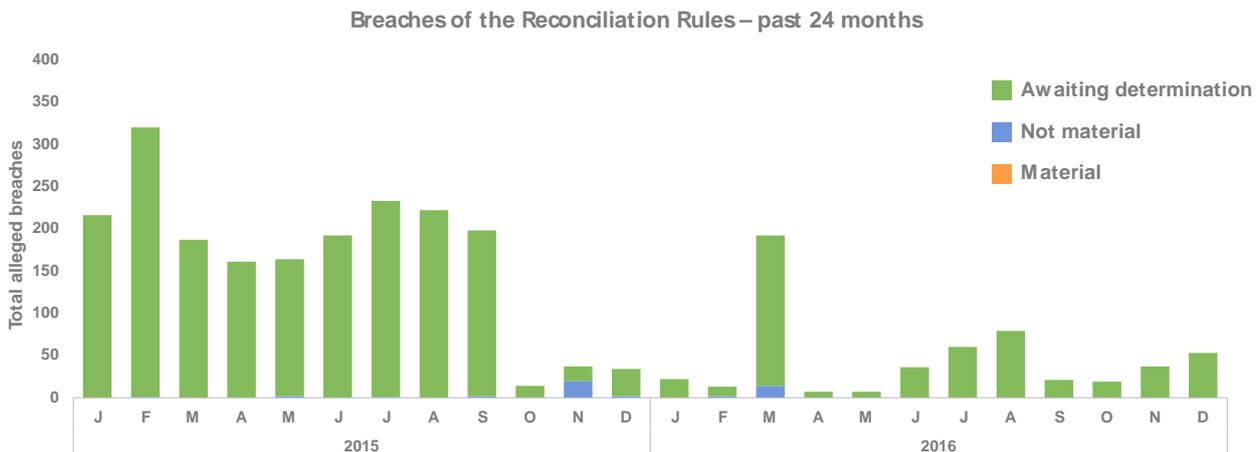
Chart 9: Gas gates where UFG is the highest



- 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 2015 through September 2016.
- The 10 gates shown in the top chart account for 78% – about 379,000 GJ – of the positive UFG experienced over the past 12 months.
- The 10 gates shown in the bottom chart account for about 62% (about 71,000 GJ) of the negative UFG experienced in the past 12 months.

- A number of the gas gates shown 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.
- In the first chart, Edgecumbe DF is a global one-month gate; Whakatane, Marton, Te Kuiti South, and Waitoa are in the second chart.

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



- In March 2016, a number of breaches were alleged in relation to the audit of the Greater Tauranga and Greater Mount Maunganui gas gates.
- Historically, the majority of breaches 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.
- In September 2015, the market administrator issued a guideline² on the materiality of rule 37 breaches, stating that instances where the volume involved is less than or equal to 200 gigajoules do not need to be alleged as a breach by the allocation agent, as there is no likelihood that those errors will raise material issues under the Reconciliation Rules. This change can be seen in the decrease in alleged breaches in October 2015.
- It has proven efficient for the Market Investigator (or, more recently, Gas Industry Co) to attempt to reach a settlement on batches of rule 37 breaches, which is why there are a large number of breaches awaiting determination. The settlement of the 23 months up to and including the consumption month of April 2015 has just concluded, which will allow the Market Administrator to determine their materiality. The final batch of settlements will be for the May 2015 to November 2015 consumption months.
- Beginning in December 2015, the end-of-month initial allocations have been replaced with day-after daily allocations (known as D+1), which will eliminate the need for rule 37 breach settlements.

Audits commissioned

Event audits

No event audits were commissioned in this quarter.

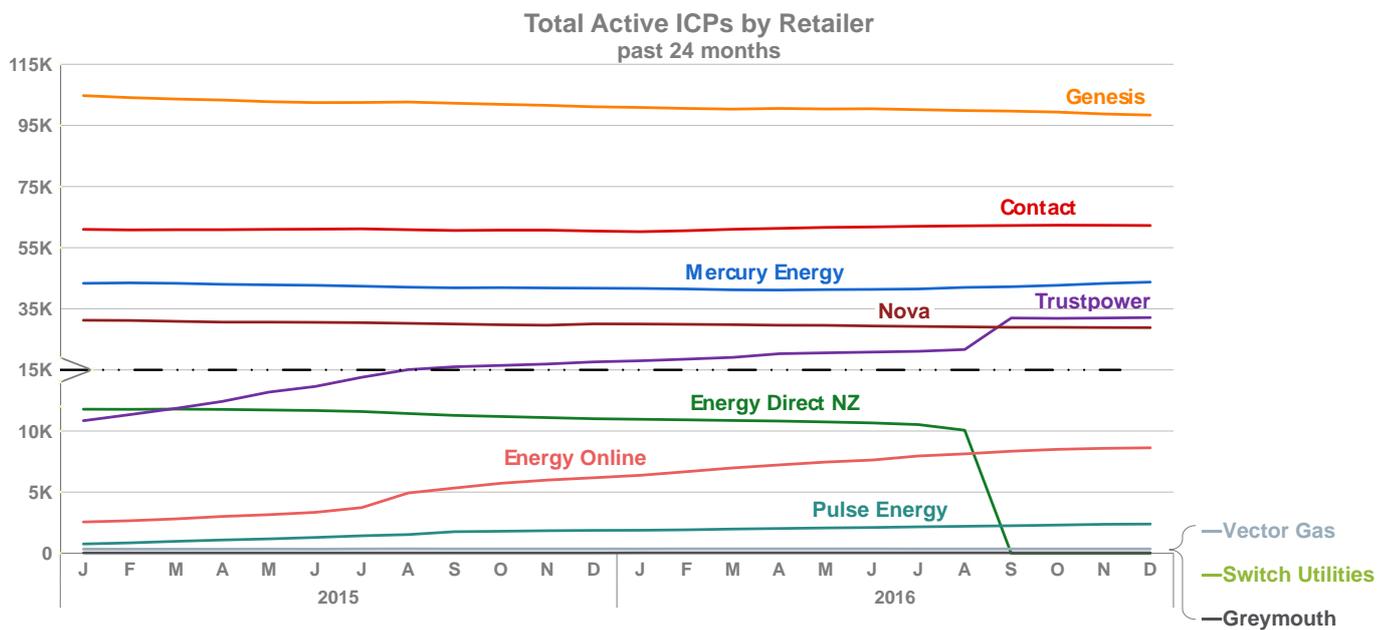
² Available at <http://gasindustry.co.nz/dmsdocument/5031>.

Performance audits

Gas Industry Co has begun a round of performance audits under the Switching Rules and the Downstream Reconciliation Rules. These are the first audits to be commissioned since the Switching Rules were amended in September 2015 to provide for regular performance audits of registry participants, defined as retailers, distributors, and meter owners. It is the third round of regular performance audits under the Downstream Reconciliation Rules. As of this writing, the audits of Genesis Energy and Contact Energy have been completed.

