ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT

VERITEK

For

GENESIS ENERGY LIMITED

Prepared by: Tara Gannon

Date audit commenced: 7 August 2019

Date audit report completed: 30 August 2019

Audit report due date: 13 September 2019

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EXECUTIVE SUMMARY

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of **Genesis Energy Ltd (Genesis),** to support their application for renewal of certification in accordance with clauses 5 and 7 of schedule 15.1. The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits version 7.2.

Genesis uses three codes; GENE, GENH and GEOL. GEOL's ICPs were migrated from Orion to Gentrack during the previous audit period. Unless otherwise specified, the processes and non-compliances described in the report relate to all codes.

Genesis has made some improvements to their processes since the 2018 audit:

- Genesis began development of an internal audit framework in October 2018, which was completed in February 2019. As part of the process Genesis identified risk areas, the risk impact, and controls to reduce and manage the risks. They then prioritised and scheduled audits to check the effectiveness of the controls. Two internal audits are underway relating to the scope of this audit: revenue assurance and bridged meters. Other upcoming audits relevant to this audits scope include vacant consuming, no access, and unbilled volumes. Actions arising from the audits are assigned, and monitored to ensure that they are completed, and follow up audits are scheduled. Reporting is available and being refined as the audits progress.
- Further monitoring controls have been added by the reconciliation team to help to identify and update missed corrections, and inconsistent information. This has resulted in an increase in the number of corrections being processed.
- Further alignment of the GENE and GEOL processes following the migration to Gentrack has led to improved compliance for GEOL.

Reconciliation submission processes continue to be closely monitored and well managed, with only minor submission accuracy issues identified.

Some key areas of non-compliance were identified:

- NHH data validation processes require improvement to ensure that inactive consumption and zero consumption is investigated promptly, and corrective action is taken.
- Read attainment requirements were not met for all NHH ICPs. Some ICPs are excluded from the automated read attainment process and based on the samples reviewed during the audit these ICPs are less likely to meet the read attainment requirements.
- There were some late registry updates and late switching files, mainly caused by delays in receiving the information needed to process the file or update.
- Some inaccurate information was recorded on the registry and in switching files. In most cases the volumes of exceptions were low relative to the sample checked. For transfer and switch move CS files a reasonably high proportion of the sample had some incorrect content, indicating that there may be system issues that require investigation and correction.
- Genesis is working to resolve unmetered load issues, however there are still some unmetered load discrepancies, and some unmetered load is over the threshold. Distributed unmetered load submissions are not correct for all databases.

The matters raised are shown in the tables below.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and recommends an audit frequency of three months. Given that:

- The audit risk rating has decreased with each audit over the past two years.
- The number of non-compliances and total audit risk rating is inflated by some very minor non-compliances affecting small numbers of ICPs which are recorded in several sections of the report, and technical non-compliances with little or no impact.

- Genesis has demonstrated progress with resolving issues, and is committed to reviewing its processes and improving compliance.

I recommend that the next audit is completed in 12 months to provide enough time to complete the planned improvements.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Relevant information	2.1	15.2	Small number of registry discrepancies. Some late status updates and trader updates. Some corrections not conducted.	Moderate	Low	2	Identified
Electrical Connection of Point of Connection	2.11	10.33A	**GENE** 120 reconnections were not certified within five business days. ICP 0000014674UN2D6 was not recertified on unbridging. **GEOL** 21 reconnections were not certified within five business days.	Moderate	Low	2	Investigating
Changes to registry information	3.3	10 Schedule 11.1	Some status and trader updates were not processed within five business days of the event on the Registry.	Moderate	Low	2	Investigating
Trader responsibility for an ICP	3.4	11.18	**GENE** 20 incorrect MEP nominations.	Moderate	Low	2	Investigating
Provision of information to the registry manager	3.5	9 Schedule 11.1	Some late and incorrect status updates.	Moderate	Low	2	Investigating
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	A small number of incorrect ANZSIC codes.	Strong	Low	1	Identified
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	**GENE** Missing unmetered details for one ICP. Ten ICPs had incorrect daily unmetered kWh, and were corrected during the audit. **GEOL** Five ICPs had unmetered load recorded in error, and corrected during the audit. **GENH** Missing unmetered details for one ICP.	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Management of "active" status	3.8	17 Schedule 11.1	**GENE** 25 (6+19) incorrect first active dates. **GEOL** One incorrect first active date.	Weak	Low	3	Identified
Management of "inactive" status	3.9	19 Schedule 11.1	**GENE** Some incorrect inactive statuses.	Moderate	Medium	4	Investigating
Losing trader response to switch request and event dates - standard switch	4.2	3 and 4 Schedule 11.3	**GEOL** Three incorrect AN codes sent.	Strong	Low	1	Identified
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	The average daily consumption calculation is not calculated from the read to read period. **GENE** Two of ten ICPs checked with incorrect last read labelled as actual but should have been sent as estimates. Two ICPs with last actual read not sent. One ICP sent with midnight read of the event date sent instead of the midnight read of the last day of supply. **GEOL** Five of ten ICPs checked with incorrect last read labelled as actual but should have been sent as estimates. Two ICPs with the incorrect last actual read date recorded.	Weak	Low	3	Investigating
Retailers must use same reading - standard switch	4.4	6(1) and 6A Schedule 11.3	**GENE** 27 late RR files. **GEOL** 5 late RR files. 2 late AC files.	Strong	Low	1	Identified
Gaining trader informs registry of switch request - switch move	4.7	9 Schedule 11.3	**GENH** Incorrect switch type used for 5 category 2 ICPs.	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	**GENE** Incorrect AN response codes sent. **GEOL** Incorrect AN response codes sent. **GENH** One late AN file sent. Two late CS files sent.	Strong	Low	1	Identified
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	The average daily consumption calculation is not calculated from the read to read period. **GENE** Two of ten ICPs checked with incorrect last read labelled as actual but should have been sent as estimates. Two ICPs with last actual read labelled incorrectly. One ICP where the last read was sent as an actual for the switch event date. **GEOL** Eight ICPs sent with an incorrect average daily consumption (7 negative +1 >200 kWh). Five of ten ICPs checked with incorrect last read labelled as actual but should have been sent as estimates. One ICP sent with an actual read incorrectly labelled as an estimate. One ICP with the incorrect last actual read date recorded.	Weak	Low	3	Investigating
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	**GENE** 91 late RR files. **GEOL** 4 RR requested as an estimated read when the actual read for the correct event date was ignored. 36 late RR files. 1 late AC file. **GENH** 2 late AC files.	Moderate	Low	2	Identified
Losing trader provision of information -	4.13	15 Schedule 11.3	**GENH** 28 late AN files.	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
gaining trader switch							
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 Schedule 11.3	**GENH** 5 late CS files.	Strong	Low	1	Investigating
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	**GENE** 1 incorrect NW code issued. 9 late NW requests. 1 late AW response. 1 WC breach late completion of a switch withdrawal. **GEOL** 14 late NW requests. 3 late AW responses. **GENH** 1 late NW request. 1 late AW response. 1 WC breach late completion of a switch withdrawal.	Strong	Low	1	Identified
Switch saving protection	4.17	11.15AA to 11.15AB	Switch save protected customer attempt to persuade customer to remain with GENE.	Moderate	Low	2	Identified
Unmetered threshold	5.2	10.14 (2)(b)	**GENE** 22 ICPs with unmetered load over 6,000 kWh per annum.	Weak	Low	3	Identified
Unmetered threshold exceeded	5.3	10.14 (5)	**GENE** Unmetered load over 6,000 kWh per annum and not resolved within the allowable timeframes.	Weak	Low	3	Identified
Distributed unmetered load	5.4	11 Schedule 15.3, Clause 15.37B	**GENE** The monthly database extracts used to derive submission from are provided as a snapshot and do not track changes at a daily basis as required by the code. Inaccurate submission information for several databases.	High	Moderate	6	Identified
Electricity conveyed & notification by embedded generators	6.1	10.13, Clause 10.24 and 15.13	**GENE** ICP 0000024381CPF34 has generation installed but does not have an EG register installed, and notification of gifting has not been provided.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Eight ICPs with solar generation indicated had EG1 profiles recorded on the registry. The correct profiles were applied for submission, and the incorrect profiles were updated during the audit. 0001409185UNC41 and 1099576199CN15D have non solar generation and had PV1 profile applied in Derive, Gentrack, and the Registry. Both ICPs were corrected to EG1 profile in the three systems during the audit. Ten ICPs were updated to PV1 profile in error on the registry, but the correct profiles were applied for submission. Seven have been corrected or switched out, and three remain incorrect. 15 meters were bridged during the audit period. While meters are bridged energy is not quantified in accordance with the code. **GEOL** ICPs 0002201640WMA5B, 0002403021TUB30, 0007185413RNFD8, 0014669504EL546 and 0110004600EL6AB have generation installed but do not have an EG register installed, and notification of gifting has not been provided. Three meters were bridged during the audit period. While meters are bridged energy is not quantified in accordance with the code. **GENH** ICPs 0005876656RNF26 has generation installed but does not have an EG register installed, and notification of gifting has not been provided.				
Collection of information by certified reconciliation participant	6.5	2 Schedule 15.2	**GENH** Four GENH meters not interrogated within the maximum interrogation cycle.	Moderate	Low	2	Cleared
Derivation of meter readings	6.6	3(1), 3(2) and 5	**GENE** At least one ICP with signs of tampering or damage, and one ICP	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
		Schedule 15.2	with missing or broken seals identified by Wells were not investigated. **GEOL** At least one ICP with missing or broken seals identified by Wells was not investigated.				
NHH meter reading application	6.7	6 Schedule 15.2	**GENE and GENH** NHH meter readings not applied at 2400 on the day of the meter reading for NHH to HHR upgrades and downgrades where the meter is replaced. **GENE** For ICP 0039607000WR3C4 the CS file contained the midnight read for the event date, instead of the midnight read for the day before the event date.	Strong	Low	1	Identified
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	**GENE** For at least nine ICPs unread during the period of supply, exceptional circumstances did not apply, and the best endeavours requirement was not met. **GEOL** For at least eight ICPs unread during the period of supply, exceptional circumstances did not apply, and the best endeavours requirement was not met.	Moderate	Low	2	Investigating
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	**GENE** For at least 14 ICPs unread in the 12 months ended April 2019, exceptional circumstances did not apply, and the best endeavours requirement was not met. **GEOL** For at least three ICPs unread in the 12 months ended April 2019, exceptional circumstances did not apply, and the best endeavours requirement was not met.	Moderate	Low	2	Investigating
NHH meters 90% read rate	6.10	9(1) and (2) Schedule 15.2	**GENE** For at least 15 ICPs unread in the four months ended April 2019, exceptional circumstances did not apply, and the best endeavours requirement was not met. **GEOL**	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			For at least ten ICPs unread in the four months ended April 2019, exceptional circumstances did not apply, and the best endeavours requirement was not met.				
Correction of NHH meter readings	8.1	19(1) Schedule 15.2	**GENE** Stopped meter corrections were not processed for 0037942216PC4D0 (November 2018) or 0000507493DEA7C (February 2019). A bridged meter correction was not processed for ICP 0000014674UN2D6, which was unbridged on 14/08/18. An inactive consumption correction was not processed for ICP 0100010811BC4DF, which switched out before the correction was processed. **GEOL** For ICP 2810040000CH3A8 the multiplier correction was applied from 17/08/18 but should have been applied from 31/03/16.	Moderate	Low	2	Investigating
Identification of readings	9.1	3(3) Schedule 15.2	**GENE** Four CS files had estimated readings recorded as actual readings. **GEOL** Ten CS files had estimated readings recorded as actual readings. One CS file had actual readings recorded as estimated readings.	Weak	Low	3	Investigating
Buying and selling notifications	11.1	15.3	**GENE** 14 trading notifications were not provided.	Strong	Low	1	Identified
Electricity supplied information provision to the reconciliation manager	11.3	15.7	**GENE and GENH** Billed data was double counted in the September and October 2017 r14 billed submissions for GENE and GENH.	Strong	Low	1	Identified
HHR aggregates information provision to the	11.4	15.8	**GENE and GENH** HHR aggregates files do not contain electricity supplied information.	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
reconciliation manager							
Accuracy of submission information	12.7	15.12	**GENE** PV1 profile was applied instead of EG1 for non-solar generation for two ICPs. A small number of corrections had not been processed for inactive ICPs with consumption, stopped meters and bridged meters. The unmetered load for GENH ICPs 0000000516NTE49 and 0000275289HB0B4 is submitted with the GENE submission. One category 3 and two category 5 ICPs have NHH submission recorded. Issues with compensation factors or the flow direction being inconsistent with the ICP's loss factor prevent HHR submission being applied. **GEOL** One multiplier correction was not processed from the correct date. **GENH** The unmetered load for GENH ICPs 0000000516NTE49 and 0000275289HB0B4 is submitted with the GENE submission.	Moderate	Low	2	Identified
Permanence of meter readings for reconciliation	12.8	4 Schedule 15.2	**GENE and GEOL** Some estimates were not replaced with permanent estimates by revision 14.	Moderate	Medium	4	Investigating
Reconciliation participants to prepare information	12.9	2 Schedule 15.3	**GENE** One category 3 and two category 5 ICPs with NHH submission recorded.	Moderate	Low	2	Investigating
Forward estimate process	12.12	6 Schedule 15.3	**GENE and GEOL** The accuracy threshold was not met for all months and revisions.	Moderate	Low	2	Investigating
Historical estimate reporting to RM	13.3	10 Schedule 15.3	**GENE and GEOL** Historic estimate thresholds were not met for some revisions.	Moderate	Low	2	Investigating
Future Risk Rating						81	

Future risk rating	0	1-3	4-14	16-40	41-55	55+

Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Description	Recommendation
Relevant Information	2.1	Regarding Clause 15.2 Validations	Validation of distributor's unmetered load details against GENE/GEOL unmetered load details. Validation of initial electrical connection date, first meter certification date and first active date.
Provision of information to the registry manager	3.5	Regarding Clause 9 Schedule 11.1 Provision of information to the registry	Reporting be put in place to assist the team with visibility of workload for the GEOL operational team.
ICPs at new or ready status for 24 months	3.10	Regarding Clauses 3 and 4 Schedule 11.3 Monitoring of new and ready ICPs	Run a monthly list from the registry of all ICPs where GENE or GEOL are the proposed trader to ensure Gentrack records align.
Losing trader must provide final information - switch move	4.10	Regarding Clause 11 Schedule 11.3 Negative estimated daily kWh	Monitor negative daily consumption in CS files.
Unmetered threshold	5.2	Regarding Clause 10.14 (2)(b) Population of unmetered load details	Populate unmetered details for ICPs with consumption between 3,000 and 6,000 kWh per annum.
Electricity conveyed & notification by embedded generators	6.1	Regarding Clause 15.13 Potential generating ICPs without EG registers	Check ICPs with generation indicated by the distributor and no import/export metering installed, to determine whether generation is present and arrange EG meter installation where required.
Derivation of meter readings	6.6	Regarding Clause 3(1) and 3(2) Schedule 15.2 Customer, web and photo readings	Update processes to ensure that customer, web and photo readings must be validated against at least two actual validated readings from another source.
Half hour estimates	9.4	Regarding Clause 15 Schedule 15.2 Default estimates	Default estimates are currently set at 24 kWh per day for all ICPs, but expected consumption may vary significantly from this. Consider using a different default estimate value for different meter categories or groups of ICPs to increase the accuracy of HHR estimates.

ISSUES

Subject	Section	Description	Issue
		Nil	

1. ADMINISTRATIVE

1.1. Exemptions from Obligations to Comply with Code (Section 11)

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

Audit observation

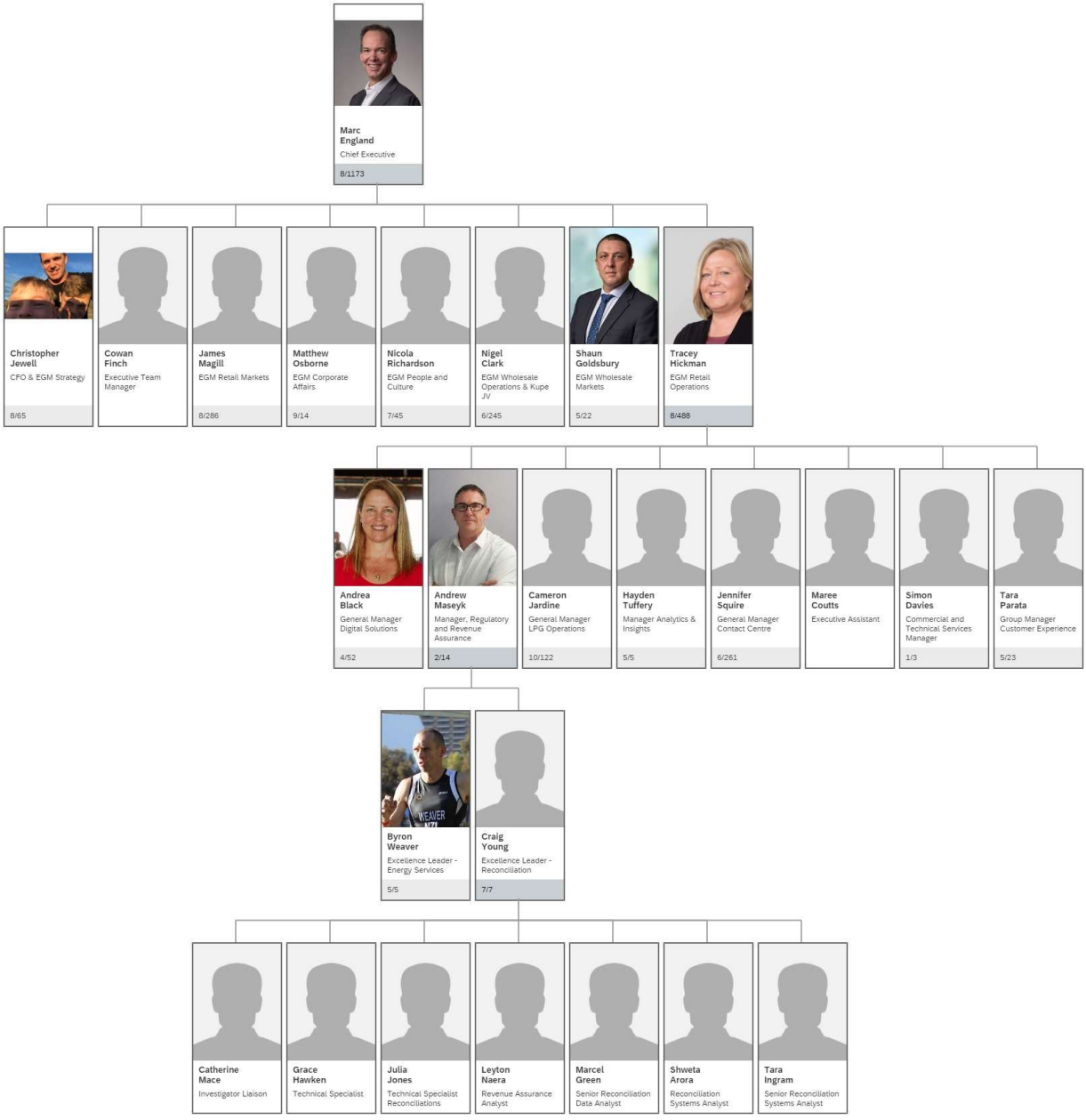
I checked the Authority's website to identify any relevant exemptions.

Audit commentary

There are no current exemptions relevant to the scope of this audit.

1.2. Structure of Organisation

Genesis provided a copy of their organisational structure:



1.3. Persons involved in this audit

Auditors:

Name	Company	Role
Tara Gannon	Veritek Limited	Lead Auditor
Rebecca Elliot	Veritek Limited	Supporting Auditor

Personnel assisting in this audit were:

Name	Title
Cameron White	Customer Services Representative
Craig Young	Excellence Leader – Reconciliation
Feng Jia	Engineer
Grace Hawken	Technical Specialist - Reconciliations Team
Kyra Inia	Customer Service Representative
Leyton Naera	Revenue Assurance Analyst
Nicki Mahuta	Billing Back Office
Richelle Fraser	Team Leader
Sacha Edwards	Team Leader
Shweta Arora	Reconciliation Services Analyst
Stacey Gleeson	Team Leader
Wenli Zhu	Accounting Technician, Finance Operations
Zeenat Fatupaito	Customer Services Representative
Alysha Majury	Customer Excellence Centre – Billing Team Leader
Cindy Campbell	Customer Service Representative
Anna Fraser-Jones	Customer Service Representative

Name	Title
Julia Jones	Technical Specialist – Reconciliations Compliance
Maimai Cooper	TOU Technical Facilitator

1.4. Use of Agents (Clause 15.34)

Code reference

Clause 15.34

Code related audit information

A reconciliation participant who uses an agent

- *remains responsible for the contractor's fulfilment of the participant's Code obligations*
- *cannot assert that it is not responsible or liable for the obligation due to something the agent has or has not done.*

Audit observation

Use of agents was discussed with Genesis.

Audit commentary

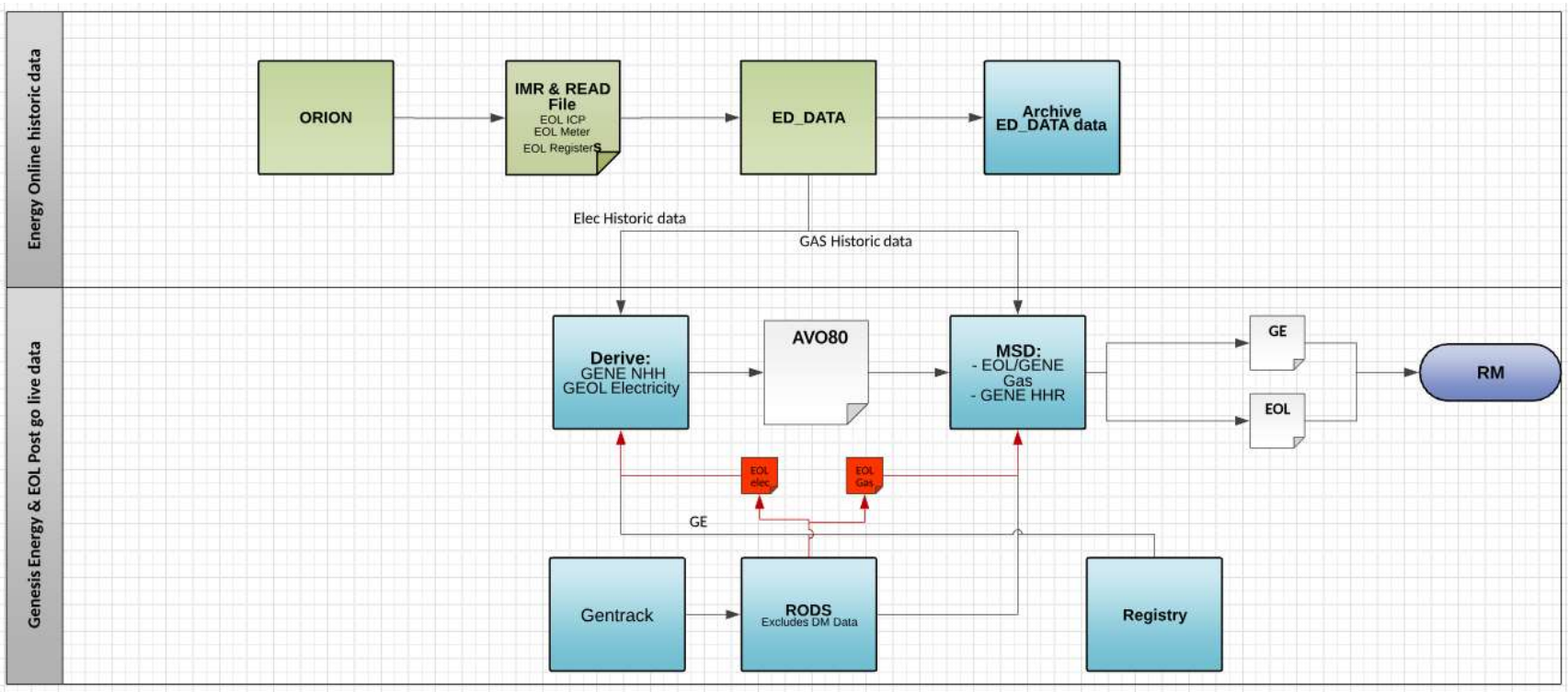
Genesis engages the following service providers:

Provider	Services
AMS	Gathering and storing of HHR data for GENH HHR and GENE AMI ICPs. Creation and management of volume information for GENH HHR ICPs. Calculation of ICP days for GENH HHR ICPs. Provision of submission information for GENH HHR.
EMS	Gathering and storing of raw meter data for unmetered streetlights. Estimation of volumes for unmetered streetlights.
Wells	Gathering and storing of raw meter data for NHH ICPs.

