



Gas Downstream Reconciliation Performance Audit Final Report

For

Energy Online Limited

Prepared by Steve Woods – Veritek Ltd

Date of Audit: 11/04/11 & 13/05/11

Date Audit Report Complete: 02/08/11

Executive Summary

This Performance Audit was conducted at the request of the Gas Industry Company Limited (GIC) in accordance with rule 65 of the Gas (Downstream Reconciliation) Rules 2008.

The purpose of this audit is to assess the systems, processes and performance of Energy Online Limited (Energy Online) in terms of compliance with these rules.

The audit was conducted in accordance with terms of reference prepared by the GIC, and in accordance with the "Guideline note for rules 65 to 75 and 80: the commissioning and carrying out of performance audits and event audits, V2.0" which was published by the GIC in October 2010.

The summary of report findings in the table below shows that Energy Online's control environment is "effective" for eleven of the areas evaluated and "adequate" for the other four. There were no areas that were considered "not adequate".

Thirteen of the fifteen areas evaluated were found to be compliant. Two breach allegations are made in relation to the remaining areas. They are summarised as follows:

- The use of incorrect meter pressure information has led to the submission of incorrect consumption information to the allocation agent. I recommend that validation of meter pressure and meter dials be conducted on a monthly basis with meter owners. I also recommend that the switching rules be amended to include meter pressure, meter multiplier and meter dials as registry fields that are maintained by meter owners.
- Energy Online's initial submission accuracy did not meet the 12.5% requirement for every gas gate for November and December 2009.

At the November 2009 Retailer's Forum the issue of "consistency of application of gas billing factors" was discussed. It was agreed that this forum would draft a guideline to assist with addressing this issue. Contact Energy produced a draft guideline and I recommend that this draft guideline be further developed into a "Guideline note" to assist participants with compliance with the rules, and to ensure the consistent application of the relevant factors.

The issue of incorrect data in relation to meter pressure has now been identified in a number of performance audits. I recommend that this matter be raised at an industry wide level, with the following objectives:

- Determine the extent of meter pressure inaccuracy, by conducting meter pressure field checks and comparing these results to meter docket, meter owner's databases and retailer's databases. This recommendation was also made during the 2009 event audit for the Greater Auckland gas gate.
- Identify initiatives to improve the current accuracy of meter pressure data.
- Improve validation processes to ensure further meter pressure errors are not introduced.

Summary of Report Findings

Issue	Section	Control Rating (Refer to Appendix 1 for definitions)	Compliance Rating	Comments
ICP set up information	2.1	Adequate	Compliant	A recommendation is made in relation to ICPs where the altitude is recorded as zero, and may be inaccurate. A further recommendation is made in relation to registry validation.
Metering set up information	2.2	Adequate	Not compliant	Some meter pressure and meter dial discrepancies exist between Energy Online's and meter owners' records. It is recommended that validation be conducted on a monthly basis with meter owners to address this matter.
Billing factors	2.3	Effective	Compliant	Two recommendations are made in relation to temperature information.
Archiving of reading data	3.1	Effective	Compliant	Robust controls are in place for the security of meter reading data.
Meter interrogation requirements	3.2	Adequate	Compliant	Although compliance has been achieved, I recommend that a monitoring process be developed.
Meter reading requirements	3.3	Effective	Compliant	Meter reading occurs monthly for all ICPs. Meter reading attainment processes are robust.

Non TOU validation	3.4	Effective	Compliant	A robust validation process is in place before and after invoicing.
Non TOU error correction	3.5	Effective	Compliant	Error correction is conducted accurately.
TOU validation	3.6	N/A	N/A	Not applicable to the scope of this audit.
Energy consumption calculation	4	Effective	Compliant	There is no manual intervention in this process, and it was “proved” from end to end using a spreadsheet based calculation tool.
TOU estimation and correction	5.1	N/A	N/A	Not applicable to the scope of this audit.
Provision of retailer consumption information	5.2	Adequate	Compliant	The process for preparing consumption information files is compliant; however, some meter pressure discrepancies exist between Energy Online’s and meter owners’ records. This has resulted in incorrect consumption information being submitted to the allocation agent.
Initial submission accuracy	5.3	Effective	Not compliant	Although compliance has not been achieved, the processes appear to be robust.
Forward estimates	5.4	Effective	Compliant	Energy Online’s forward estimates are compliant and based on historic daily average consumption.
Historic estimates	5.5	Effective	Compliant	Compliance was achieved for all of the scenarios provided during the audit.
Proportion of HE	5.6	Effective	Compliant	Reporting has been provided as required.