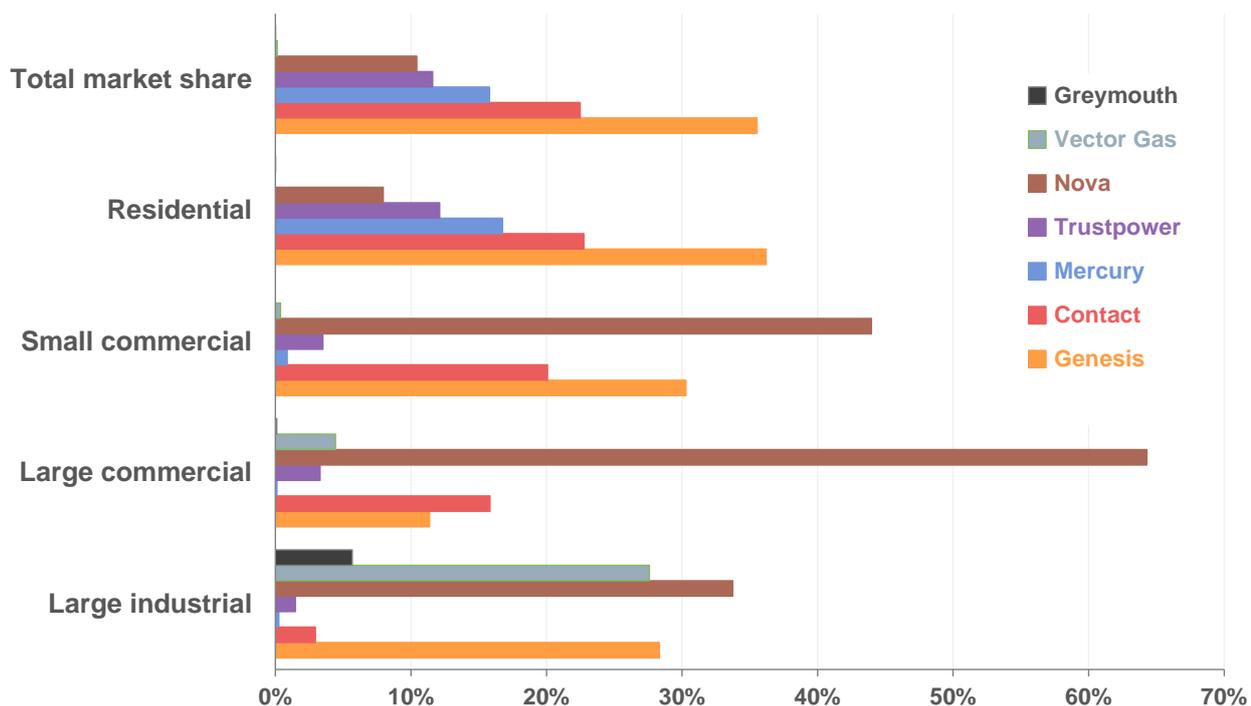
4 Market competition performance measures

Chart 11: Market share of ICPs by retailer



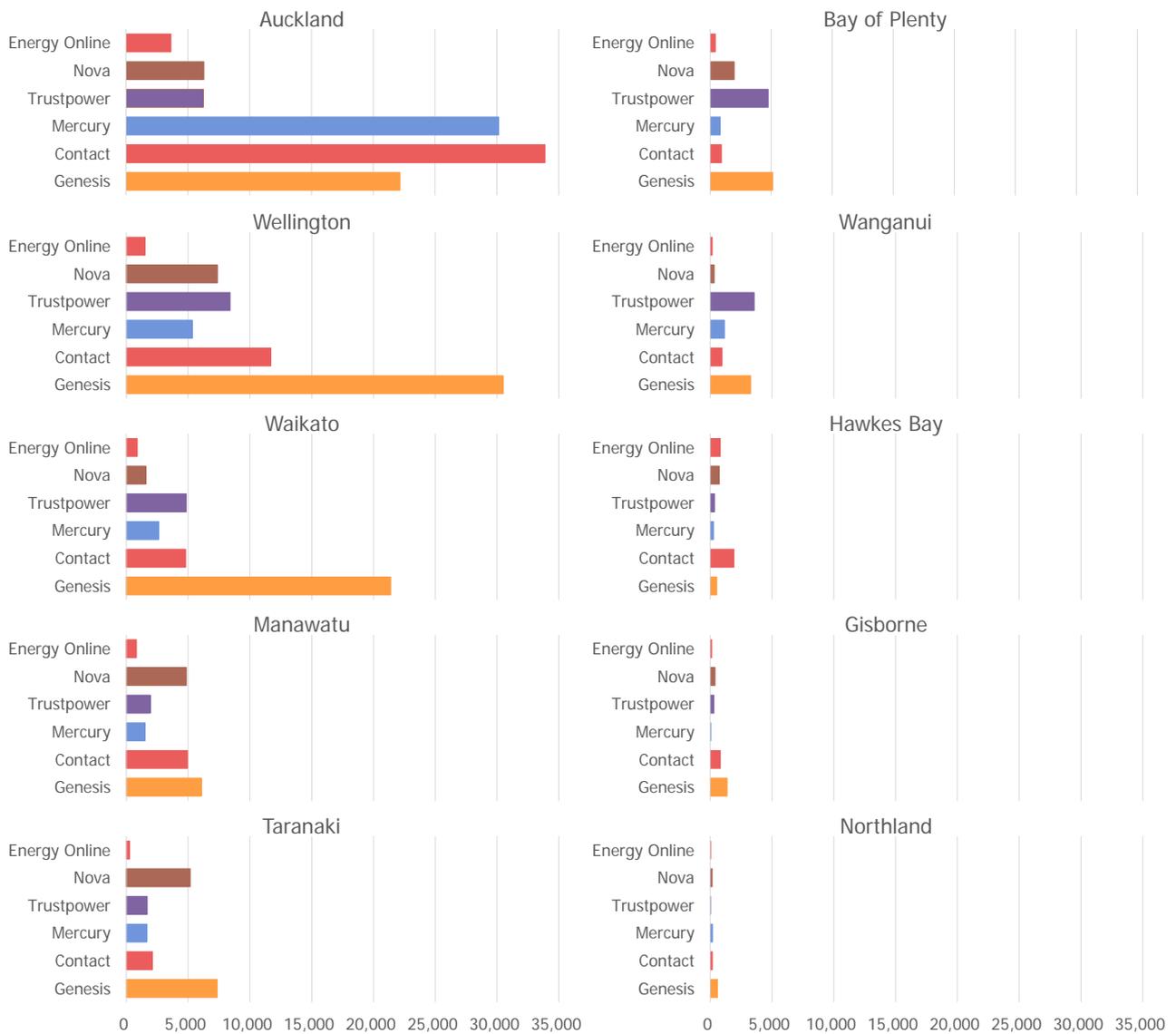
- This chart shows the contrast between the relative stability of customer numbers for the established retailers versus the growth of the new entrant retailers:
 - Trustpower, which entered the retail gas market in November 2013, is now the fourth largest retailer by customer share;
 - Pulse Energy entered the market in October 2014;
 - Switch Utilities entered in July 2015.
- Energy Online is a retail brand of Genesis Energy and has also been experiencing growth in customer numbers.
- There are now 10 distinct retail brands, owned by nine different retail companies (Energy Online is owned by Genesis Energy).

Chart 12: Customer market share by consumer segment



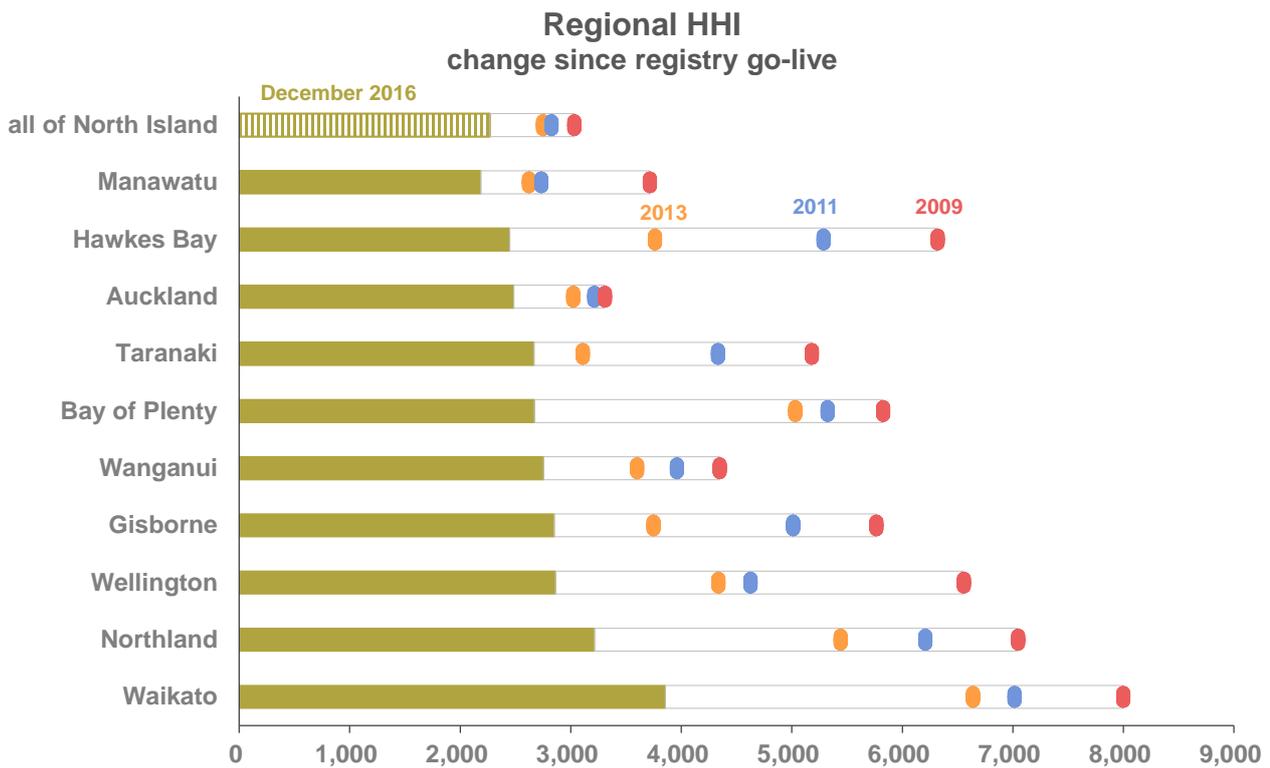
- In this chart, consumer segment is determined by the load shedding category listed on the gas registry for each consumer site. The top set of bars shows the same set of data as the previous chart. The other sets of bars show how some retailers are more dominant in specific sectors of the retail gas market. Vector Gas, for example, focusses on large industrial and large commercial customers, while Greymouth has a focus on large industrial customers.
- The chart includes the retail brands that have more than 4% of market share in a category.