In addition, MEPs provide AMI data in their capacity as MEPs and are subject to a separate audit regime.

1.5. Hardware and Software

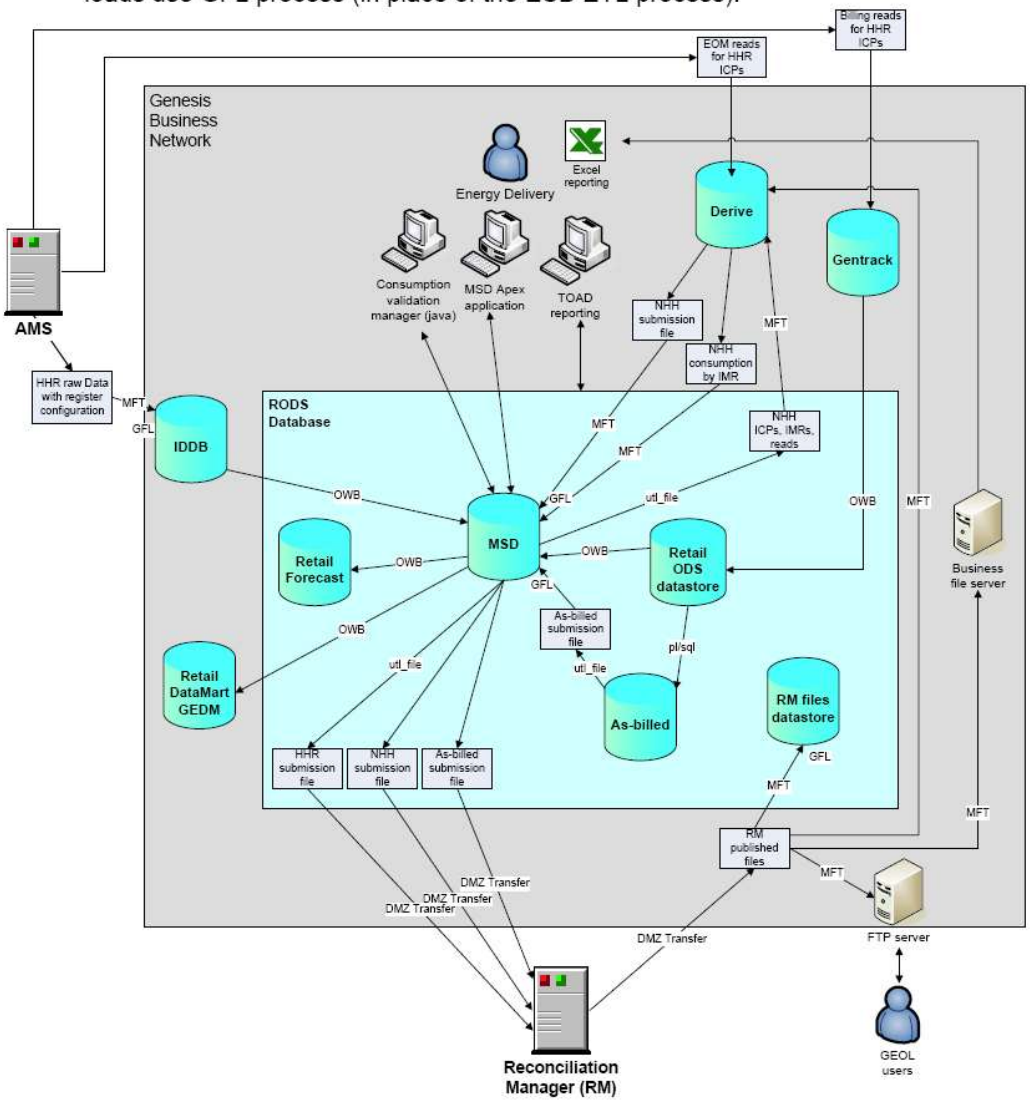
A diagram of the systems is shown below. The areas shaded green are now discontinued. The Orion system is no longer used and all GEOL ICPs are managed in Gentrack.



A diagram of the AMI HHR application architecture is shown below.

Key points:

- AMS continues to send EOM file to Derive and billing read file to Gentrack.
- The Retail ODS datastore sends ICP & IMR data to MSD.
- HHR data (including register configuration) is sent from AMS to IDDB and then to MSD.
- MSD creates the HHR submission file and submits this to the RM.
- MSD sends ICP, IMR and NHH reads files to Derive.
- File transfers use the MFT process (in place of the ESB file transfer process) and file loads use GFL process (in place of the ESB ETL process).



Stark RT version 6 is used for interrogation of generation metering, and all users have an individual login and password for Stark.

Back-ups are in accordance with standard industry protocols. The systems are backed up every 15 minutes in production and there is a further off site back up of RODS daily.

1.6. Breaches or Breach Allegations

Genesis has had two breach allegations relevant to the scope of this audit recorded by the Electricity Authority during the audit period:

Ref	Breach Description	Clause	Date	Outcome
1810GENE1	It was alleged that on or before 24 September 2018 Genesis approached the customer at ICP 1001155662CK926 to attempt to persuade the customer to terminate her new arrangement with Paua.	Part 11 clause 11.15AB (4)	13/02/19	Warning letter issued.
1905GENE1	It was alleged that on or before 10 April 2019 Genesis (Energy Online brand) approached the customer at ICP0007012583TU203 to attempt to persuade the customer to terminate her new arrangement with Future Energy New Zealand Limited trading as energyclubnz.	Part 11 clause 11.15AB (4)	27/06/19	Open for joining. This incident is discussed further in **section 4.17.**

1.7. ICP Data

GENE

All active ICPs are summarised by metering category in the table below. 2,933 of the 3,000 active ICPs with a metering category of 9 or blank have trader unmetered load details recorded. The remaining 67 ICPs are active but have no metering details entered on the registry and are discussed in **section 2.9**.

Metering Category	2019	2018	2017	2016
1	405,579	409,403	418,547	442,114
2	3027	2,918	2,703	2,865
3	1	1	1	0
4	0	0	0	0
5	2	2	2	2
9	822	927	1,172	1,132
Blank	2,178	2,318	2,387	1,161

Status	Number of ICPs (2019)	Number of ICPs (2018)	Number of ICPs (2017)	Number of ICPs (2016)
Active (2,0)	411,609	415,569	424,722	447,274
Inactive - new connection in progress (1,12)	1,515	1,212	966	806
Inactive – vacant (1,4)	10,172	10,646	10,966	13,099

Inactive – AMI remote disconnection (1,7)	1,919	2,199	1,831	44
Inactive – de-energised due to meter disconnected (1,9)	26	36	33	0
Inactive – at pole fuse (1,8)	37	53	46	0
Inactive – de-energised at meter box fuse (1,10)	7	20	10	0
Inactive – at meter box switch (1,11)	6	10	8	0
Inactive – ready for decommissioning (1,6)	1,988	2,270	2,957	4,441
Inactive – reconciled elsewhere (1,5)	2	0	4	2
Decommissioned (3)	42,090	40,249	37,654	33,876

GEOL

All active ICPs are summarised by metering category in the table below. Six of the ten active ICPs with a metering category of 9 or blank have trader unmetered load details recorded. The remaining four ICPs are active but have no metering details entered on the registry and are discussed in **section 2.9**.

Metering Category	2019	2018	2017	2016
1	89,865	90,011	86,110	82,861
2	154	170	191	237
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
9	7	11	12	9
Blank	3	2	7	7

Status	Number of ICPs (2019)	Number of ICPs (2018)	Number of ICPs (2017)	Number of ICPs (2016)
Active (2,0)	90,029	90,194	86,230	83,114
Inactive - new connection in progress (1,12)	80	69	88	48
Inactive – vacant (1,4)	964	850	834	737
Inactive – AMI remote disconnection (1,7)	411	61	64	34

Inactive – de-energised due to meter disconnected (1,9)	3	2	0	0
Inactive – at pole fuse (1,8)	7	3	3	1
Inactive – de-energised at meter box fuse (1,10)	1	0	1	0
Inactive – at meter box switch (1,11)	0	1	0	0
Inactive – ready for decommissioning (1,6)	180	189	206	218
Inactive – reconciled elsewhere (1,5)	0	0	0	0
Decommissioned (3)	2,340	2,115	1,868	1,605

GENH

All active ICPs are summarised by metering category in the table below. The four active ICPs with a metering category of 9 do not have trader unmetered load details recorded and are discussed in **section 2.9.**

Metering Category	2019	2018	2017	2016
1	99	100	82	77
2	908	922	753	635
3	649	632	452	347
4	218	192	150	91
5	24	22	11	15
9	4	1	1	0
Blank	0	2	1	0

Status	Number of ICPs (2019)	Number of ICPs (2018)	Number of ICPs (2017)	Number of ICPs (2016)
Active (2,0)	1,902	1,841	1,450	1,165
Inactive - new connection in progress (1,12)	8	11	13	11
Inactive – vacant (1,4)	0	0	2	3
Inactive – AMI remote disconnection (1,7)	0	0	0	0

Inactive – de-energised due to meter disconnected (1,9)	0	0	1	0
Inactive – at pole fuse (1,8)	0	0	1	0
Inactive – de-energised at meter box fuse (1,10)	0	0	0	0
Inactive – at meter box switch (1,11)	0	0	0	0
Inactive – ready for decommissioning (1,6)	1	0	1	1
Inactive – reconciled elsewhere (1,5)	2	2	2	0
Decommissioned (3)	419	406	0	365

1.8. Authorisation Received

A letter of authorisation was received.

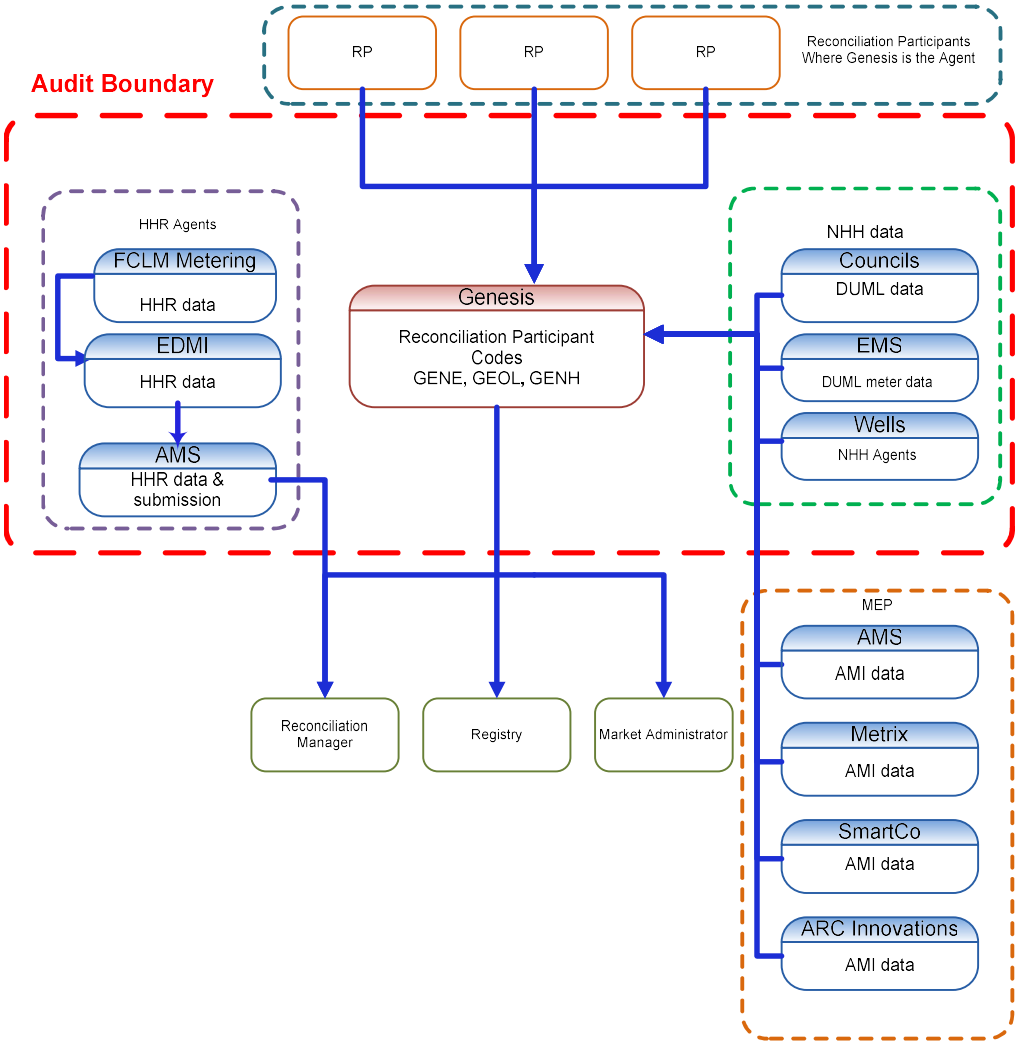
1.9. Scope of Audit

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of Genesis to support their application for renewal of certification in accordance with clauses 5 and 7 of schedule 15.1. The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits version 7.2.

This audit includes the GENE, GENH and GEOL participant codes. Any reference to Genesis in the report includes all participant codes, unless the specific code is mentioned.

The audit was carried out on August 7-9, 2019 at the Genesis offices in Hamilton.

The scope of the audit is shown in the diagram below, with the Genesis audit boundary shown for clarity.



The table below shows the tasks under clause 15.38 of part 15 for which Genesis requires certification.

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing Data
(a) - Maintaining registry information and performing customer and embedded generator switching		
(b) – Gathering and storing raw meter data	AMS – HHR Wells – NHH	AMS Metrix Smartco ARC Innovations

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing Data
(c)(iii) - Creation and management of volume information	AMS – HHR Councils – DUML databases EMS - DUML data	
(d) (i)– Calculation of ICP days	AMS – HHR for GENH	
(d)(ii) - delivery of electricity supplied information under clause 15.7		
(d)(iii) - delivery of information from retailer and direct purchaser half hourly metered ICPs under clause 15.8		
(e) – Provision of submission information for reconciliation	AMS - HHR for GENH	
(f) - Provision of metering information to the Grid Owner	AMS - HHR for GENH	

Genesis receives DUML data from several Councils. These parties are considered agents under clause 15.34.

The remaining agents listed above have been audited in accordance with the Guidelines for Reconciliation Participant Audits relevant at the time of the audit.

1.10. Summary of previous audit

Genesis provided a copy of their previous audit report conducted in September 2018 by Steve Woods (lead auditor) of Veritek Limited. The summary tables below show the statuses of the non-compliances and recommendations raised in the previous audit. Further comment is made in the relevant sections of this report.

Subject	Section	Clause	Non-compliance	Status
Provision of information	2.1	15.2	Small number of registry discrepancies. Some late status updates. Some submission related areas where controls require strengthening to ensure compliance. Some corrections not conducted.	Still existing

Subject	Section	Clause	Non-compliance	Status
Electrical connection	2.11	10.33A	79 reconnections were not certified within five business days for GENE 49 reconnections were not certified within five business days for GENE. One GENE new connection not certified for two months after electrical connection. One GENH new connection certified two days later than the 5-day threshold.	Still existing
Changes to registry information	3.3	10 of schedule 11.1	Some status updates were not processed within five business days of the event on the Registry.	Still existing
Trader responsibility	3.4	11.18	5 incorrect MEP nominations.	Still existing
Provision of registry information	3.5	Clause 9 Schedule 11.1	Some late and incorrect status updates. Some late and incorrect MEP nominations.	Still existing
ANZSIC codes	3.6	9(1)(k) of schedule 11.1	Some incorrect ANZSIC codes.	Still existing
Unmetered load	3.7	Clause 9(1)(f) of Schedule 11.1	Incorrect unmetered details for 21 ICPs.	Still existing
Management of Active status	3.8	17 of schedule 11.1	One incorrect status update.	Still existing
Management of Inactive status	3.9	19 of schedule 11.1	Some incorrect inactive statuses.	Still existing
Change of MEP	3.11	10.22(1)(a)(i)	Backdated MEP changes.	Still existing see **section 3.3**
Switching	4.2	3 of schedule 11.3	Incorrect AN response codes for GEOL.	Still existing

Subject	Section	Clause	Non-compliance	Status
	4.3	5 of schedule 11.3	Incorrect average daily consumption for 1 GENE file and 9 GEOL files.	Still existing
	4.4	6(1) and 6A Schedule 11.3	13 late RR files for GEOL. 6 late RR files for GENE.	Still existing
	4.5	6(2) and (3) Schedule 11.3	3 GEOL RR files incorrectly rejected.	Cleared
	4.8	10(1) of schedule 11.3	Incorrect AN response codes for GEOL.	Still existing
	4.10	11 of schedule 11.3	Incorrect CS content for GEOL. 7 late CS files for GEOL. Incorrect CS file content for GENE. 189 late CS files for GENE.	Still existing
	4.11	12 of schedule 11.3	19 late RR files for GEOL. 42 late RR files for GENE. 2 GEOL RR files incorrectly rejected.	Still existing
	4.12	14 of schedule 11.3	The NT was sent late for ICP 1000015708BP6E8.	Cleared
Shared unmetered load	5.1	11.14	Incorrect shared unmetered load for 4 GEOL ICPs.	Cleared
Unmetered threshold	5.2	10.14 (2)(b)	Unmetered load over 6,000 kWh per annum.	Still existing
Unmetered threshold exceeded	5.3	10.14 (5)	Unmetered load over 6,000 kWh per annum and not resolved within the allowable timeframes.	Still existing
Distributed unmetered load	5.4	11 Schedule 15.3	Distributed unmetered databases not accurate.	Still existing

Subject	Section	Clause	Non-compliance	Status
Electricity conveyed	6.1	10.13 of part 10	**GENE** One meter was bridged during the audit period. While meters are bridged energy is not quantified in accordance with the code. 27 ICPs without DG quantified. **GEOL** 9 ICPs without DG quantified.	Still existing
Derivation of meter readings	6.6	3(1), 3(2) and 5 Schedule 15.2	**GENE** One customer read was treated as validated, when it had not been validated against at least two actual reads from other sources. **GEOL** Four customer reads were treated as validated, when they had not been validated against at least two actual reads from other sources.	Cleared, but some other issues were identified
NHH meter reading application	6.7	6 Schedule 15.2	NHH meter readings not applied at 2400 on the day of the meter reading for NHH to HHR upgrades.	Still existing
Interrogate meters once	6.8	Clause 7(1) and (2) Schedule 15.2	**GENE** For nine ICPs unread during the period of supply, exceptional circumstances did not apply and the best endeavours requirement was not met. **GEOL** For six ICPs unread during the period of supply, exceptional circumstances did not apply, and the best endeavours requirement was not met.	Still existing

Subject	Section	Clause	Non-compliance	Status
Interrogate meters annually	6.9	8(1), 8(2), of schedule 15.2	**GENE** For eight ICPs unread in the 12 months ended May 2018, exceptional circumstances did not apply and the best endeavours requirement was not met. **GEOL** For eight ICPs unread in the 12 months ended May 2018, exceptional circumstances did not apply and the best endeavours requirement was not met. Unmetered ICPs were included in the meter reading frequency reporting up to May 2018.	Still existing
NHH meters 90% read rate	6.10	Clause 8(1) and (2) Schedule 15.2	GENE For three ICPs unread in the four months ended May 2018, exceptional circumstances did not apply and the best endeavours requirement was not met. GEOL For six ICPs unread in the four months ended May 2018, exceptional circumstances did not apply and the best endeavours requirement was not met.	Still existing
NHH correction	8.1	19(1) Schedule 15.2	**GENE** Consumption while inactive is not consistently monitored and corrected. **GEOL** Consumption while inactive is not consistently monitored and corrected.	Still existing
Identification of readings	9.1	3(3) and 5 of Schedule 15.2	**GENE** One customer read was treated as validated, when it had not been validated against at least two actual reads from other sources. **GEOL** Four customer reads were treated as validated, when they had not been validated against at least two actual reads from other sources.	Cleared

Subject	Section	Clause	Non-compliance	Status
Electronic readings	9.6	17(4)(f) of schedule 15.2	**GENE and GEOL** AMI events for ARC are not all being reviewed and actioned for GENE and GEOL.	Cleared
HHR aggregates	11.4	15.8	**GENE** HHR aggregates files do not contain electricity supplied information. Initial aggregates submissions for October 2017 did not contain the correct daily aggregation factors for each day for ICPs with aggregation factor changes during the audit period. Some revision submissions did not adjust for changes to ICP status since the previous revision. **GENH** HHR aggregates files do not contain electricity supplied information. Some HHR aggregates submissions were not zeroed.	Still existing Cleared Cleared Still existing Cleared
Submission accuracy	12.7	15.12	**GENE** Solar generation is reported with the EG1 profile, when it should be reported with PV1. Consumption while an ICP is inactive is not always included in reconciliation submissions. **GEOL** Solar generation is reported with the EG1 profile, when it should be reported with PV1. Consumption while an ICP is inactive is not always included in reconciliation submissions. Incorrect submissions for four ICPs with unmetered load, and two removed meters.	Still existing Still existing Still existing Still existing Cleared

Subject	Section	Clause	Non-compliance	Status
Permanence of meter readings	12.8	4 of Schedule 15.2	**GENE** Some estimates were not replaced with permanent estimates by revision 14. **GEOL** Some estimates were not replaced with permanent estimates by revision 14.	Still existing
Preparation of submission information	12.9	2 Schedule 15.3	**GENE** One category 3 and two category 5 ICPs with NHH submission recorded.	Still existing
Historic estimates	12.11	4 and 5 of Schedule 15.3	Historic estimate proportions are incorrect for GEOL. Total historic estimate is calculated correctly for NSP changes but is not apportioned between the NSPs using the correct historic estimate process.	Still existing
Forward estimates	12.12	6 of Schedule 15.3	**GENE** The accuracy threshold was not met for all months and revisions. **GEOL** The accuracy threshold was not met for all months and revisions.	Cleared Sill existing
HE reporting	13.4	10 of Schedule 15.3	**GENE** Historic estimate thresholds were not met for some revisions. **GEOL** Historic estimate thresholds were not met for some revisions.	Sill existing, see **section 13.3**

Subject	Section	Clause	Recommendations	Status
Provision of registry information	3.5	Clause 9 Schedule 11.1	I recommend Genesis identifies who their electrical connection agents are and that they obtain electrical connection dates directly from that party.	Implemented

Subject	Section	Clause	Recommendations	Status
Provision of registry information	3.5	Clause 9 Schedule 11.1	Remove blanket approval to accept all ICPs and require distributors to get approval from Genesis for each ICP.	Not implemented, blanket approvals remain in place
New and ready ICPs	3.10	15 Schedule 11.1	Run a monthly list from the registry of all ICPs where GENE or GEOL are the proposed trader to ensure Gentrack records align.	Not implemented
CS file content	4.3 and 4.10	5 and 11 Schedule 11.3	Monitor negative daily consumption in CS files.	Not implemented
Approved unmetered load	5.2	10.14 (2)(b)	Populate unmetered details for ICPs with consumption between 3,000 and 6,000 kWh per annum.	Not implemented
Defective metering	6.4	10.43(2) and (3)	Develop reporting for defective and bridged meter to identify trends, identify remedial actions and so the audit function can check for compliance.	Cleared, reporting was provided
NHH validation	9.5	16 Schedule 15.2	Investigate whether consumption while ICPs have inactive status is genuine. Following investigation, correct the status and re-disconnect as necessary.	Underway

2. OPERATIONAL INFRASTRUCTURE

2.1. Relevant information (Clause 10.6, 11.2, 15.2)

Code reference

Clause 10.6, 11.2, 15.2

Code related audit information

A participant must take all practicable steps to ensure that information that the participant is required to provide is:

a) complete and accurate
b) not misleading or deceptive
c) not likely to mislead or deceive.

