Gas Industry Co

QUARTERLY REPORT

Quarter ended 31 March 2015

FROM THE CHIEF EXECUTIVE

Gas Industry Co's latest evaluation of the New Zealand gas industry portrays a sector in continuing good health, but currently facing some headwinds as a substantial decline in international oil prices impacts broader petroleum-related activity.

Our evaluation is set out in the third edition of our *New Zealand Gas Story – the State and Performance of the New Zealand Gas Industry* publication, issued in March this year.

In this edition, we have been able to expand on wholesale gas market activity as new and additional information flows from the operation of the wholesale trading platform, while a variety of recently-commissioned reports have fed into extended discussion of future gas supply/demand scenarios, and the opportunities and challenges they may present.

In the past year we have continued to see the gas industry in New Zealand change and evolve. For instance, during that period the total market has grown as the return to full methanol production at the Methanex plants has offset the continuing trend towards a gas peaking role in electricity generation. Whether this overall growth can be sustained is in question given further reductions in gas-fired generation have been heralded in Mighty River Power's recent announcement to close its Southdown power station at the end of this year. At the same time broader retailer market demand is relatively flat.

The fall in international oil prices is inevitably affecting upstream investment in New Zealand, where exploration is frequently targeted at oil. Smaller explorers and producers are particularly affected and have suspended or cut back exploration and development activity.

Oil prices have a habit of changing over the longer term and it was pleasing to see that New Zealand continued to attract new and large investors through this year's block offers regime.

Despite the current challenges, the gas sector remains in a sound condition. Intensive exploration efforts in the last few years may not yet have yielded the significant new discoveries that many hoped for, but last year saw a lift in reported gas reserves from further development of existing fields.

Continued Page 2...

Contents **Page**

All reports, submissions and other documents referred to in this Quarterly Report are available on our website at www.gasindustry.co.nz

...from Page 1

Downstream, gas consumers continue to be well-served and customer numbers are growing. Consumers have a good and expanding choice of retailers, with recent new entrants strengthening an already competitive market. And the emsTradepoint wholesale market is gaining traction, with increasing market participants and an upswing in volumes traded.

Existing gas infrastructure is expected to carry the industry forward in the foreseeable future, pending any future step change in the form of a major new discovery or a substantial new demand source. In the meantime, a core focus for Gas Industry Co continues to be on infrastructure access efficiency, particularly around transmission pipeline capacity, and balancing.

Steve Bielby
Chief Executive

Industry Performance Highlights

This Quarterly Report includes Gas Industry Co's regular Industry Performance Report (Page 7). Highlights are:

- The annual rate of switching for the past 12 months is 18.7 percent, up from 17.3 percent in calendar 2013.
- In the first three months of 2015, 80 percent of switches were completed in seven days or less, compared with a rate of 50 percent in 2009.
- 52 percent of residential consumer sites, 64 percent of small commercial and 73 percent of large commercial sites have switched retailer at least once in the past five years;
- Average annual unaccounted-for gas (UFG) over the past year is approximately 1.0 percent, compared with about 2 percent in 2009.
- Genesis is the largest retailer by customer share; it is also the largest retailer in the residential and large industrial markets. Nova Energy has the largest share of commercial customers.
- In all regions, the gas retail market has become less concentrated in the past five years, as measured by the Herfindahl–Hirschman Index (HHI), due to new retailers entering the market and smaller retailers increasing their market shares.
- Nova and OnGas are the largest retailers by gas volume, reflecting their focus on the industrial and commercial sectors of the gas market.
- Pulse Energy entered the retail gas market in October 2014, increasing the number of retail gas brands to 10. Over 99 percent of gas consumers are connected to a gate where least seven retailers trade, demonstrating that gas retailers generally are competitive throughout the North Island.

Final Recommendation supports MBBCR

Gas Industry Co has issued its Final Recommendation which supports the 10 October 2014 Maui Pipeline Operating Code Market-based Balancing Change Request (MBBCR) proposed by Maui Development Limited (MDL). This confirms Gas Industry Co's Draft Recommendation issued for consultation on 25 February 2015.

The Final Recommendation incorporates an independent Cost-Benefit Analysis (CBA) - *Market Based Balancing on the Maui Pipeline: Cost-Benefit Analysis*- prepared by John Small of Covec.

Both documents take full account of feedback received, most recently at workshops on the Draft Recommendation and draft CBA in Wellington and Auckland during March, as well as 13 formal submissions on the Draft Recommendation.

The latest submissions broadly reflected the opposing positions in those stakeholders' previous submissions and cross-submissions, while providing fuller detail on costs of the proposal as requested by Gas Industry Co. Covec's CBA was revised to reflect those costs, but still finds the proposal to be beneficial overall, particularly in terms of dynamic efficiency benefits arising from better price signals and increased market liquidity.

Gas Industry Co's analysis acknowledges a number of other concerns raised in the final round of consultation, but concludes that, while market-based balancing is not ideal, its central element - daily cash-out – is common international practice, makes good sense from the perspective of pipeline economics, and broadly aligns with the objectives of the Gas Act 1992.

It also acknowledges some remaining issues, progress on which may subsequently improve market arrangements, including more timely information to support nominations. In this regard Gas Industry Co is separately pursuing D+1, with a D+1 trial proposed as the next phase.

The Final Recommendation notes that MBBCR resulted from industry participants being unable to agree on a solution through a facilitated 'Industry Code Development' process, and a number of years' work relating to a subsequent industry request that a regulatory proposal be deferred to allow industry-led code changes to develop. Gas Industry Co was accordingly not persuaded by submissions that an alternative (but unspecified) solution ought to be found. Ongoing disagreement in submissions continues to reflect the fact that the economic interests of stakeholders do not align.

Gas Industry Co conducted its assessment of the MBBCR in accordance with the terms of the Memorandum of Understanding with MDL and the MPOC arrangements agreed between the signatories. In assessing change requests, Gas Industry Co's role is to consult on the proposal and make a recommendation either 'supporting' or 'not supporting' it. The Final Recommendation finds that, in the context of the industry's attempts over a number of years to improve balancing arrangements, supporting MBB is a reasonable conclusion.

Gas Industry Co notes concerns referred to in submissions relating to the information and tools available to pipeline users to mitigate imbalance risk. The MBBCR includes measures aimed at providing a 'soft landing' for pipeline users, and MDL has confirmed that increased tolerances will apply for a period of 18

months following implementation. MDL also agreed to extend its planned 1 July 2015 implementation date to 1 October 2015 to allow more time for industry preparations.

Gas Quality: Requirements and Procedures

Gas Industry Co is currently finalising the *Gas Quality: Requirements and Procedures* document, following the release of a draft in February 2015 for stakeholder comment. Three comments were received and are being taken into account in the final document, which is expected to be available by the end of May.

Gas Quality: Requirements and Procedures provides an overview of gas quality requirements and how these are fulfilled by parties in the gas supply chain. It is the latest step in the development of what was previously entitled the Gas Quality Information Protocol, and incorporates a number of changes arising from stakeholder feedback on that document.

The document describes the statutory requirements for gas quality, the technical standards that apply, the main obligations on market participants and means of compliance.

The document is intended as a resource for all industry participants to educate staff on gas quality arrangements, inform safety/process/risk auditors about current gas quality practices in the industry, assist in the design of compliance arrangements, and identify what gas quality information is available.

Gas Industry Co will keep the document up to date and intends to reissue it periodically.

Gas Quality: Requirements and Procedures was initiated as a Gas Quality Exchange Information Protocol by a group of gas retailers seeking added confidence that service providers in the physical supply chain are meeting their obligations. In turn, they wished to ensure they comply with the Gas (Safety and Measurement) Regulations 2010. As work progressed, it became clear that such a document had broader relevance and required input from all participants in the gas supply chain to show the complete picture of how gas quality is managed. Gas Industry Co since worked with industry stakeholders to develop the then protocol, which subsequently evolved into the *Requirements and Procedures* document.

New report assesses commercialisation options for a large gas discovery

A new study into commercialisation possibilities for a large new gas find in New Zealand has identified Liquefied Natural Gas (LNG) exports and petrochemical production among the best options for the country.

The report, *Possible Commercialisation Options for New Gas Discoveries*, commissioned by Gas Industry Co, was produced by Concept Consulting Group. It provides insights into how a new gas discovery may be utilised, and illustrates how, despite New Zealand's remote location, there are ready opportunities to commercialise significant new gas finds and make valuable contributions to the New Zealand economy.

With continuing investment in oil and natural gas exploration, there is potential for significant new gas discoveries of a scale that may exceed the domestic market's current ability to absorb them. The report considers potential opportunities to commercialise any significant new gas finds beyond existing sources of

demand, and in particular assesses issues and opportunities for LNG, new petrochemical production, gas as a transport fuel, new gas-fired electricity generation, and increased industrial, commercial and residential demand.

The study supplements a gas supply/demand update report, *Long-Term Gas Supply and Demand Options* also produced by Concept for Gas Industry Co in September 2014. This report focussed only on existing sources of natural gas supply and demand. The latest study also builds on a discussion paper, *Commercialisation Issues, Opportunities and Challenges in the Event of Substantive Gas-Rich Exploration Success*, produced for Gas Industry Co by John Kidd, of Woodward Partners, in May 2014.

Minister approves Switching and Reconciliation Rules changes

The Minister of Energy and Resources has approved changes to the Switching Rules and Reconciliation Rules recommended in December 2014. The changes result from two separate Gas Industry Co projects:

- the Registry Amendments Project aimed at enhancing Gas Registry operations and customer switching arrangements, with consequential changes to the Switching Rules. These changes include more metering fields to increase the accuracy and efficiency of retailers' conversion of metered volumes to energy, increased ICP information quality oversight through performance audits, better aligning switching timeframes for dual fuel customers, enhanced mechanisms for secure information exchange between Registry participants, and fine tuning of processes to better reflect commercial arrangements in the gas market.

- the new framework for addressing retailer insolvency in the gas market, with consequential amendments to the Switching Rules and Reconciliation Rules. These are part of the retailer insolvency management framework, which includes drafting instructions for backstop regulations to be tailored and used, on recommendation to the Minister, only in the unlikely event that a gas retailer insolvency occurs.

Gas Industry Co and the Registry Operator, Jade Software Corporation, have now commenced implementation of the Registry-related changes, although the amended Rules will not come into effect until the required changes to the Registry are in place.

A Registry Amendments Implementation Group, comprising industry stakeholder representatives, is assisting with the process, with a particular focus on coordinating comprehensive data cleansing and conducting user acceptance testing (UAT) of registry amendments prior to go-live. The new system is expected to be available for acceptance testing by June 2015.

GTIP Update – Maui Authorised Quantity (AQ) consultation

Gas Industry Co has issued for consultation a paper on *Proposed Maui AQ Product* (AQ Paper). Prepared by Concept Consulting, the paper develops one of the 'initial changes' in Gas Industry Co's Gas Transmission Investment Programme (GTIP) *Options Paper* issued in December 2013.

The AQ Paper is incorporated as an attachment in the paper *Design Option - MPOC Authorised Quantity Product - March 2015*. The front section provides an introduction and background discussion by Gas Industry Co.

AQ is a product provided for in the Maui Pipeline Operating Code (MPOC) that would give shippers priority to have gas transported in the event of capacity constraints. However, the AQ product has yet to be ascribed detailed terms and conditions or a description of how it might work in practice.

The AQ Paper proposes taking a price-based rather than a rule-based approach to the allocation of AQ and recommends the development of standardised AQ products.