Billed vs consumption comparison	5.7	Effective	Compliant	On a long-term basis, Energy Online's billed information is slightly lower than consumption information. Although these figures cannot be directly compared, they provide a useful indicator to ensure that under reporting of consumption information is not occurring.
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Persons Involved in This Audit

Auditor:

Steve Woods
Veritek Limited

Energy Online personnel assisting in this audit were.

Name	Title
Andrew Maseyk	Reconciliation and Switching Manager
Marcel Green	Senior Reconciliation Data Analyst
Helen Crocker	Customer Services Representative
Megan Matthews	Customer Services Representative

Service providers assisting with processes within the audit scope:

Company	Processes
Datacol	Meter reading
Wells Instrument and Electrical	Meter reading

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1. Pre-Audit and Operational Infrastructure Information

1.1 Scope of Audit

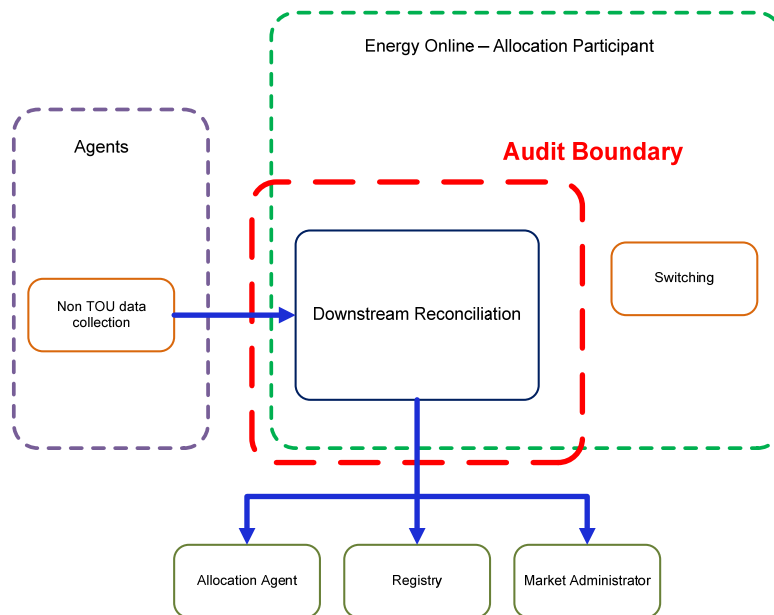
This Performance Audit was conducted at the request of the GIC in accordance with rule 65 of the Gas (Downstream Reconciliation) Rules 2008. Rule 65 is inserted below:

- 65. Industry body to commission performance audits
 - 65.1 The industry body must arrange at regular intervals performance audits of the allocation agent and allocation participants.
 - 65.2 The purpose of a performance audit under this rule is to assess in relation to the allocation agent or an allocation participant, as the case may be, -
 - 65.2.1 The performance of the allocation agent or that allocation participant in terms of compliance with these rules; and
 - 65.2.2 The systems and processes of the allocation agent or that allocation participant that have been put in place to enable compliance with these rules.

The audit was conducted in accordance with terms of reference prepared by the GIC, and in accordance with the "Guideline note for rules 65 to 75 and 80: the commissioning and carrying out of performance audits and event audits, V2.0" which was published by the GIC in October 2010.

The audit was carried out on April 11th and May 13th 2011 at Energy Online's offices in Hamilton.

The scope of the audit includes "downstream reconciliation" only, as shown in the diagram below. Switching, metering ownership and data collection functions are not within the audit scope. Energy Online only has allocation group 4 and 6 ICPs, therefore they do not have any TOU processes or systems.