If the participant becomes aware that in providing information under this Part, the participant has not complied with that obligation, the participant must, as soon as practicable, provide such further information as is necessary to ensure that the participant does comply.

Audit observation

The process to find and correct incorrect information was examined. The registry validation process was examined in detail in relation to the achievement of this requirement. The registry lists as at 18/06/19 were examined to identify any registry discrepancies, and to confirm that all information was correct and not misleading.

Audit commentary

Genesis has a dedicated team to manage registry discrepancies. Registry rejection notifications are managed on a daily basis. Registry discrepancy reports are run on a weekly basis to check for any discrepancies that are not captured through the registry notification process for all three codes (GENE and GEOL are run as one report and GENH is run separately).

The three list files were analysed, and the tables below show the findings:

GENE

Issue	2019 Qty	2018 Qty	2017 Qty	2016 Qty	Comments
ICPs at status (1,11) "De-energised at meter box" in the registry	6	10	8	0	See **section 3.9**.
Status of (1,12) "New connection in progress" with an initial energisation date populated	138	44	44	62	See **section 3.9**.
Active with Blank ANZSIC codes	1	-	-	-	See **section 3.6**.
Active with ANZSIC T994/994000 "Don't know"	1	4	3	768	See **section 3.6**.

Issue	2019 Qty	2018 Qty	2017 Qty	2016 Qty	Comments
Active with ANZSIC "T999" not stated	-	-	-	-	None found in this audit.
Meter category 9 or blank and active with MEP and UML "N"	67	15	23	22	See **section 3.4**.
Active ICP with no MEP	49	-	32	1	See **section 3.4**.
ICPs with Distributor unmetered load populated but retail unmetered load is blank	13	2	17	14	12 were confirmed to have no unmetered load. One ICP is missing unmetered load. See **section 3.7**.
Standard unmetered load different to distributor field	42	10	10	27	GENE had the correct load recorded for 24 of these. See **section 3.7** for detailed findings for the remaining 18 ICPs.
ICPs with unmetered load flag Y but load is recorded as zero	-	-	-	67	None found in this audit.
Shared unmetered load ICPs with no UML	4	-	-	1	See **section 5.1**.
Shared unmetered load ICPs with an unmetered load = zero	-	-	-	-	None found in this audit.
Shared unmetered load ICPs with incorrect load	-	-	5	5	None found in this audit.
Unmetered load differences between registry and Derive	-	-	-	1,226	None found in this audit.
Incorrect EG1 profiles	2	2,882	-	-	See **sections 6.1** and **12.7**.
Incorrect RPS profiles	372	-	-	-	See **section 6.1**.
Incorrect PV1 profiles	10	-	-	-	See **section 6.1**.

GEOL

Issue	2019 Qty	2018 Qty	2017 Qty	2016 Qty	Comments
Status of (1,12) "New connection in progress" with an initial energisation date populated	16	5	8	2	See **section 3.9**.

Issue	2019 Qty	2018 Qty	2017 Qty	2016 Qty	Comments
ICPs at status (1,11) "De-energised at meter box" in the Registry	-	1	-	0	None found in this audit.
Blank ANZSIC codes	-	-	-	30	None found in this audit.
ANZSIC T994/994000 "Don't know"	1	10	16	49	See **section 3.6**.
Meter category 9 or blank and active with MEP and UML "N"	4	-	-	-	See **section 3.4**.
Active ICP with no MEP	1	-	-	-	See **section 3.4**.
Standard unmetered load different to distributor field	6	-	-	-	See **section 3.7**.
ICPs with incorrect unmetered load	-	-	-	3	None found in this audit.
ICPs with Distributor unmetered load populated but retail unmetered load is blank and unmetered flag = N	1	9	-	6	See **section 3.7**.
ICPs with incorrect shared unmetered load	-	4	-	1	None found in this audit.
Incorrect RPS profiles	50	69	-	-	See **section 6.1**.

GENH:

Issue	**2019 Qty**	**2018 Qty**	**Comments**
ICPs at status (1,11) "De-energised at meter box" in the registry	-	-	None found this audit.
Status of (1,12) "New connection in progress" with an initial energisation date populated	1	-	See **section 3.9**.
Active with Blank ANZSIC codes	-	-	None found this audit.

Issue	2019 Qty	2018 Qty	Comments
Active with ANZSIC T994/994000 "Don't know"	4	-	See **section 3.6**.
Active with ANZSIC "T999" not stated	-	-	None found in this audit.
Meter category 9 or blank and active with MEP and UML "N"	4	-	See **section 3.4**.
Active ICP with no MEP	-	-	None found in this audit.
ICPs with Distributor unmetered load populated but retail unmetered load is blank	1	-	See **section 3.7**.
Standard unmetered load different to distributor field	-	-	None found in this audit.
ICPs with unmetered load flag Y but load is recorded as zero	-	-	None found in this audit.
Shared unmetered load ICPs with no UML	-	-	No shared unmetered load is supplied.
Shared unmetered load ICPs with an unmetered load = zero	-	-	No shared unmetered load is supplied.
Shared unmetered load ICPs with incorrect load	-	-	No shared unmetered load is supplied.
Generating ICPs without import/export metering or arrangements for gifting in place	2	2	See **section 6.1**.

The validation processes appear to be operating as intended. Delayed corrections are sometimes due to resourcing. I identified two validations that I recommend are added.

- There is no check for variations between the Distributor and trader unmetered load fields. This has resulted in some incorrect standard unmetered loads and some ICPs with missing or incorrectly populated shared unmetered load.
- There is no validation in place to compare the initial electrical connection date and first meter certification date. This will improve the accuracy of the first active date.

Description	Recommendation	Audited party comment	Remedial action
Regarding Clause 15.2 Validations	• Validation of distributor's unmetered load details against GENE/GEOL unmetered load details. • Validation of initial electrical connection date, first meter certification date and first active date.	Genesis needs to investigate and potentially request verification from networks prior to updating load details on the registry. All duml load information will be updated to "DUML" accordingly. Requirement for a validation of connection dates will be added to our change programme.	Investigating

Other issues recorded are as follows:

- some late status updates and trader updates; and
- some corrections not conducted.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 15.2 From: 01-Aug-18 To: 19-Jul-19	Small number of registry discrepancies. Some late status updates and trader updates. Some corrections not conducted. Potential impact: High Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because the scope of this clause is broad, and most areas have moderate or strong controls. There is a minor impact on settlement for some discrepancies. For most of the profile discrepancies there is no impact on settlement, because the profiles used to generate reconciliation submissions are recorded correctly.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has identified the cause and are considering the reintroduction of the validation reporting to capture inactive consuming.	01/11/2019	Identified

Preventative actions taken to ensure no further issue will occur	Completion date	
Genesis has introduced internal control audits which identified the status issue. The internal audit recommendations are currently being actioned.	01/11/2019	

2.2. Provision of information (Clause 15.35)

Code reference

Clause 15.35

Code related audit information

If an obligation exists to provide information in accordance with Part 15, a participant must deliver that information to the required person within the timeframe specified in the Code, or, in the absence of any such timeframe, within any timeframe notified by the Authority. Such information must be delivered in the format determined from time to time by the Authority.

Audit observation

Processes to provide information were reviewed and observed throughout the audit.

Audit commentary

This area is discussed in a number of sections in this report and compliance is confirmed.

Audit outcome

Compliant

2.3. Data transmission (Clause 20 Schedule 15.2)

Code reference

Clause 20 Schedule 15.2

Code related audit information

Transmissions and transfers of data related to metering information between reconciliation participants or their agents, for the purposes of the Code, must be carried out electronically using systems that ensure the security and integrity of the data transmitted and received.

Audit observation

I checked the process and audit trail of NHH and HHR meter reading data, AMI data, and generation data.

- AMS provides NHH AMI data and HHR data as an agent through the Data Store (DRDS).
- Wells provides NHH data as an agent via SFTP.
- Generation data is collected using Stark.

AMS acts as an agent for data transmission for GENH, and compliance was assessed as part of their agent audit.

Audit commentary

GENE and GEOL

AMI and HHR data is loaded into DRDS by AMS, which stores daily readings and interval data. Gentrack and the Market Submission Database (MSD) receive data from DRDS according to an automated schedule. Readings are transferred from Gentrack to Derive for NHH settled ICPs overnight. To confirm the process:

- I traced volumes for three HHR settled ICPs from DRDS to MSD and the HHR aggregates submissions - all volumes matched;
- I traced readings for five NHH settled ICPs from DRDS, to Gentrack and Derive - all volumes matched; and
- I traced readings for nine ICPs from DRDS to Gentrack - all readings matched.

Wells readings are loaded directly into Gentrack, and then transferred from Gentrack to Derive overnight. To confirm the process, I traced a sample of readings for five ICPs for GEOL and five ICPs for GENE from Wells' source files to Gentrack and Derive. All reads matched.

GENH

The AMS report confirms compliance.

Generation

Data is securely collected by Stark at midnight each day. A check of raw data for two stations against submission information confirmed accuracy.

Audit outcome

Compliant

2.4. Audit trails (Clause 21 Schedule 15.2)

Code reference

Clause 21 Schedule 15.2

Code related audit information

Each reconciliation participant must ensure that a complete audit trail exists for all data gathering, validation, and processing functions of the reconciliation participant.

The audit trail must include details of information:

- *provided to and received from the registry manager*
- *provided to and received from the reconciliation manager*
- *provided and received from other reconciliation participants and their agents.*

The audit trail must cover all archived data in accordance with clause 18.

The logs of communications and processing activities must form part of the audit trail, including if automated processes are in operation.

Logs must be printed and filed as hard copy or maintained as data files in a secure form, along with other archived information.

The logs must include (at a minimum) the following:

- *an activity identifier (clause 21(4)(a))*
- *the date and time of the activity (clause 21(4)(b))*
- *the operator identifier for the person who performed the activity (clause 21(4)(c)).*

Audit observation

A complete audit trail was checked for all data gathering, validation and processing functions. I reviewed audit trails for a small sample of events. Large samples were not necessary because audit trail fields are expected to be the same for every transaction of the same type.

Audit commentary

GENE and GEOL

A complete audit trail was viewed for all data gathering, validation and processing functions. The logs of these activities for GENE, GEOL, and their agents include the activity identifier, date and time and an operator identifier.

GENH

The AMS report confirms compliance.

Generation

Stark contains a compliant audit trail, and all users have individual logins.

Audit outcome

Compliant

2.5. Retailer responsibility for electricity conveyed - participant obligations (Clause 10.4)

Code reference

Clause 10.4

Code related audit information

If a participant must obtain a consumer's consent, approval, or authorisation, the participant must ensure it:

- *extends to the full term of the arrangement*
- *covers any participants who may need to rely on that consent.*

Audit observation

I reviewed the current terms and conditions.

Audit commentary

Genesis and Energy Online's terms and conditions include consent to access for authorised parties for the duration of the contract.

Audit outcome

Compliant

2.6. Retailer responsibility for electricity conveyed - access to metering installations (Clause 10.7(2),(4),(5) and (6))

Code reference

Clause 10.7(2),(4),(5) and (6)

Code related audit information

The responsible reconciliation participant must, if requested, arrange access for the metering installation to the following parties:

- *the Authority*
- *an ATH*
- *an auditor*
- *an MEP*
- *a gaining metering equipment provider.*

The trader must use its best endeavours to provide access:

- *in accordance with any agreements in place*
- *in a manner and timeframe which is appropriate in the circumstances.*

If the trader has a consumer, the trader must obtain authorisation from the customer for access to the metering installation, otherwise it must arrange access to the metering installation.

The reconciliation participant must provide any necessary facilities, codes, keys or other means to enable the party to obtain access to the metering installation by the most practicable means.

Audit observation

I reviewed the current terms and conditions and discussed compliance with these clauses.

Audit commentary

Genesis and Energy Online's terms and conditions include consent to access for authorised parties for the duration of the contract. Genesis confirmed that they have been able to arrange access for other parties when requested.

Audit outcome

Compliant

2.7. Physical location of metering installations (Clause 10.35(1)&(2))

Code reference

Clause 10.35(1)&(2)

Code related audit information

A reconciliation participant responsible for ensuring there is a category 1 metering installation or category 2 metering installation must ensure that the metering installation is located as physically close to a point of connection as practical in the circumstances.

A reconciliation participant responsible for ensuring there is a category 3 or higher metering installation must:

a) if practical in the circumstances, ensure that the metering installation is located at a point of connection; or
b) if it is not practical in the circumstances to locate the metering installation at the point of connection, calculate the quantity of electricity conveyed through the point of connection using a loss compensation process approved by the certifying ATH.

Audit observation

A discussion was held regarding knowledge of any ICPs with loss compensation present. The presence of loss compensation factors was checked.

Audit commentary

Genesis is not responsible for any metering installations with loss compensation factors.

Audit outcome

Compliant

2.8. Trader contracts to permit assignment by the Authority (Clause 11.15B)

Code reference

Clause 11.15B

Code related audit information

A trader must at all times ensure that the terms of each contract between a customer and a trader permit:

- *the Authority to assign the rights and obligations of the trader under the contract to another trader if the trader commits an event of default under paragraph (a) or (b) or (f) or (h) of clause 14.41 (clause 11.15B(1)(a)); and*
- *the terms of the assigned contract to be amended on such an assignment to—*
- *the standard terms that the recipient trader would normally have offered to the customer immediately before the event of default occurred (clause 11.15B(1)(b)(i)); or*
- *such other terms that are more advantageous to the customer than the standard terms, as the recipient trader and the Authority agree (clause 11.15B(1)(b)(ii); and*
- *the terms of the assigned contract to be amended on such an assignment to include a minimum term in respect of which the customer must pay an amount for cancelling the contract before the expiry of the minimum term (clause 11.15B(1)(c)); and*
- *the trader to provide information about the customer to the Authority and for the Authority to provide the information to another trader if required under Schedule 11.5 (clause 11.15B(1)(d)); and*
- *the trader to assign the rights and obligations of the trader to another trader (clause 11.15B(1)(e)).*

The terms specified in subclause (1) must be expressed to be for the benefit of the Authority for the purposes of the Contracts (Privacy) Act 1982, and not be able to be amended without the consent of the Authority (clause 11.15B(2)).

Audit observation

I reviewed the current terms and conditions.

Audit commentary

Genesis and Energy Online's terms and conditions contain the appropriate clauses to achieve compliance with this requirement.

Audit outcome

Compliant

2.9. Connection of an ICP (Clause 10.32)

Code reference

Clause 10.32

Code related audit information

A reconciliation participant must only request the connection of a point of connection if they:

- *accept responsibility for their obligations in Parts 10, 11 and 15 for the point of connection; and*

- *have an arrangement with an MEP to provide 1 or more metering installations for the point of connection.*

Audit observation

The new connection process was checked to confirm a retailer acceptance step is in place. I checked that arrangements were in place for the relevant MEPs.

The registry lists as at 18/06/19, and event detail reports for 01/03/19 to 19/06/19 were analysed to confirm process compliance and that controls are functioning as expected. Late updates to active for new connections are discussed in **section 3.5**.

Audit commentary

GENE and GEOL have blanket acceptance agreements in place with most networks. For those that require an acceptance of trader nomination, Genesis sends an acceptance. All ICPs at "ready" in the registry where GENE or GEOL are the nominated trader are automatically claimed using an interface tool (MULE). This raises a case for a new connection process in Salesforce, and the customer is contacted to confirm the new connection. The customer is not set up in Gentrack until they have completed their application. Once this is complete a service order is raised and issued to the MEP.

The new connection process requires an MEP to be selected, and the MEP nomination is processed when the job to complete the new connection is raised.

The registry list was reviewed to identify all active ICPs with a metering category of 9 or blank for each code. Each ICP was checked.

GENE

2,933 of the 3,000 active ICPs with a metering category of 9 or blank had trader unmetered load details recorded. The remaining 67 ICPs were active but had no metering details entered on the registry:

- 51 ICPs have had MEP nominations made, and the MEP has accepted;
- six ICPs have a meter recorded and are receiving readings in Gentrack, however the MEP is still to load the meter details to the registry;
- three ICPs have been decommissioned since the list file was provided;
- three ICPs have had metering details populated on the registry by the MEP since the list file was provided;
- two ICPs are expected to be decommissioned and GENE are following up with the network to progress these; and
- ICP 0002558750CN366 has had its status corrected to "inactive - new connection in progress".

GEOL

Six of the ten active ICPs with a metering category of 9 or blank had trader unmetered load details recorded. The remaining four ICPs were active but had no metering details entered on the registry. All were timing differences and the ICPs have now had a status change, or MEP nominations made and accepted.

GENH

The four active ICPs with a metering category of 9 did not have trader unmetered load details recorded. All have had MEP nominations made and accepted.

Audit outcome

Compliant

2.10. Temporary Electrical Connection of an ICP (Clause 10.33)

Code reference

Clause 10.33(1)

Code related audit information

A reconciliation participant may temporarily electrically connect a point of connection, or authorise a MEP to temporarily electrically connect a point of connection, only if:

- *for a point of connection to the grid – the grid owner has approved the connection*
- *for an NSP that is not a point of connection to the grid - the relevant distributor has approved the connection.*
- *for a point of connection that is an ICP, but is not as NSP:*
- *the reconciliation participant is recorded in the registry as the trader responsible for the ICP*
- *if the ICP has metered load, one or more certified metering installations are in place*
- *if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the temporary electrical connection.*

Audit observation

The new connection process was examined in detail to evaluate the strength of controls. The registry lists as at 18/06/19, and event detail reports for 01/03/19 to 19/06/19 were analysed to confirm process compliance and controls are functioning as expected.

I identified all ICPs certified prior to their active date and reviewed them to determine whether they had been temporarily electrically connected.

Audit commentary

GENE

Review of the list and event detail reports identified 19 ICPs which appeared to be certified before their electrical connection date. These were all examined and found that the first active date was incorrect, and these were not electrically connected prior to the meter certification date. They have been corrected. The accuracy of active dates is discussed in **sections 2.1** and **3.8**. No ICPs were found to be temporarily electrically connected.

GEOL

Review of the list and event detail reports identified one ICP which was certified before its electrical connection date. I found that the first active date was incorrect and this ICP was not electrically connected prior to the meter certification date and has been corrected. The accuracy of active dates is discussed in **sections 2.1** and **3.8**. No ICPs were found to be temporarily electrically connected.

GENH

Review of the list and event detail reports did not identify any ICPs which had been temporarily electrically connected.

Audit outcome

Compliant

2.11. Electrical Connection of Point of Connection (Clause 10.33A)

Code reference

Clause 10.33A(1)

Code related audit information

A reconciliation participant may electrically connect or authorise the electrical connection of a point of connection only if:

- *for a point of connection to the grid – the grid owner has approved the connection*
- *for an NSP that is not a point of connection to the grid - the relevant distributor has approved the connection.*
- *for a point of connection that is an ICP, but is not as NSP:*
- *the reconciliation participant is recorded in the registry as the trader responsible for the ICP*
- *if the ICP has metered load, one or more certified metering installations are in place*
- *if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the temporary electrical connection.*

Audit observation

The new connection and reconnection process was examined in detail to evaluate the strength of controls.

The registry lists as at 18/06/19, and event detail reports for 01/03/19 to 19/06/19 were analysed to confirm process compliance and that controls are functioning as expected.

Audit commentary

Active ICPs without metering

The registry list was reviewed to identify all active ICPs with a metering category of 9 or blank for each code. Each ICP was checked.

GENE

2,933 of the 3,000 active ICPs with a metering category of 9 or blank had trader unmetered load details recorded. The remaining 67 ICPs were active but had no metering details entered on the registry:

- 51 ICPs have had MEP nominations made, and the MEP has accepted;
- six ICPs have a meter recorded and are receiving readings in Gentrack however the MEP is still to load the meter details to the registry;
- three ICPs have been decommissioned since the list file was provided;
- three ICPs have had metering details populated on the registry by the MEP since the list file was provided;
- two ICPs are expected to be decommissioned and GENE are following up with the network to progress these; and
- ICP 0002558750CN366 has had its status corrected to “inactive - new connection in progress”.

GEOL

Six of the ten active ICPs with a metering category of 9 or blank had trader unmetered load details recorded. The remaining four ICPs were active but had no metering details entered on the registry. All were timing differences and the ICPs have now had a status change, or MEP nominations made and accepted.

GENH

The four active ICPs with a metering category of 9 did not have trader unmetered load details recorded. All have had MEP nominations made and accepted.

New Connections

The new connection process is detailed in **section 2.9**.

GENE

3,780 new connections were certified within five business days of initial electrical connection. The four ICPs that appeared to be certified late were examined and confirmed to be unmetered BTS supplies.

GEOL

All new connections were certified within five business days of their initial electrical connection date.

GENH

All new connections had certified meters on their initial electrical connection date.

Reconnections

GENE

3,611 reconnections were completed during the period reviewed. 11 ICPs were reconnected with expired full certification, and 109 ICPs were reconnected with expired interim certification. Genesis' reconnection process does not include a check for meter certification. The 120 ICPs reconnected with no certified metering are recorded as non-compliance.

GEOL

1,214 reconnections were completed during the period reviewed. Seven ICPs were reconnected with expired full certification, and 14 ICPs were reconnected with expired interim certification. As detailed for GENE above, the reconnection process does not include a check for meter certification. The 21 ICPs reconnected with no certified metering are recorded as non-compliance.

GENH

No reconnections occurred during the period reviewed.

Bridged meters

GENE

GENE provided a list of 15 meters which were bridged during the audit period**.** 14 had their certification details updated on unbridging. Non-compliance is recorded for ICP 0000014674UN2D6, which was unbridged on 14/08/18 and was not recertified until 07/11/18.

GEOL

GEOL provided a list of three meters which were bridged during the audit period, which had certification details updated upon unbridging.

GENH

No bridged meters were identified during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.11 With: Clause 10.32 From: 01-Mar-19 To: 19-Jun-19	**GENE** 120 reconnections were not certified within five business days. ICP 0000014674UN2D6 was not recertified on unbridging. **GEOL** 21 reconnections were not certified within five business days. Potential impact: Medium Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I've rated the controls as moderate because they are strong for new connections but there are no controls in place for ensuring certification occurs at the time of reconnection. Uncertified metering installations may be less accurate than certified metering installations, so there could be a minor impact on settlement. The audit risk rating is recorded as low.

Actions taken to resolve the issue	Completion date	Remedial action status
Discussions to be held with MEP's involved to understand why re-certification has not occurred and whether there is anything Genesis as the retailer can do to assist with their obligation to re-certify.	01/10/2019	Investigating
Preventative actions taken to ensure no further issue will occur	**Completion date**	
Genesis will review it's bridged and vacant/credit re-connection process to include an advice to the MEP to arrange for, and provide any information needed, to perform re-certification.		

2.12. Arrangements for line function services (Clause 11.16)

Code reference

Clause 11.16

Code related audit information

Before providing the registry manager with any information in accordance with clause 11.7(2) or clause 11.18(4), a trader must ensure that it, or its customer, has made any necessary arrangements for the provision of line function services in relation to the relevant ICP

Before providing the registry manager with any information in accordance with clause 11.7(2) or clause 11.18(4), a trader must have entered into an arrangement with an MEP for each metering installation at the ICP.

Audit observation

The process to ensure an arrangement is in place before trading commences on a network was examined and controls were checked.

Registry list files for 01/06/18 to 18/06/19 were reviewed to identify all the networks Genesis traded on during the audit period. Arrangements for line function services with these networks were discussed.

Audit commentary

Networks must be recorded in Gentrack before ICPs can be assigned to them.

Genesis demonstrated the existence of either a UoSA or other trading arrangement for all relevant networks, and did not begin trading on any new networks during the audit period.

Audit outcome

Compliant

2.13. Arrangements for metering equipment provision (Clause 10.36)

Code reference

Clause 10.36

Code related audit information

A reconciliation participant must ensure it has an arrangement with the relevant MEP prior to accepting responsibility for an installation.

Audit observation

The process to ensure an arrangement is in place with the metering equipment provider before an ICP can be created or switched in was checked.