Chart 12a: Customer market share by region



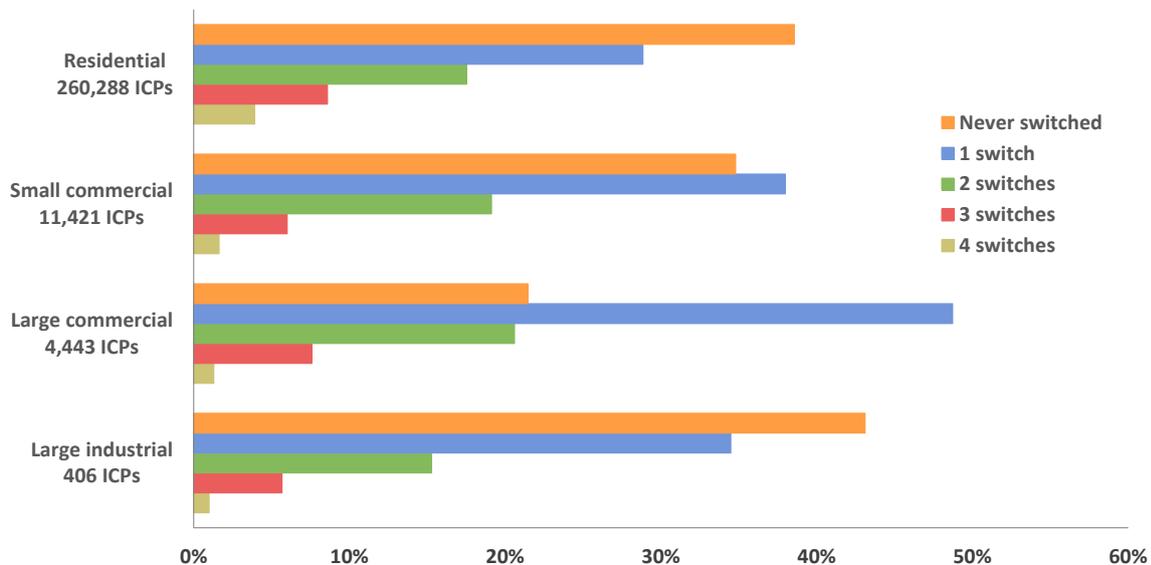
- This chart shows the number of ICPs for each retailer in each geographical region. The retailers shown each have over 1% of total customer market share.

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 2,269, in comparison to 3,033 in February 2009 (the start of the registry).

Chart 14: Switching by consumer sites since 2009

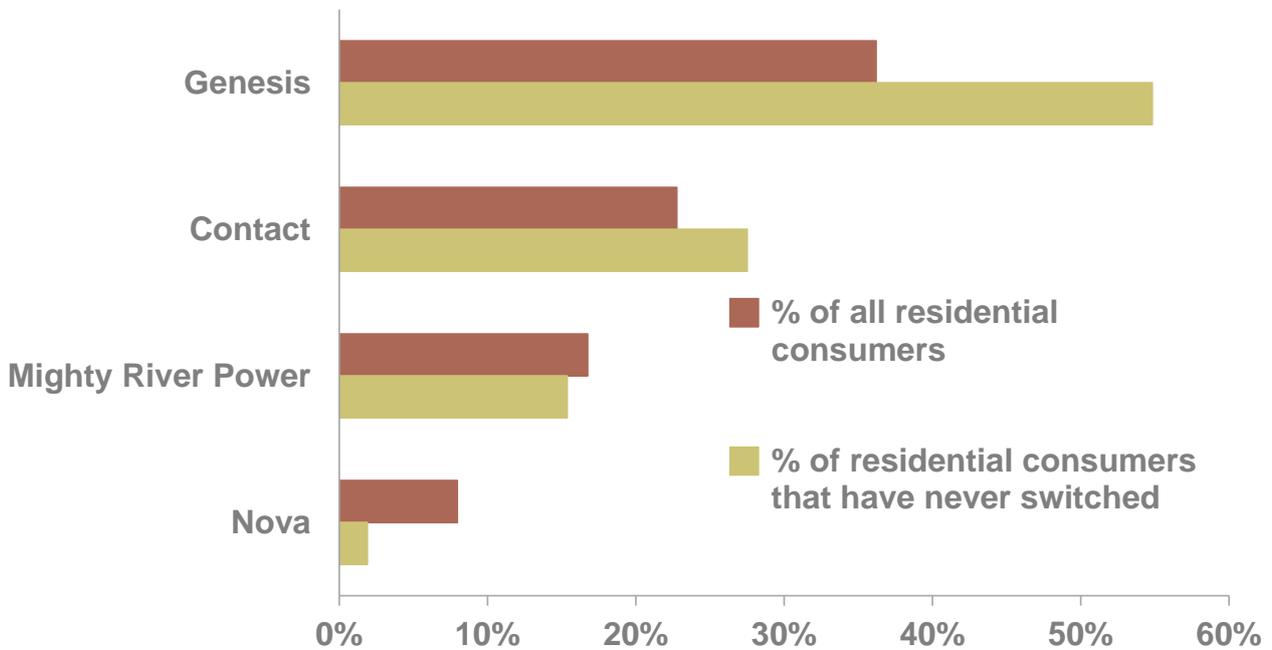


As with Chart 12, consumer sites in this chart and Chart 15 are categorised based on the load shedding category recorded in the gas registry.