1.2 Audit Approach

As mentioned in Section 1.1, the purpose of this audit is to assess the performance of Energy Online in terms of compliance with the rules, and the systems and processes that have been put in place to enable compliance with the rules.

This audit has examined the effectiveness of the controls Energy Online has in place to achieve compliance, and where it has been considered appropriate sampling has been undertaken to determine compliance.

Where sampling has occurred, this has been conducted using the Auditing Standard 506 (AS-506) which was published by the Institute of Chartered Accountants of New Zealand. I have used my professional judgement to determine the audit method and to select sample sizes, with an objective of ensuring that the results are statistically significant.¹

Where calculations are performed by Energy Online's systems, the algorithm has been checked by using one or two examples as a "sample". Multiple examples are not required because they will not introduce any different variables.

Where compliance is reliant on manual processes, manual data entry for example, the sample size has been increased to a magnitude that, in my judgement, ensures the result has statistical significance.

Where errors have been found or processes found not to be compliant the materiality of the error or non-compliance has been evaluated.

¹ In statistics, a result is considered statistically significant if it is unlikely to have occurred by chance. (Wikipedia)

1.3 General Compliance

This is Energy Online's first performance audit under rule 65; therefore, there is not a previous audit report for review.

An event audit was conducted in 2009 for the Greater Auckland and Tawa A gas gates. Energy Online did not begin operating until after these event audits, therefore there are no findings relevant to this report.

Energy Online has 10 alleged breaches recorded by the Market Administrator. These are summarised as follows:

Nature of Breach	Rule	Quantity	Section in this Report
Switching Breaches		5	Not within audit scope
Initial vs final allocation variances more than 15 %	37.2	3	5.3
Late trading notification	39.2.3	1	
Reporting of meter readings obtained	40.2	1	3.3

As noted in the Summary of Report Findings, this audit has found two areas of non-compliance. The following breach allegations are made in relation to these matters.

Breach Allegation	Rules	Sections in this report
The use of incorrect meter pressure information has led to the net under submission of consumption information to the allocation agent by approximately 20GJ over a 12-month period.	26.2.1 & 28.2	2.2 & 5.2
Energy Online's initial submission accuracy did not meet the 12.5% requirement for all gas gates for November and December 2009.	37.2	5.3

1.4 Provision of Information to the Auditor (Rule 69)

In conducting this audit, the auditor may request any information from Energy Online, the allocation agent and any allocation participant.

Information was provided by Energy Online in a timely manner in accordance with this rule.

Information was requested from metering equipment owners and was provided within the requested timeframe or a subsequent agreed timeframe by all parties. I consider that all parties have complied with the requirements of this rule.

1.5 Draft Audit Report Comments

A draft audit report was provided to the industry body (GIC), the allocation agent, and allocation participants that I considered had an interest in the report. In accordance with rule 70.3 of the Gas (Downstream Reconciliation) Rules 2008, those parties were given an opportunity to comment on the draft audit report and indicate whether they would like their comments attached as an appendix to the final audit report. The following party responded.

Party	Response	Comments provided	Attached as appendix
AMS	Yes	No	N/A

There were no comments received prior to preparing the final audit report. Therefore, I have not made any changes to the audit report.

1.6 Transmission Methodology and Audit Trails (Rule 28.4.1)

All meter reading data is transmitted to Energy Online in a secure manner by FTP. A complete audit trail was viewed for all data gathering, validation and processing functions. Compliance is confirmed with this rule.

2. Set-up and Maintenance of Information in Systems (Rule 28.2)

Every retailer must ensure the conversion of measured volume to volume at standard conditions and the conversion of volume at standard conditions to energy complies with NZS 5259:2004, for metering equipment installed at each consumer installation, for which the retailer is the responsible retailer.

At the November 2009 Retailer's Forum the issue of "consistency of application of gas billing factors" was discussed. It was agreed that this forum would draft a guideline to assist with addressing this issue. Contact Energy produced a draft guideline and I recommend that this draft guideline be further developed into a "Guideline note" to assist participants with compliance with the rules, and to ensure the consistent application of the relevant factors.

Compliance with this rule has been examined in relation to the set-up of ICP, metering and billing information.