Registry list files for 01/06/18 to 18/06/19 were reviewed to identify all MEPs for Genesis ICPs during the audit period. Arrangements for MEP services with these networks were discussed.

Audit commentary

MEPs must be recorded in Gentrack before ICPs can be assigned to them.

Genesis has an arrangement in place with all MEPs that manage metering in relation to their customer base.

Genesis began using Intellihub as an MEP during the audit period. Intellihub meters are treated as non-AMI, and will be read manually until Intellihub is able to provide AMI readings. The arrangements in place meet the requirements of clause 10.36.

The new connection process also contains a step that requires nomination of an MEP. MEP nomination rejections are monitored to ensure correction occurs if the incorrect MEP is nominated.

Audit outcome

Compliant

3. MAINTAINING REGISTRY INFORMATION

3.1. Obtaining ICP identifiers (Clause 11.3)

Code reference

Clause 11.3

Code related audit information

The following participants must, before assuming responsibility for certain points of connection on a local network or embedded network, obtain an ICP identifier for the point of connection:

- *a) a trader who has agreed to purchase electricity from an embedded generator or sell electricity to a consumer*
- *b) an embedded generator who sells electricity directly to the clearing manager*
- *c) a direct purchaser connected to a local network or an embedded network*
- *d) an embedded network owner in relation to a point of connection on an embedded network that is settled by differencing*
- *e) a network owner in relation to a shared unmetered load point of connection to the network owner's network*
- *f) a network owner in relation to a point of connection between the network owner's network and an embedded network.*

ICP identifiers must be obtained for points of connection at which any of the following occur:

- *a consumer purchases electricity from a trader 11.3(3)(a)*
- *a trader purchases electricity from an embedded generator 11.3(3)(b)*
- *a direct purchaser purchases electricity from the clearing manager 11.3(3)(c)*
- *an embedded generator sells electricity directly to the clearing manager 11.3(3)(d)*
- *a network is settled by differencing 11.3(3)(e)*
- *there is a distributor status ICP on the parent network point of connection of an embedded network or at the point of connection of shared unmetered load. 11.3(3)(f)*

Audit observation

The new connections process was examined in detail to confirm compliance with the requirement to obtain ICP identifiers for points of connection to local or embedded networks.

Audit commentary

This requirement is well understood and managed by Genesis.

Audit outcome

Compliant

3.2. Providing registry information (Clause 11.7(2))

Code reference

Clause 11.7(2)

Code related audit information

Each trader must provide information to the registry manager about each ICP at which it trades electricity in accordance with Schedule 11.1.

Audit observation

The new connection process was examined in detail. The registry lists as at 18/06/19, and event detail reports for 01/03/19 to 19/06/19 were analysed to evaluate the updating of the registry in relation to new connections. This clause links directly to **section 3.5** below. The findings for the timeliness of updates are detailed there.

The process to update the registry was reviewed for a diverse sample of 51 new connections.

Audit commentary

The new connection process is detailed in **section 2.9** above. The process in place ensures that the trader required information is populated as required by this clause.

I walked through the registry update process for a sample of 51 new connections including HHR and NHH. The accuracy and timeliness of registry updates is discussed in **section 3.5**.

Audit outcome

Compliant

3.3. Changes to registry information (Clause 10 Schedule 11.1)

Code reference

Clause 10 Schedule 11.1

Code related audit information

If information provided by a trader to the registry manager about an ICP changes, the trader must provide written notice to the registry manager of the change no later than 5 business days after the change.

Audit observation

The process to manage status changes is discussed in detail in **sections 3.8** and **3.9** below. The process to manage MEP nominations and trader updates was discussed.

In this section I have examined the event detail reports for 01/03/19 to 19/06/19, to identify all late status updates, MEP nominations, and trader updates. To determine the reasons for the late updates, I examined:

- a sample of ten (or all) late updates over 30 business days after the event date for each participant code and status type to determine the reasons for the late updates;
- 20 late MEP nominations made over 30 business days after the event date; and
- 20 late trader updates over 30 business days were checked.

Audit commentary

Reconnections

Event	Code	Year	Total ICPs	ICPs notified within 5 days	ICPs notified greater than 5 days	Average notification days	Percentage compliant
Change to active-Reconnections	GENE	2016	3,396	2,241	1,155	11.2	66%
	GENE	2017	3,678	2,235	1,443	10.7	61%

Event	Code	Year	Total ICPs	ICPs notified within 5 days	ICPs notified greater than 5 days	Average notification days	Percentage compliant
	GENE	2018	3,239	2,543	696	9.4	79%
	GENE	**2019**	**3,611**	**2,505**	**1,106**	**8**	**69%**
	GENH	2016	0	-	-	-	-
	GENH	2017	0	-	-	-	-
	GENH	2018	0	-	-	-	-
	GENH	**2019**	**0**	**-**	**-**	**-**	**-**
	GEOL	2016	551	261	290	11.8	47%
	GEOL	2017	669	194	475	21	29%
	GEOL	2018	1,346	698	648	13.2	52%
	GEOL	**2019**	**1,214**	**462**	**752**	**11**	**38%**

GENE

GENE had 216 reconnections backdated 30 business days or more in the registry. 20 of these were checked and I found:

- 12 late updates were due to the reconnection process change. Previously there was a check for the operator to ensure that as a site was reconnected the ICP status was updated. This step has been removed so the customer is billed but the status may not be updated to active. Status discrepancies are identified via the registry discrepancy process and are being updated on an ad-hoc basis, but the updates are sometimes late.
- Six were due to revenue assurance activity where consumption on disconnected ICPs had been detected.
- Two require further investigation as it appears that the ICPs (0000420125ENFCB & 0005311276RNF8F) have not been reconnected and the status is incorrect.

GEOL

GEOL had 53 reconnections backdated 30 days or more in the registry. 20 of these were checked and found:

- 17 were status corrections as they had consumption on disconnected ICPs; and
- three were status corrections identified through validation.

GENH

GENH did not complete any reconnections during the period reviewed.

Disconnections

Event	Code	Year	Total ICPs	ICPs notified within 5 days	ICPs notified greater than 5 days	Average notification days	Percentage compliant
Change to de-energised – all statuses except new connection in progress, deenergised remotely by AMI and ready for decommissioning	GENE	2016	5,340	4,838	497	6.3	91%
	GENE	2017	3,789	3,460	329	3.9	91%
	GENE	2018	817	670	147	5.8	82%
	GENE	**2019**	**1,079**	**1,006**	**73**	**2**	**93%**
	GENH	2016	0	-	-	-	-
	GENH	2017	1	0	1	8	0%
	GENH	2018	0	-	-	-	-
	GENH	**2019**	**0**	**-**	**-**	**-**	**-**
	GEOL	2016	241	223	18	3.2	92%
	GEOL	2017	330	64	266	21	29%
	GEOL	2018	190	79	111	52.2	42%
	GEOL	**2019**	**221**	**81**	**140**	**8.7**	**37%**
De-energised remotely by AMI	GENE	2018	2,047	2,025	22	1.3	99%
	GENE	**2019**	**2,670**	**2,662**	**8**	**1.1**	**99%**
	GENH	**2019**	**0**	**-**	**-**	**-**	**-**
	GEOL	2018	4	0	4	75.5	0%
	GEOL	**2019**	**1,427**	**1,127**	**300**	**1**	**79%**
Change to de-energised ready for decommissioning	GENE	2016	485	133	352		27%
	GENE	2017	180	16	164	47	9%
	GENE	2018	240	36	204	39	15%
	GENE	**2019**	**522**	**173**	**349**	**10.7**	**33%**
	GENH	2016	2	2	0	0	100%
	GENH	2017	5	2	3	21	40%
	GENH	2018	2	0	2	19.5	0%
	GENH	**2019**	**2**	**-**	**2**	**16**	**0%**

Event	Code	Year	Total ICPs	ICPs notified within 5 days	ICPs notified greater than 5 days	Average notification days	Percentage compliant
	GEOL	2016	59	30	29	35	51%
	GEOL	2017	27	11	16	81	41%
	GEOL	2018	42	9	33	126	21%
	GEOL	**2019**	**59**	**35**	**24**	**3**	**59%**

GENE

Inactive for reasons other than decommissioning: GENE achieved compliance for 99% of remote disconnections and 93% of manual disconnections. Credit disconnections now update to the registry. I checked all 11 late updates over 30 business days and found:

- four ICPs were updated late due to a fire at the property, these were updated as soon as practicable;
- five were corrections identified via the registry discrepancy reporting;
- two were late due to late paperwork;
- two were at the incorrect status:
    - ICP 0005901285WEA4A has since been decommissioned;
    - ICP 0000064336CPBD9 has had no disconnection order issued but the meter is unable to be located and further investigation is required. This is recorded as non-compliance in **section 3.9**.

Inactive ready for decommissioning: GENE's compliance has increased from 15% to 33%. There were 43 ICPs backdated to "ready for decommissioning" by 30 business days or more in the registry. A sample of ten of these were checked and it was found they related to late notification from either the network or the field contractor.

GEOL

Inactive for reasons other than decommissioning: GEOL achieved compliance for 79% of remote disconnections. The last audit review raised concerns about the volume of processing errors. In this audit there has been a further decline in the completion of manual disconnections with only 37% completed within five business days. Four manual disconnections were backdated by 30 business days or more. I checked a sample of 25 late updates and found that these were all due to a lack of resourcing in the team.

Inactive ready for decommissioning: GEOL's compliance has improved from 21% to 59%. There were two ICPs backdated to "ready for decommissioning" by 30 business days or more in the registry. The ten latest updates were checked and found:

- nine were all were late due to late notification from either the MEP or the network; and
- ICP 0000217751MP15A was held up due to a switch withdrawal.

GENH

Inactive for reasons other than decommissioning: There were no GENH ICPs disconnected for reasons other than decommissioning during the audit period.

Inactive ready for decommissioning: Both of the late updates were late due to late notification from either the MEP or the network.

Trader updates (excluding MEP nominations and NT updates)

Event		Year	Total ICPs	ICPs notified within 5 days	ICPs notified greater than 5 days	Average notification days	Percentage compliant
Trader updates (excluding MEP nominations and NT updates)	**GENE**	**2019**	**26,627**	**4,610**	**22,017**	**20.5**	**17.3%**
	GEOL	**2019**	**260**	**223**	**37**	**3**	**85.8%**
	GENH	**2019**	**61**	**29**	**32**	**2**	**47.5%**

GENE

42 trader updates were backdated by 30 business days or more, and the latest update was 71 business days after the event date. The 20 latest updates were reviewed found that:

- 17 of these were ICPs with distributed generation. Genesis have to revert all such ICPs to the RPS profile from the beginning of the month of distributed generation being added so that the RPS PV1 profile can then be added from the point that distributed generation is added. Genesis do not submit generation for these ICPs on the HHR profile. Whilst the update is not within five business days of the event there is no effect on submission.
- Two were corrections to the ANZSIC code.
- The unmetered load details were corrected for ICP 0007189912RND15.

GEOL

None of the late updates were made more than 30 business days after the event date. The ten latest updates reviewed found that:

- four were backdated switches;
- three were ANZSIC code corrections; and
- three were profile corrections to add distributed generation, the process for the submission of distributed generation is the same as described above for GENE.

GENH

Two trader updates were backdated by 30 business days or more, and the latest update was 31 business days after the event date. The ten latest updates were reviewed and found all related to backdated switches.

MEP nominations

Event		Year	Total ICPs	ICPs notified within 5 days	ICPs notified greater than 5 days	Average notification days	Percentage compliant
MEP nominations	GENE	2019	4,763	4,126	637	3	87%
	GEOL	2019	414	281	133	4.8	47%
	GENH	2019	21	16	5	7	76%

GENE

16 MEP nominations were made more than 30 business days after the event date, and the latest nomination was made 65 business days after the event date. All late nominations over 30 business days were checked and found they were delayed due to a lack of resource.

GEOL

Four MEP nominations were made more than 30 business days after the event date, and the latest nomination was made 65 business days after the event date. The ten latest nominations were checked and found they were delayed due to a lack of resource.

GENH

Four MEP nominations were made more than 30 business days after the event date, and the latest nomination was made 40 business days after the event date. All late nominations were checked and found they related to backdated switches.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.3 With: Clause 10 of schedule 11.1 From: 01-Mar-19 To: 19-Jun-19	Some status and trader updates were not processed within five business days of the event on the Registry. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls in place are robust but I have rated them as moderate as the removal of the status validation for reconnections has weakened the controls. The impact on settlement is minor because status discrepancies are identified at the time of submission where there is consumption on inactive ICPs and these are then remedied. The audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
The change in process highlighted in the audit was a introduced to provide a better overall customer experience, but it was discovered after implementation that it created a gap where in some instances the registry advice of status change was missed. An interim process was immediately put in place to capture and rectify these instances to ensure correct data is supplied to the Registry. While this ensures correct data is populated, a consequence is the timing non-compliance. The capture of these exceptions is prior to settlements reducing any risk to the market.	In place	Investigating
Preventative actions taken to ensure no further issue will occur	**Completion date**	
The altered process is being reviewed to identify the change required to capture all status changes while maintaining the customer experience improvements gained. Whatever resolution is found will then need to be placed in our change programme.	01/03/2020	

3.4. Trader responsibility for an ICP (Clause 11.18)

Code reference

Clause 11.18

Code related audit information

A trader becomes responsible for an ICP when the trader is recorded in the registry as being responsible for the ICP.

A trader ceases to be responsible for an ICP if:

- *another trader is recorded in the registry as accepting responsibility for the ICP (clause 11.18(2)(a)); or*
- *the ICP is decommissioned in accordance with clause 20 of Schedule 11.1 (clause 11.18(2)(b)).*
- *if an ICP is to be decommissioned, the trader who is responsible for the ICP must (clause 11.18(3)):*
    - *arrange for a final interrogation to take place prior to or upon meter removal (clause 11.18(3)(a)); and*
    - *advise the MEP responsible for the metering installation of the decommissioning (clause 11.18(3)(b)).*

A trader who is responsible for an ICP (excluding UML) must ensure that an MEP is recorded in the registry for that ICP (clause 11.18(4)).

A trader must not trade at an ICP (excluding UML) unless an MEP is recorded in the registry for that ICP (clause 11.18(5)).

Audit observation

Retailers Responsibility to Nominate and Record MEP in the Registry

The new connection process was discussed and the registry lists as at 18/06/19 were examined to confirm whether all active ICPs have an MEP recorded. Active ICPs which did not have an MEP or unmetered load recorded were checked.

The event detail reports for 01/03/19 to 19/06/19 were analysed to identify all rejected MEP nominations. All the rejected nominations were reviewed.

ICP Decommissioning

The process for the decommissioning of ICPs was examined. A typical sample of ten (or all) decommissioned ICPs per code were checked using the typical case method of sampling to prove the process and confirm controls are in place.

Audit commentary

Retailers Responsibility to Nominate and Record MEP in the Registry

There is a weekly list sent from AMS where they have installed metering, but the nomination has not been received. Validation is in place to check for metering records returned which are different to the proposed MEP.

GENE

2,933 of the 3,000 active ICPs with a metering category of 9 or blank had trader unmetered load details recorded. The remaining 67 ICPs were active but had no metering details entered on the registry:

- 51 ICPs have had MEP nominations made, and the MEP has accepted;
- six ICPs have a meter recorded and are receiving readings in Gentrack, however the MEP is still to load the meter details to the registry;
- three ICPs have been decommissioned since the list file was provided;
- three ICPs have had metering details populated on the registry by the MEP since the list file was provided;
- two ICPs are expected to be decommissioned, and GENE are following up with the network to progress these; and
- ICP 0002558750CN366 has had its status corrected to “inactive - new connection in progress”.

21 of the 4,763 MEP nominations made were rejected. These were examined and found that:

- five requests were issued to the incorrect MEP due to human error;
- ICP 0000009954CEE59 was rejected by the MEP as the HHR upgrade was cancelled and the ICP switched away; and
- 15 of these were due to Gentrack having an earlier MEP open nomination request. In these instances, the earlier request is reissued effectively superseding the later request. This caused the incorrect MEP to be nominated. The correct MEP nomination was reissued once the earlier request was closed. This is a known issue and these jobs are cleaned up intermittently via a mass close out.

GEOL

Six of the ten active ICPs with a metering category of 9 or blank had trader unmetered load details recorded. The remaining four ICPs were active but had no metering details entered on the registry. All were timing differences and the ICPs have now had a status change, or MEP nominations made and accepted.

All MEP nominations made during the period reviewed were accepted.

GENH

The four active ICPs with a metering category of 9 did not have trader unmetered load details recorded. All have had MEP nominations made and accepted.

All MEP nominations made during the period reviewed were accepted.

ICP Decommissioning

ICPs that are vacant and active, or inactive, are still maintained in Gentrack.

When an ICP is to be decommissioned, an attempt is made to read the meter at the time of removal and if this is not possible then the last actual meter reading is used. This last actual reading is normally the one taken at the time of de-energisation. Genesis also advises the MEP responsible that a site is to be decommissioned.

GENE

A sample of ten ICPs was examined, which confirmed an attempt to read the meter was made at the time of removal, and the MEP was notified.

GEOL

A sample of ten ICPs was examined, which confirmed an attempt to read the meter was made at the time of removal, and the MEP was notified.

GENH

A sample of ten ICPs was examined, which confirmed an attempt to read the meter was made at the time of removal, and the MEP was notified.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.4 With: Clause 11.18 From: 01-Mar-19 To: 19-Jun-19	**GENE** 20 incorrect MEP nominations. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate because there is room for improvement with regard to the identification of incorrect nominations. Settlement and billing are still occurring because Genesis has the metering details recorded. The audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
The 5 human error nominations will be reviewed to determine if anything system wise can be implemented to prevent reoccurrence. For the remaining 15, these are the result of an already known issue within Gentrack for which the current process is the most cost-effective solution. Timing of mass closure will be looked at to see if a more frequent running will add any value, but it should be remembered that at the time of the initial MEP nomination it was correct and it is only the request from another MEP for the second nomination that indicates it is no longer so.	31/10/2019	Investigating
Preventative actions taken to ensure no further issue will occur	**Completion date**	
Pending any refinements indicated above we see no further changes required.	n/a	

3.5. Provision of information to the registry manager (Clause 9 Schedule 11.1)

Code reference

Clause 9 Schedule 11.1

Code related audit information

Each trader must provide the following information to the registry manager for each ICP for which it is recorded in the registry as having responsibility:

- *a) the participant identifier of the trader, as approved by the Authority (clause 9(1)(a))*
- *b) the profile code for each profile at that ICP, as approved by the Authority (clause 9(1)(b))*
- *c) the metering equipment provider for each category 1 metering or higher (clause 9(1)(c))*
- *d) the type of submission information the trader will provide to the RM for the ICP (clause 9(1)(ea)*
- *e) if a settlement type of UNM is assigned to that ICP, either:*
  - *the code ENG if the load is profiled through an engineering profile in accordance with profile class 2.1 (clause 9(1)(f)(i)); or*
  - *in all other cases, the daily average kWh of unmetered load at the ICP (clause 9(1)(f)(ii)).*
  - *the type and capacity of any unmetered load at each ICP (clause 9(1)(g))*
  - *the status of the ICP, as defined in clauses 12 to 20 (clause 9(1)(j))*
  - *except if the ICP exists for the purposes of reconciling an embedded network or the ICP has distributor status, the trader must provide the relevant business classification code applicable to the customer (clause 9(1)(k)).*

The trader must provide information specified in (a) to (j) above within 5 business days of trading (clause 9(2)).

The trader must provide information specified in 9(1)(k) no later than 20 business days of trading (clause 9(3)).

Audit observation

The new connection process was examined in detail to evaluate the strength of controls.

The registry lists as at 18/06/19, and event detail reports for 01/03/19 to 19/06/19 were analysed to confirm process compliance and that controls are functioning as expected.

Audit commentary

In this audit the timeliness of updates to active has improved for GENE and GENH but declined for GEOL. The reasons for this are discussed below. The accuracy of the first active date is discussed in **section 3.8**.

The event detail report was analysed, and the results are recorded in the table below:

Event		Year	Total ICPs	ICPs notified within 5 days	ICPs notified greater than 5 days	Average notification days	Percentage compliant
Change to active-New connections	GENE	2016	1,520	835	685	6.2	54%
	GENE	2017	1,850	939	911	8.04	51%
	GENE	2018	1,919	1,095	824	7.8	57%
	GENE	**2019**	**3,784**	**3,187**	**597**	**4**	**84%**
	GENH	2016	5	5	0	3	100%
	GENH	2017	12	11	1	1.9	92%
	GENH	2018	7	3	4	6	43%
	GENH	**2019**	**13**	**10**	**3**	**9**	**77%**
	GEOL	2016	62	33	29	6.8	53%
	GEOL	2017	68	52	16	7.4	76%
	GEOL	2018	90	74	16	5.7	82%
	GEOL	**2019**	**91**	**54**	**37**	**8**	**59%**
Change to inactive new connection in progress	**GENE**	**2019**	**3,976**	**3,710**	**266**	**2.7**	**93%**
	GEOL	**2019**	**128**	**98**	**30**	**3**	**77%**
	GENH	**2019**	**15**	**13**	**2**	**3**	**87%**

GENE

Active status

Genesis use Salesforce to manage the new connection process. This is detailed in **section 2.9**. The last audit recommended that the first active date is provided from the livening agent and not the MEP. The paperwork viewed in this audit confirmed that the electrical connection date is derived from the livening agent. The accuracy of the electrical connection date is examined in **section 3.8**.

The percentage of on time updates has increased from 57% in 2018 to 84% in 2019. 37 updates were made 30 business days or more after the event date and the latest update was 67 business days after the

event date. I reviewed 20 late updates over 30 business days and found all were due to resource constraint in the new connections area.

Inactive new connection in progress status

There were 266 late updates to "inactive - new connection in progress" status. 125 were made on or before the date the ICP was electrically connected and are compliant. 141 updates (4% of all new connections) were made after the ICP was electrically connected. I checked a sample of the ten latest updates and found they all were due to the auto claim interface process (MULE) failing. In this instance any late new connections that occur when MULE is down will also cause the new connection in progress to be backdated as well. These ICPs are picked up through the registry discrepancy process and corrected.

GEOL

Active status

The percentage of on time updates has decreased from 82% in 2018 to 59% in 2019. This was discussed and it was evident that since the migration to Gentrack from Orion the GEOL team lack visibility of their work queues. GEOL does not use Salesforce. New connections are managed via email inboxes. I recommend in that reporting be put in place to assist the team with being able to prioritise work.

Description	Recommendation	Audited party comment	Remedial action
Regarding Clause 9 Schedule 11.1 Provision of information to the registry	Reporting be put in place to assist the team with visibility of workload for the GEOL operational team.	Internal audits on reconnection process has been completed with recommendation being actioned.	Identified

Three updates were made 30 business days or more after the event date and the latest update was 66 business days after the event date. I reviewed 20 late updates over 30 business days and found all but one was due to resource constraints that were further exacerbated by the training of new staff and the lack of reporting. One backdated update was a correction to the electrical connection date.

Inactive new connection in progress status

There were 30 late updates to inactive new connection in progress status. 22 were made on or before the date the ICP was electrically connected and are compliant. Eight updates were made after the ICP was electrically connected. As detailed in the active status section above, these were all late due to resource constraints.

GENH

Active status

11 new connections were completed during the period reviewed. Two of the connections had more than one update because corrections were required. Two were updated late, these were checked and found both were due to late paperwork.

Inactive new connection in progress status

There were two late updates to new connection in progress status. Both were updated prior to the ICP being electrically connected and are compliant.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.5 With: Clause 9 of schedule 11.1 From: 01-Mar-19 To: 19-Jun-19	Some late and incorrect status updates. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate because they are identified but resource is not sufficient to ensure ICPs are updated within the required time. The audit risk rating is low as the volume of ICPs not updated within the required time will have only a minor effect on submission.