- 61% of residential consumer sites
- 65% of small commercial sites

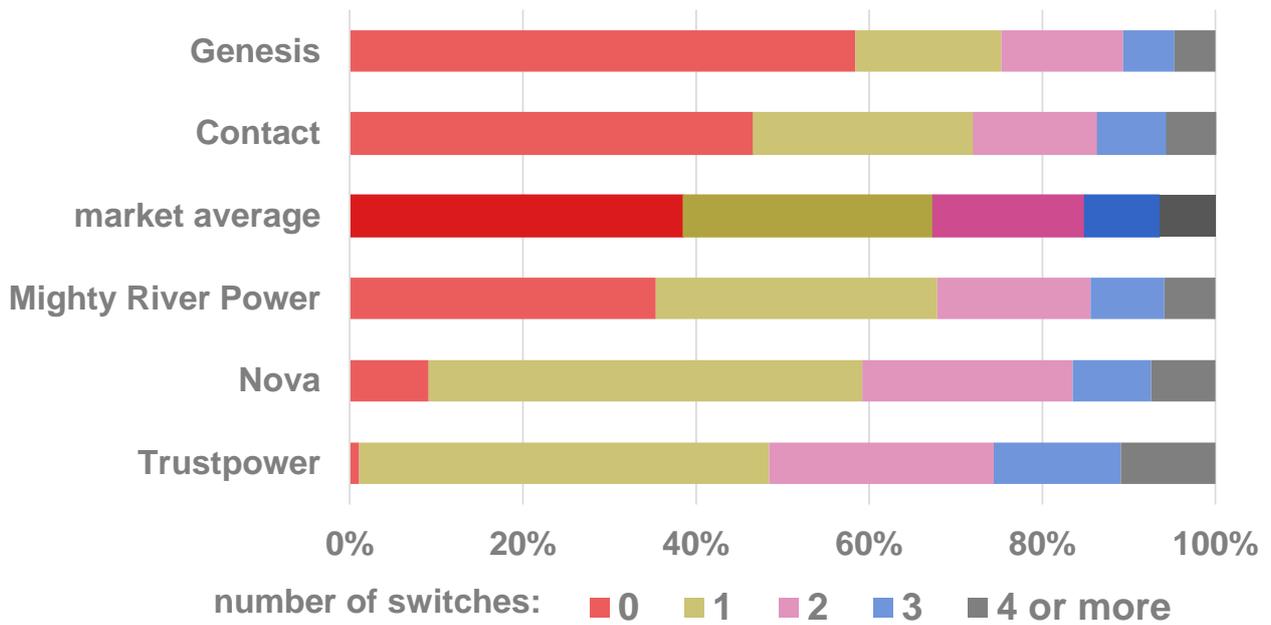
- 79% of large commercial sites; and
 - 57% of large industrial sites
- have switched retailer at least once since the start of the gas registry (February 2009).

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 36% of the total residential market, and about 55% of the residential consumers that have not switched retailer since the start of the gas registry in February 2009.
- The chart focuses on the incumbent retailers that were in operation at the start of the gas registry.

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: 39% of residential consumer sites have never switched retailer; 29% have switched once; 18% have switched twice; 9% three times, and 6% four or more times.
- The other bars enable comparison with retailers' residential customer bases. 58% of Genesis customers, for example, have never switched; the proportion is 47% for Contact customers.
- In contrast, Trustpower has built its customer base almost entirely through switching: 47% of its customers have switched once; 26% twice; and 15% three times. (Trustpower is also retailer to a small number of newly-created ICPs that have never switched.) Note that the transfers from Energy Direct would be counted as switches in this context.

Chart 16: Switching activity by retailer

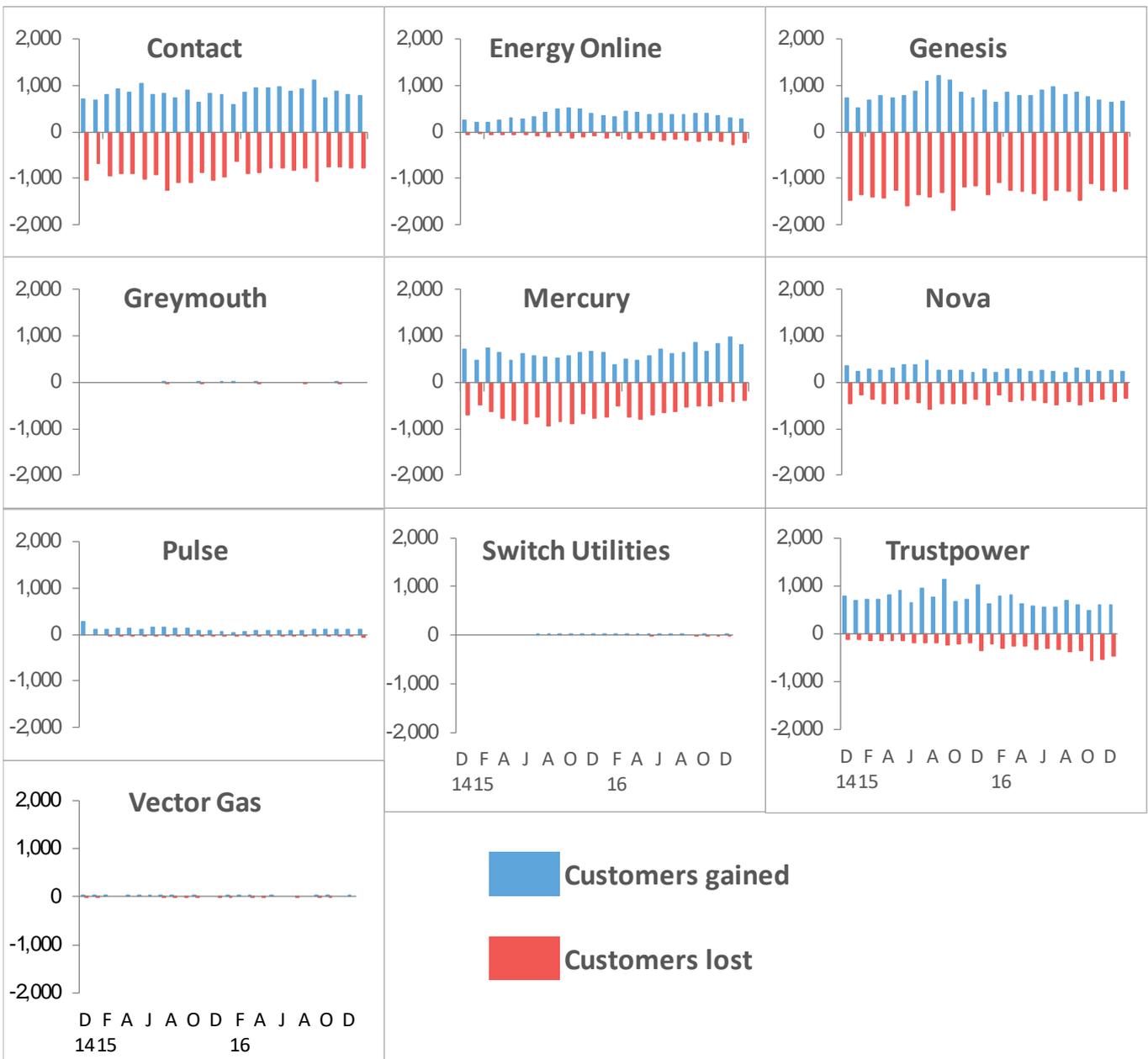
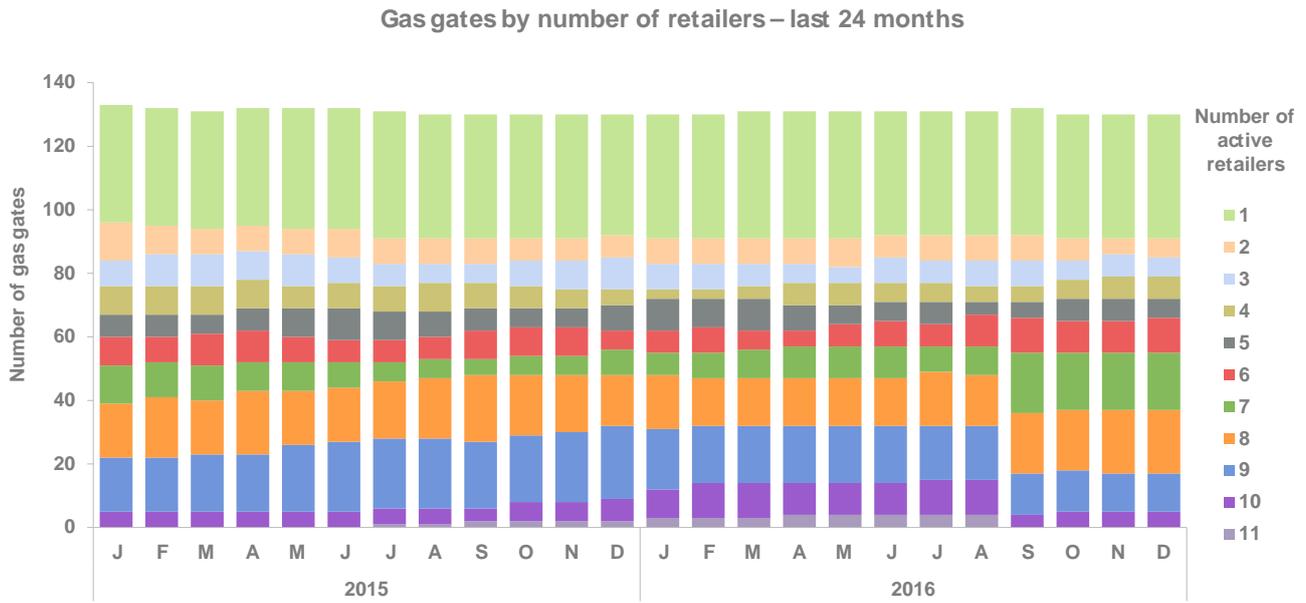
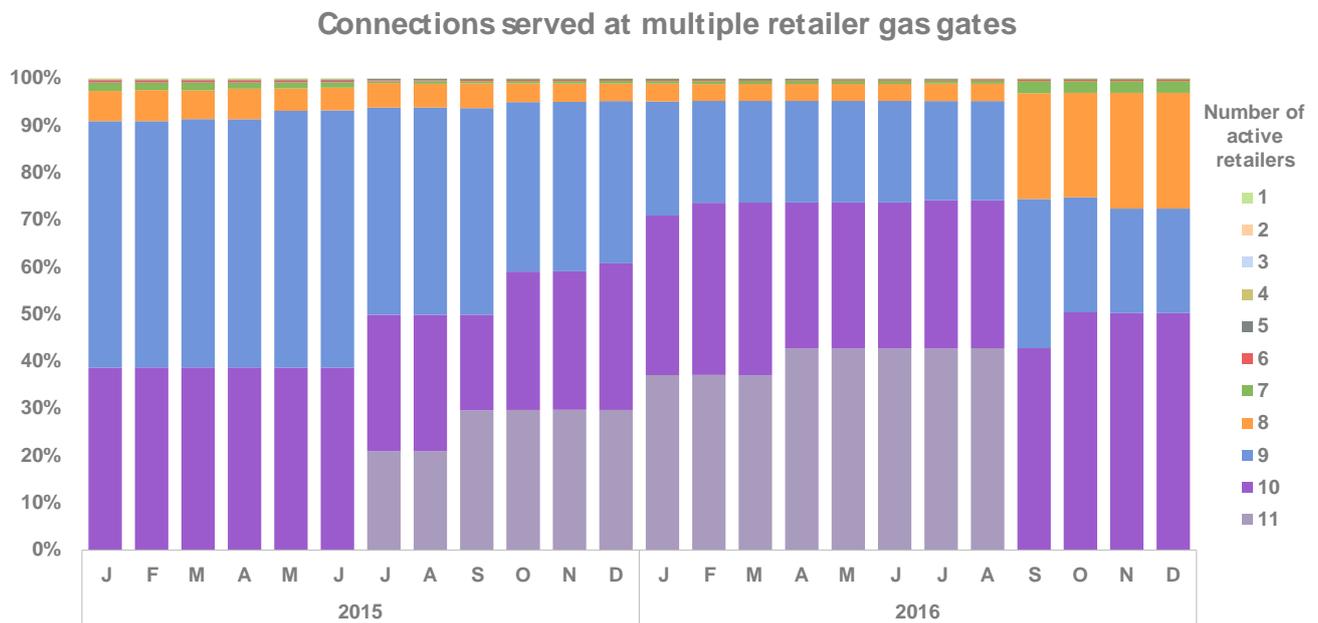