2.1 ICP Set Up Information

2.1.1 New Connections Process

Energy Online does not deal with new connections, all ICPs are gained through the switching process.

There are 67 ICPs that have a status of ACTV on the registry. I checked a sample of ten ICPs and confirmed that they all had active consumers in Orion and should have a status of ACTC. These ICPs are all included in the meter reading process and consumption information is provided to the allocation agent; however, I recommend that validation of the status field occurs between the registry and Orion.

The Energy Online back office systems and processes have recently been moved from Auckland and incorporated into the Genesis back office. Registry validation processes have not yet been established. I recommend that these processes be established as soon as possible.

2.1.2 Altitude Information

It is a distributor responsibility to populate the registry with current and accurate altitude information and Energy Online uses these figures.

NZS 5259:2004 Amendment No1, which was published in November 2009, contains two changes, which affect the way that altitude information should be managed.

1. The maximum permissible error has been reduced from $\pm 1.5\%$ to $\pm 1.0\%$ where the meter pressure is below 100kPa and $\pm 0.5\%$ where the meter pressure is greater than 100kPa.
2. The following note is also included "To minimise uncertainty due to altitude factor the aim should be to determine the altitude to within 10m where practicable."

Energy Online provided a registry list file and a random sample of ICPs per distributor was checked against "google earth" data. The "google earth" data is based on the "Shuttle Radar Topography Mission" (SRTM) results and a number of recent studies indicate an accuracy of $\pm 10\text{m}$ for altitude. An evaluation against this data is considered an appropriate test for "reasonableness". The requirement in point 1 above has been met for all ICPs examined. Altitude figures that are within approximately 90m of the actual altitude will ensure an accuracy of $\pm 1.0\%$. Point 2 above recommends altitude figures are determined to within 10m where practicable. An evaluation of altitude data on the registry was conducted to check whether this recommendation had been met. As noted above, the margin of error of the "google earth" data appears to be approximately $\pm 10\text{m}$, therefore, to allow for this margin, I have checked that the registry data is within $\pm 20\text{m}$ of "google earth" data.

As shown in the table below the altitude data on the registry appears to be accurate. There were only three ICPs with altitudes recorded on the registry that were not within $\pm 20\text{m}$.

Distributor	Total ICPs	ICPs checked	Quantity within $\pm 20\text{m}$
UNLG	56	15	13
POCO	331	15	14
GNET	3	3	3

A further evaluation was conducted of ICPs where the altitude figure was zero on the registry. This data appears to be less accurate than when a figure other than zero is populated. The results are shown in the table below.

Distributor	Total ICPs	ICPs with altitude of zero	ICPs checked	Quantity within 20m
UNLG	56	1	1	0
POCO	331	78	15	6
GNET	3	0	0	N/A

I have considered whether distributors have potentially breached any rules by populating the registry with inaccurate altitude information. Distributors have responsibility for populating the registry with altitude figures² and for maintaining the accuracy of this information. Nevertheless, rule 28.2 requires retailers to comply with NZS 5259:2004, which includes the altitude accuracy requirements mentioned above. I recommend that Energy Online liaise with distributors to determine whether many of the ICPs with an altitude of zero should have more accurate figures populated. Energy Online should keep GIC informed of progress in relation to this matter, and if improvements are not made to the accuracy of this data, Energy Online should consider alleging a breach of the relevant Gas (Switching Arrangements) Rules 2008.

² Gas (Switching Arrangements) Rules 2008, Part A, ICP parameters maintained by Distributors and rules 41 and 58.

2.2 Metering Set-up Information

I compared the meter pressure and meter dial data in Orion against that contained in meter owners' databases. Six meter pressure and twelve meter dial discrepancies were found.

The discrepancies identified are shown in the table below.

Meter Owner	Total ICPs	Meter Pressure Discrepancies	Meter Dial Discrepancies
NGC	10	1	0
Powerco	24	2	0
Gas Net	5	1	0
Nova	2	0	0
Contact	296	2	12
Total Discrepancies		6	12

Meter docket, or other records, were requested from meter owners, which confirmed the accuracy of their data where discrepancies exist.