Actions taken to resolve the issue	Completion date	Remedial action status
Reporting implemented to assist with visibility and meet timelines. Genesis settlement processes also ensure correct status prior to submissions.	In place	Investigating
Preventative actions taken to ensure no further issue will occur	**Completion date**	
New connection processes to be reviewed for GEOL to identify any cost effective systematic improvements possible.	01/04/2019	

3.6. ANZSIC codes (Clause 9 (1(k) of Schedule 11.1)

Code reference

Clause 9 (1(k) of Schedule 11.1

Code related audit information

Traders are responsible to populate the relevant ANZSIC code for all ICPs for which they are responsible.

Audit observation

The process to capture and manage ANZISC codes was examined.

The registry lists as at 18/06/19 were reviewed to check ANZSIC codes. To confirm the validity of ANZSIC codes I checked all ICPs with blank ANZSIC codes and ANZSIC codes in the T99 series.

I selected a sample of 100 active ICPs across the top ten most popular ANZSIC codes to confirm the validity of the codes applied.

Audit commentary

GENE

GENE supplies one active ICP with a blank ANZSIC code, and one ICP with a T994 series ANZSIC code. These were examined and found:

Code	ICP	ANZSIC	Status	Comments
GENE	0000491248CE79F		002	Site is active vacant
GENE	1000755156UN375	T994000	002	Site is active vacant

The ICP with no ANZSIC code is recorded as non-compliance below. The ICP recorded as T994000 "don't know" is valid as there is no customer registered.

A diverse sample of active 250 ICPs were checked to confirm the validity of ANZSIC codes, including ICPs assigned across each of the 28 codes which made up 0.1% of the population. This identified four incorrect ANZSIC codes representing a 0.01% error rate, and the exceptions have been provided to GENE.

GEOL

GENE supplied one active ICP with a T994 series ANZSIC code. This was examined and corrected to "Residential". A diverse sample of active 100 ICPs were checked to confirm the validity of ANZSIC codes, including ICPs assigned each of the 20 most frequently used codes. This found all but five ICPs had the correct ANZSIC code applied representing a 4% error rate, and the exceptions have been provided to GEOL.

GENH

GENE supplied four active ICPs with T994 series ANZSIC codes. All have been corrected. No ICPs with metering category three or higher were found to have domestic ANZSIC codes.

A diverse sample of active 80 ICPs were checked to confirm the validity of ANZSIC codes, including ICPs assigned each of the 20 most frequently used codes and found all were correctly recorded.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.6 With: Clause 9(1)(k) of schedule 11.1 From: 24-Aug-18 To: 31-Aug-19	A small number of incorrect ANZSIC codes. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong as these are checked on customer sign up and changes are managed via trader updates as required. The low error rate indicates that these are managed well. There is no impact on settlement outcomes from incorrect ANZSIC codes but there is a low impact on the Electricity Authority's reporting accuracy, therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis is comfortable with the level of controls in place for ANZSIC codes.	n/a	Identified
Preventative actions taken to ensure no further issue will occur	**Completion date**	
n/a	n/a	

3.7. Changes to unmetered load (Clause 9(1)(f) of Schedule 11.1)

Code reference

Clause 9(1)(f) of Schedule 11.1

Code related audit information

if a settlement type of UNM is assigned to that ICP, the trader must populate:

the code ENG - if the load is profiled through an engineering profile in accordance with profile class 2.1 (clause 9(1)(f)(i)); or

the daily average kWh of unmetered load at the ICP - in all other cases (clause 9(1)(f)(ii)).

Audit observation

The process to manage unmetered load was examined. The list file as at 18/06/19 was examined to identify any ICPs where:

- unmetered load is identified by the distributor, but none is recorded by Genesis; and
- Genesis' unmetered load figure does not match with the Distributor's figure (where it was possible to calculate this if the Distributor is using the recommended format) and the variance is greater than 1.0kWh per day. 1.0 kWh per day was chosen as a sample only; this does not indicate compliance is achieved if an error is found that is less than 1.0 kWh per day.

Audit commentary

All ICPs with unmetered load recorded in the trader details on the registry are recorded in Gentrack with the unmetered load. The unmetered load values are recorded in Derive via a dummy meter process. As detailed in **section 2.1**, there is no validation between the Distributors unmetered load field and the load recorded by Genesis.

GENE

Active ICPs with no metering or unmetered load recorded by GENE

2,933 of the 3,000 active ICPs with a metering category of 9 or blank have trader unmetered load details recorded. The remaining 67 ICPs are active with no metering details entered on the registry did not have unmetered load associated with them.

ICPs with unmetered load recorded by the distributor but not by GENE

13 ICPs have distributor unmetered load details and no unmetered load populated by GENE. These were checked and found:

- For 12 ICPs GENE have correctly recorded no unmetered load and the Distributor's details are incorrect.

- The Distributor has added under verandah lighting to ICP 0007433053NVFE4 in September 2018 but GENE have not added it to the ICP. This is recorded as non-compliance.

ICPs with unmetered load recorded by GENE but not the distributor

337 ICPs have unmetered load details recorded by GENE, but not the distributor. I checked a sample of 20 and found all are genuinely unmetered.

Accuracy of trader unmetered daily kWh

GENE supplies 3,407 active ICPs with unmetered load recorded, and all had a value recorded in the daily unmetered kWh field.

Four ICPs had daily unmetered load of zero populated; all were DUML ICPs.

For 2,063 ICPs, the distributor had populated the unmetered load details in a format that allowed recalculation of the unmetered load based on their data, and the ICP was not DUML. I recalculated the unmetered load for each of these ICPs and found that for 2,015 of them, the calculation was within ± 1 kWh of the trader unmetered daily kWh. The other 42 ICPs were checked and found:

- GENE has the correct value recorded for 24 ICPs;
- ten ICPs had the unmetered load calculated incorrectly and these were corrected during the site audit; and
- eight ICPs are to be investigated as it is unclear which load is correct.

GEOL

Active ICPs with no metering or unmetered load recorded by GEOL

Six of the ten active ICPs with a metering category of 9 or blank have trader unmetered load details recorded. The remaining four ICPs were all due to timing differences and have now had a status change or the MEP nomination has been accepted.

ICPs with unmetered load recorded by the distributor but not by GEOL

One ICP has distributor unmetered load details and no unmetered load populated by GEOL. The Distributor's unmetered load details are incomplete and GEOL confirmed there is no unmetered load present.

ICPs with unmetered load recorded by GEOL but not the distributor

Six ICPs have unmetered load details recorded by GEOL, but not the distributor. These were checked and found five have had unmetered load details incorrectly recorded by the previous trader. These have been corrected. ICP 0003185519HB2B2 is confirmed to have the correct unmetered load recorded. The ICPs with unmetered load incorrectly recorded are recorded as non-compliant below.

Accuracy of trader unmetered daily kWh

GEOL supplies 203 active ICPs with unmetered load recorded, and all had a non zero value recorded in the daily unmetered kWh field.

For 47 ICPs, the distributor had populated the unmetered load details in a format that allowed recalculation of the unmetered load based on their data. I recalculated the unmetered load for each of these ICPs and found that the calculation was within ± 1 kWh of the trader unmetered daily kWh.

GENH

Active ICPs with no metering or unmetered load recorded by GENH

Six of the ten active ICPs with a metering category of 9 or blank have trader unmetered load details recorded. The remaining four ICPs that are active and had no metering details entered on the registry have had MEP nominations made and accepted and no unmetered load is associated with these ICPs.

ICPs with unmetered load recorded by the distributor but not by GENH

ICP 0019030025HB43B has distributor unmetered load details and no unmetered load populated by GENH. Unison added unmetered streetlight details to this ICP effective from 01/04/19 to reflect lighting connected to NZTA circuits. Unmetered load should be recorded against this ICP by GENH. This is recorded as non-compliance below.

ICPs with unmetered load recorded by GENH but not the distributor

All ICPs with unmetered load recorded by GENH also have unmetered load recorded by the distributor.

Accuracy of trader unmetered daily kWh

GENH supplies two active ICPs with unmetered load recorded, and all had a value recorded in the daily unmetered kWh field. One ICP had distributor unmetered load in the expected format and I used this information to recalculate the estimated daily kWh. The recalculation matched GENH's daily kWh to two decimal places.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.7 With: Clause 9(1)(f) of Schedule 11.1 From: 01-Aug-18 To: 28-Aug-19	**GENE** Missing unmetered details for one ICP. Ten ICPs had incorrect daily unmetered kWh, and were corrected during the audit. **GEOL** Five ICPs had unmetered load recorded in error, and corrected during the audit. **GENH** Missing unmetered details for one ICP. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are generally strong in this area. The impact on settlement is minor, therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Corrections were made during the audit process.	Completed	Identified
Preventative actions taken to ensure no further issue will occur	**Completion date**	
Additional reporting has been introduced in the registry management process to validate uml.	Completed	

3.8. Management of "active" status (Clause 17 Schedule 11.1)

Code reference

Clause 17 Schedule 11.1

Code related audit information

The ICP status of "active" is be managed by the relevant trader and indicates that:

- *the associated electrical installations are electrically connected (clause 17(1)(a))*
- *the trader must provide information related to the ICP in accordance with Part 15, to the reconciliation manager for the purpose of compiling reconciliation information (clause 17(1)(b)).*

Before an ICP is given the "active" status, the trader must ensure that:

- *the ICP has only one customer, embedded generator, or direct purchaser (clause 17(2)(a))*
- *the electricity consumed is quantified by a metering installation or a method of calculation approved by the Authority (clause 17(2)(b)).*

Audit observation

The connection and reconnection processes were examined. The event detail reports for 1/03/19 to 19/06/19 were examined to identify all changes to active during the audit period.

- The timeliness and accuracy of data for new connections is assessed in **section 3.5**.
- The timeliness of data for reconnections is assessed in **section 3.3**, and a sample of 22 updates were checked for accuracy.

The list file as at 18/06/19 was analysed to identify ICPs at "new connection in progress" status with initial electrical connection dates populated. A sample of 86 ICPs were checked to determine whether they were electrically connected.

Audit commentary

GENE

<u>New connections</u>

Examination of the new connection process for this audit confirmed that the data source for the first active date is coming from the livening agent. I recommend in **section 2.1** that a validation be added to check for alignment between the initial electrical connection date, first meter certification date. This will assist with identifying potential missed new connections or incorrect first active dates.

Examination of the list file found 138 ICPs at the "Inactive new connection in progress" status with an initial electrical connection date populated. A sample of 70 ICPs were checked and found:

- 47 ICPs have since been made active as part of BAU;
- the initial electrical connection date had been populated incorrectly by the network for 17 ICPs which is a known issue with the network concerned and they have corrected this - GENE confirmed they were not electrically connected;
- four ICPs have since been decommissioned-set up in error, the distributor has incorrectly populated the initial electrical connection dates for these ICPs; and
- two were unmetered BTS supplies and no notification of electrical connection had been provided by the network, both have been updated to active since the site audit.

The active date for new connections was matched to the initial electrical connection date (where populated) and meter certification date for all 3,625 records with an active event state. 862 discrepancies were identified.

For 527 ICPs, the active date was consistent with the meter certification date and the initial electrical connection date was not populated. The other 327 discrepancies were checked:

Count	Active date matches initial electrical connection date	Active date matches meter certification date
16	IECD not populated	No
54	No	No
224	No	Yes
33	Yes	No
327		

The sample of 20 ICPs checked found:

- eight were confirmed to have matching dates for all three fields, in these instances, the analysis had picked a later meter certification date (due to the date range of the event detail report);
- the active date for six ICPs was incorrect and has been corrected - temporary staff have been used to address the resource issue and it appears that a lack of experience caused these to be populated incorrectly due to human error; and
- the first active date confirmed to be correct for the remaining six examples checked and the distributor's initial electrical connection date was incorrect.

The last audit noted that the active date was not always being determined from the electrical connection agent. I found no evidence of this occurring in this audit.

Reconnections

AMS carries out the reconnection work for Genesis. The close out process is automated providing all information expected is provided. Any that do not pass the validations are moved to a work queue and reviewed by an operator to determine what further action is required to complete these.

A sample of ten reconnections were checked and found to be processed accurately.

In **section 2.10**, I identified 19 ICPS that had an incorrect first active date recorded. I recommend in **section 2.1** that a validation between the initial electrical connection date and the first meter certification date is added to the registry discrepancy reporting to identify potential incorrect first active dates.

GEOL

New connections

16 ICPs at "inactive - new connection in progress" status had an initial electrical connection date populated. All were due to be timing differences, and all have since been updated to active as part of BAU.

The active date for new connections was matched to the initial electrical connection date (where populated) and meter certification date for all 90 records with an active event state.

For 12 ICPs, the active date was consistent with the meter certification date and the initial electrical connection date was not populated.

Count	Active date matches initial electrical connection date	Active date matches meter certification date
1	IECD not populated	No
7	No	Yes
8		

The other eight discrepancies were checked and found GEOL had the correct first active date and the distributor's initial electrical connection date was incorrect. ICP 1002059949LCFE6 was found to have been made active for the incorrect date. This has been corrected.

In **section 2.10**, I identified one ICP that had an incorrect first active date recorded. I recommend in **section 2.1** that a validation between the initial electrical connection date and the first meter certification date is added to the registry discrepancy reporting to identify potential incorrect first active dates.

Reconnections

The process for GEOL is not automated. Field work is tracked through spreadsheets and returned through team inboxes that are worked through. As indicated in **section 3.3**, there have been resource constraints and a lack of reporting means the team does not have good visibility of performance. I recommend in **section 3.5** that reporting be put in place.

GENH

Accuracy of active dates

The active date for new connections was matched to the initial electrical connection date (where populated) and meter certification date. No discrepancies were identified.

No reconnections were processed during the period for GENH.

One ICP at "inactive - new connection in progress" status had an initial electrical connection date populated. This ICP has yet to be electrically connected.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.8 With: Clause 17 of schedule 11.1 From: 01-Mar-19 To: 16-Jun-19	**GENE** 25 (6+19) incorrect first active dates. **GEOL** One incorrect first active date. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3

Audit risk rating	Rationale for audit risk rating
Low	The controls are rated as weak as there is no validation between the first active date, the initial electrical connection and the meter certification dates to identify potential incorrect active dates. The audit risk rating is low as the volume of error found for the sample checked is small.

Actions taken to resolve the issue	Completion date	Remedial action status
Requirement for validation of connection dates will be added to our change programme.	01/06/2020	Identified
Preventative actions taken to ensure no further issue will occur	**Completion date**	
As above	01/06/2020	

3.9. Management of "inactive" status (Clause 19 Schedule 11.1)

Code reference

Clause 19 Schedule 11.1

Code related audit information

The ICP status of "inactive" must be managed by the relevant trader and indicates that:

- *electricity cannot flow at that ICP (clause 19(a)); or*
- *submission information related to the ICP is not required by the reconciliation manager for the purpose of compiling reconciliation information (clause 19(b)).*

Audit observation

The disconnection process was discussed. The event detail reports for 01/03/19 to 19/06/19 were analysed to identify all disconnections during the period.

A typical sample of at least ten ICPs at each inactive status (or all ICPs if less than ten were available) were checked using the typical characteristics methodology.

The list file was examined to identify any ICPs that had been at the "Inactive - new connection in progress" for greater than 24 months. Findings on the timeliness of inactive status updates are recorded in **section 3.3**.

Audit commentary

Management of inactive status

The issue identified in the last audit where Genesis was not updating the registry for credit disconnections at the time of the disconnection has been corrected.

GENE

The process for disconnections is the same as for reconnections and is automated where possible.

37 status updates to inactive were checked and found all to be accurate with the exception of six ICPs (16%):

- four ICPs recorded as “electrically disconnected- remotely disconnected” - in these instances, the ICPs were not remotely disconnected but were incorrectly recorded as this due to the CSR not following the correct process when working through the workflow exception queue and these have been corrected; and
- two ICPs recorded as “electrically disconnected – vacant” but one has since been corrected to “decommissioned” and the other has no had no disconnection order issued but the meter is unable to be located and requires further investigation - these are also detailed in **section 3.3**.

GEOL

49 status updates to inactive were checked and found to be accurate.

GENH

Both status updates to inactive were checked and found to be accurate.

Inactive new connections in progress

GENE

130 ICPs have been at “inactive - new connection in progress” status for more than 24 months. A new report has been created to report on these ICPs but due to a lack of resources the report is not being worked. A sample of 30 ICPs were checked and found that 27 were still pending and three have since been electrically connected and updated correctly as part of BAU.

GEOL

Five ICPs have been at “inactive - new connection in progress” status for more than 24 months. All were checked and found that the connection has been confirmed as still required with the customer.

GENH

No ICPs have been at “inactive - new connection in progress” status for more than 24 months.

Monitoring of consumption on ICPs with inactive status

Consumption during periods with “inactive” status is identified, but these exceptions are not consistently investigated and resolved. This is discussed further in **sections 8.1** and **9.5** and is recorded as non-compliance below.

GENE

GENE provided a report with 260 ICPs with inactive consumption, totalling 319,875 kWh. I reviewed the 20 ICPs with the most disconnected consumption. I found that corrections to “active” status were processed for all ICPs except:

- 0005418617WEBCA (3450 kWh after 28/05/19), which is under investigation to confirm whether the consumption is genuine or caused by a misread; and
- 0100010811BC4DF (2994 kWh after 04/06/19), which switched out effective 13/07/19 before a correction was processed.

Seven of the corrections were identified and made through GENE’s normal processes, and 11 were corrected as part of the review of the audit samples.

GEOL

GEOL provided a report with 42 ICPs with inactive consumption, totalling 39,243 kWh. I reviewed the ten ICPs with the most disconnected consumption, and found corrections had been processed.

GENH

No ICPs with inactive consumption were identified.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.9 With: Clause 19 of schedule 11.1 From: 30-Jun-18 To: 30-Jun-19	**GENE** Some incorrect inactive statuses. Potential impact: Medium Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are rated as moderate because there is room for improvement with regard to the identification of incorrect statuses. Settlement is not occurring in some cases until the status is corrected, therefore the audit risk rating is medium.

Actions taken to resolve the issue	Completion date	Remedial action status
Status update timeliness has been affected by staff attrition in more recent times. The importance of attending to 'Inactive-new connection in process' report will be highlighted to management, though audit checks indicate that the time in the new connection process is valid. Genesis will be conducting internal review of the vacant consuming and inactive consuming processing to determine effectiveness. Findings from these will drive any actions required. Genesis settlement processes also ensure correct status prior to submissions.	01/12/2019	Investigating
Preventative actions taken to ensure no further issue will occur	**Completion date**	
Any changes identified above will be implemented.	01/03/2020	

3.10. ICPs at new or ready status for 24 months (Clause 15 Schedule 11.1)

Code reference

Clause 15 Schedule 11.1

Code related audit information

If an ICP has had the status of "New" or "Ready" for 24 calendar months or more, the distributor must ask the trader whether it should continue to have that status, and must decommission the ICP if the trader advises the ICP should not continue to have that status.

Audit observation

Whilst this is a Distributor's code obligation, I investigated whether any queries had been received from Distributors in relation to ICPs at the "new" or "ready" status for more than 24 months and the process in place to manage and respond to such requests.

I analysed a registry list of ICPs with "new" or "ready" status and Genesis as the proposed trader, and reviewed processes to monitor new connections.

Audit commentary

As reported in the last audit. Genesis stated that they review lists from Distributors when they are received. I repeat the last audit's recommendation that Genesis runs this list monthly and checks all records to identify ICPs created in error and genuine ICPs they don't know about.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clauses 3 and 4 Schedule 11.3 Monitoring of new and ready ICPs	Run a monthly list from the registry of all ICPs where GENE or GEOL are the proposed trader to ensure Gentrack records align.	Inclusion of new or ready status's where GENE is the proposed trader is to be included to the registry maintenance reporting. This will identify where networks have populated Genesis as proposed retailer without our involvement.	Identified

GENE

Analysis of the registry list found 22 ICPs at "ready" status for two years or more, and ten ICPs at "new" status for two years or more. These were all checked and are not in Gentrack and never have been. I checked four of these in Salesforce and found none were pending new connections.

GEOL

Analysis of the registry list found two ICPs at "ready" status for two years or more, and no ICPs at "new" status for two years or more. Both ICPs were present in the last audit analysis. They are not set up in Gentrack. ICP 0110010256ELD4C has been confirmed as no longer required and the Distributor has been advised. ICP 1099576193CN3CC is being investigated.

GENH

Analysis of the registry list did not find any ICPs at "ready" or "new" status.

Audit outcome

Compliant

4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

4.1. Inform registry of switch request for ICPs - standard switch (Clause 2 Schedule 11.3)

Code reference

Clause 2 Schedule 11.3

Code related audit information

The standard switch process applies where a trader and a customer or embedded generator enters into an arrangement in which the trader commences trading electricity with the customer or embedded generator at a non-half hour or unmetered ICP at which another trader supplies electricity, or the trader assumes responsibility for such an ICP.

If the uninvited direct sale agreement applies to an arrangement described above, the gaining trader must identify the period within which the customer or embedded generator may cancel the arrangement in accordance with section 36M of the Fair Trading Act 1986. The arrangement is deemed to come into effect on the day after the expiry of that period.

A gaining trader must advise the registry manager of a switch no later than 2 business days after the arrangement comes into effect and include in its advice to the registry manager that the switch type is TR and one or more profile codes associated with that ICP.

Audit observation

The switch gain process was examined to determine when Genesis deem all conditions to be met. A typical sample of five ICPs were checked to confirm that these were notified to the registry within two business days, and that the correct switch type was selected.

Audit commentary

Genesis' processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent as soon as all pre-conditions are met, and the withdrawal process is used if the customer changes their mind.

The transfer switch type is applied where a customer is transferring between retailers at an address. This information is collected as part of the customer application process.

GENE

Review of the event detail report found 5,124 transfer switch NTs for GENE. I matched the NTs to the meter category recorded on the registry list for 4,996 ICPs, and found all had meter category 1 or 2.

The ten NT files checked were sent within two business days of pre-conditions being cleared, and the correct switch type was selected.

GEOL

Review of the event detail report found 1,778 transfer switch NTs for GEOL. I matched the NTs to the meter category recorded on the registry list for 1,252 ICPs, and found all had meter category 1 or 2.

The ten NT files checked were sent within two business days of pre-conditions being cleared, and the correct switch type was selected.

GENH

Review of the event detail report did not identify any transfer switches for GENH.

Audit outcome

Compliant

4.2. Losing trader response to switch request and event dates - standard switch (Clauses 3 and 4 Schedule 11.3)

Code reference

Clauses 3 and 4 Schedule 11.3

Code related audit information

Within three business days after receiving notice of a switch from the registry manager, the losing trader must establish a proposed event date. The event date must be no more than 10 business days after the date of receipt of such notification, and in any 12-month period, at least 50% of the event dates must be no more than five business days after the date of notification. The losing trader must then:

- *provide acknowledgement of the switch request by (clause 3(a) of Schedule 11.3):*
- *providing the proposed event date to the registry manager and a valid switch response code (clause 3(a)(i) and (ii) of Schedule 11.3); or*
- *providing a request for withdrawal of the switch in accordance with clause 17 (clause 3(c) of Schedule 11.3).*

When establishing an event date for clause 4, the losing trader may disregard every event date established by the losing trader for an ICP for which when the losing trader received notice from the registry manager under clause 22(a) the losing trader had been responsible for less than 2 months.

Audit observation

Event detail reports for 01/03/19 to 19/06/19 were reviewed to identify AN files issued by Genesis during the audit period, and:

- a sample of three ANs per response code were reviewed to determine whether the codes had been correctly applied; and
- assess compliance with the requirement to meet the setting of event dates requirement.

The switch breach report was examined for the audit period.

Audit commentary

The AN file is automatically generated for GENE and GEOL. The AN code is assigned determined by hierarchy. Switching is manually carried out directly in the registry for GENH.

GENE

The switch breach report did not record any late AN files.

The switching process was examined in relation to GENE as the "losing trader" for a sample of NHH ICPs, and in all cases, the correct codes were used.

The event detail report was reviewed for all 4,210 transfer ANs to assess compliance with the setting of event dates requirements.

- 4,155 (98.7%) had a proposed event date within five business days of the NT receipt date.
- All had proposed event dates within ten business days of the NT receipt date.

GEOL

The switch breach report recorded three late AN files, none were genuinely late.