The AQ Paper and the Options Paper form part of the 'counterfactual design' that Gas Industry Co is developing in parallel with the industry-led work.

Submissions on the AQ Paper closed on 24 April, with 10 received.

Critical Contingency Operator (CCO) Publication Updates

Revisions to the CCO Information Guide and CCO Communications Plan, have been finalised and published on the CCO's website. The Information Guide outlines communication flows between the Critical Contingency Operator and stakeholders, and the Communications Plan governs communications between the CCO and transmission system owners during a critical contingency.

The revised documents, and feedback received during the Information Guide consultation, are available at http://www.cco.org.nz/publications

Performance Measures Quarterly Report for the period ending 31 March 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.

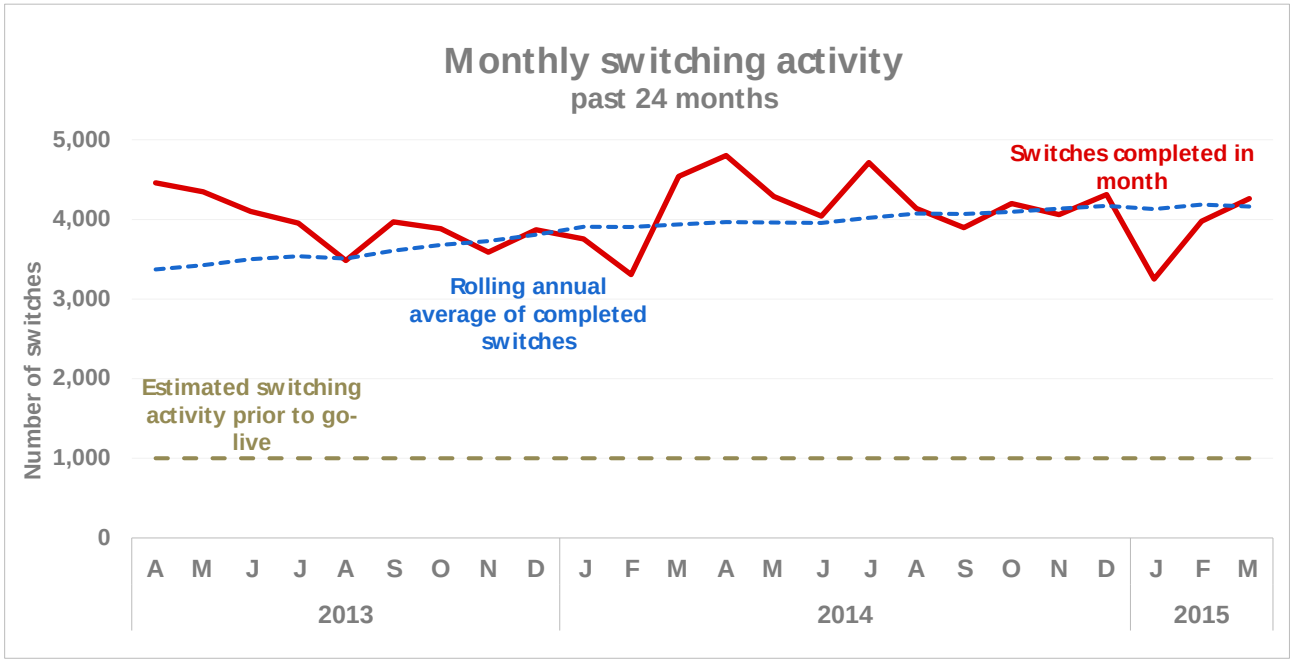
Explanatory details about the charts can be found in the Appendix to this report.

Highlights of the Report:

- The annual rate of switching for the past 12 months is 18.7%, up from the 17.3% switching rate experienced in calendar 2013.
- In the first three months of 2015, 80% of switches were completed in seven days or less, compared with a rate of 50% in 2009.
- 52% of residential consumer sites have switched retailer at least once in the past five years; 64% of small commercial and 73% of large commercial sites have switched at least once.
- 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; it is also the largest retailer in the residential and large industrial markets. Nova Energy has the largest share of commercial customers.
- In all regions, the gas retail market has become less concentrated in the past five years, as measured by the Herfindahl–Hirschman Index (HHI), due to new retailers entering the market and smaller retailers increasing their market shares.
- In terms of market share by gas volumes, Nova and OnGas are the largest retailers, reflecting their focus on the industrial and commercial sectors of the gas market.
- Pulse Energy entered the retail gas market in October 2014, increasing the number of retail gas brands to ten. Over 99% of gas consumers are connected to a gate where least seven retailers trade, demonstrating that gas retailers generally are competitive throughout the North Island.

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 March 2015 is 18.7%.

Chart 2: Regional switching activity

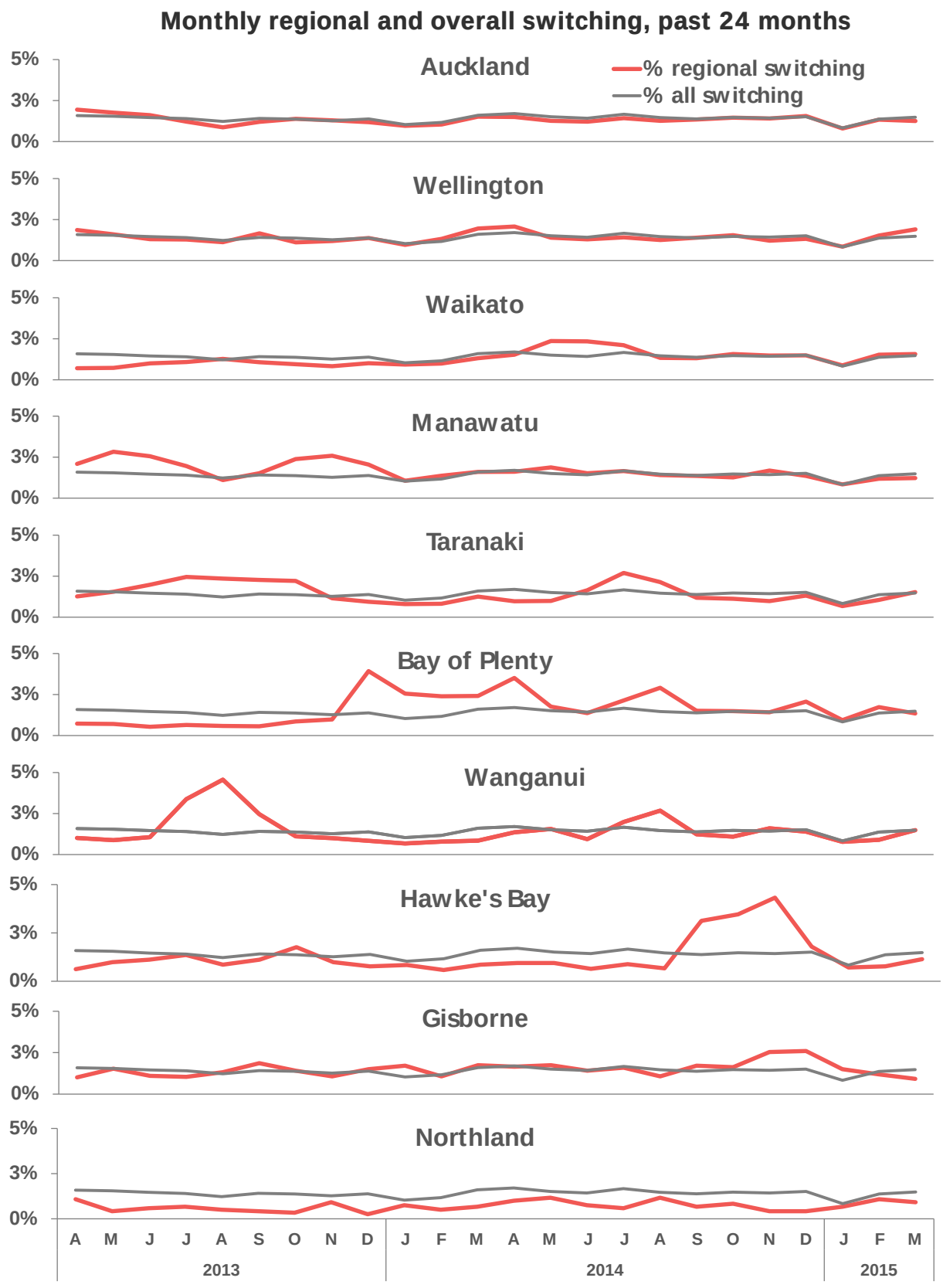
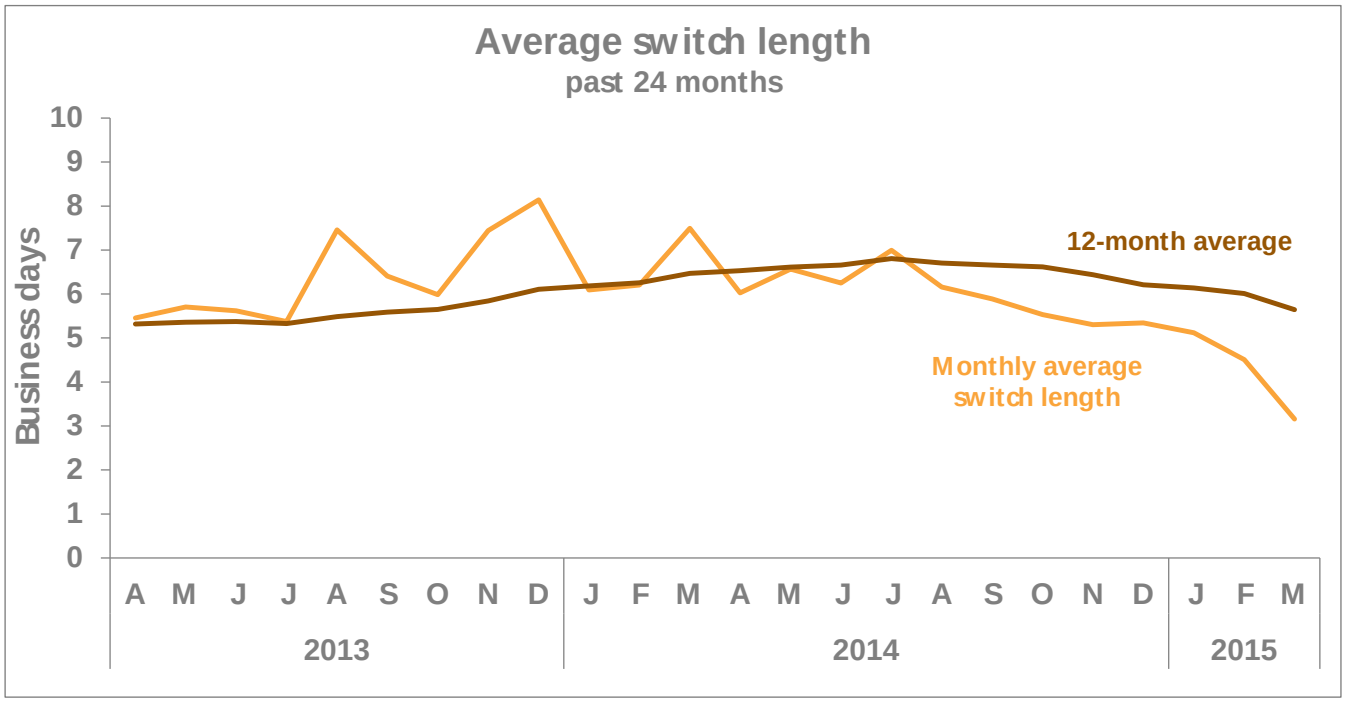