The invoices for a sample of some ICPs were checked where meter dial discrepancies exist and there does not appear to have been an effect on consumption information. The meter reading processes are designed to identify meter dial discrepancies that could affect meter reading accuracy. If the meter reader's hand held device is expecting more digits than the number of dials, then the reading is entered as normal and notification is made in the "readers notes" field for investigation. If the hand held is expecting fewer digits than the number of dials, then the reading is entered into the "readers notes" field and once again an investigation is conducted. This "safety net" appears to be robust; however, the quantity of meter dial discrepancies existing within the industry suggests that this validation process may not always be applied. I recommend that meter dials validation be conducted on a monthly basis with meter owners. I also recommend that the GIC consider whether it is more appropriate for this information to be contained on the registry.

I recommend that meter owners be required to undergo performance audits to ensure the processes for recording and reporting metering set-up information are robust.

The use of incorrect meter pressure information has led to the net under submission of consumption information to the allocation agent by approximately 20GJ for a 12-month period. Under submission

has occurred for five ICPs and over submission has occurred for one ICP. I allege a breach of rules 26.2.1 & 28.2.

2.3 Billing Factors

2.3.1 Temperature Information

For ICPs where the actual temperature is not measured NZS 5259: 2004 states that temperature may be estimated and four methodologies are provided. These are listed below in order of decreasing preference.

- (a) Temperature records of the station under flowing conditions. Historical records can be used if similarity is preserved.
- (b) Records of actual gas temperature in similar installations over similar periods at similar locations may serve to estimate the value of gas temperature in the installation.
- (c) For compact installations directly connected to short risers and well shaded from direct sunlight, where the temperature of the gas is in the vicinity of ground temperature, the temperature may be estimated from the average ground temperature at 300mm depth. NOTE – Reliable and relevant climatic temperature data may be used as a basis for estimating average 300mm ground temperatures. This may include published data. For installations with seasonal use only, the data for the relevant season or seasons should be used.
- (d) For installations where the inlet pipes are exposed to ambient air conditions the temperature may be estimated from the mean temperature obtained at reliable and relevant weather recording stations. For installations with seasonal use only, the data for the relevant season or season should be used. The installation should be shielded from direct sunlight.

Energy Online has chosen option (c) and they apply the daily weighted average ground temperature for the billing/read-read period. Option (c) seems to be the most logical choice because it matches the majority of GMS installations.

The temperature data was supplied from NIWA and the figures are derived from daily average airport readings over a five-year period.

The temperature data for gas gates HTV11301 and ALF15501 was compared to data recently provided by NIWA and the figures used by Energy Online appear to be approximately 1.5°C to 2.0°C lower. This could result in consumption information for ICPs at these gas gates being calculated low by approximately 0.5%.

It is recommended that Energy Online refresh this data to ensure it is accurate.

Energy Online does not apply the Joule Thompson effect adjustment. NZS 5259:2004 states "...correction may be made for the temperature drop due to pressure reduction if this reduction is made in the same installation and immediately upstream of the GMS. The temperature drop is about 0.5° per 100kPa of pressure drop. For large pressure drops or high flow rates it is recommended that the actual temperature drop be measured." This indicates that adjustment for the Joule Thompson effect is desirable. I recommend that Energy Online considers adjustment for the Joule Thompson effect.

2.3.2 Calorific Values

Gas composition data is sourced from the Open Access Transmission Information System (OATIS) and is loaded into a spreadsheet, from here the data is manually entered into Orion. Validation occurs between the OATIS data and that entered into Orion. Any discrepancies appear on an exception report. Each day an average CV is calculated per gas type based on six months of historic data. This average data is populated into Orion for a two-week period in the future. This is effectively "backup" data in case the data from OATIS is not loaded.

The process was also observed for the daily downloading of this data. Whilst this process includes a manual step, the personnel involved appear to be following well-defined instructions and the validation process appears robust.

3. Meter Reading and Validation

3.1 Archiving of Register Reading Data (Rule 28.4.2)

Retailers are required to keep register reading data for a period of 30 months. Data was examined during the audit and it is confirmed that Energy Online securely archives data for a period in excess of 30 months.