The switching process was examined in relation to GEOL as the "losing trader" for a sample of NHH ICPs, and in all but three cases, the correct codes were used. The three incorrect AN responses were sent as "AD" as the AMI flag was incorrectly set to "Yes" in Gentrack but the ICP was recorded as not communicating in the registry and these should have been sent as "AA".

The event detail report was reviewed for all 2,719 transfer ANs to assess compliance with the setting of event dates requirements.

- 2,669 (98.2%) had a proposed event date within five business days of the NT receipt date.
- All had proposed event dates within ten business days of the NT receipt date.

GENH

No AN files were issued for transfer switches by GENH. The switch breach report recorded one late transfer AN file. The switch was withdrawn before an was provided, and the breach was not genuine.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.2 With: Clause 3 of schedule 11.3 From: 01-Mar-19 To: 19-Jun-19	**GEOL** Three incorrect AN codes sent. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong as the hierarchy will work providing the ICP details are correct. The audit risk rating is low as the volume of errors were small and this has no direct impact on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis is comfortable with the level of control and accuracy in AN process, particularly considering the almost redundant value of AN files in the current switching process. As these breaches are immaterial we suggest the risk rating should not contribute to the total.	n/a	Identified
Preventative actions taken to ensure no further issue will occur	**Completion date**	
n/a	n/a	

4.3. Losing trader must provide final information - standard switch (Clause 5 Schedule 11.3)

Code reference

Clause 5 Schedule 11.3

Code related audit information

If the losing trader provides information to the registry manager in accordance with clause 3(a) of Schedule 11.3 with the required information, no later than five business days after the event date, the losing trader must complete the switch by:

- *providing event date to the registry manager (clause 5(a)); and*
- *provide to the gaining trader a switch event meter reading as at the event date, for each meter or data storage device that is recorded in the registry with accumulator of C and a settlement indicator of Y (clause 5(b)); and*
- *if a switch event meter reading is not a validated reading, provide the date of the last meter reading (clause 5(c)).*

Audit observation

Event detail reports for 01/03/19 to 19/06/19 were reviewed to identify CS files issued by Genesis during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of ten files per code. The content checked included:

- correct identification of meter readings and correct date of last meter reading;
- accuracy of meter readings; and
- accuracy of average daily consumption.

CS files with an average daily kWh that was negative, zero, or over 200 kWh were identified. A sample of 20 of these CS files were checked to determine whether the average daily consumption was correct.

The process to manage the sending of the CS file within five business days was examined, and the switch breach history report for the audit period was reviewed to identify late CS files.

Audit commentary

The registry functional specification requires estimated daily kWh to be based on the average daily consumption for the last read to read period. Genesis calculates the average daily consumption from from the last billed actual to the switch read when switch read is an actual, and from the last billed actual to actual when the switch read is an estimate. This is not based on the average daily consumption from the two most recent reads. Genesis' current process is likely to produce a more accurate indication of the average daily consumption especially where the read to read period may be for a day, but as it does not meet the code's requirements the current methodology is recorded as non-compliant.

GENE

Analysis of the estimated daily kWh on the event detail report identified:

Count of transfer CS files	Estimated daily kWh
Negative	-
Zero	7
More than 200 kWh	5

A sample of ten of these ICPs were checked (five with zero and all five with more than 200 kWh). I found that all were calculated correctly.

The accuracy of the content of CS files was confirmed by checking the sample. This found five CS file content errors:

- two instances where the read sent was incorrectly labelled as an actual but was not for the switch event date and these should have been sent as estimates (ICPs 0000162706UN51F & 1001245014UNBDA);
- two instances where the last available read was not sent and the last billed read were sent instead (ICPs 0001920400PC0E8 & 0001521090PC060) however both were correctly labelled as estimates; and
- one instance where the switch event meter read sent is for the midnight read for event date rather than the midnight read of the day before the event date - this is a known issue which occurs when the customer finals their account with Genesis as well as signing up with the new retailer and the date supplied by the customer for their final bill is the date they are going to the new retailer. (ICP 0039607000WR3C4).

The switch breach history report recorded 51 late transfer CS files. 46 were not genuine and the other five files were checked and occurred at the time the GEOL ICPs were being moved to Gentrack, due to increased workloads. There have been no late files since this time.

GEOL

Analysis of the estimated daily kWh on the event detail report identified:

Count of transfer CS files	Estimated daily kWh
Negative	-
Zero	19
More than 200 kWh	7

A sample of 12 of these ICPs were checked (five with zero and all with more than 200 kWh). I found that:

- the seven ICPs sent with an average daily consumption greater than 200 kWh were checked and found all to be correct; and
- the five ICPs sent with an average daily consumption of zero were all confirmed to be correct.

The accuracy of the content of CS files was confirmed by checking the sample. This found seven CS file content errors:

- five instances where the read sent was incorrectly labelled as an actual but was not for the switch event date and these should have been sent as estimates (ICPs 0000732135TE07C, 0000519817HBA11, 1001277393LC821, 0001544111CN32A & 1000575293PC9A5); and
- two instances where the last actual read date is recorded incorrectly (ICPs 1001299314UNF08 & 0001030080WM82D).

The switch breach history report recorded 22 late transfer CS files. 16 were not genuine and the other six files were checked and all occurred at the time the GEOL ICPs were being moved to Gentrack. There have been no late files since this time.

GENH

Two transfer switch CS files were sent. Both were checked and confirmed the content was correct.

The switch breach history report recorded one late transfer CS file. It was not a genuine breach, because the switch was withdrawn before it was completed.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.3 With: Clause 5 of schedule 11.3 From: 01-Jul-18 To: 19-Jun-19	The average daily consumption calculation is not calculated from the last read period. **GENE** Two of ten ICPs checked with incorrect last read labelled as actual but should have been sent as estimates. Two ICPs with last actual read not sent. One ICP sent with midnight read of the event date sent instead of the midnight read of the last day of supply. **GEOL** Five of ten ICPs checked with incorrect last read labelled as actual but should have been sent as estimates. Two ICPs with the incorrect last actual read date recorded. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as weak as the volume of errors found in the ICPs sample was high indicating that there are system issues that require investigation and correction. The audit risk rating is low as the incorrect reads are addressed via the RR process initiated by the gaining trader in most instances.

Actions taken to resolve the issue	Completion date	Remedial action status
Average daily consumption: This discrepancy has arisen from the functional spec being written at a time when the last read period generally aligned with the last invoiced period. In today's environment where reads may be gathered multiple times a month (i.e. for Genesis this is daily) but not necessarily billed the last read period is now likely to be one day. Our logic means a an average calculated over more than a single day and we feel no need to adjust this. We suggest risk rating should be adjusted to reflect the short coming of the functional spec. Customer force finals for switch event date: an education programme for staff in contact centre to reinforce that when they receive a request from a customer to close an account and a switch is already ready in progress, then no further action is required. Mis-labelling of reads / last actual read: Further investigation required to determine if errors are in fact systematic and parameters need to be altered, or whether they are human errors introduced in actioning exceptions from our automated process.	01/10/2019	Investigating

Preventative actions taken to ensure no further issue will occur	Completion date	
Any system or training issues identified from the above investigation	01/01/2020	

4.4. Retailers must use same reading - standard switch (Clause 6(1) and 6A Schedule 11.3)

Code reference

Clause 6(1) and 6A Schedule 11.3

Code related audit information

The losing trader and the gaining trader must both use the same switch event meter reading as determined by the following procedure:

- *if the switch event meter reading provided by the losing trader differs by less than 200 kWh from a value established by the gaining trader, the gaining trader must use the losing trader's validated meter reading or permanent estimate (clause 6(a)); or*
- *the gaining trader may dispute the switch meter reading if the validated meter reading or permanent estimate provided by the losing trader differs by 200 kWh or more. (clause 6(b)).*

If the gaining trader disputes a switch meter reading because the switch event meter reading provided by the losing trader differs by 200 kWh or more, the gaining trader must, within four calendar months of the registry manager giving the gaining trader written notice of having received information about the switch completion, provide to the losing trader a changed switch event meter reading supported by two validated meter readings.

- *the losing trader can choose not to accept the reading however must advise the gaining trader no later than five business days after receiving the switch event meter reading from the gaining trader (clause 6A(a)); or*
- *if the losing trader notifies its acceptance or does not provide any response, the losing trader must use the switch event meter reading supplied by the gaining trader (clause 6A(b)).*

Audit observation

The process for the management of read change requests was examined.

The event detail reports for 01/03/19 to 19/06/19 were analysed to identify all read change requests and acknowledgements during the audit period. Ten RR files issued by Genesis, and ten AC files issued by Genesis were checked (including all acceptances and five rejections).

I also checked a sample of five estimated CS files provided by other traders where no RR was issued to determine whether the correct readings were recorded in Gentrack.

The switch breach report was reviewed to identify late RR and AC files.

Audit commentary

When a high or low read is identified through the read validation process for a new switch in, the ICP is investigated to determine whether a read change is required.

GENE

GENE issued 19 RR files for transfer switches. 15 were accepted and four were rejected. A sample of six accepted and all rejected RRs were checked. There was a genuine reason for GENE's RRs, they were supported by at least two validated readings, and the reads recorded in Gentrack reflected the outcome of the RR process.

GENE issued two AC files for transfer switches. One was accepted, and one was rejected. Both were correct.

Review of five transfer CS files with estimated reads where no RR was issued confirmed that the correct readings were recorded in Gentrack.

The switch breach report recorded 27 late transfer RR files, and no late AC files. I reviewed the ten latest RR files and found all were late due to the time required to get two actual reads.

GEOL

GEOL issued eight RR files for transfer switches. Seven were accepted and one was rejected. All eight were checked, and there was a genuine reason for GEOL's RRs, they were supported by at least two validated readings, and the reads recorded in Gentrack reflected the outcome of the RR process.

GEOL issued 48 AC files for transfer switches. 26 were accepted and 22 were rejected. A sample of five AC rejections and five acceptances were checked. All were rejected for valid reasons and Gentrack reflected the correct outcome of the RR process.

Review of five transfer CS files with estimated reads where no RR was issued confirmed that the correct readings were recorded in Gentrack.

The switch breach report recorded five late transfer RR files, and two late AC files. and all occurred at the time the GEOL ICPs were being moved to Gentrack. There have been no late files since this time.

GENH

Review of five transfer CS files with estimated reads where no RR was issued confirmed that the correct readings were recorded in Gentrack.

No RR or AC files were recorded on the event detail report for the period reviewed. The switch breach report did not record any late RR or AC files for transfer switches.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.4 With: Clause 6(1) and 6A Schedule 11.3 From: 01-Aug-18 To: 19-Jun-19	**GENE** 27 late RR files. **GEOL** 5 late RR files. 2 late AC files. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1

Audit risk rating	Rationale for audit risk rating
Low	The controls are strong because the process is sound and potentially incorrect readings are investigated as soon as possible. There is a minor impact on other traders and customers because rebilling has to occur. The audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis sees no reason to alter the current RR process. Current industry practice is such that initial provision of a revised read occurs by email within the 4-month time frame and revised reads are agreed before creation of the RR files. At times this process may mean the RR files are not created within the 4-month window and as such will be identified by the switch breach report as 'late' when the dispute process did occur within code timeframes. As these breaches are immaterial we suggest the risk rating should not contribute to the total.	n/a	Identified
Preventative actions taken to ensure no further issue will occur	**Completion date**	
n/a	n/a	

4.5. Non-half hour switch event meter reading - standard switch (Clause 6(2) and (3) Schedule 11.3)

Code reference

Clause 6(2) and (3) Schedule 11.3

Code related audit information

If the losing trader trades electricity from a non-half hour meter, with a switch event meter reading that is not from an AMI certified meter flagged Y in the registry: and

- *the gaining trader will trade electricity from a meter with a half hour submission type in the registry (clause 6(2)(b);*
- *the gaining trader within five business days after receiving final information from the registry manager, may provide the losing trader with a switch event meter reading from that meter. The losing trader must use that switch event meter reading.*

Audit observation

The event detail reports for 01/03/19 to 19/06/19 were reviewed to identify all read change requests and acknowledgements where clause 6(2) and (3) of schedule 11.3 applied.

Audit commentary

These RR requests are processed in the same way as those received for greater than 200 kWh. Each request is evaluated and validated against the ICP information. If the request is within validation requirements these are accepted.

GENE

GENE did not issue any read change requests where clause 6(2) and (3) of schedule 11.3 applied.

I identified two RR files for transfer switches issued to GENE within five business days of CS completion where the NT specified a HHR profile. One was accepted and one was rejected. The rejection was made because the switch was withdrawn instead. The ICP switched on actual CS event readings so clause 6(2) and (3) of schedule 11.3 did not apply.

GEOL

GEOL did not issue any read change requests where clause 6(2) and (3) of schedule 11.3 applied.

I identified 30 RR files for transfer switches issued to GEOL within five business days of CS completion where the NT specified a HHR profile. 13 were accepted and 17 were rejected. The 17 rejected files all switched on actual CS event readings and were validly rejected because clause 6(2) and (3) of schedule 11.3 did not apply.

GENH

No RR or AC files were recorded on the event detail report for the period reviewed.

Audit outcome

Compliant

4.6. Disputes - standard switch (Clause 7 Schedule 11.3)

Code reference

Clause 7 Schedule 11.3

Code related audit information

A losing trader or gaining trader may give written notice to the other that it disputes a switch event meter reading provided under clauses 1 to 6. Such a dispute must be resolved in accordance with clause 15.29 (with all necessary amendments).

Audit observation

I asked Genesis whether any disputes have needed to be resolved in accordance with this clause.

Audit commentary

Genesis confirms that no disputes have needed to be resolved in accordance with this clause. Genesis understands the requirements of this clause.

Audit outcome

Compliant

4.7. Gaining trader informs registry of switch request - switch move (Clause 9 Schedule 11.3)

Code reference

Clause 9 Schedule 11.3

Code related audit information

The switch move process applies where a gaining trader has an arrangement with a customer or embedded generator to trade electricity at an ICP using non half-hour metering or an unmetered ICP, or to assume responsibility for such an ICP, and no other trader has an agreement to trade electricity at that ICP, this is referred to as a switch move and the following provisions apply:

If the "uninvited direct sale agreement" applies, the gaining trader must identify the period within which the customer or embedded generator may cancel the arrangement in accordance with section 36M of the Fair Trading Act 1986. The arrangement is deemed to come into effect on the day after the expiry of that period.

In the event of a switch move, the gaining trader must advise the registry manager of a switch and the proposed event date no later than two business days after the arrangement comes into effect.

In its advice to the registry manager the gaining trader must include:

- *a proposed event date (clause 9(2)(a)); and*
- *that the switch type is "MI" (clause 9(2)(b); and*
- *one or more profile codes of a profile at the ICP (clause 9(2)(c)).*

Audit observation

The switch gain process was examined to determine when Genesis deem all conditions to be met. A typical sample of ICPs were checked to confirm that these were notified to the registry within two business days, and that the correct switch type was selected.

Audit commentary

Genesis' processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent as soon as all pre-conditions are met, and the withdrawal process is used if the customer changes their mind.

Switch move is applied where a new customer is moving into an address. This information is collected as part of the customer application process.

GENE

Review of the event detail report found 12,945 switch move NTs for GENE. I matched the NTs to the meter category recorded on the registry list for 11,829 ICPs, and found all had meter category 1 or 2.

The ten NT files checked were sent within two business days of pre-conditions being cleared, and the correct switch type was selected.

GEOL

Review of the event detail report found 8,286 switch move NTs for GEOL. I matched the NTs to the meter category recorded on the registry list for 6,929 ICPs, and found all had meter category 1 or 2.

The ten NT files checked were sent within two business days of pre-conditions being cleared, and the correct switch type was selected.

GENH

Review of the event detail report found 78 switch move NTs for GENH. All had meter category 1 or 2.

The five NT files checked were sent within two business days of pre-conditions being cleared. All of the switches were transfers but as these are contracted customers the move switch process was used to ensure that these ICPs can be gained for the correct date. This is recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.7 With: Clause 9 of Schedule 11.3 From: 01-Mar-19 To: 09-Apr-19	**GENH** Incorrect switch type used for 5 category 2 ICPs. Potential impact: None Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong as the controls to determine the correct switch type are robust. The MI switch type is used so that Genesis gains the customer for the correct contract start date. The audit risk rating is low as this has no impact on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis see no need to change this process as it is accepted industry process to realise customer requirements. As such we suggest the risk rating should not contribute to the total.	n/a	Identified
Preventative actions taken to ensure no further issue will occur	**Completion date**	
n/a	n/a	

4.8. Losing trader provides information - switch move (Clause 10(1) Schedule 11.3)

Code reference

Clause 10(1) Schedule 11.3

Code related audit information

10(1) Within five business days after receiving notice of a switch move request from the registry manager—

- *10(1)(a) If the losing trader accepts the event date proposed by the gaining trader, the losing trader must complete the switch by providing to the registry manager:*
  - *confirmation of the switch event date; and*
  - *a valid switch response code; and*
  - *final information as required under clause 11; or*
- *10(1)(b) If the losing trader does not accept the event date proposed by the gaining trader, the losing trader must acknowledge the switch request to the registry manager and determine a different event date that—*
  - *is not earlier than the gaining trader's proposed event date, and*
  - *is no later than 10 business days after the date the losing trader receives notice; or*
- *10(1)(c) request that the switch be withdrawn in accordance with clause 17.*

Audit observation

Event detail reports for 01/03/19 to 19/06/19 were reviewed to identify AN files issued by Genesis during the audit period, and:

- a sample of three ANs per response code were reviewed to determine whether the codes had been correctly applied; and
- assess compliance with the requirement to meet the setting of event dates requirement.

The process to manage the sending of the CS file within five business days was examined.

The switch breach report was examined for the audit period to identify any late AN and CS files.

Audit commentary

GENE

The switching process was examined in relation to GENE as the "losing trader" for a sample of NHH ICPs, and in all but two cases, the correct codes were used. ICP 1000543641PCC8F should have been sent as response code "AD" but as the AMI flag was incorrectly set to no in Gentrack it was sent as "AA". ICP 1002040661LCBE9 was sent as "OC" (occupied premise) but the account was vacant with and this should have been sent as "AA".

The event detail report was reviewed for all 861 switch move ANs to assess compliance with the setting of event dates requirements.

- 856 (99.4%) had proposed event dates within ten business days of the NT receipt date. Five ICPs had event dates more than ten business days after the NT receipt date, which matched the gaining trader's requested transfer date.
- No ANs has a proposed event date before the gaining trader's requested date.

The switch breach history report recorded two late AN files and 5,302 late switch move CS files. None were found to be genuinely late.

GEOL

The switching process was examined in relation to GEOL as the "losing trader" for a sample of NHH ICPs, and in all but four cases, the correct codes were used. The incorrect codes findings are recorded below:

- three AN files were sent as "MU" (unmetered supply) - all were metered ICPs but the metering was not loaded at the time of the AN file being sent; and
- ICP 0006604217ML38F was sent as "OC" (occupied premise) but the account was vacant with and this should have been sent as "AA".

The event detail report was reviewed for all 6,212 switch move ANs to assess compliance with the setting of event dates requirements.

- 6,209 (99.95%) had proposed event dates within ten business days of the NT receipt date. Three ICPs had event dates more than ten business days after the NT receipt date, which matched the gaining trader's requested transfer date.
- No ANs had a proposed event date before the gaining trader's requested date.

The switch breach report did not record any late AN or CS files.

GENH

The switching process was examined in relation to GEOL as the "losing trader" for a sample of NHH ICPs, and in all cases, the correct codes were used.

The event detail report was reviewed for all nine switch move ANs to assess compliance with the setting of event dates requirements.

- All had proposed event dates within ten business days of the NT receipt date.
- No ANs has a proposed event date before the gaining trader's requested date.

The switch breach report recorded 19 late AN files and 32 late CS files. These were examined and found:

- 18 of the AN files were not genuinely late, the one AN file was late due to human error; and
- 30 of the CS files were not genuinely late, the two late CS files were late due to human error.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.8 With: Clause 10(1) of schedule 11.3 From: 01-Mar-19 To: 19-Jun-19	**GENE** Incorrect AN response codes sent. **GEOL** Incorrect AN response codes sent. **GENH** One late AN file sent. Two late CS files sent. Potential impact: None Actual impact: None Audit history: Twice Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong as the hierarchy will work providing the ICP details are correct. The audit risk rating is low as the volume of errors were small and this has no direct impact on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status
AN files: refer 4.2 Late CS files: Will raise issue with GENH management to reinforce importance of timely processing of switch files. As these breaches are immaterial we suggest the risk rating should not contribute to the total.	n/a	Identified
Preventative actions taken to ensure no further issue will occur	**Completion date**	
n/a	n/a	

4.9. Losing trader determines a different date - switch move (Clause 10(2) Schedule 11.3)

Code reference

Clause 10(2) Schedule 11.3

Code related audit information

If the losing trader determines a different date, then within 10 business days of receiving notice the losing trader must also complete the switch by providing to the registry manager as described in subclause (1)(a):

- *the event date proposed by the losing trader; and*
- *a valid switch response code; and*
- *final information as required under clause 1.*

Audit observation

Event detail reports for 01/03/19 to 19/06/19 were reviewed to identify AN files issued by Genesis during the audit period, and assess compliance with the requirement to meet the setting of event dates requirement.

Audit commentary

Analysis found all switch move ANs had a valid switch response code, and event dates were compliant. Switches were completed as required by this clause.

Audit outcome

Compliant

4.10. Losing trader must provide final information - switch move (Clause 11 Schedule 11.3)

Code reference

Clause 11 Schedule 11.3

Code related audit information

The losing trader must provide final information to the registry manager for the purposes of clause 10(1)(a)(ii), including—

- *the event date (clause 11(a)); and*
- *a switch event meter reading as at the event date for each meter or data storage device that is recorded in the registry with an accumulator type of C and a settlement indicator of Y (clause 11(b)); and*
- *if the switch event meter reading is not a validated meter reading, the date of the last meter reading of the meter or storage device (clause (11(c)).*

Audit observation

Event detail reports for 01/03/19 to 19/06/19 were reviewed to identify CS files issued by Genesis during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of ten files. The content checked included:

- correct identification of meter readings and correct date of last meter reading;
- accuracy of meter readings; and
- accuracy of average daily consumption.

CS files with an average daily kWh that was negative, zero, or over 200 kWh were identified. A sample of 24 of these CS files were checked to determine whether the average daily consumption was correct.

Audit commentary

The registry functional specification requires estimated daily kWh to be based on the average daily consumption for the last read period. Genesis calculates the average daily consumption from the last billed actual to the switch read when switch read is an actual, and from the last billed actual to actual when the switch read is an estimate.. This is not based on the average daily consumption from the two most recent reads. Genesis' current process is likely to produce a more accurate indication of the average daily consumption especially where the read to read period may be for a day, but as it does not meet the codes requirements the current methodology is recorded as non-compliant.

The 2018 audit recommended Genesis reports on negative consumption in CS files in case corrections are required. No CS files for the event detail period were identified for GENE but seven were identified for GEOL. These are detailed below. I repeat last audit's recommendation that these be monitored.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clauses 3 and 4 Schedule 11.3 Negative estimated daily kWh	Monitor negative daily consumption in CS files.	Genesis review the GEOL process to discover point efficiency gains in the switching process.	Investigating

GENE

Analysis of the estimated daily kWh on the event detail report identified:

Count of switch move CS files	Estimated daily kWh
Negative	-
Zero	21
More than 200 kWh	2

A sample of seven of these ICPs were checked (five with zero and the both with more than 200 kWh). I found that all were calculated correctly.

The accuracy of the content of CS files was confirmed by checking the sample. This found five CS file content errors:

- two instances where the read sent was incorrectly labelled as an actual but they were not for the switch meter read event date, these should have been sent as estimates (ICPs 0000040570WE96A & 0000044616WE296);
- two instances where the read was correctly sent as an estimate but the last read date is recorded incorrectly as the switch event date (ICPs 0000781471WEC30 & 0033870054PC81C); and
- one instance where the switch event meter read was incorrectly sent as an actual for the event date 08/03/19, but the last read was gained on the date of disconnection 14/02/19 (ICP 0444803033LCECD).