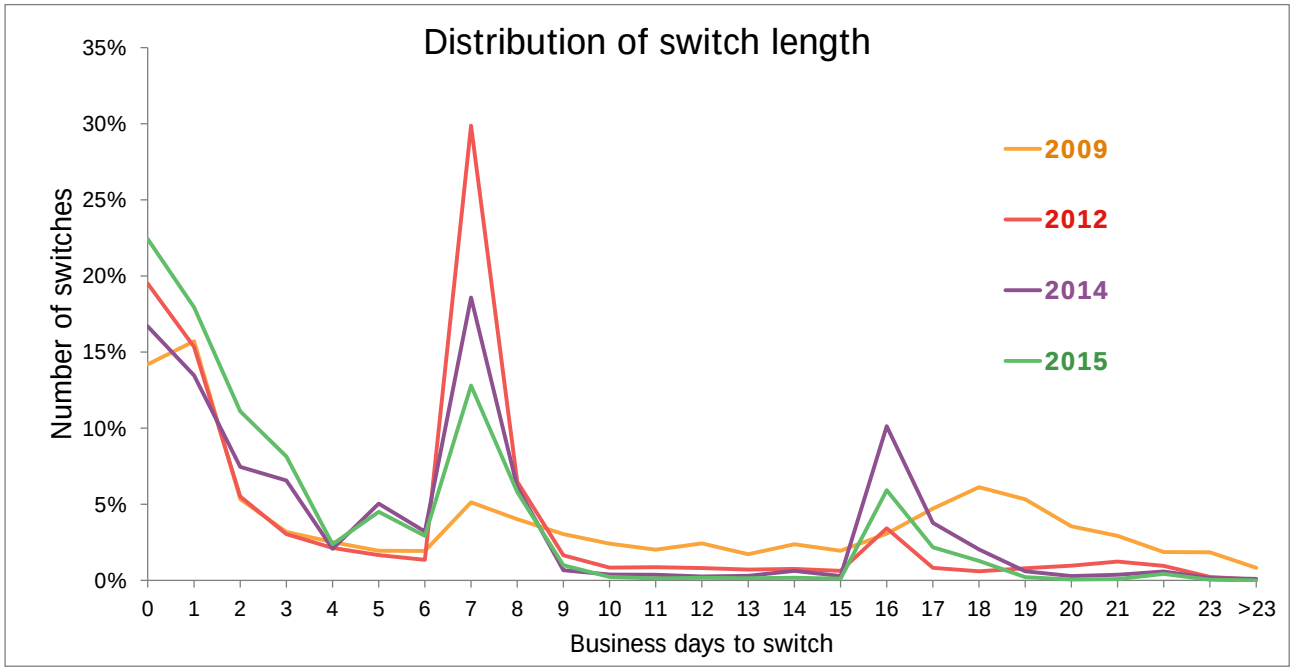
Chart 3: Time to process switches



The 12-month average switching time is about 6.1 business days.

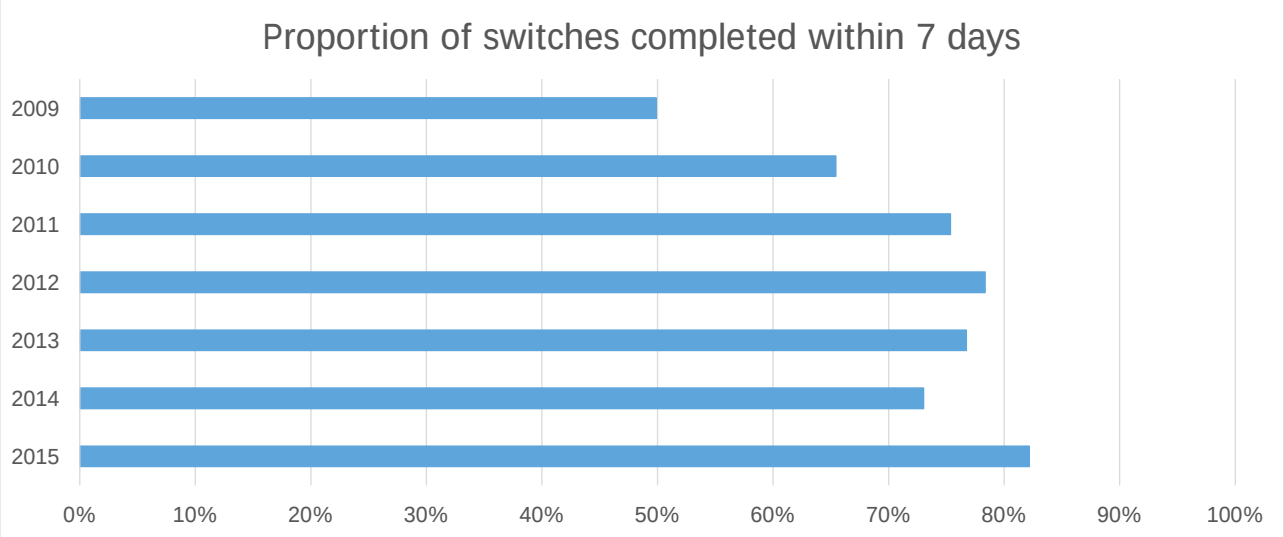
Note that the switching figures for March are skewed, as they show the completed switches that originated in March. Some March switches have yet to be completed.

Chart 4: Distribution of switching length



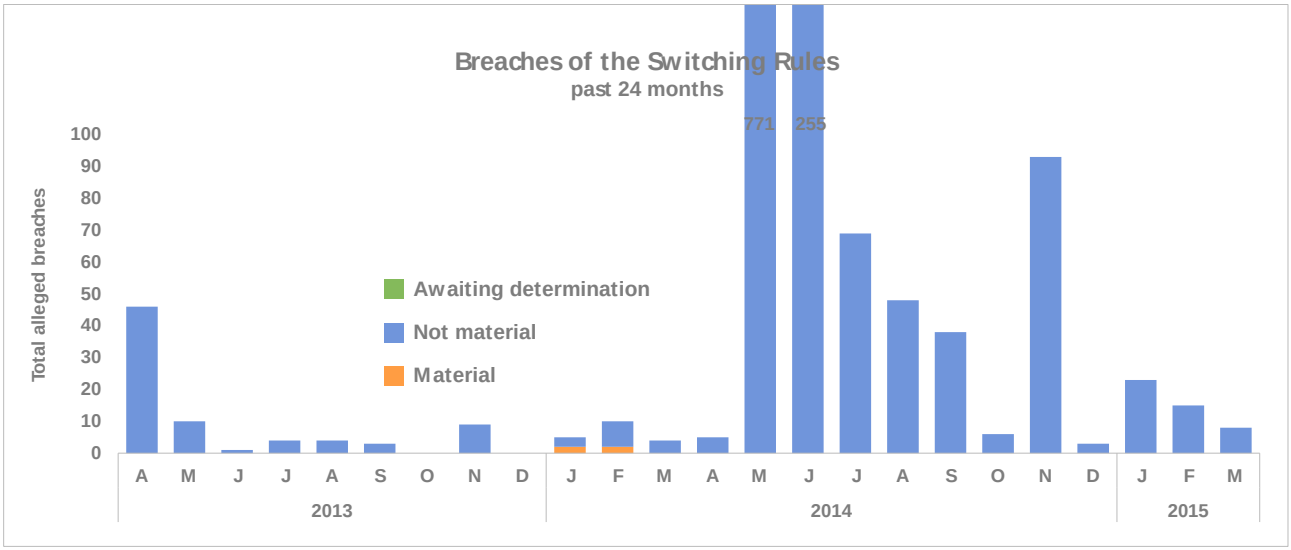
This chart shows the distribution of switching times for the calendar years of 2009, 2012, 2014, and the first three months of 2015. More and more switches are being completed within one day.

Chart 4a: Proportion of switches completed within seven days



This chart shows that the proportion of switches completed within seven days has increased – from about 50% of switches in 2009 to over 80% in 2015.

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.