All data is transmitted via FTP, which ensures its security and integrity.

3.2 Retailer to Ensure Certain Metering Interrogation Requirements are Met (Rule 29)

This rule requires that for consumer installations where the actual or expected consumption is greater than 10TJ, a TOU meter will be installed and the installation will be assigned to allocation group 1 or 2. For consumer installations where the actual or expected consumption is between 250GJ and 10TJ a non-TOU meter will be installed and the installation will be assigned to allocation group 4.

Energy Online has mainly allocation group 6 ICPs and one allocation group 4 ICP. The one allocation group 4 ICP has annual consumption of between 250GJ and 10TJ. There are no allocation group 6 ICPs that should be allocation group 4.

Although compliance has been achieved, Energy Online does not currently have a monitoring process in place to ensure ICPs are in the correct allocation groups. I recommend that a monitoring process be developed.

Energy Online reads all ICPs monthly, so allocation group changes do not result in a change of meter reading frequency.

3.3 Meter Reading Requirements (Rules 29.4.3, 29.5 & 40.2)

All consumer installations with non-TOU meters must have register readings recorded at least once every 12 months unless exceptional circumstances prevent such an interrogation.

Energy Online provided a copy of the GAS080 report that was run for March 2011.

The table below shows the GAS080 results.

Target	Reading Percentage (GAS080)
Rolling 4 months (target 90%)	99.60%
12 months (target 100%)	100%

Energy Online did not achieve compliance with rule 40.2, which is the requirement to report the number and percentage of validated register readings obtained in accordance with rules 29.4.3 and 29.5. This was the subject of a breach notification in June 2010. This matter is now resolved.

3.4 Non TOU Validation

Meter reading validation occurs at multiple levels.

At source, the handheld data input devices perform a localised validation, to ensure that the reading is within expected high-low parameters. These parameters are set as a "high/low" limit, based on an agreed setting with Energy Online.

Readings that fail this initial validation must be re-entered, and if the second reading is the same, it will be accepted; if it is different (indicating an error with the first reading) then it must be re-entered. Once the same reading has been entered twice consecutively, it will be accepted.

The second level of validation occurs when the data reaches Energy Online. Once readings have been imported, they are subject to a number of validation checks, including:

- High reading
- Low reading

- Metering or installation information mis-match
- Duplicate reading
- Invalid date
- Meter dial mismatch

The next level of validation occurs during the “billing validation” process. This process checks for high and low dollar amounts, short and long billing periods and missing CV information.

If meter readings are edited during these processes, the original reading is retained for audit trail purposes. In most instances when a meter reading or a bill fails validation, a check reading is performed.

3.5 Non TOU Error Correction

The process for error correction was examined to ensure that consumption information for prior consumption periods is included in the revision process and provided to the allocation agent.

The six meter pressure discrepancies mentioned in Section 2.2 were corrected during the audit and a check was conducted, which confirmed that the corrected consumption information flowed through to the revision files.

3.6 TOU Validation

Energy Online does not have any TOU customers.

4. Energy Consumption Calculation (Rule 28.2)

To evaluate this calculation a spreadsheet was prepared which converts volume between meter readings to volume at standard conditions and then to energy consumption. The relevant information for an ICP was entered into the spreadsheet and the resulting energy value was compared to that calculated by Orion. This comparison confirmed the accuracy of the Orion calculation and confirmed compliance with NZS 5259.

The small sample size for this comparison is considered appropriate because the calculation being evaluated is conducted entirely within the Orion system, with no manual intervention. Therefore, the only opportunity for error is if the incorrect factors are present within the system.

5. Estimation and Submission Information

5.1 TOU Estimation and Correction (Rule 30.3)

Energy Online does not have any TOU customers.

5.2 Provision of Retailer Consumption Information (Rules 30 to 33)

Energy Online's compliance with rules 30 to 33 was examined by a "walk through" of their processes and controls to confirm compliance.

A GAS040 file for March 2011 was examined and compared to the data in Energy Online's system at ICP level; the totals matched, which confirms compliance. This also proves that Energy Online's consumption information provided to the allocation agent is calculated at ICP level and then aggregated.