Chart 17: Gas gates by number of retailers



- With the amalgamation of Energy Direct and Trustpower, there are now ten retailers trading at some gas gates in Auckland and Wellington.

Chart 18: Connections served by multiple retailers



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

Chart 19: Total gas volumes

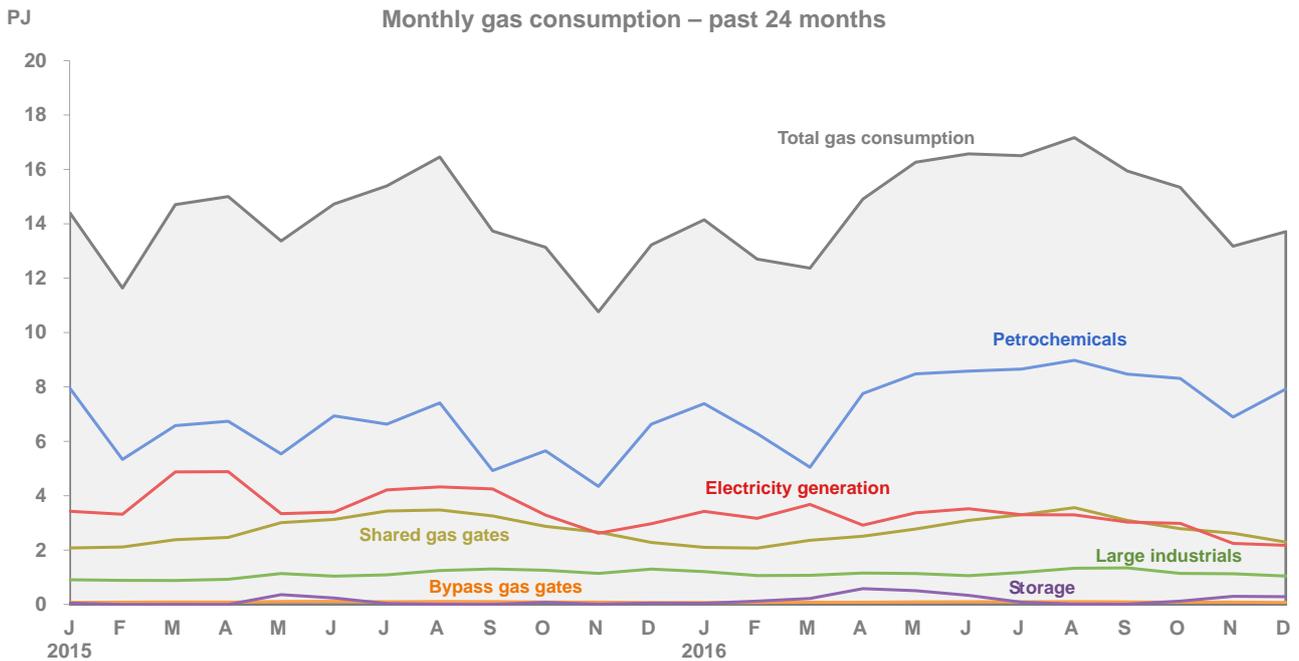
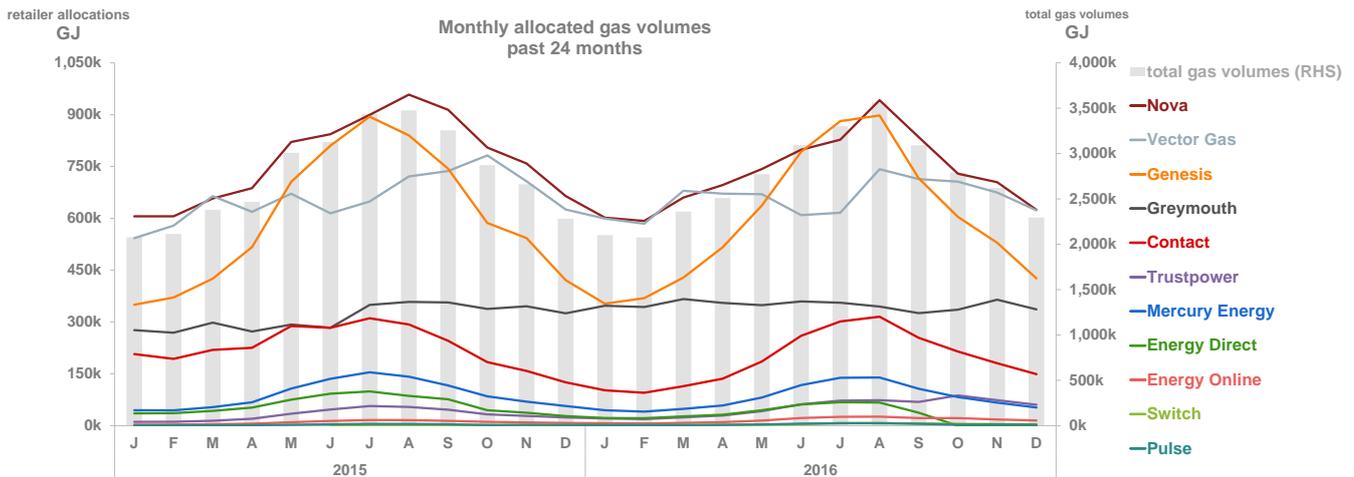
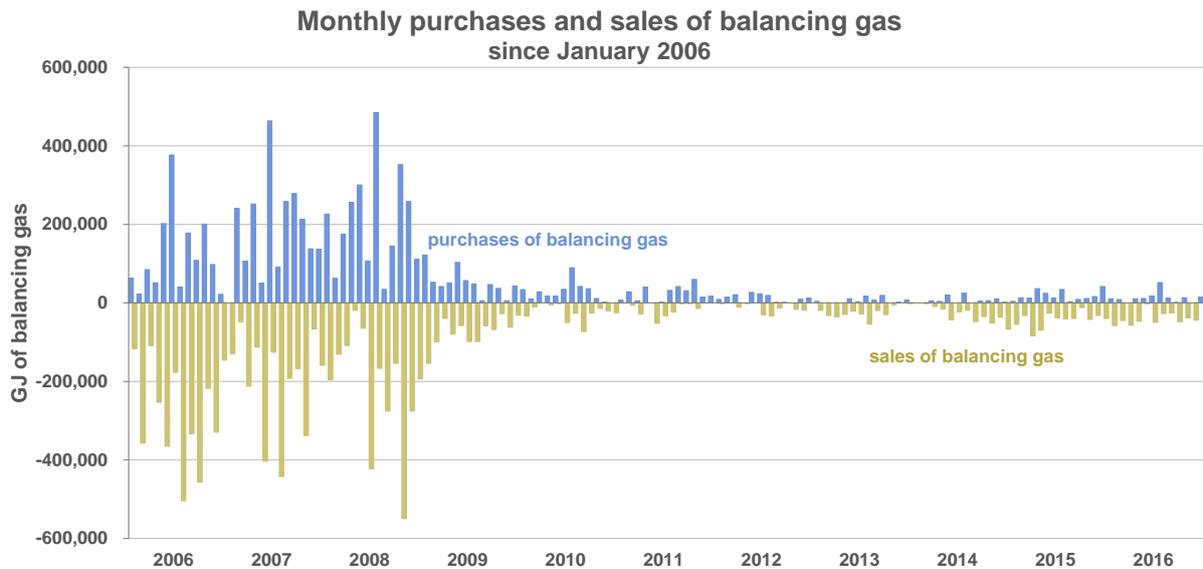