3 Allocation and reconciliation performance measures

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

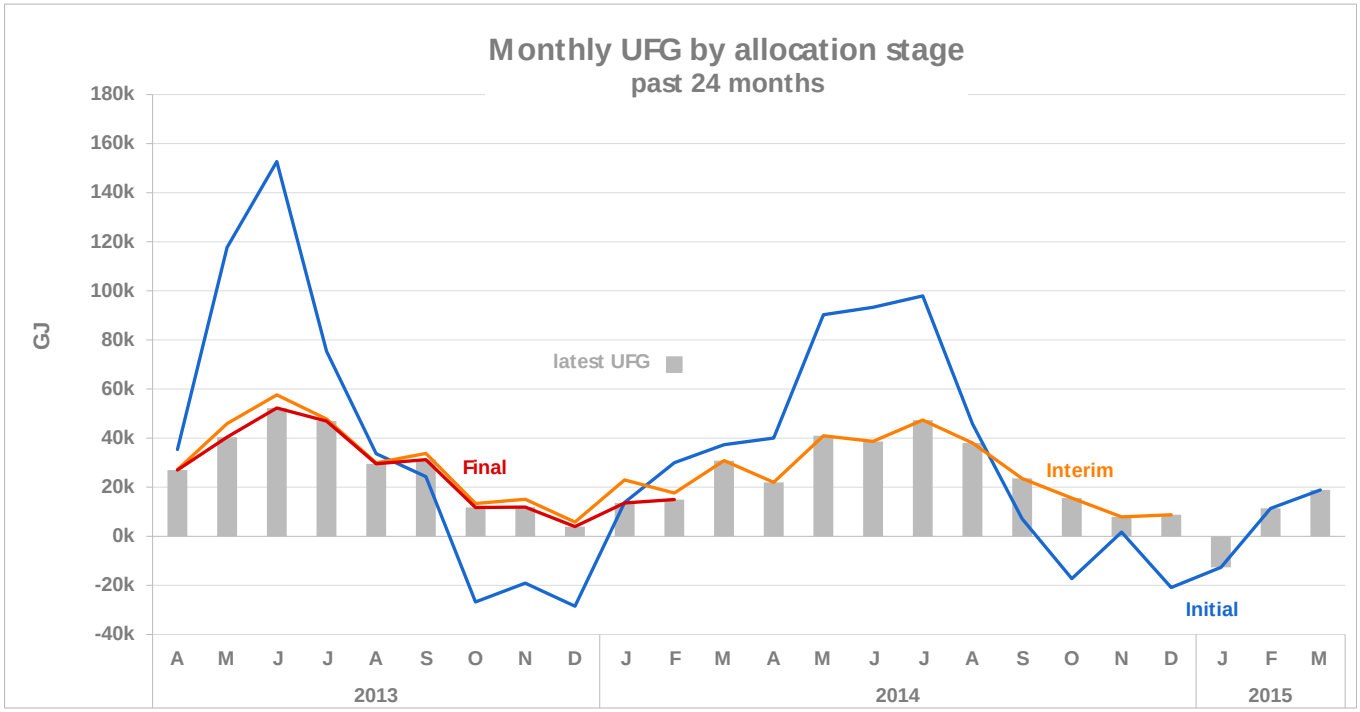


Chart 7: Percentage of UFG

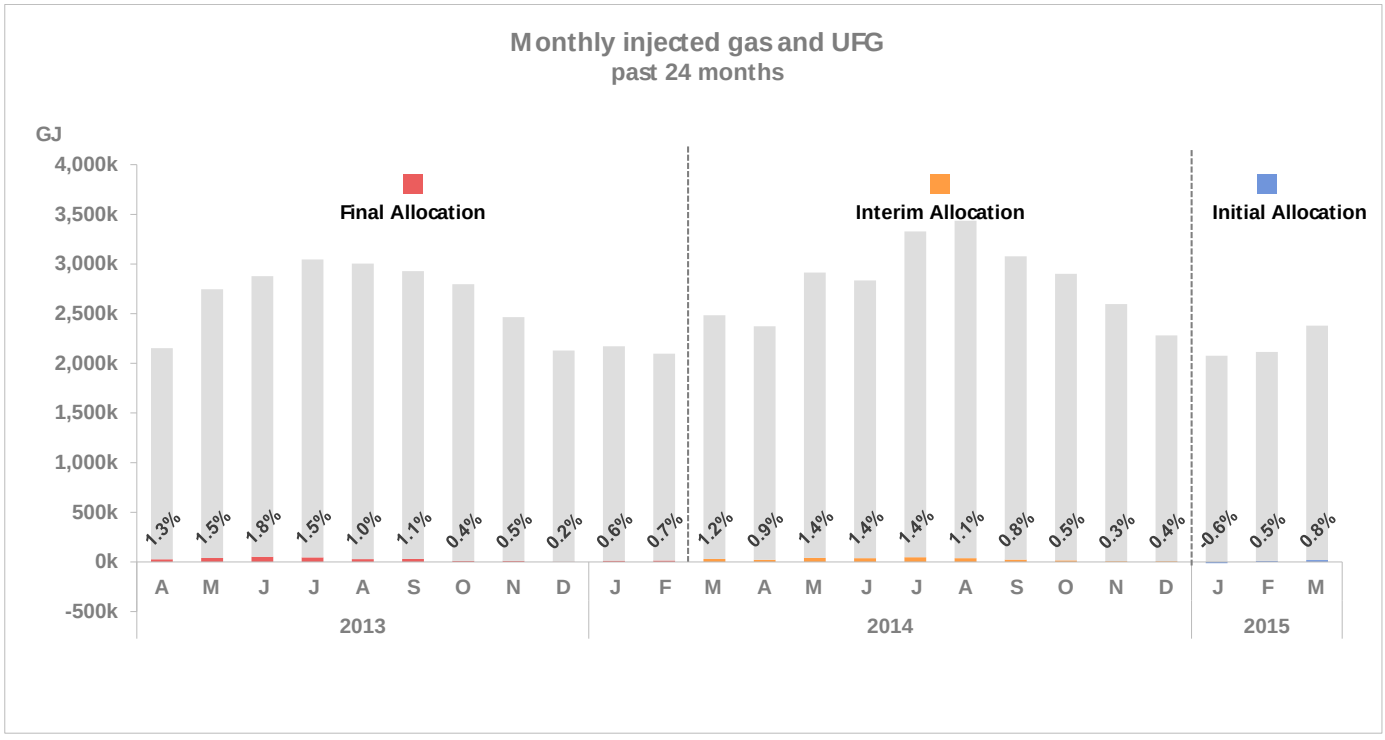
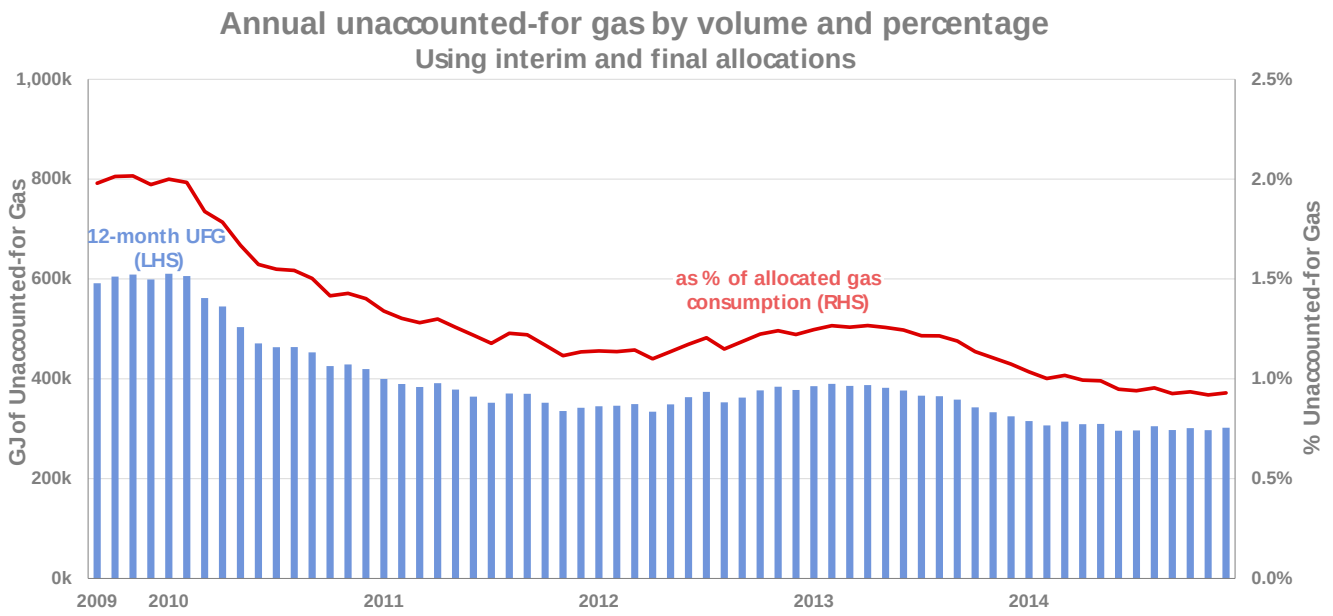
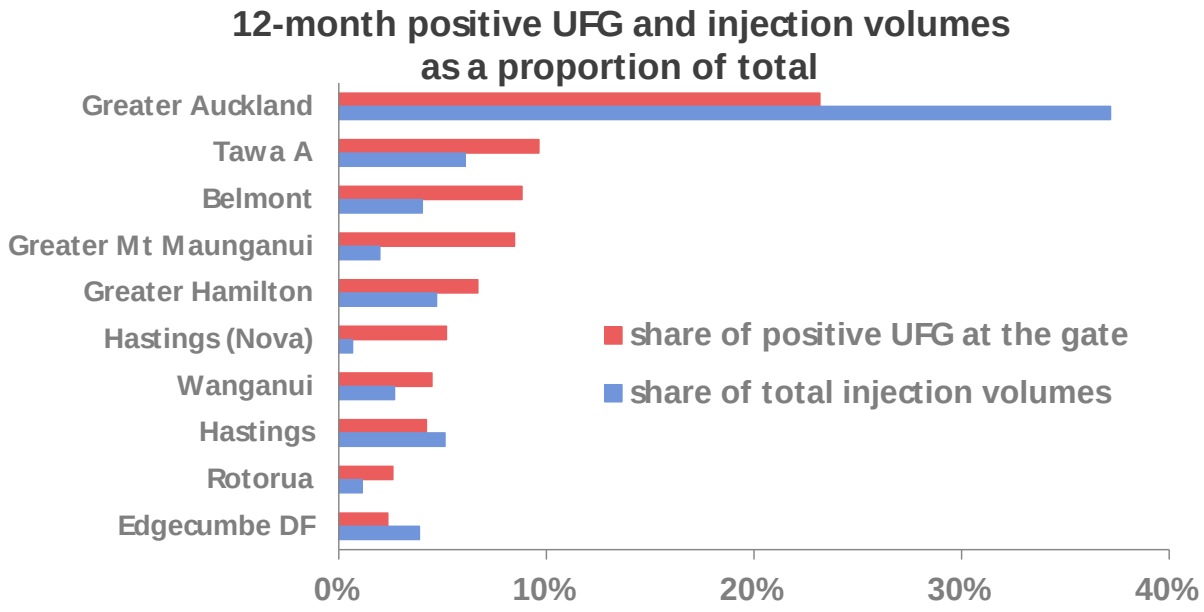


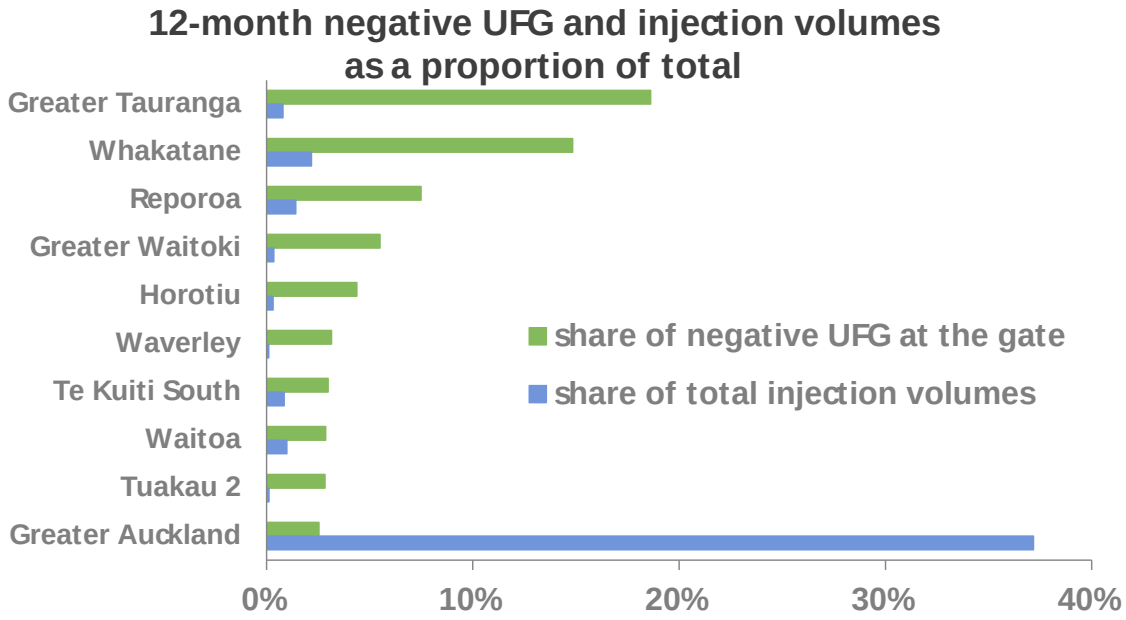
Chart 8: Rolling 12-month UFG



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 just under 1%.

Chart 9: Gas gates where UFG is the highest



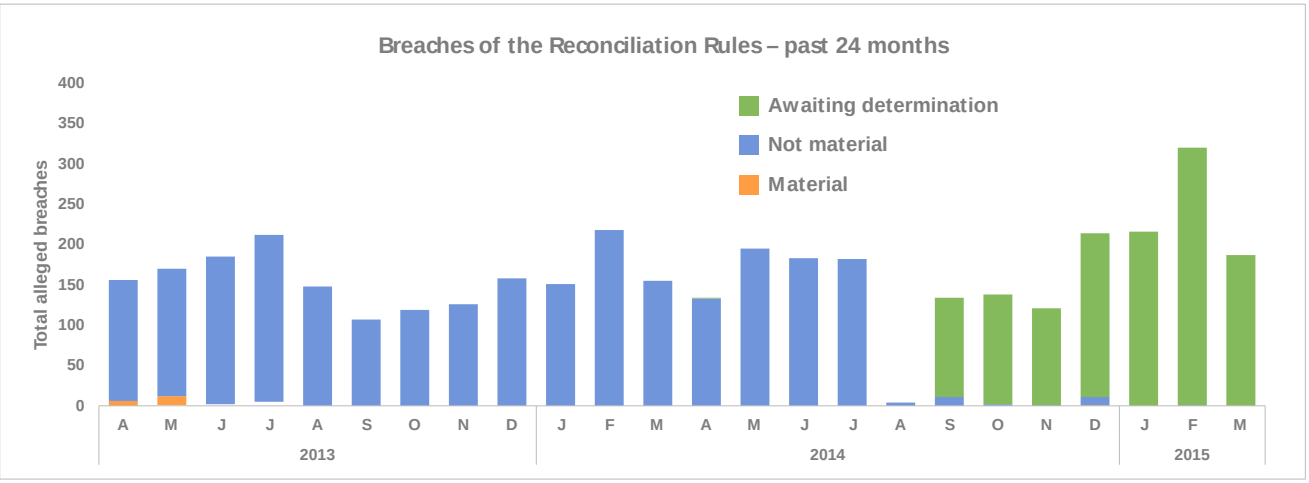


These charts show the gates that experience the largest share of total UFG, compared to their share of total gas gate deliveries at shared gas gates. These charts use 12 months of the most recent interim and final allocation data available: in this case, January through December 2014.