The matter of "vacant consumption" was also examined. When an ICP is vacant but still active (ACTV on the registry), meter reading still occurs and any volume that is recorded is converted into validated consumption and is then included in the allocation process, even though this consumption is not billed.

As noted in Section 2.2, the use of incorrect meter pressure information has led to the submission of incorrect consumption information to the allocation agent. Under submission has occurred for five ICPs and over submission has occurred for one ICP. This is alleged as a breach of rules 26.2.1 & 28.2.

5.3 Initial Submission Accuracy (Rule 37.2)

Final allocations are complete for the months October 2008 to May 2010. The months examined during the audit were November and December 2009. Rule 37.2 requires that the accuracy of consumption information, for allocation groups 3 to 6, for initial allocation must be within a certain percentage of error published by the industry body.

Energy Online did not meet this requirement for every gas gate for the two months examined. The results are summarised in the table below.

Month	Total Gas Gates	Number Within 12.5%	% Compliant
November 2009	2	0	0.00%
December 2009	6	2	33.3%

The following table shows the difference between consumption information for initial and final submissions at an aggregated level for all gas gates.

Month	Initial Submission All Gas Gates (GJ)	Final Submission All Gas Gates (GJ)	Percentage Variation
November 2009	2.53	6.63	-62%
December 2009	18.70	17.18	9%

Energy Online only had a small number of ICPs during the period examined and therefore it is difficult to draw any conclusions.

5.4 Forward Estimates (Rules 34 & 36)

Rule 36 allows participants to determine the methodology for forward estimates. Energy Online's forward estimates are based on historic daily average consumption.

5.5 Historic Estimates (Rules 34 & 35)

To assist with determining compliance of the historic estimate processes, Energy Online was supplied with a list of scenarios. For each scenario, a manual calculation was performed using the relevant seasonal adjustment shape file, and this was compared to the calculation performed in Energy Online's system. Compliance is confirmed for all scenarios. This test also proves that the correct shape file is used in each case.

Test	Scenario	Test Expectation	Result
A	ICPs become inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	Compliant
B	ICPs become active then inactive within a month.	Consumption is only calculated for the Active portion of the month.	Has not occurred
C	ICPs become inactive, then active, then inactive again within a month.	Consumption is only calculated for the Active portion of the month.	Has not occurred
E	ICPs start on the 1 st day of a month.	Consumption is calculated to include the 1 st day of responsibility.	Compliant
F	ICPs end on the last day of the month.	Consumption is calculated to include the last day of responsibility.	Compliant
G	ICPs start part way through a month.	Consumption is calculated to include the 1 st day of responsibility.	Compliant
H	ICPs end part way through a month.	Consumption is calculated to include the last day of responsibility.	Compliant
I & J	ICP's are lost and won back in a month.	Consumption is calculated for each day of responsibility.	Has not occurred
N	ICPs start on 1 st and end on last day of month.	Consumption is calculated for each day of responsibility.	Has not occurred
O	Rollover reads	Consumption is calculated correctly in the instance of meter rollovers.	Has not occurred

5.6 Proportion of Historic Estimates (Rule 40.1)

This rule requires retailers to report to the allocation agent the proportion of historic estimates contained within the consumption information for the previous initial, interim and final allocations. The relevant files were examined and compliance is confirmed.

5.7 Billed vs Consumption Comparison (Rule 52)

The content of the GAS070 files was proved by selecting some gas gates and checking the bills in Orion for all ICPs at those gates, against the total in the GAS070 files. This confirmed the accuracy of the data. The GAR080 return files were examined for the months November 2009 to December 2010. The table below shows that Energy Online's consumption information that is submitted to the allocation agent is higher than the billed information by 6.0% for the 12-month period ending December 2010. This discrepancy can be explained by the fact that the revision process for billed data is different to that for consumption data, and the consumption data contains initial submission information for the most recent months, which will include a high proportion of estimated data. Although these figures cannot be directly compared, they provide a useful indicator to ensure that under reporting of consumption information is not occurring.

A summary of the billed vs consumption information is contained in the table below.