Chart 20: Allocated gas volumes



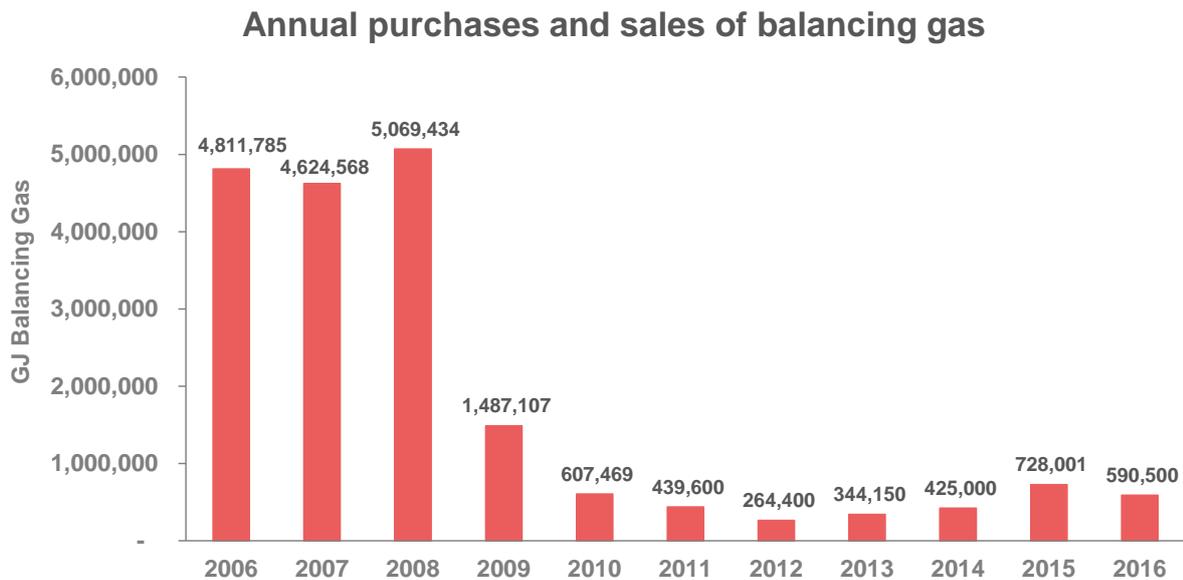
- The data are from a mix of allocation stages: Final through November 2015; Interim for December 2015 through September 2016; and Initial for October through December 2016. Note that the initial allocation data are those initially produced by the allocation agent, not the D+1 allocations that were used to replace the initial allocations.

Chart 21: Balancing gas volumes



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

Chart 22: Annual volumes of balancing gas



Market Based Balancing (MBB) has been in place since October 2015. This set of arrangements is designed to target the costs of secondary balancing (i.e. balancing undertaken by the transmission operator) to parties that are out of balance.

A review of MBB published in November 2016 by Gas Industry Co found that, since October 2015, imbalance on the pipeline has decreased, both on the Maui and ex-Vector transmission pipelines, indicating that shippers have improved in balancing their own positions (primary balancing). However, as shown by the charts above, this improvement in primary balancing has not resulted in a decrease in secondary balancing volumes. Since the introduction of MBB, secondary balancing

transactions have used the emsTradePoint market (rather than the BGX, which limited the parties that could participate), which has led to a narrower price spread between put and call gas transactions.

5 Critical Contingency Management performance measures

There were no critical contingencies during the quarter.

Appendix A - 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. Additionally, the charts include only those switches that occurred to customer sites that had a status of active-contracted (ACTC) or active-vacant (ACTV) in the registry (so as to exclude the transfer of vacant sites from one retailer code to another).

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; the amalgamation of Auckland Gas (June 2011) and Bay of Plenty Energy (March 2013) with Nova Energy; and the transfer of Energy Direct customers to Trustpower (September 2016).

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 more than 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 13% 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

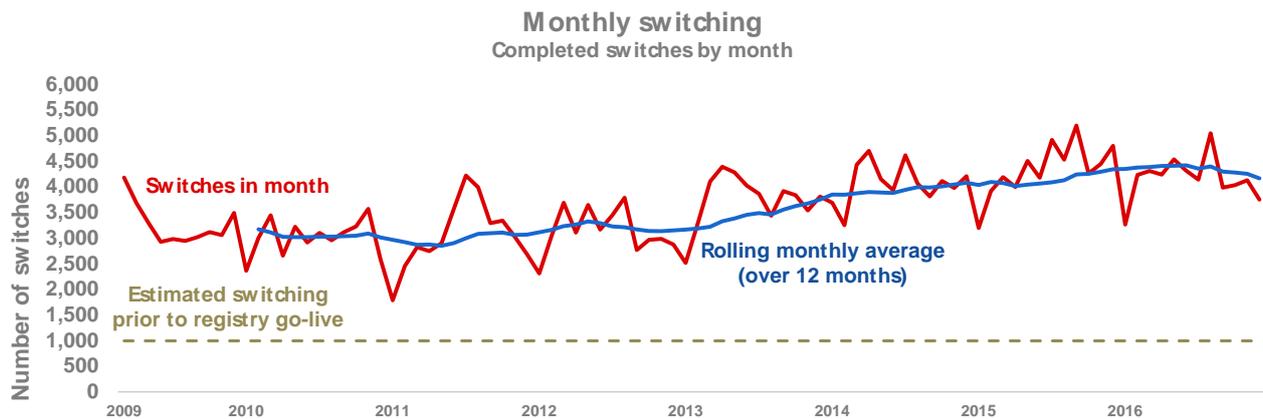


Chart 2: Regional switching activity

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 (ACTC and ACTV ICPs) 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 1.0% 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 about two 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. Historically, switches taking zero to two business days were generally move switches (where a property is switched at the request of an incoming tenant or homeowner), while the majority of switches taking three or more business days were standard switches (where a gas customer simply decides to switch the retailer that supplies their existing location). Now, the majority of switches occur within three 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. Breaches can also be reported by an auditor following an event audit or performance audit.