GEOL

Analysis of the estimated daily kWh on the event detail report identified:

Count of switch move CS files	Estimated daily kWh
Negative	7

Count of switch move CS files	Estimated daily kWh
Zero	671
More than 200 kWh	2

A sample of 14 of these ICPs were checked (five with zero, all with more than 200 kWh, and all with negative consumption). I found that:

- The seven ICPs sent with negative consumption were due in five instances where the loss read was lower than the gain read. In the remaining two ICPs it appears that Gentrack has not calculated the average daily consumption from two billed reads. This is being investigated. All are recorded as non-compliant below.
- The two ICPs sent with an average daily consumption greater than 200 kWh were checked and found the average daily consumption was calculated incorrectly for ICP 0000503130NR19D. This is being investigated.
- The five ICPs sent with an average daily consumption of zero were all confirmed to be correct.

The accuracy of the content of CS files was confirmed by checking the sample. This found seven CS file content errors:

- five instances where the read sent was incorrectly labelled as an actual but they were not for the switch meter read event date, these should have been sent as estimates (ICPs 0409946478LCDCC, 0005209471RN5CE, 0000378934TU8FB, 0007177579RND61 & 0000260907TU24E);
- one instance where the switch meter read was incorrectly sent as an estimate (ICPs 0003040780WM0E4); and
- one instance where the last actual read date is recorded incorrectly (ICP 0000908938TU2F5).

GENH

Analysis of the estimated daily kWh on the event detail report identified:

Count of switch move CS files	Estimated daily kWh
Negative	-
Zero	3
More than 200 kWh	-

All three files with zero estimated daily kWh were checked and found that as these are Category 2 HHR ICPs that are read half hourly the average daily consumption was not required.

33 switch move CS files were sent. The accuracy of the content of CS files was confirmed by checking a sample of 13 files and confirmed to be compliant.

Audit outcome

Compliant

Non-compliance	Description
Audit Ref: 4.10 With: Clause 11 of schedule 11.3 From: 01-Aug-18 To: 19-Jun-19	The average daily consumption calculation is not calculated from the read to read period. **GENE** Two of ten ICPs checked with incorrect last read labelled as actual but should have been sent as estimates. Two ICPs with last actual read labelled incorrectly. One ICP where the last read was sent as an actual for the switch event date. **GEOL** Eight ICPs sent with an incorrect average daily consumption (7 negative +1 >200 kWh). Five of ten ICPs checked with incorrect last read labelled as actual but should have been sent as estimates. One ICP sent with an actual read incorrectly labelled as an estimate. One ICP with the incorrect last actual read date recorded. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as weak as the volume of errors found in the ICPs sample was high indicating that there are system issues that require investigation and correction. The audit risk rating is low as the incorrect reads are addressed via the RR process initiated by the gaining trader in most instances.

Actions taken to resolve the issue	Completion date	Remedial action status
Refer 4.3	01/10/2019	Investigating
Preventative actions taken to ensure no further issue will occur	**Completion date**	
Refer 4.3	01/01/2020	

4.11. Gaining trader changes to switch meter reading - switch move (Clause 12 Schedule 11.3)

Code reference

Clause 12 Schedule 11.3

Code related audit information

The gaining trader may use the switch event meter reading supplied by the losing trader or may, at its own cost, obtain its own switch event meter reading. If the gaining trader elects to use this new switch event meter reading, the gaining trader must advise the losing trader of the switch event meter reading and the actual event date to which it refers as follows:

- *if the switch meter reading established by the gaining trader differs by less than 200 kWh from that provided by the losing trader, both traders must use the switch event meter reading provided by the gaining trader (clause 12(2)(a)); or*
- *if the switch event meter reading provided by the losing trader differs by 200 kWh or more from a value established by the gaining trader, the gaining trader may dispute the switch meter reading. In this case, the gaining trader, within four calendar months of the date the registry manager gives the gaining trader written notice of having received information about the switch completion, must provide to the losing trader a changed validated meter reading or a permanent estimate supported by two validated meter readings and the losing trader must either (clause 12(2)(b) and clause 12(3)):*
- *advise the gaining trader if it does not accept the switch event meter reading and the losing trader and the gaining trader must resolve the dispute in accordance with the disputes procedure in clause 15.29 (with all necessary amendments) (clause 12(3)(a)); or*
- *if the losing trader notifies its acceptance or does not provide any response, the losing trader must use the switch event meter reading supplied by the gaining trader (clause 12(3)(b)).*

12(2A) If the losing trader trades electricity from a non-half hour meter, with a switch event meter reading that is not from an AMI certified meter flagged Y in the registry,

- *the gaining trader will trade electricity from a meter with a half hour submission type in the registry (clause 12(2A)(b));*
- *the gaining trader no later than five business days after receiving final information from the registry manager, may provide the losing trader with a switch event meter reading from that meter. The losing trader must use that switch event meter reading (clause 12(2B)).*

Audit observation

The process for the management of read change requests was examined.

The event detail reports for 01/03/19 to 19/06/19 were analysed to identify all read change requests and acknowledgements during the audit period. Ten RR files issued by Genesis, and ten AC files issued by Genesis were checked (including all acceptances and five rejections).

I also checked a sample of five estimated CS files provided by other traders where no RR was issued to determine whether the correct readings were recorded in Gentrack.

The switch breach report was reviewed to identify late RR and AC files.

Audit commentary

GENE

GENE issued 154 RR files for switch moves. 134 were accepted and 20 were rejected. For the sample of five acceptances and five rejections checked there was a genuine reason for GENE's RRs, they were supported by at least two validated readings, and the reads recorded in Gentrack reflected the outcome of the RR process.

GENE issued three AC files for switch moves, all were rejected so that the switch out be withdrawn.

Review of five transfer CS files with estimated reads where no RR was issued confirmed that the correct readings were recorded in Gentrack.

The switch breach report recorded 91 late switch move RR files, and no late AC files. I reviewed the ten latest RR files and found all were late due to the time required to get two actual reads.

GEOL

GEOL issued 65 RR files for switch moves. 56 were accepted and 9 were rejected. For the sample of five acceptances and five rejections checked there was a genuine reason for GEOL's RRs, they were supported by at least two validated readings. In four instances I found that the actual read for the gain date was ignored and an estimated read was sent based on two later reads resulting in a minor variance. This is recorded as non-compliance.

GEOL issued 343 AC files for switch moves. 279 were accepted and 64 were rejected. A sample of five AC rejections and five acceptances were checked. All were rejected for valid reasons and Gentrack reflected the correct outcome of the RR process.

Review of five transfer CS files with estimated reads where no RR was issued confirmed that the correct readings were recorded in Gentrack.

The switch breach report recorded 36 late switch move RR files, and one late AC file. I reviewed the ten latest RR files and found all were late due to the time required to get two actual reads.

GENH

No RR or AC files were recorded on the event detail report for the period reviewed.

Review of five transfer CS files with estimated reads where no RR was issued confirmed that the correct readings were recorded in Gentrack.

The switch breach report recorded two late AC files for switch moves, and no late RR files. Both late AC files were due to human error.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.11 With: Clause 12 of schedule 11.3	**GENE** 91 late RR files **GEOL** 4 RR requested as an estimated read when the actual read for the correct event date was ignored. 36 late RR files. 1 late AC file. **GENH** 2 late AC files.
From: 01-Jul-18 To: 19-Jun-19	Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 1

Audit risk rating	Rationale for audit risk rating
Low	The controls are moderate as the controls will mitigate risk most of the time but there is still room for errors to occur. There is a minor impact on other traders and customers because rebilling has to occur. The audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Refer 4.4 other than for the 4 instances where actual read was overlooked. This will be taken up with GEOL management as appears to be a training issue.	n/a	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Refer 4.4.	n/a	

4.12. Gaining trader informs registry of switch request - gaining trader switch (Clause 14 Schedule 11.3)

Code reference

Clause 14 Schedule 11.3

Code related audit information

The gaining trader switch process applies when a trader has an arrangement with a customer or embedded generator to trade electricity at an ICP at which the losing trader trades electricity with the customer or embedded generator, and one of the following applies at the ICP:

- *the gaining trader will trade electricity through a half hour metering installation that is a category 3 or higher metering installation; or*
- *the gaining trader will trade electricity through a non-AMI half hour metering installation and the losing trader trades electricity through a non-AMI non half hour metering installation; or*
- *the gaining trader will trade electricity through a non-AMI non half hour metering installation and the losing trader trades electricity through anon-AMI half hour metering installation*

If the uninvited direct sale agreement applies to an arrangement described above, the gaining trader must identify the period within which the customer or embedded generator may cancel the arrangement in accordance with section 36M of the Fair Trading Act 1986. The arrangement is deemed to come into effect on the day after the expiry of that period.

A gaining trader must advise the registry manager of the switch and expected event date no later than three business days after the arrangement comes into effect.

14(2) The gaining trader must include in its advice to the registry manager:

a) a proposed event date; and
b) that the switch type is HH.

14(3) The proposed event date must be a date that is after the date on which the gaining trader advises the registry manager, unless clause 14(4) applies.

14(4) The proposed event date is a date before the date on which the gaining trader advised the registry manager, if:

14(4)(a) – the proposed event date is in the same month as the date on which the gaining trader advised the registry manager; or

14(4)(b) – the proposed event date is no more than 90 days before the date on which the gaining trader advises the registry manager and this date is agreed between the losing and gaining traders.

Audit observation

Event detail reports for 01/03/19 to 19/06/19 were reviewed to identify all HH NTs issued during the period. A typical sample of five ICPs were checked to confirm that these were notified to the registry within three business days, and that the correct switch type was selected.

Audit commentary

The switching process is manual. GENH manages all trader switches. No trader switches are managed by GENE or GEOL. A check of the event detail report confirmed this.

57 HH NTs were issued by GENH during the period reviewed. I matched the NTs to the meter category recorded on the registry list, and found all had meter category 3 or 4.

The five NT files checked were sent within three business days of pre-conditions being cleared, and the correct switch type was selected.

Audit outcome

Compliant

4.13. Losing trader provision of information - gaining trader switch (Clause 15 Schedule 11.3)

Code reference

Clause 15 Schedule 11.3

Code related audit information

Within three business days after the losing trader is informed about the switch by the registry manager, the losing trader must:

15(a) - provide to the registry manager a valid switch response code as approved by the Authority; or

15(b) - provide a request for withdrawal of the switch in accordance with clause 17.

Audit observation

Event detail reports for 01/03/19 to 19/06/19 were reviewed to identify all HH ANs issued during the period. All were reviewed to determine whether the codes had been correctly applied.

The switch breach report was examined for the audit period.

Audit commentary

Nine HH ANs were issued by GENH during the period reviewed. All correctly had the AA code applied.

The switch breach report recorded 28 late HH AN files, all appeared genuine. I checked the ten latest files to determine the reasons for the late updates and found this was due delays in getting responses from Account Managers to confirm that the AN could be released.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.13 With: Clause 15 of schedule 11.3 From: 01-Jul-18 To: 19-Jun-19	**GENH** 28 late AN files. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong as the team have good visibility of workflow but are reliant on other parts of the business. The audit risk rating is low as these they were only a few days late and had no impact on settlement.

Actions taken to resolve the issue	Completion date	Remedial action status
Considering the redundant nature of the AN files and the ability to withdraw switches if genuinely required, we will remove the requirement for account managers to authorise AN files.	01/10/2019	Identified
Preventative actions taken to ensure no further issue will occur	**Completion date**	
As above	n/a	

4.14. Gaining trader to advise the registry manager - gaining trader switch (Clause 16 Schedule 11.3)

Code reference

Clause 16 Schedule 11.3

Code related audit information

The gaining trader must complete the switch no later than three business days, after receiving the valid switch response code, by advising the registry manager of the event date.

If the ICP is being electrically disconnected, or if metering equipment is being removed, the gaining trader must either-

> *16(a)- give the losing trader or MEP for the ICP an opportunity to interrogate the metering installation immediately before the ICP is electrically disconnected or the metering equipment is removed; or*
>
> *16(b)- carry out an interrogation and, no later than five business days after the metering installation is electrically disconnected or removed, advise the losing trader of the results and metering component numbers for each data channel in the metering installation.*

Audit observation

The HH switching process was examined. The switch breach history report for the audit period was reviewed to identify late CS files.

Audit commentary

CS content was as expected for all HH CS files.

The switch breach report identified five late CS files. These were checked and found they were late due to processing delays.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.14 With: Clause 16 of schedule 11.3 From: 01-Jul-18 To: 19-Jun-19	**GENH** 5 late CS files. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong as the team have good visibility of workflow but are reliant on other parts of the business. The audit risk rating is low as these they were only a few days late and had no impact on settlement.

Actions taken to resolve the issue	Completion date	Remedial action status
Nonperformance will be raised with GENH management.	01/10/2019	Investigating
Preventative actions taken to ensure no further issue will occur	**Completion date**	
Introduction of switch file breach reporting as such occurs for GENE and GEOL brands to assist with process maintenance..	01/10/2019	

4.15. Withdrawal of switch requests (Clauses 17 and 18 Schedule 11.3)

Code reference

Clauses 17 and 18 Schedule 11.3

Code related audit information

A losing trader or gaining trader may request that a switch request be withdrawn at any time until the expiry of two calendar months after the event date of the switch.

If a trader requests the withdrawal of a switch, the following provisions apply:

- *for each ICP, the trader withdrawing the switch request must provide the registry manager with (clause 18(c)):*

    - *the participant identifier of the trader making the withdrawal request (clause 18(c)(i)); and*
    - *the withdrawal advisory code published by the Authority. (clause 18(c)(ii))*
- *within 5 business days after receiving notice from the registry manager of a switch, the trader receiving the withdrawal must advise the registry manager that the switch withdrawal request is accepted or rejected. A switch withdrawal request must not become effective until accepted by the trader who received the withdrawal (clause 18(d))*
- *on receipt of a rejection notice from the registry manager, in accordance with clause 18(d), a trader may re-submit the switch withdrawal request for an ICP in accordance with clause 18(c). All switch withdrawal requests must be resolved within 10 business days after the date of the initial switch withdrawal request (clause 18(e))*
- *if the trader requests that a switch request be withdrawn, and the resolution of that switch withdrawal request results in the switch proceeding, within two business days after receiving notice from the registry manager in accordance with clause 22(b), the losing trader must comply with clauses 3,5,10 and 11 (whichever is appropriate) and the gaining trader must comply with clause 16 (clause 18(f))*

Audit observation

Event detail reports for 01/03/19 to 19/06/19 were reviewed to:

- identify all switch withdrawal requests issued by Genesis and check the content of a sample of at least two (or all) ICPs from the event detail report for each withdrawal code;
- identify all switch withdrawal acknowledgements issued by Genesis, a sample of ten rejections were checked; and
- confirm timeliness of switch withdrawal requests, as this is not currently being identified in the switch breach report.

The switch breach reports were checked for any late switch withdrawal requests or acknowledgements.

Audit commentary

GENE

The content of a sample of 14 NWs was checked, including eight rejections and in all cases except one the withdrawal reasons provided by GENE were accurate. ICP 0002429030WF4E1 was incorrectly requested as a "UA" (unauthorised switch). This was due to human error as these are selected on a case by case basis.

118 (8.7%) of the 1,354 AWs issued by GENE were rejections, and 23 of the rejected files were accepted on reissue. I reviewed a sample of ten rejections by GENE, and confirmed they were rejected based the information available at the time the response was issued. One NW was rejected twice in error before being accepted.

Analysis of the event detail report found nine of the 3,373 NWs were issued more than two calendar months after the switch date. Five of these late withdrawals used the code for wrong premises, and I note that this issue often does not become apparent for an extended period after a switch completes. All late files were reviewed and in six cases, there was a complex set of circumstances leading to the delayed withdrawals. The remaining three requests were sent for the incorrect year.

The switch breach history report recorded two late NW files, one late AW file, and one late withdrawal completion.

- The late NW files were not genuine breaches.
- The genuine late AW occurred at the time GEOL ICPs were being migrated to Gentrack.
- The late switch withdrawal completion was due to GENE incorrectly rejecting the first NW and then accepted the second NW.

GEOL

The content of a sample of 14 NWs was checked, including ten rejections and in all cases that the withdrawal reasons provided by GEOL were accurate.

104 (8.8%) of the 1,184 AWs issued by GEOL were rejections, and 31 of the rejected files were accepted on reissue. I reviewed a sample of ten rejections by GEOL, and confirmed they were rejected based the information available at the time the response was issued.

Analysis of the event detail report found 14 of the 1,070 NWs were issued more than two calendar months after the switch date. Six of these late withdrawals used the code for wrong premises, and I note that this issue often does not become apparent for an extended period after a switch completes. A sample of the ten latest files were reviewed and in most cases, there was a complex set of circumstances leading to the delayed withdrawals.

The switch breach history report recorded three late NW files and two late AW files. The NW files were not genuinely late. The three late AW files were examined and found they at the time GEOL ICPs were being migrated to Gentrack.

GENH

The content of a sample of nine NWs was checked and, in all cases, that the withdrawal reasons provided by GENH were accurate.

Three (33.3%) of the nine AWs issued by GENH were rejections. I reviewed all rejections, and confirmed they were rejected based the information available at the time the response was issued.

Analysis of the event detail report found all 12 NWs were issued within the two calendar months after the switch date.

The switch breach history report recorded 48 late NW files, one late AW file, and one late withdrawal completion.

- 47 of the 48 late NW files were not genuine breaches. The one late NW file was late due to late notification from the sales team.
- The one late AW and late switch withdrawal completion files were also found to be late due to late notification from the sales team.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.15 With: Clause 17 & 18 of schedule 11.3 From: 01-Jul-18 To: 19-Jun-19	**GENE** 1 incorrect NW code issued. 9 late NW requests. 1 late AW response. 1 WC breach late completion of a switch withdrawal. **GEOL** 14 late NW requests. 3 late AW responses. **GENH** 1 late NW request. 1 late AW response. 1 WC breach late completion of a switch withdrawal. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong as these are managed on a cases by case with good controls to ensure that content is accurate and timeliness reporting is in place. There was a minor impact on settlement due to the correction of consumption information. There was also a minor impact on the customer; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Current controls provide a strong foundation and the non-compliances are immaterial. Genesis sees no reason to change existing process.	n/a	Identified
Preventative actions taken to ensure no further issue will occur	**Completion date**	
n/a	n/a	

4.16. Metering information (Clause 21 Schedule 11.3)

Code reference

Clause 21 Schedule 11.3

Code related audit information

For an interrogation or validated meter reading or permanent estimate carried out in accordance with Schedule 11.3:

> *21(a)- the trader who carries out the interrogation, switch event meter reading must ensure that the interrogation is as accurate as possible, or that the switch event meter reading is fair and reasonable.*
>
> *21(b) and (c) - the cost of every interrogation or switch event meter reading carried out in accordance with clauses 5(b) or 11(b) or (c) must be met by the losing trader. The costs in every other case must be met by the gaining trader.*

Audit observation

The meter reading process in relation to meter reads for switching purposes was examined.

Audit commentary

The reads applied in switching files were examined in **section 4.3** for standard switches, **section 4.10** for switch moves, and **sections 4.4** and **4.11** for read changes. The meter readings used in the switching process are validated meter readings or permanent estimates.

Genesis' policy regarding the management of meter reading expenses is compliant.

Audit outcome

Compliant

4.17. Switch saving protection (Clause 11.15AA to 11.15AB)

Code reference

Clause 11.15AA to 11.15AB

Code related audit information

A trader that buys electricity from the clearing manager may elect to have a switch saving protection by giving notice to the Authority in writing.

If a protected trader enters into an arrangement with a customer of another trader (the losing trader), or a trader enters into an arrangement with a customer of a protected trader, to commence trading electricity with the customer, the losing trader must not, by any means, initiate contact with the customer to attempt to persuade the customer to terminate the arrangement during the period from the receipt of the NT to the event date of the switch including by:

> *11.15AB(4)(a)- making a counter offer to the customer; or*
>
> *11.15AB(4)(b)- offering an enticement to the customer.*

Audit observation

The Electricity Registry switch save protected retailer list was examined to confirm that GENE, GEOL and GENH are not save protected retailers. Win-back processes were examined to determine whether they are compliant.

I checked the event detail reports for 01/03/19 to 19/06/19 to identify all withdrawn switches with a CX code applied prior to the switch completion date in relation to any switch save protected retailers.

Audit commentary

Genesis confirmed that they contact customers who are switching out to confirm that the switch request is valid, but do not offer enticements for the customer to remain with Genesis.

GENE

Review of the event detail report identified one switch withdrawal with a CX code was sent prior to switch completion. The file was issued to a retailer who was not switch saves protected.

Two alleged breaches were recorded during the audit period, which occurred outside the event detail report period:

Ref	Breach Description	Clause	Date	Outcome
1810GENE1	It was alleged that on or before 24 September 2018 Genesis approached the customer at ICP 1001155662CK926 to attempt to persuade the customer to terminate her new arrangement with Paua.	Part 11 clause 11.15AB (4)	13/02/19	Warning letter issued
1905GENE1	It was alleged that on or before 10 April 2019 Genesis approached the customer at ICP0007012583TU203 to attempt to persuade the customer to terminate her new arrangement with Future Energy New Zealand Limited trading as energyclubnz.	Part 11 clause 11.15AB (4)	27/06/19	Response for settlement terms

I requested call recordings for both of these cases. Genesis were unable to provide the call for ref 1810GENE1 but I was able to listen to the call recording for ref 1905GENE1. The agent attempted to persuade the customer to remain with Genesis. This is recorded as non-compliance below.

GEOL

Two switch withdrawals with CX codes were sent prior to switch completion. The files were issued to a retailer who was not switch saves protected.

GENH

No switches were withdrawn with a CX code prior to switch completion.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.17 With: clause 11.15AA to 11.15AB From: 13-Feb-19 To: 27-Jun-19	**GENE** Switch save protected customer attempt to persuade customer to remain with GENE. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating
Low	The controls are rated as moderate as the policy is in place, but the agent did not adhere to this and calls into question the controls in place to monitor this activity. The audit risk rating is low, this is unlikely to be a widespread issue.

Actions taken to resolve the issue	Completion date	Remedial action status
Both these instances are being handled via the breach process. Win back processes were altered at the time to remove chance of re-occurrence of the instances. To avoid any possibility of double jeopardy the risk rating in these instances should not contribute towards the total.	March and July 2019	Identified
Preventative actions taken to ensure no further issue will occur	**Completion date**	
n/a	n/a	

5. MAINTENANCE OF UNMETERED LOAD

5.1. Maintaining shared unmetered load (Clause 11.14)

Code reference

Clause 11.14

Code related audit information

The trader must adhere to the process for maintaining shared unmetered load as outlined in clause 11.14:

> *11.14(2) - The distributor must give written notice to the traders responsible for the ICPs across which the unmetered load is shared, of the ICP identifiers of the ICPs.*
>
> *11.14(3) - A trader who receives such a notification from a distributor must give written notice to the distributor if it wishes to add or omit any ICP from the ICPs across which unmetered load is to be shared.*
>
> *11.14(4) - A distributor who receives such a notification of changes from the trader under (3) must give written notice to the registry manager and each trader responsible for any of the ICPs across which the unmetered load is shared.*
>
> *11.14(5) - If a distributor becomes aware of any change to the capacity of a shared unmetered load ICP or if a shared unmetered load ICP is decommissioned, it must give written notice to all traders affected by that change as soon as practicable after that change or decommissioning.*
>
> *11.14(6) - Each trader who receives such a notification must, as soon as practicable after receiving the notification, adjust the unmetered load information for each ICP in the list for which it is responsible to ensure that the entire shared unmetered load is shared equally across each ICP.*
>
> *11.14(7) - A trader must take responsibility for shared unmetered load assigned to an ICP for which the trader becomes responsible as a result of a switch in accordance with Part 11.*
>
> *11.14(8) - A trader must not relinquish responsibility for shared unmetered load assigned to an ICP if there would then be no ICPs left across which that load could be shared.*
>
> *11.14(9) - A trader can change the status of an ICP across which the unmetered load is shared to inactive status, as referred to in clause 19 of Schedule 11.1. In that case, the trader is not required to give written notice to the distributor of the change. The amount of electricity attributable to that ICP becomes UFE.*

Audit observation

The process to identify and monitor unmetered load was discussed. The registry lists for 18/06/19 were reviewed to identify all shared unmetered load. I checked the accuracy of the unmetered daily kWh.