Month	Billed (GJ)	Consumption (GJ)	% Difference
November 2009	11.6	2.5	-78%
December 2009	26.3	21.2	-19%
January 2010	62.4	62.4	0%
February 2010	118.8	112.3	-5%
March 2010	265.0	278.6	5%
April 2010	662.9	528.3	-20%
May 2010	1,281.8	858.0	-33%
June 2010	2,146.4	1,482.0	-31%
July 2010	2,887.2	2,435.5	-16%
August 2010	3,531.7	3,306.5	-6%
September 2010	3,959.1	4,002.4	1%
October 2010	4,363.3	4,579.4	5%
November 2010	4,629.1	4,955.7	7%
December 2010	4,963.5	5,264.6	6%

6. Recommendations

As a result of this performance audit I recommend the following:

- Registry validation processes have not yet been established. I recommend that these processes be established as soon as possible.
- There are 67 ICPs that have a status of ACTV on the registry. Some of these have active consumers in Orion and should have a status of ACTC. I recommend that validation of the status field occurs between the registry and Orion.
- 79 ICPs have “zero” populated in the registry altitude field. I recommend that Energy Online liaises with distributors in relation to this matter to determine whether many of these ICPs should have more accurate figures populated. Energy Online should keep GIC informed of progress in relation to this matter, and if improvements are not made to the accuracy of this data, Energy Online should consider alleging a breach of the relevant Gas (Switching Arrangements) Rules 2008.
- Six meter pressure and twelve meter dial discrepancies were found between Energy Online’s and meter owners’ records. I recommend that validation occurs on a monthly basis with meter owners to address this matter.
- Energy Online uses temperature data that was supplied by NIWA. This data seems to be different to more recent data. I recommend that Energy Online refreshes this data and records its source and the date it was loaded into Orion.
- I recommend that Energy Online considers adjustment for the Joule Thompson effect.
- Energy Online does not currently have a monitoring process in place to ensure ICPs are in the correct allocation groups. I recommend that a monitoring process be developed.

An additional general recommendation is made in relation to billing factors. At the November 2009 Retailer’s Forum the issue of “consistency of application of gas billing factors” was discussed. It was agreed that this forum would draft a guideline to assist with addressing this issue. Contact Energy produced a draft guideline and I recommend that this draft guideline be further developed into a “Guideline note” to assist participants with compliance with the rules, and to ensure the consistent application of the relevant factors.

Three recommendations are made in relation to the setup and maintenance of information:

- That meter owners be required to undergo performance audits to ensure the processes for recording and reporting metering set-up information are robust.
- That the switching rules be amended to include meter pressure, meter multiplier and meter dials as registry fields that are maintained by meter owners.
- That the switching rules be amended to include an accuracy requirement for altitude information populated by distributors.

The issue of incorrect data in relation to meter pressure has now been identified in a number of performance audits. I recommend that this matter be raised at an industry wide level, with the following objectives:

- Determine the extent of meter pressure inaccuracy, by conducting meter pressure field checks and comparing these results to meter docket, meter owner's databases and retailer's databases. This recommendation was also made during the 2009 event audit for the Greater Auckland gas gate.
- Identify initiatives to improve the current accuracy of meter pressure data.
- Improve validation processes to ensure further meter pressure errors are not introduced.

Appendix 1 – Control Rating Definitions

Control Rating	Definition
Control environment is not adequate	<p>Operating controls designed to mitigate key risks are not applied, or are ineffective, or do not exist.</p> <p>Controls designed to ensure compliance are not applied, or are ineffective, or do not exist.</p> <p>Efficiency/effectiveness of many key processes requires improvement.</p>
Control environment is adequate	<p>Operating controls designed to mitigate key risks are not consistently applied, or are not fully effective.</p> <p>Controls designed to ensure compliance are not consistently applied, or are not fully effective.</p> <p>Efficiency/effectiveness of some key processes requires improvement.</p>
Control environment is effective	<p>Isolated exceptions identified when testing the effectiveness of operating controls to mitigate key risks.</p> <p>Isolated exceptions identified when testing the effectiveness of controls to ensure compliance.</p> <p>Isolated exceptions where efficiency/effectiveness of key processes could be enhanced.</p>