The 10 gates shown in the top chart account for 76% – about 308,000 GJ – of the positive UFG experienced over the past 12 months.

The 10 gates shown in the bottom chart account for about 65% (about 68,000 GJ) of the negative UFG experienced in the past 12 months. Seven of the gas gates shown – Whakatane, Reporoa, Horotiu, Waverley, Te Kuiti South, Waitoa, and Tuakau 2 – 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.

About 97% 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 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

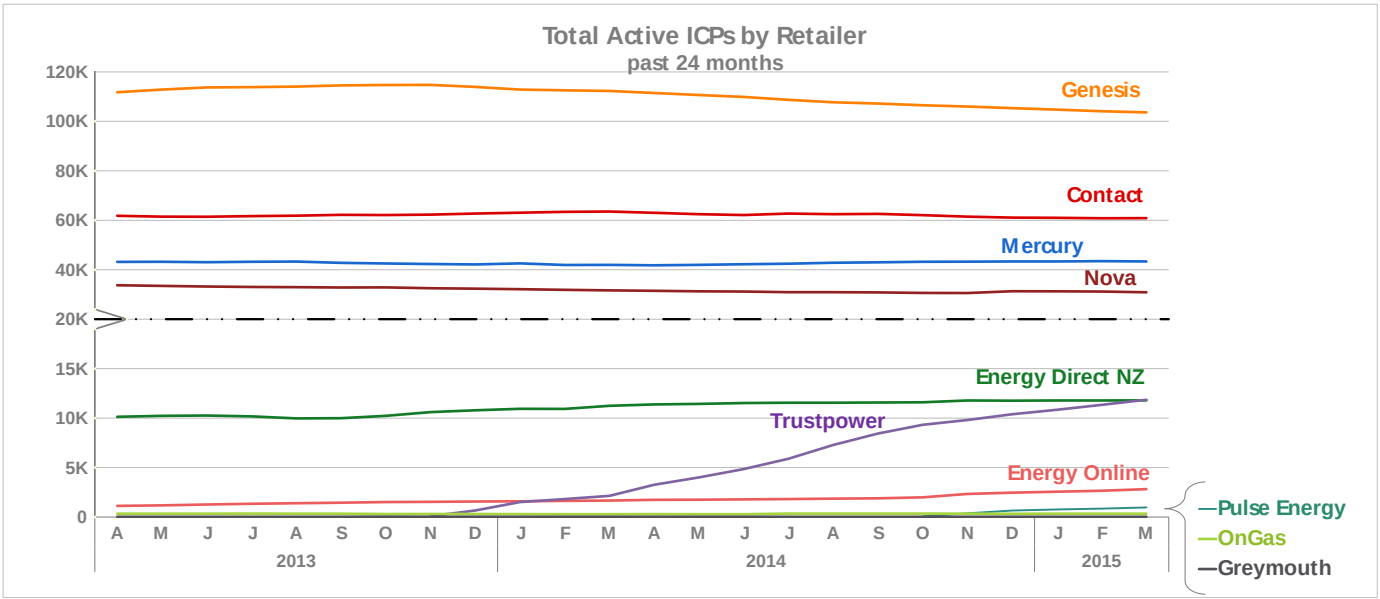
No event audits have been commissioned in the past quarter.

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

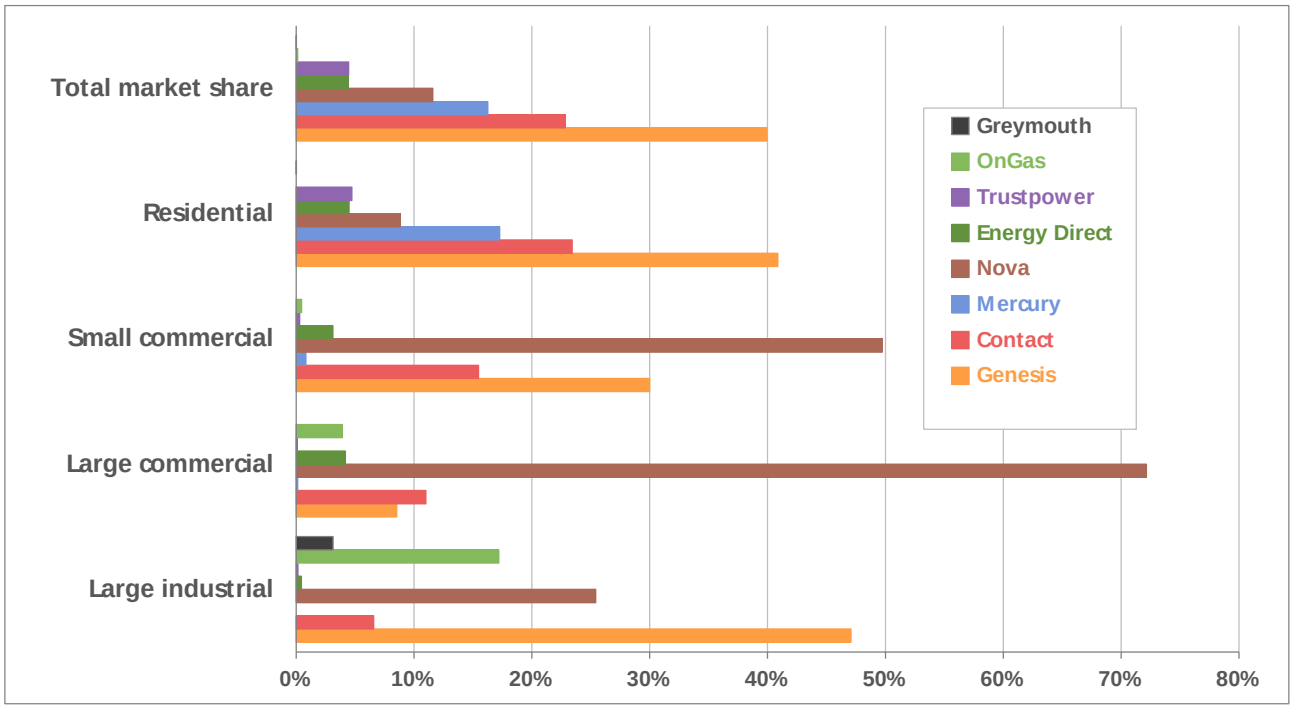


Pulse Energy entered the retail gas market in October 2014.

In November 2013, Trustpower entered the retail gas market under its own brand, following the company's acquisition of Energy Direct in July 2013.

There are ten distinct retail brands, owned by eight different retail companies (Energy Online is owned by Genesis Energy).

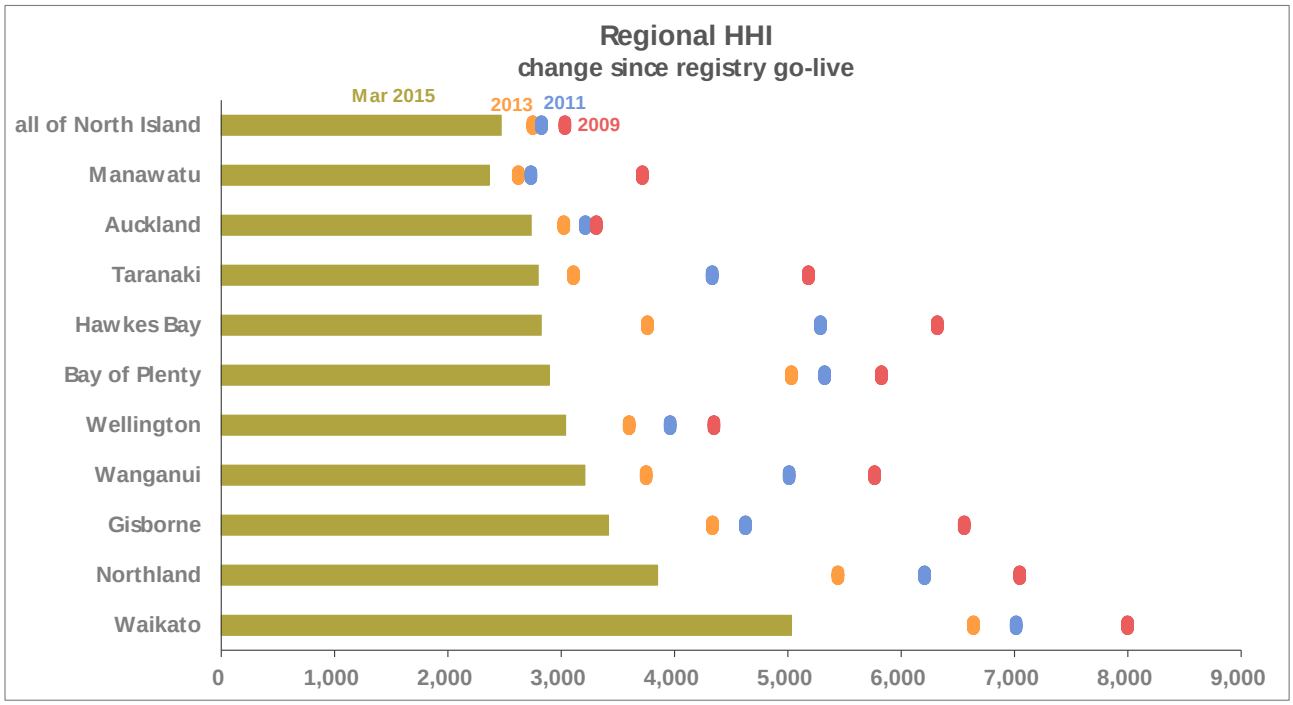
Chart 12: Customer Market share by consumer segment



In this chart, consumer segment is determined by the load shedding category listed on the gas registry for each consumer site. (Energy Online is included in the total for Genesis in this chart.)

Note that Pulse Energy, which has about 0.4% of the residential market at present, is not shown on the chart.