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

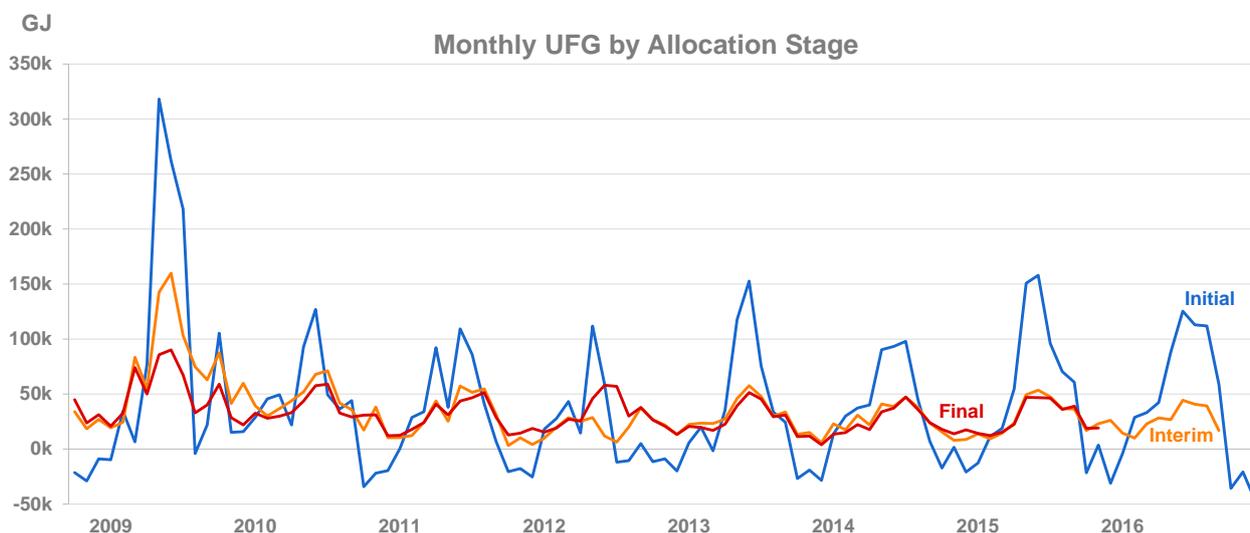


Chart 7: Percentage of UFG

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.

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. Breaches can also be reported by an auditor following an event audit or performance audit. Rule 37 breaches tend to be considered and settled in 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 4% 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.³

The bars in the chart shows the HHI of the retail gas market as at December 2016; 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 seven 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 never switched retailer (since the start of the gas registry in February 2009), 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.

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 40 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 – about 100 – 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

³ <http://www.justice.gov/atr/public/guidelines/hhi.html> accessed 1 May 2014.

example, that while nine or ten 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 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 (the tan line) 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 and Mercury 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, meant that the costs associated with secondary balancing were generally recovered from pipeline users. In 2009, MDL instituted the Balancing Gas Exchange, an online platform that displayed pipeline balance conditions and enabled parties physically interconnected to the Maui pipeline to post offers to buy and sell balancing gas. These two changes provided gas transmission customers with an incentive to self-balance and greater information on which to base their balancing decisions.

The outcome was the significantly reduced volumes of gas needed to be purchased or sold by MDL to balance the Maui pipeline.

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. The rationale for the change was to provide welded parties with even greater incentive to self-balance. 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 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.

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 (<i>initial allocation</i>); four months after consumption month (<i>interim allocation</i>); and 13 months after consumption month (<i>final allocation</i>).
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.

PROGRESS TOWARDS OBJECTIVES AND OUTCOMES

1 OCTOBER – 31 DECEMBER 2016

This section provides an update of progress towards objectives and outcomes for Gas Industry Co the gas industry body, 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 *FY2017-2019 Statement of Intent*.

Project	Rationale	Activity	Status
Strategic Objective 1: Promote efficient, competitive and confident gas markets			
Retail Gas Contracts Oversight Scheme	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Administer the Retail Gas Contracts Oversight Scheme. Conduct a full review of retail contracts every 3 years - next in calendar year 2018. Review retailers' contracts otherwise on an exceptions basis (ie new entrants and changed contracts). Provide additional information to assist new entrant retailers to understand their obligations and governance processes. 	<ul style="list-style-type: none"> Fourth assessment of retailers' standard published contracts with small consumers published in October 2015; showed 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. The next review is scheduled for 2018.
Gas Distribution Contracts Oversight Scheme	<ul style="list-style-type: none"> Gas industry participants and new entrants are able to access distribution pipelines on reasonable terms and conditions. Ensure consistency in distribution services arrangements. 	<ul style="list-style-type: none"> Monitor and report to Minister on status of distribution arrangements. Develop and publish distribution contract Principles. Encourage publication of network services agreements. 	<ul style="list-style-type: none"> Report on second assessment of distribution contracts issued in May 2014 showed that overall alignment improved from 'Moderate' to 'Substantial'. Gas Industry Co continues to assess progress with executing new distribution contracts consistent with the Distribution Scheme principles.

Project	Rationale	Activity	Status
Gas Quality	<ul style="list-style-type: none"> Maintain an acceptable standard of gas quality. Ensure costs of gas quality incidents are met efficiently. Achieve improved transparency on gas quality incidents. 	<ul style="list-style-type: none"> Ongoing review of industry arrangements for managing gas quality. Consider options for improving gas quality arrangements. 	<ul style="list-style-type: none"> <i>Gas Quality: Requirements and Procedures Document</i> issued in 2015, and will be reviewed and updated by Gas Industry Co as required. Gas Industry Co to review developments in relation to gas quality and work with stakeholders on further improvements.
Rule Changes	<ul style="list-style-type: none"> Improved industry governance through regular review of existing arrangements and recommending changes where appropriate. 	<ul style="list-style-type: none"> Maintain rule change registers. Review the pricing provisions of the CCM Regulations Review Switching, Reconciliation, and CCM rules/regulations once new access code design sufficiently advanced. 	<ul style="list-style-type: none"> A pilot of day-after (D+1) gas allocation and daily balancing and peaking pool (BPP) information delivery is continuing successfully. The pilot will be reviewed in light of single new transmission code development, and changes made to Reconciliation Rules proposed where appropriate.
Gas Measurement	<ul style="list-style-type: none"> Workstream arose from industry stakeholder discussions at annual Co-Regulatory Forums undertaken in context of GPS outcome of providing efficient market for metering services. 	<ul style="list-style-type: none"> Develop a seed paper to identify any metering issues. 	<ul style="list-style-type: none"> Gas Industry Co currently preparing a draft <i>Metering Seed Paper</i>.
Information Gathering	<ul style="list-style-type: none"> Protocol established in 2012 as an industry arrangement rather than a formal regulated process. 	<ul style="list-style-type: none"> If required, due to non-compliance, Gas Industry Co can consult on regulations for mandatory supply of information by participants to inform relevant issues. Subject to outcome of this consultation, Gas Industry Co may make recommendation to the Minister for regulations for the provision of information. 	<ul style="list-style-type: none"> Information was provided under the Protocol in relation to review of market-based balancing and metering contracts review.