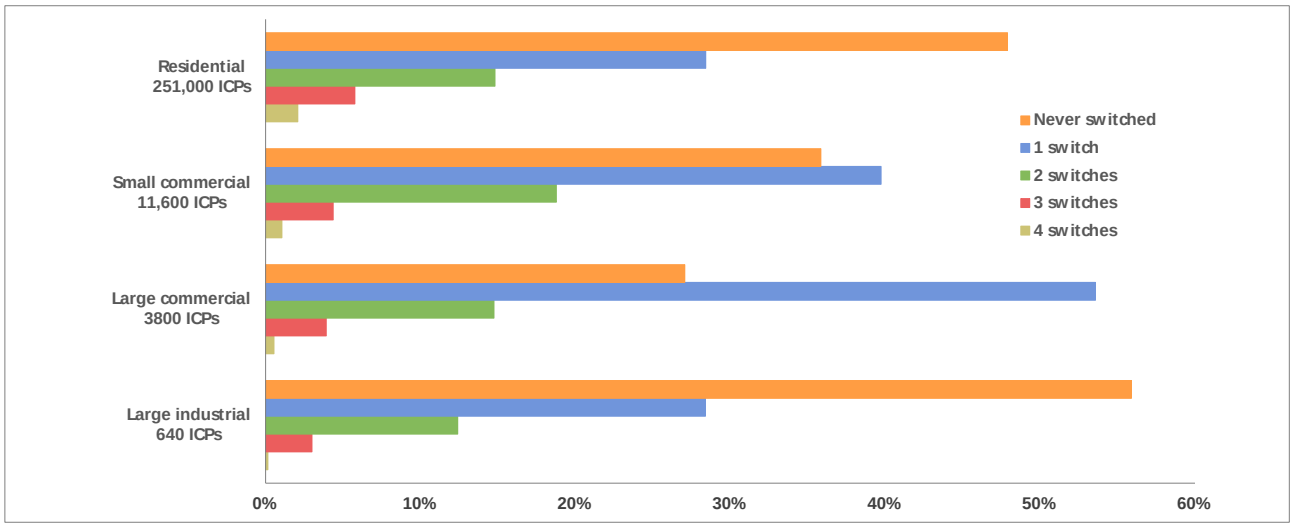
Chart 13: Herfindahl–Hirschman Index (HHI)



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 2,470, in comparison to 3,033 in February 2009 (the start of the registry).

Chart 14: Switching by consumer sites since 2008



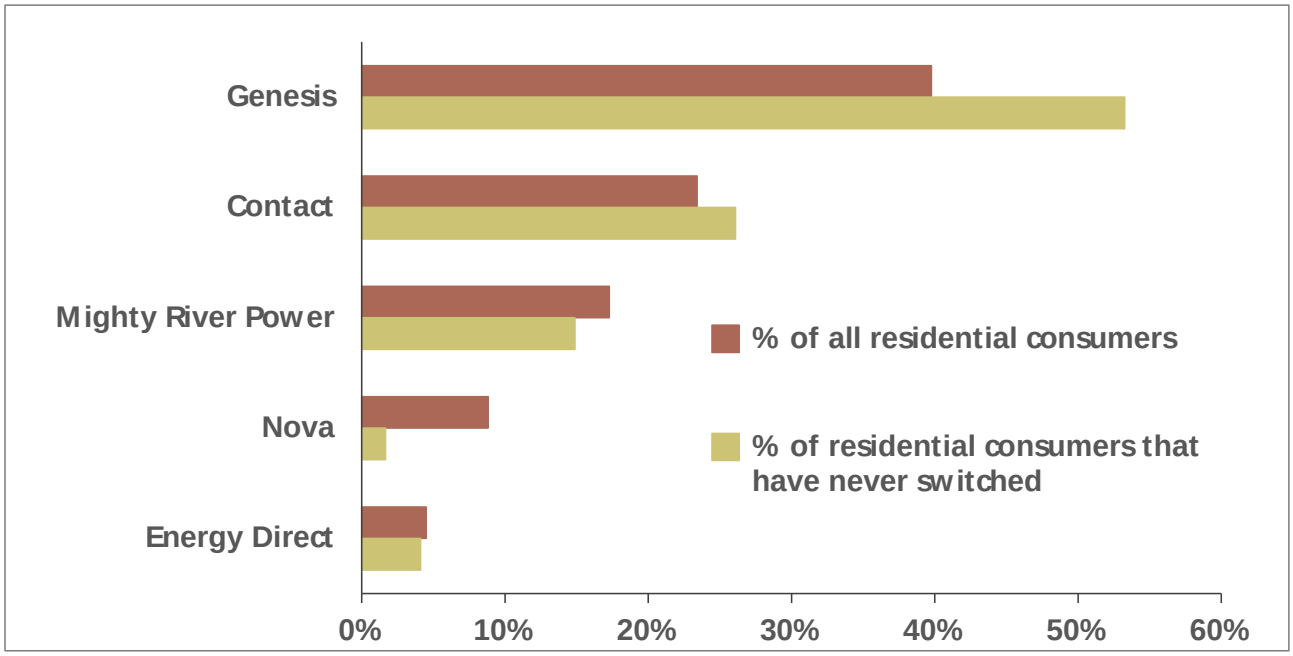
As with Chart 12, consumer sites in this chart and Chart 15 are categorised based on the load shedding category recorded in the gas registry.

- 52% of residential consumer sites

- 64% of small commercial sites
- 73% of large commercial sites; and
- 44% 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 40% 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 and Pulse Energy, as all of their customers have made at least one retailer switch.

Chart 16: Switching activity by retailer

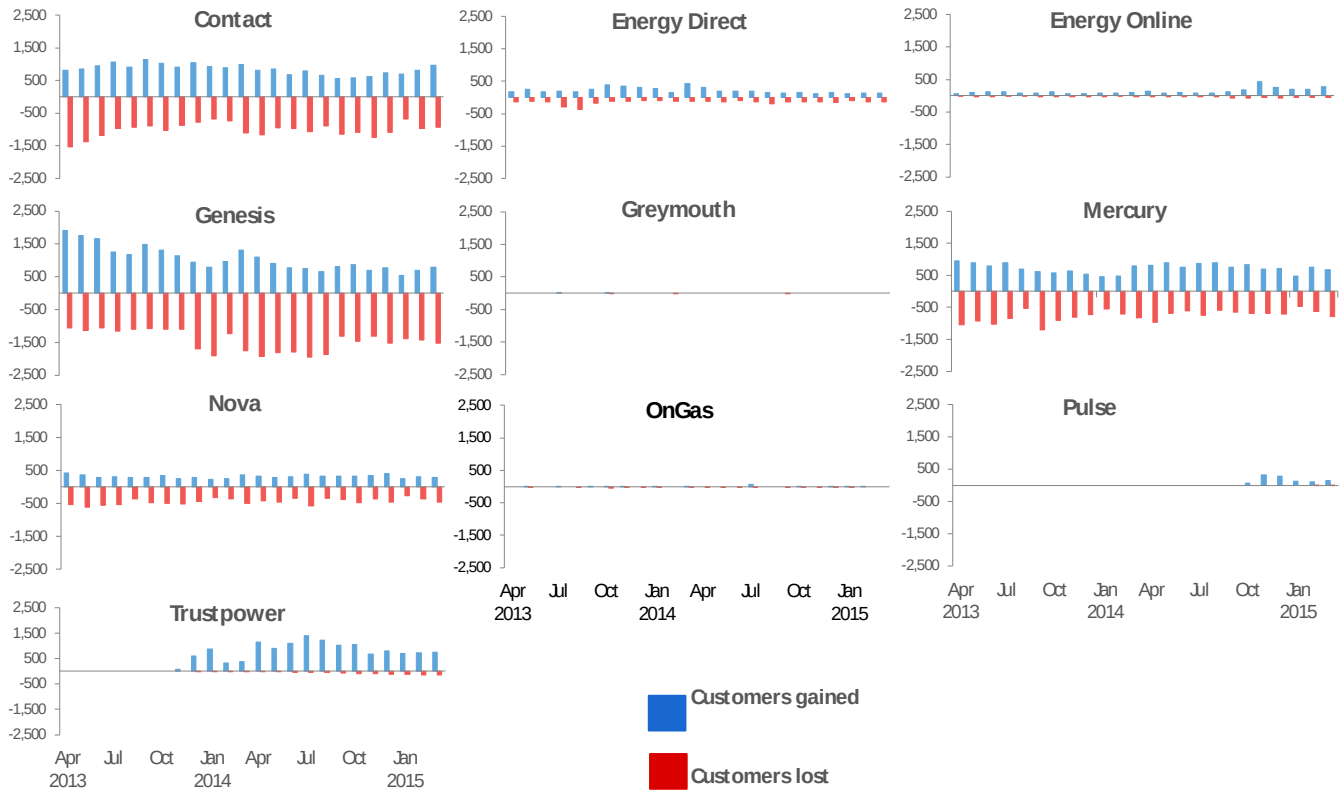
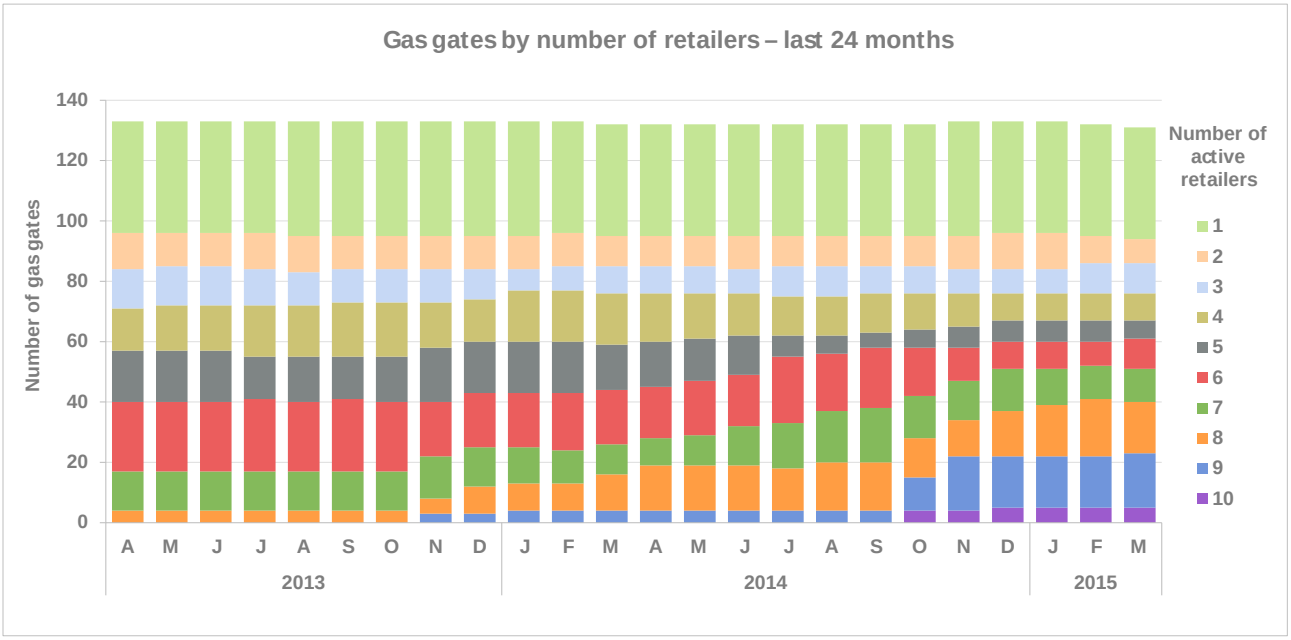
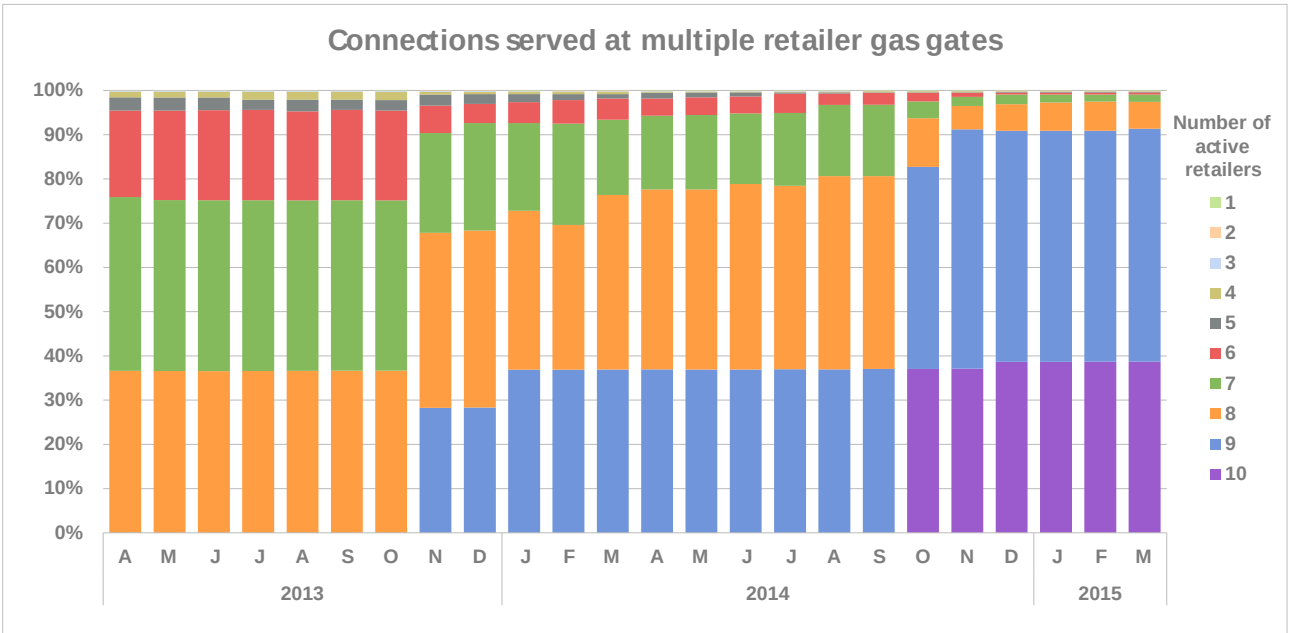