Project	Rationale	Activity	Status
Strategic Objective 2: Facilitate efficient use of, and investment in, gas infrastructure			
Transmission Access	<ul style="list-style-type: none"> Ensure transmission pipeline access arrangements transparently provide for the efficient utilisation of physical capacity and effectively signal any need for efficient investment in additional capacity. 	<ul style="list-style-type: none"> Address by regulatory and/or non-regulatory options any lessening of competition due to transmission constraints. Improve the quality and availability of pipeline security and supply/demand information. Promote changes to commercial and regulatory transmission access arrangements. 	<ul style="list-style-type: none"> Former Vector and Maui transmission systems under single ownership by First Gas. Gas Industry Co and First Gas co-leading development work around single new transmission access code to replace the Vector Transmission Code (VTC) and Maui Pipeline Operating Code (MPOC).
Supply/Demand Model	<ul style="list-style-type: none"> <i>Gas Supply and Demand Scenarios 2012-2027</i> commissioned in 2012 as part of the Gas Transmission Investment Programme (GTIP). 	<ul style="list-style-type: none"> Developed first dedicated study on future gas supply and demand. Review and update the supply/demand model biannually. 	<ul style="list-style-type: none"> Third edition of Report released on 14 October and presented to industry on 27 October.
Transmission Pipeline Balancing	<ul style="list-style-type: none"> Improved industry arrangements. Gas industry participants and new entrants are able to access transmission pipelines under reasonable terms and conditions. 	<ul style="list-style-type: none"> Assess balancing market developments. 	<ul style="list-style-type: none"> Market-Based Balancing (MBB) introduced on 1 October 2015 with associated new trading of balancing gas on emsTradepoint wholesale market. Post-implementation review of MBB identified efficiency improvements. Gas Industry Co, First Gas and stakeholders considering balancing in context of single new transmission code development.
Transmission Code Change Requests	<ul style="list-style-type: none"> Ensure ongoing relevance and efficiency of multilateral terms of access to transmission pipelines. 	<ul style="list-style-type: none"> Transmission Code Change Requests processed as required. 	<ul style="list-style-type: none"> No proposed code changes are under consideration, and changes are not being encouraged in context of single new transmission code development.

Project	Rationale	Activity	Status
Interconnection	<ul style="list-style-type: none"> Improved industry outcomes. Gas industry participants and new entrants are able to access transmission pipelines under reasonable terms and conditions. 	<ul style="list-style-type: none"> Review interconnections as required. Address any concerns regarding reasonable access Amend Interconnection Guidelines if needed. 	<ul style="list-style-type: none"> Interconnection Guidelines implemented since 2009. Transmission System Owner policies largely consistent with those. Gas Industry Co and First Gas to consider interconnection arrangements in context of single new transmission code development.
Security and Reliability	<ul style="list-style-type: none"> Gas Industry Co's 2015/16 review of transmission pipeline security and reliability found arrangements were generally appropriate but noted several opportunities for improvement under current arrangements (mainly development of first combined First Gas Transmission Asset Management Plan) and several areas where arrangements were evolving (Commerce Commission price-quality regulations). 	<ul style="list-style-type: none"> Gas Industry Co will continue to review developments and work with stakeholders on further improvements. 	<ul style="list-style-type: none"> Gas Industry Co to review progress by First Gas and Commerce Commission in 2017.
Wholesale Market Monitoring	<ul style="list-style-type: none"> emsTradepoint wholesale gas market (eTp) makes a significant contribution to GPS outcome for 'efficient arrangements for the short-term trading of gas'. 	<ul style="list-style-type: none"> Gas Industry Co continues to monitor activity and developments in the wholesale spot market as well as having a role with the eTp's Operational Working Group' Gas Industry Co monitors wholesale market activity and developments, particularly in relation to Market-Based Balancing. 	<ul style="list-style-type: none"> Continue to monitor the market platform, including impacts of balancing gas trading following introduction of MBB. Supporting new Energy Trader Forum.

Project	Rationale	Activity	Status
Strategic Objective 3: Deliver effectively on Gas Industry Co's accountabilities as the gas industry body			
Downstream Reconciliation	<ul style="list-style-type: none"> • Statutory role under Gas (Downstream Reconciliation) Rules 2008. • Improved industry arrangements and consumer outcomes through the objective of fairly allocating, and reducing, Unaccounted-for-gas (UFG) and its associated costs. 	<ul style="list-style-type: none"> • Oversight of Reconciliation Rules, including Allocation Agent Service Provider role. 	<ul style="list-style-type: none"> • Reconciliation Rules operating well, with emsTradePoint performing Allocation Agent Service Provider role. • Gas reconciliation audits performed regularly. • Annual Unaccounted for Gas (UFG) factors and unusual metering arrangements reviewed for any significant differences. • A pilot of day-after (D+1) gas allocation and daily balancing and peaking pool (BPP) information delivery is continuing successfully. The pilot will be reviewed in light of single new transmission code development, and changes to Reconciliation Rules proposed if appropriate.
Switching and Registry	<ul style="list-style-type: none"> • Statutory Role under Gas (Switching Arrangements) Rules 2008. • Efficient retail market and improved consumer outcomes by facilitating market contestability through customer switching between retailers. 	<ul style="list-style-type: none"> • Oversight of Switching Rules, including Registry Operator Service Provider role. 	<ul style="list-style-type: none"> • Switching Rules operating well, with Jade performing Registry Operator Service Provider role. • Switching statistics report issued monthly, with switching levels remaining high. • Completing Registry Service Provider tender process.

Project	Rationale	Activity	Status
Critical Contingency Management	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Oversight of CCM Regulations including management of Critical Contingency Operator (CCO) Service Provider role. Review effectiveness of the Regulations following any events/exercises. Operate critical contingency pool following an event. Conduct annual critical contingency management exercise. 	<ul style="list-style-type: none"> CCM Regulations operating well, with Core Group performing Critical Contingency Operator Service Provider role. CCO activities are reviewed each quarter. No Critical Contingency events occurred during this period. One critical contingency (Pohokura platform trip 24 May) and annual exercise (22 June) in 2016. Annual industry exercise to take place 11 April 2017. CCM designation renewal process is well underway.
Compliance	<ul style="list-style-type: none"> Statutory role under the Compliance Regulations. Improved industry operations through provision of a compliance and dispute resolution process for industry participants. 	<ul style="list-style-type: none"> Oversight of Gas Governance (Compliance) Regulations 2008. Appointment of Rulings Panel and Investigator, and management of associated processes. 	<ul style="list-style-type: none"> Gas Industry Co continues to fulfil its role as Market Administrator under the Compliance Regulations. Sir John Hansen appointed as Rulings Panel and Jason McHerron as Investigator. Breach activity remains generally low; a positive indicator of industry compliance. One matter before Rulings Panel currently (alleged breaches of CCM Regulations 2008 and Compliance Regulations).
Statutory Accountability	<ul style="list-style-type: none"> To ensure stakeholders understand the scope of the company's intended operations and its results to the cost thereof. 	<ul style="list-style-type: none"> Prepare/publish a Statement of Intent that meets statutory requirements Prepare/publish Annual Reports that meet statutory requirements Prepare/publish Quarterly Reports to the Minister on 'state and current performance of the industry' 	<ul style="list-style-type: none"> Statement of Intent (SOI) for FY2017- FY2019 published July 2016. Commencing work on new FY2018-20 SOI. Annual Report published 30 September 2016. Quarterly Reports and the News Bulletins published regularly.
Performance Measures	<ul style="list-style-type: none"> Improved industry and consumer outcomes through provision of public information on industry performance Monitor the effectiveness of governance arrangements 	<ul style="list-style-type: none"> Determine and publish information on each gas governance arrangement that has been implemented. 	<ul style="list-style-type: none"> Performance Measures Reports included in Quarterly Reports. Rules/Market performing well on key measures - switching numbers, switching times, Unaccounted-for gas (UFG) levels, etc.

Project	Rationale	Activity	Status
Strategic Objective 4: Build and communicate the New Zealand Gas Story			
NZ Gas Story/State and Performance of Industry	<ul style="list-style-type: none"> Facilitate nexus between industry and Government. Maintain informed industry participants and other stakeholders. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> <i>NZ Gas Story</i> – Latest update (fifth edition) released December 2016. Annual <i>NZ Gas Story</i> roadshow presentations held in Wellington and Auckland in December with one planned Taranaki in early 2017. Regular liaison with MBIE, Electricity Authority, and other relevant regulators. In particular, working closely with Commerce Commission on gas transmission matters (Commission Input Methodologies and price/quality path reviews; Gas Industry Co single transmission code development).