Chart 17: Gas gates by number of retailers



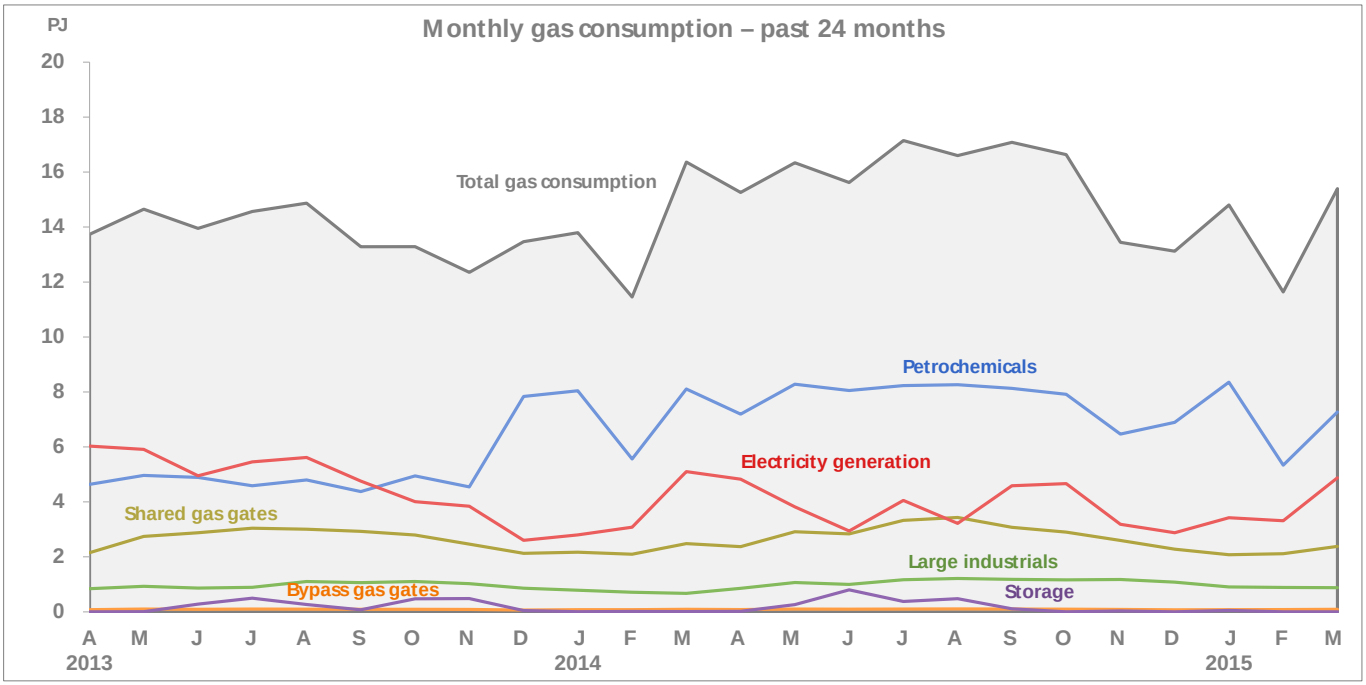
Trustpower's and Pulse Energy's entries into the retail gas market in November 2013 and October 2014, respectively, mean that there are now ten retailers active at some gas gates.

Chart 18: Connections served by multiple retailers



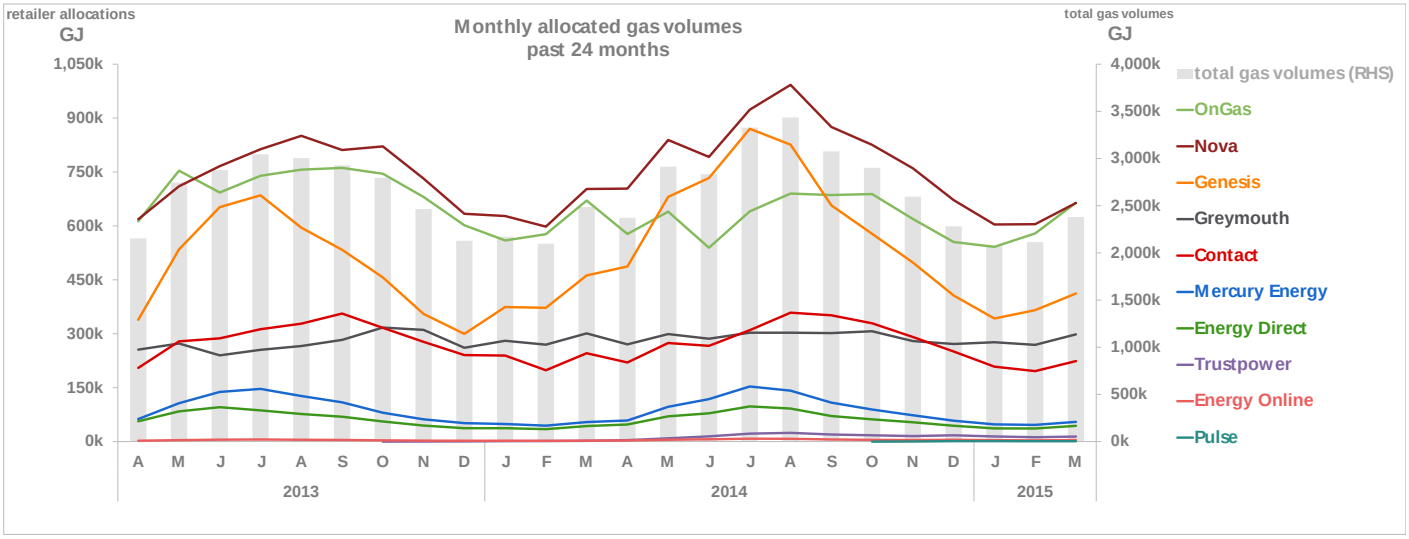
Over 99% of gas consumers are connected to a gate where least seven retailers trade.

Chart 19: Total gas volumes



Gas used for petrochemicals has increased since the end of 2013 due to the restart of Methanex's Waitara Valley plant and increased capacity at its Motunui site.

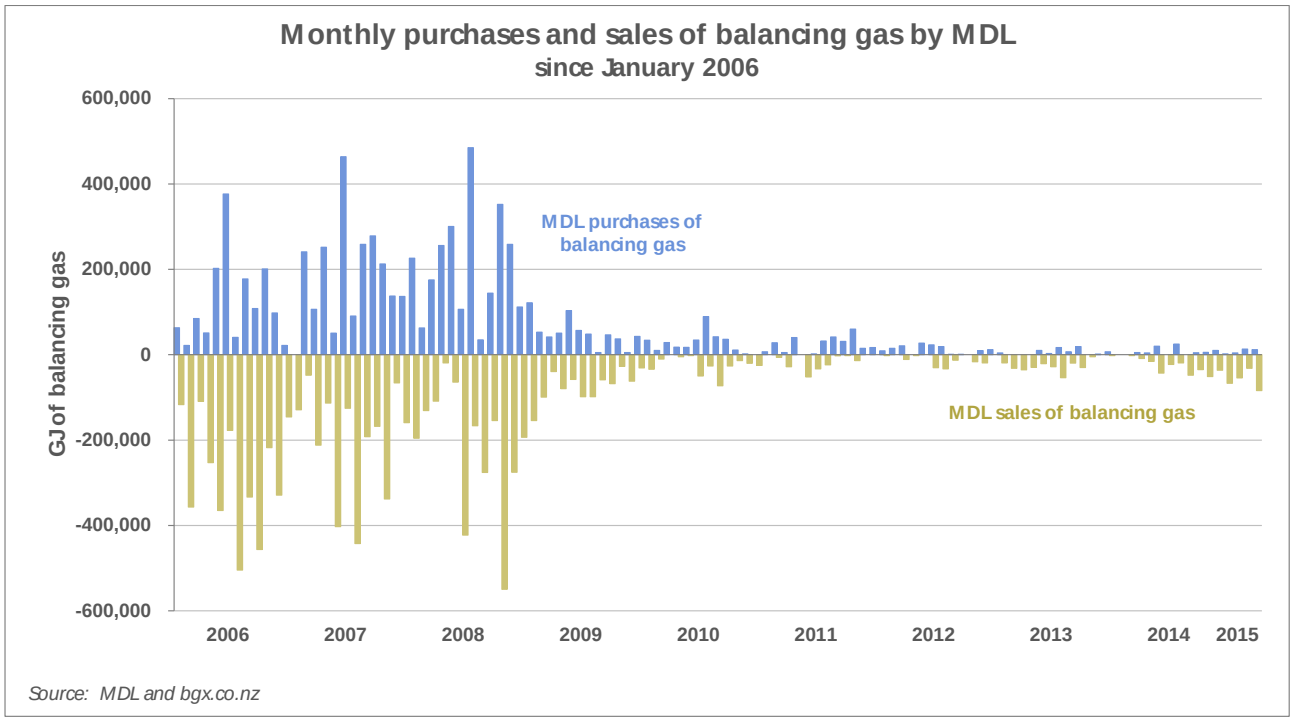
Chart 20: Allocated gas volumes



Nova and OnGas are the largest gas retailers in terms of allocated gas volumes.

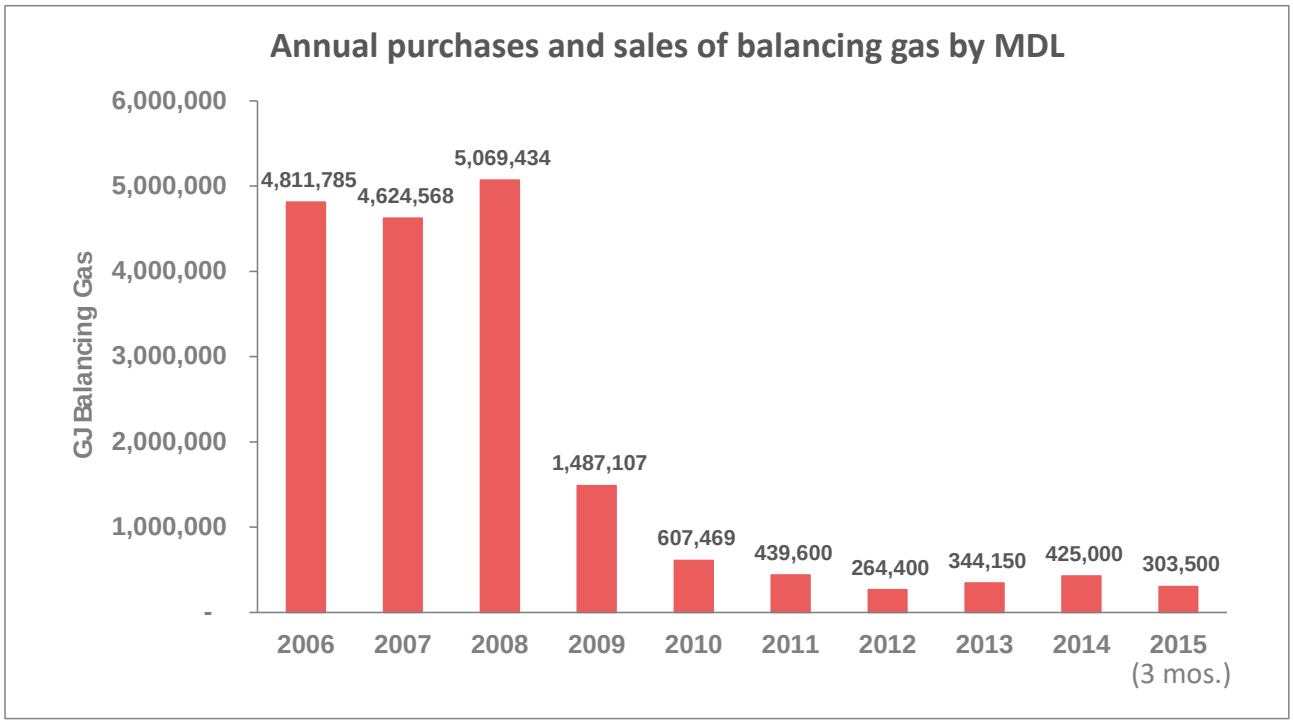
The data are from a mix of allocation stages: Final through February 2014; Interim for March through December 2014; and Initial for January through March 2015.

Chart 21: Balancing gas volumes



Source: MDL and bgx.co.nz

Chart 22: Annual volumes of balancing gas



On average, balancing gas volumes transacted by MDL have decreased over 90% from pre-2009 levels.

5 Critical Contingency Management performance measures

There were no critical contingencies in the previous quarter.

On 15 April 2015, the Critical Contingency Operator (CCO) issued a notice of potential critical contingency due to very low linepack conditions on the Maui pipeline. The issue was resolved without the need for intervention from the CCO, and the potential critical contingency was terminated the following day.

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 nearly 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

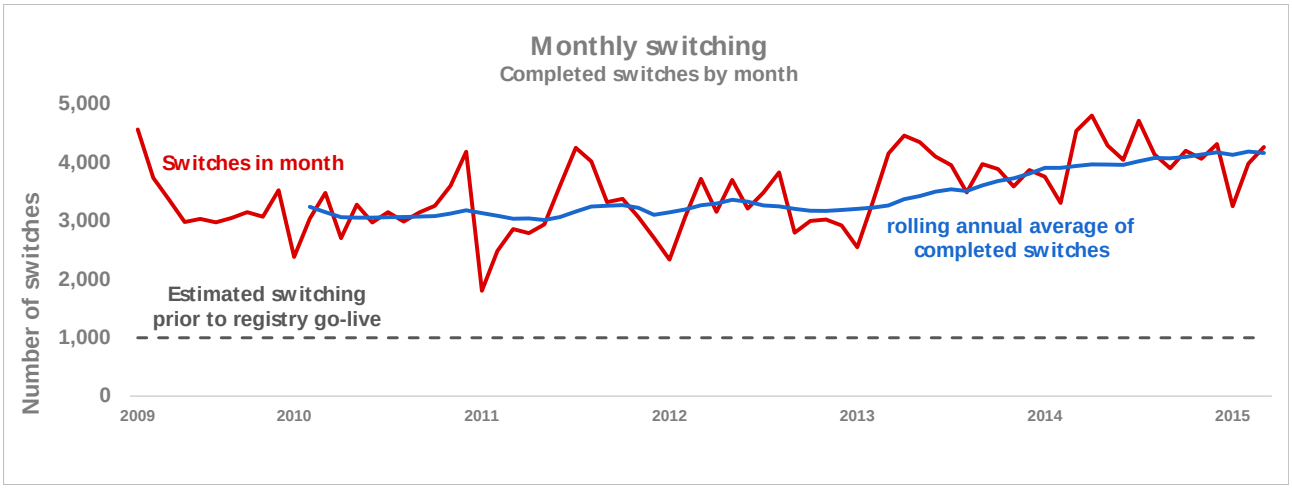


Chart 2: Regional switching activity

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 1.6% 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.

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 five or six 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 number of recent breaches have been alleged by the auditor conducting performance audits.

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

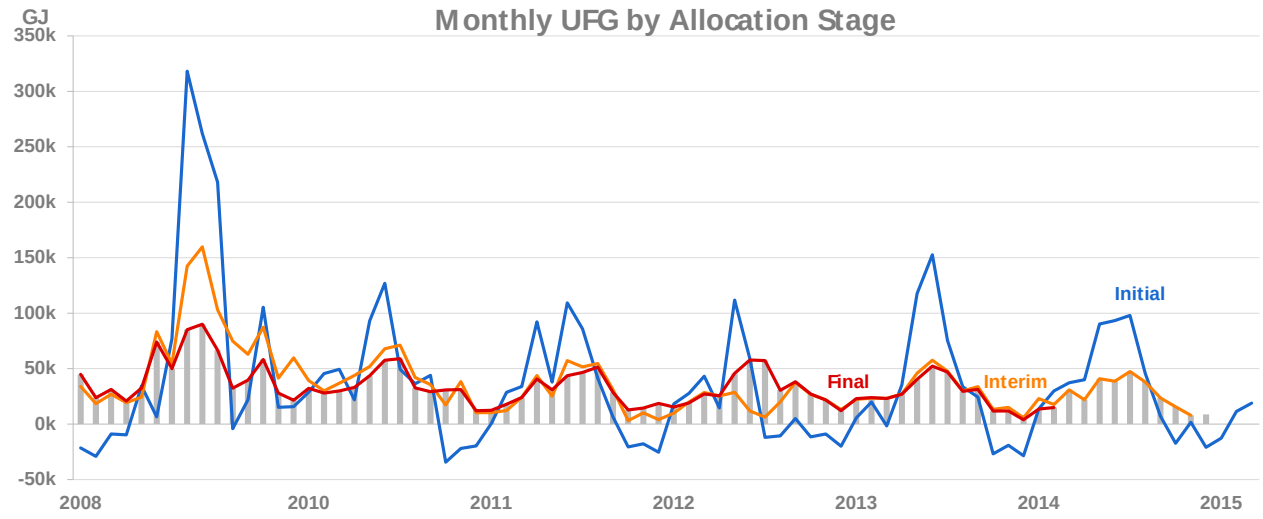


Chart 7: Percentage of UFG

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 now varies from about 1.0% to 1.3%.

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. About 97% 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.

In the past, the Market Investigator has attempted to reach settlements of yearly batches of rule 37 breaches that the Market Administrator has determined to raise material issues.

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, because of the small size of its customer base, Energy Online's market share is combined with that of its parent

company, Genesis. Pulse Energy is not shown on the chart, due to its small customer base, but it has about 0.4% of the residential market and 0.1% of the small commercial market.

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 March 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 four 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 in the past five years, broken down by consumer type as shown 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 16: Switching activity by retailer

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

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 36 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 – 101 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 all ten retailers are active at only a handful of gas gates, those gates tend to be the largest ones, since about 39% of all gas consumers are connected at these gates.

This chart shows the entry into the gas retail market by Pulse Energy in October 2014, the entry by Trustpower in November 2013, and the March 2013 step change caused by the amalgamation of Bay of Plenty with Nova.

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 the largest retailer by allocated volumes (though, in some shoulder months, OnGas has larger 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 will rise or fall as parties who inject gas into the pipeline over- or under-inject and as parties who receive gas from the pipeline under- or over-take relative to their respective scheduled volumes. When a transmission owner, or operator, manages the gas inventory in a pipeline, it is referred to as *secondary* or *residual balancing*. 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.

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.

Strategic Progress: Quarterly Report 1 January – 31 March 2015

This report provides an update of progress towards Gas Industry Co's strategic goals. These reflect the Government's objectives and outcomes for the gas industry, as set out in the Gas Act 1992 and the April 2008 Government Policy Statement on Gas Governance, as implemented through the Company's FY2015-2017 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. Formal balancing update provided to Minister on 16 April 2013	• MDL has lodged an MPOC change request proposing a market-based balancing regime. Following extensive consultation GIC has issued a Final Recommendation in support of the MPOC changes.
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.

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. • Review the effectiveness of the CCM Regulations following any events/exercises.	• Work commenced on setting up a trial of D+1, this will continue through calendar 2015. • 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 is now moving to implement the thresholds regime which requires guidelines to be issued by the MA and associated changes to the Gas Registry.
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* developed by GIC in liaison with industry working group, issued in February 2015 for comment. Three comments received and the document is now being finalised.

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.	• The Minister has accepted GIC's recommendation that permanent backstop regulations are not necessary. • Draft Decision Paper on drafting instructions for backup regulations and minor changes to each of the Switching and Reconciliation Rules now being finalised.
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'.
Transmission Change Requests	• Contractual role pursuant to MoUs with MDL and Vector. • Ensure ongoing relevance and efficiency of multilateral terms of access to transmission pipelines.	• Process MPOC change requests and VTC change request appeals as they are received in accordance with respective Memorandum of Understanding (MoU).	• MDL Market Based Balancing Change Request approved by Gas Industry Co in April 2015.

Project	Rationale	Activity	Status
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.
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 Electricity & Gas Complaints Commission and other relevant regulators. Gas-related inquiries and complaints statistics included in Gas Industry Co 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.	• Third assessment (published in November 2012) increased retailers' overall rating from 'Moderate' to 'Substantial' alignment with the benchmarks. • Changes to the Scheme are being implemented following a review of its first three years of operation, an associated consultation process and final advice to the Minister.

Project	Rationale	Activity	Status
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.	• Second Options Paper to be released for consultation in May 2015. Focus is on developing a vision for converged transmission arrangements. • Continued monitoring of information provided by signatories to the 'Bridge Commitments', designed to address short-term issues. • The GTX was decommissioned in December 2014 due to inactivity. • Release of the updated Gas Supply and Demand Study October 2014.

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.	• 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.	• 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.

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* third update issued March 2015. • Programme of Gas Story 'roadshow' presentations to stakeholder groups undertaken during 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.	• CCO activities monitored and reviewed quarterly. • Critical contingency management exercise scheduled for Q4 FY2015.