Audit commentary

GENE

268 ICPs had shared unmetered load indicated by the distributor. I conducted a manual calculation from the distributors' information and the result was within ± 1 kWh of the trader unmetered daily kWh.

GEOL

39 ICPs had shared unmetered load indicated by the distributor. I conducted a manual calculation from the distributors' information and the result was within ± 1 kWh of the trader unmetered daily kWh.

GENH

Review of the registry list confirmed that GENH does not supply any ICPs with shared unmetered load.

Audit outcome

Compliant

5.2. Unmetered threshold (Clause 10.14 (2)(b))

Code reference

Clause 10.14 (2)(b)

Code related audit information

The reconciliation participant must ensure that unmetered load does not exceed 3,000 kWh per annum, or 6,000 kWh per annum if the load is predictable and of a type approved and published by the Authority.

Audit observation

The registry lists for 18/06/19 were reviewed to identify all unmetered load over 3,000 kWh per annum.

Audit commentary

GENE

GENE supplies 22 ICPs with estimated annual consumption over 6,000 kWh which are not included in the DUML audit regime. They are shown in the table below.

ICP	Annual kWh	Comment
0005000772HBA61	7643.1	Big Save Furniture employed an electrician to reduce the number of lights and replace the remaining with LED's. The electrician has to date failed to reply to emails and phone calls to provide the appropriate information for the work carried out.
0088051701WM2E0	8460.7	These lights relate to harbour lights. The site is vacant. GENE are investigating to determine whether a customer can be found for these lights or get them disconnected.
1001243372UN366	60721.4	This is a bucket ICP for Nulite signs on the North Shore. The customer has not provided a database. GENE are working with Mercury who also has lights with this customer to resolve these.
0000455891UN0A2	39091.5	This is a bucket ICP for Nulite signs on West Auckland. The customer has not provided a database. GENE are working with Mercury who also has lights with this customer to resolve these.
0900088511PC7FA	115405.7	GENE have been advised that the NZTA has employed a streetlighting contractor to assist in identifying all NZTA Manawatu lighting assets. Genesis has made direct contact with the head office of NZTA to speak with the persons who manage these streetlighting assets, but to no avail. Genesis continue to work on getting asset information pertain to the Rural State Highway's. The Urban State Highway lighting seems to be under CTCT ownership.

ICP	Annual kWh	Comment
0900088512PCB3A	13369.95	As above
0000081066CPA8F	9745.5	As above
0089342001PCB9C	6570	As above
1001101874UN586	30660	ICP belongs to NZTA and will be audited as part of the NZTA - Ref 60035210 account assets
0000011095WE94E	146091.3	NZTA Waikato. GENE have requested Veritek to undertake an audit of the data available. A field audit is being arranged.
0000022579WE623	704815	As above
0000026694WE641	31481.25	As above
0000036247WE323	429167	As above
0000036254WE54E	220825	As above
0000557929UNE2C	94695.6	As above
0000557951UN965	13888.25	As above
0000562185UN32C	35594.8	As above
0000562362UNE5B	12282.25	As above
0001425637UN339	269450.3	As above
0001425638UNCE7	9599.5	As above
0000562361UN29B	25316.4	Genesis have requested the information from the distributor who has populated the distributor unmetered load field, to ascertain what the populated load is, to be able to establish its validity.
0000179860TR9B6	16545.45	Wellington International Airport Limited. Genesis account manager is currently in the process of enquiries. Genesis and the customer need to ascertain whether these lights still exist and or whether they have already been upgraded or not and recommend any potential solution.
1001102039UNA95	75,135	Porirua NZTA. Was previously included in the Porirua CC DUML audit but is now billed separately to NZTA and will require a separate audit.
1001102038UN6D0	2,486	Porirua NZTA. Was previously included in the Porirua CC DUML audit but is now billed separately to NZTA and will require a separate audit. Whilst the consumption is less than 3,000, there are 96 items of load where the wattage field is blank, therefore the consumption may be greater than 6,000 kWh per annum.

GENE uses the registry unmetered load figures to reconcile the loads above.

GENE supplies 45 ICPs with consumption between 3,000 and 6,000 kWh per annum. 12 of these have DUML databases and a further 20 have a predicable load type. For the remaining 13 ICPs the load type is not clear in the registry and/or the trader unmetered load details are not populated. This includes eight ICPs where the 2018 audit recommended that GENE update the registry to reflect the unmetered load details. This recommendation has not been implemented, and is repeated below.

ICP	Annual consumption	Comments
0000010993HB626	4,380	HawkesBay reg council pumps and gates
0000010994HBBEC	4,380	HawkesBay reg council pumps and gates
0000408270HBF0C	4,380	HawkesBay reg council Telemetry sites
0000562357UN4EC	3,986	PUMP STN WAITEKAURI ROAD - Cyprus gold
0000775915HB290	4,380	HawkesBay reg council Telemetry sites
0004585847HBCB6	4,380	HawkesBay reg council Telemetry sites
0008112945HB811	4,380	HawkesBay reg council Telemetry sites
0008506001HB569	4,380	HawkesBay reg council Telemetry sites
0040914837HB586	4,380	HawkesBay reg council Telemetry sites
1001117616UN1D9	4015	NZTA Wellington – believed to be Tory Street under pass lighting. GENE are confirming this.
0000562357UN4EC	3986	Pump
0001452317UN5B0	3650	Wellington International Airport billboard. GENE has no customer registered for this load and is investigating disconnecting it.
0000066557CPD2A	3577	Palmerston North Airport lights. GENE are investigating if this belongs to the main airport or a nearby private air strip.

GENE uses the registry unmetered load figures to reconcile the loads above.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 10.14 (2)(b) Population of unmetered load details	Populate unmetered details for ICPs with consumption between 3,000 and 6,000 kWh per annum.	Part of the work in progress is to verify the current UML details. Genesis make best endeavors based off network and customer information. Genesis will populate UML details once verified.	Investigating

GEOL

Review of the registry list found GEOL supplies three ICPs with unmetered load between 3,000 and 6,000 kWh per annum. All have a predicable load type.

No ICPs with unmetered load over 6,000 kWh per annum are supplied.

GENH

Review of the registry list confirmed that GENH does not supply any ICPs with unmetered load over 3,000 kWh per annum.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.2 With: Clause 10.14 (2)(b) From: 01-Aug-18 To: 19-Jun-19	**GENE** 22 ICPs with unmetered load over 6,000 kWh per annum. Potential impact: Medium Actual impact: Unknown Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as weak because the issues do not appear to have been resolved over an extended period. The impact on settlement is unknown because the load has not been checked but submission is occurring. I have recorded the audit risk rating as low.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis continues to work with parties involved to investigate each ICP to verify load attached.	Ongoing	Identified
Preventative actions taken to ensure no further issue will occur	**Completion date**	
Genesis investigate each ICP and best endeavours are made to quantify load attached. Genesis has approached the distributor and in most cases no information was able to be obtained.	Ongoing	

5.3. Unmetered threshold exceeded (Clause 10.14 (5))

Code reference

Clause 10.14 (5)

Code related audit information

If the unmetered load limit is exceeded the retailer must:

- *within 20 business days, commence corrective measure to ensure it complies with Part 10*
- *within 20 business days of commencing the corrective measure, complete the corrective measures*
- *no later than 10 business days after it becomes aware of the limit having been exceeded, advise each participant who is or would be expected to be affected of:*

- *the date the limit was calculated or estimated to have been exceeded*
- *the details of the corrective measures that the retailer proposes to take or is taking to reduce the unmetered load.*

Audit observation

The registry lists for 18/06/19 were reviewed to identify all unmetered load over 6,000 kWh per annum, which is not DUML.

Audit commentary

GENE

22 ICPs with estimated unmetered consumption over 6,000 kWh per annum, which do not have a DUML database listed on the Authority's DUML audit register were identified. Remedial actions are not complete for these ICPs.

GEOL

Review of the registry list found GEOL supplies three ICPs with unmetered load between 3,000 and 6,000 kWh per annum. All have a predicable load type.

No ICPs with unmetered load over 6,000 kWh per annum are supplied.

GENH

Review of the registry list confirmed that GENH does not supply any ICPs with unmetered load over 3,000 kWh per annum.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.3 With: Clause 10.14 (5) From: 01-Aug-17 To: 31-Jul-18	**GENE** Unmetered load over 6,000 kWh per annum and not resolved within the allowable timeframes. Potential impact: Medium Actual impact: Unknown Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as weak because the issues do not appear to have been resolved over an extended period. The impact on settlement is unknown because the load has not been checked. I have recorded the audit risk rating as low.

Actions taken to resolve the issue	Completion date	Remedial action status
See 5.2. This is instance where non-conformance measured at the sub clause (and even paragraph) level is creating over counting of risk rating.	Ongoing	Identified
Preventative actions taken to ensure no further issue will occur	**Completion date**	
see 5.2	Ongoing	

5.4. Distributed unmetered load (Clause 11 Schedule 15.3, Clause 15.37B)

Code reference

Clause 11 Schedule 15.3, Clause 15.37B

Code related audit information

An up-to-date database must be maintained for each type of distributed unmetered load for which the retailer is responsible. The information in the database must be maintained in a manner that the resulting submission information meets the accuracy requirements of clause 15.2.

A separate audit is required for distributed unmetered load data bases.

The database must satisfy the requirements of Schedule 15.5 with regard to the methodology for deriving submission information.

Audit observation

Genesis is responsible for a large number of DUML databases. Most of these were all audited by Veritek during the audit period.

All DUML is supplied using the GENE participant code.

Audit commentary

Audit observation

Genesis is responsible for a large number of DUML databases. Most of these were all audited by Veritek during the audit period.

All DUML is supplied using the GENE participant code.

Audit commentary

The Electricity Authority issued a memo on 18 June, 2019 confirming that the code requirement to calculate the correct monthly load must:

- Take into account when each item of load was physically installed or removed.
- Wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

Currently Genesis use a snapshot of a DUML database taken at the end of each month to derive submission. The use of a database snapshot to derive submission is recorded as non-compliance below.

Under the new audit DUML audit regime it is no longer possible to calculate an overall submission impact for the database inaccuracies found as the factors are not cumulative. Therefore, I have included in the

table below the main submission related issues applicable for the DUML databases that Genesis is recorded as the trader for:

Database	Main issues	Potential kWh impact (per annum)
Whangarei DC	Inaccurate and out of date database- Genesis are changing the database source and the accuracy is expected to improve	Over submission of 107,300 kWh
NZTA Northland	I Inaccurate and out of date database	Under submission of 291,800 kWh
Hastings DC	Data used for submission not from RAMM database	Over submission of 44,900 kWh
Porirua CC	Inaccurate database largely due to late LED updates	Over submission of 135,400 kWh
	Missing lamp descriptions and wattages	Under submission of 297,744 kWh
Wellington CCC	Inaccurate database	Over submission of 906,800 kWh
Porirua CC	Incorrect use of profile	Over submission of 62,220 kWh

The table below shows that all but four DUML databases identified have been audited during the audit period. Genesis are actively working to resolve these.

		Compliance Achieved (Yes/No)								
Database	DUML Audit completed 16A.26 and 17.295F	Deriving submission information 11(1) of schedule 15.3	ICP identifier 11(2)(a) of schedule 15.3	Location of items of load 11(2)(b) of schedule 15.3	Description of load 11(2)(c)&(d) of schedule 15.3	All load recorded in database 11(2A) of schedule 15.3	Tracking of load changes 11(3) of schedule 15.3	Audit trail 11(4) of schedule 15.3	Database accuracy 15.2 and 15.37B(b)	Volume information accuracy 15.2 and 15.37B(c)
NZTA Wairarapa	29/03/18	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Stratford DC	31/05/19	No	Yes	Yes	No	No	Yes	Yes	No	No
NZTA Waikato	17/05/18 overdue	No	No	No	No	No	Yes	No	No	No
Waimate DC	01/12/18	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Hauraki DC	25/05/18	No	Yes	Yes	Yes	No	Yes	Yes	No	No
Whangarei DC	01/12/18	No	Yes	Yes	Yes	No	Yes	Yes	No	No
NZTA Manawatu	29/03/17 Overdue									
Central Hawkes Bay DC	01/06/19	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Christchurch CC Traffic lights	08/05/18 overdue	No	No	Yes	Yes	Yes	No	No	Yes	No
Hastings DC	01/06/19	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Horowhenua DC	18/12/18	No	No	Yes	Yes	Yes	Yes	Yes	No	No

		Compliance Achieved (Yes/No)								
Database	DUML Audit completed 16A.26 and 17.295F	Deriving submission information 11(1) of schedule 15.3	ICP identifier 11(2)(a) of schedule 15.3	Location of items of load 11(2)(b) of schedule 15.3	Description of load 11(2)(c)&(d) of schedule 15.3	All load recorded in database 11(2A) of schedule 15.3	Tracking of load changes 11(3) of schedule 15.3	Audit trail 11(4) of schedule 15.3	Database accuracy 15.2 and 15.37B(b)	Volume information accuracy 15.2 and 15.37B(c)
NZTA Northland	15/12/18	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Wairoa DC	01/12/18	No	No	Yes	No	No	Yes	Yes	No	No
Western BOP DC	26/03/19	No	Yes	Yes	No	No	Yes	Yes	No	No
Kaipara DC	018/12/18	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Sth Taranaki DC	31/05/19	No	Yes	Yes	No	No	Yes	Yes	Yes	No
DOC Tekapo	15/12/18	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
McKenzie DC	01/06/19	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Waimakariri DC	01/06/19	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Kawarau DC	03/12/18	No	No	No	No	No	Yes	Yes	No	No
Opotiki DC	17/07/19	No	Yes	Yes	No	No	Yes	Yes	No	No
Whakatane DC	01/06/19	No	No	No	No	No	Yes	Yes	No	No
BOP East NZTA	25/05/18 overdue	No	Yes	Yes	No	No	No	Yes	No	No
Marlborough Lines	01/12/18	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Far North DC	01/03/19	No	Yes	Yes	No	Yes	Yes	Yes	No	No

		Compliance Achieved (Yes/No)								
Database	DUML Audit completed 16A.26 and 17.295F	Deriving submission information 11(1) of schedule 15.3	ICP identifier 11(2)(a) of schedule 15.3	Location of items of load 11(2)(b) of schedule 15.3	Description of load 11(2)(c)&(d) of schedule 15.3	All load recorded in database 11(2A) of schedule 15.3	Tracking of load changes 11(3) of schedule 15.3	Audit trail 11(4) of schedule 15.3	Database accuracy 15.2 and 15.37B(b)	Volume information accuracy 15.2 and 15.37B(c)
Kiangaroa Forest Village Lights	29/01/19	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Napier CC	01/06/19	No	No	Yes	No	Yes	Yes	Yes	Yes	No
Central Otago DC	07/12/18	No	Yes	Yes	Yes	No	Yes	Yes	No	No
Paremoremo Prison Village	12/04/19	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Otorohonga DC	01/06/19	No	Yes	No	Yes	No	Yes	Yes	No	No
Alandale Retirement Village	01/12/18	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Te Kauwhata Retirement Trust Board	18/12/18	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DOC Whakapapa Village	29/01/19	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Porirua CC	06/09/19	No	No	No	No	No	Yes	Yes	No	No
Wellington CC	15/03/19	No	No	Yes	No	Yes	Yes	Yes	No	No

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.4 With: Clause 11 Schedule 15.3 From: 01-Aug-18 To: 19-Jun-19	**GENE** The monthly database extracts used to derive submission from are provided as a snapshot and do not track changes at a daily basis as required by the code. Inaccurate submission information for several databases. Potential impact: High Actual impact: High Audit history: Multiple times Controls: Moderate Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
High	The controls are rated as moderate as Genesis are working to resolve the databases not yet audited but as this is reliant on third parties co-operating this is proving challenging. For those databases audited corrections are being made where possible. There is a major impact on settlement outcomes because there are examples of over submission and under submission; therefore, the audit risk rating is high.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis have been making good improvements on DUML data sets and in most cases, there has been a positive customer response. However historical issues still pose their challenges. Where it is possible Genesis have worked with the distributor to gain information on datasets, but it seems the Distributors also have similar information issues.	01/09/2020	Identified
Preventative actions taken to ensure no further issue will occur	**Completion date**	
Genesis continues to address the asset database issues of their contracted parties.	01/09/2020	

6. GATHERING RAW METER DATA

6.1. Electricity conveyed & notification by embedded generators (Clause 10.13, Clause 10.24 and 15.13)

Code reference

Clause 10.13, Clause 10.24 and Clause 15.13

Code related audit information

A participant must use the quantity of electricity measured by a metering installation as the raw meter data for the quantity of electricity conveyed through the point of connection.

This does not apply if data is estimated or gifted in the case of embedded generation under clause 15.13.

A trader must, for each electrically connected ICP that is not also an NSP, and for which it is recorded in the registry as being responsible, ensure that:

- *there is one or more metering installations*
- *all electricity conveyed is quantified in accordance with the Code*
- *it does not use subtraction to determine submission information for the purposes of Part 15.*

An embedded generator must give notification to the reconciliation manager for an embedded generating station, if the intention is that the embedded generator will not be receiving payment from the clearing manager or any other person through the point of connection to which the notification relates.

Audit observation

Processes to ensure metering is installed and unmetered load is quantified were examined.

The process to manage distributed generation was examined. The registry lists as at 18/06/19 were analysed to identify all ICPs where the Distributor had indicated distributed generation. This was further broken down to identify any ICPs with a non-distributed generation profile. The metering configuration for these ICPs was analysed to confirm if an injection channel was present.

ICPs which had their meters bridged during the audit period were identified.

Audit commentary

Metering installations installed

Genesis' new connection process includes a check that metering is installed before energisation occurs, or that any unmetered load is quantified. No submission information is determined using subtraction.

Distributed Generation

Registry metering information is loaded into Gentrack, and then transferred to Derive when an ICP switches in. Any meter with energy flow direction G will trigger a profile update in Derive. An exception will be generated if profiles are different in Derive and Gentrack, and profiles will be checked and corrected to be consistent in both systems and on the registry. On an ad hoc basis, the reconciliation team runs a query to identify any ICPs which have had EG registers removed, so that profiles can be corrected.

If a customer wishes to install generation and completes an application, the home generation team ensures that compliant metering is installed, and the profile is updated as part of the process.

Instances where a customer has installed generation but not provided an application are more difficult to identify. Genesis has tried to monitor ICPs where the installation type is B but has found that distributors

sometimes update this on receipt or approval of an application for generation instead of when generation has commenced. Monitoring of injection registers is also difficult because some MEPs routinely install ICPs with injection registers, regardless of whether they are expected to be used.

GENE

Review of the registry list identified 3,871 active ICPs with generation indicated by the distributor. 79 of these did not have import/export metering recorded on the registry. A sample of 27 ICPs were checked.

- For 11 ICPs solar generation was confirmed. Four ICPs now have EG registers recorded on the registry, and a further six ICPs have generation metering installed and Genesis believes the MEP's registry records are incorrect. Generation metering has not been requested for ICP 0000024381CPF34; a note was recorded in Gentrack that the landlord was to phone on 25/05/17 regarding installing generation metering but this was not followed up.
- For 16 ICPs GENE had not been able to confirm whether generation was present. For one of these (0000028355WE02E) the high-risk database indicated a PV array install, and the ICP is likely to be generating.

I recommend that the ICPs with generation indicated by the distributor and no import/export metering installed should be checked, to determine whether generation is present and arrange EG meter installation where required.

Description	Recommendation	Audited party comment	Remedial action
Regarding Clause 15.13 Potential generating ICPs without EG registers	Check ICPs with generation indicated by the distributor and no import/export metering installed, to determine whether generation is present and arrange EG meter installation where required.	Genesis plan to maintain the generation attributes through monthly system validations to capture changes or additions.	Identified

Registry profiles were checked for the 3,792 ICPs with import/export metering installed. 372 of these ICPs did not have a profile recorded which indicated generation. A sample of 20 ICPs were checked, and had PV1 profile correctly applied to generation registers for submission. PV1 is automatically applied for any registers with a flow direction of G in Derive, and staff manually adjust profiles to EG1 where generation is not solar. The incorrect profiles on the registry are recorded as non-compliance in **section 2.1**.

I checked for consistency between the distributor generation details and the profiles applied, and identified the following exceptions:

- Eight ICPs with solar generation indicated and EG1 profiles applied. I confirmed that the profiles were correctly applied for reconciliation, but had not been updated in Gentrack or on the registry. The profiles for the ICPs still supplied by GENE were corrected in Gentrack and on the registry during the audit.
- 40 ICPs with non solar generation indicated and PV1 profiles applied. 32 of the ICPs are listed with "other" fuel type, and GENE intends to confirm the fuel type with the network. Six of the ICPs are believed to be solar, and the correct profiles are recorded in Derive, Gentrack, and the Registry. 0001409185UNC41 is a hydro generator and 1099576199CN15D uses a battery and had PV1 profile applied in Derive, Gentrack, and the Registry. Both ICPs were corrected to EG1 profile in the three systems during the audit.

172 ICPs had profiles indicating generation was present, but no generation was recorded by the distributor. 161 of these have generation metering installed and it is likely that the distributor's records are incorrect. 11 do not have generation metering installed, and I could not find evidence that generation

was installed in the Energy Safety database (www.energysafety.govt.nz/energysafety/app/highrisk-db/home). I checked the 11 ICPs without generation metering and found:

- One ICP had an EG register with the settlement indicator set to no, and no consumption is recorded on the EG register. The profile remains in case the register is used again in the future.
- The other ten ICPs were updated to PV1 profile in error, as part of a bulk profile correction. Seven ICPs have had their profiles corrected back to RPS or have switched out, but the other three ICPs (0002544120CN35C, 0003342162CN362 and 0003606100CNCD1) are still to be corrected.

GEOL

Review of the registry list identified 123 active ICPs with generation indicated by the distributor. Ten of these did not have import/export metering recorded on the registry:

- for six ICPs solar generation was confirmed - 0000223918UNCA3 has a meter change in progress, but for the other five ICPs (0002201640WMA5B, 0002403021TUB30, 0007185413RNFD8, 0014669504EL546 and 0110004600EL6AB) the customer has either refused to have the meter upgraded, or was not approached about the upgrade; and
- for four ICPs GEOL had not been able to confirm whether generation was present.

Registry profiles were checked for the 113 ICPs with import/export metering installed. 50 do not have a profile recorded which indicates generation. A sample of 20 ICPs were checked, and had PV1 profile correctly applied to generation registers for submission. PV1 is automatically applied for any registers with a flow direction of G in Derive, and staff manually adjust profiles to EG1 where generation is not solar. The incorrect profiles on the registry are recorded as non-compliance in **section 2.1**.

I checked for consistency between the distributor generation details and the profiles applied, and identified two ICPs with non solar generation indicated and PV1 profiles applied. Both were confirmed to have solar generation and the profiles were correctly applied.

12 ICPs had profiles indicating generation was present, but no generation was recorded by the distributor. 11 of these have generation metering installed and it is likely that the distributor's records are incorrect. ICP 0000045267CPEFD had its generation metering removed on 27/03/19, and was updated to RPS profile during the audit.

GENH

Review of the registry list identified 76 active ICPs with generation indicated by the distributor. Ten of these ICPs did not have import/export metering recorded on the registry, including nine ICPs identified in the previous audit. All were checked, along with ICP 0007110201RN312 which had gifting arrangements in place at the time of the 2018 audit:

ICP	Generation date (or switch in date if later)	2018 Comment	2019 comment
1002046050UN986	02/11/18	-	Genesis intends to query whether this ICP is generating with the customer.
0005876656RNF26	25/07/17	Notification is required	Generation is from liquid fuel and almost all generation is expected to be used internally by the installation. Generation metering has not been installed and gifting has not been notified.

ICP	Generation date (or switch in date if later)	2018 Comment	2019 comment
0006476414RNE04	01/02/18	Investigation required	This is not a generating ICP, but appeared to be generating briefly due to some work carried out on the transformer. No action is required.
0006090168RNC40	01/08/14	Gifting has been notified	No change.
0007139792RN05D	01/06/17	Gifting has been notified	No change.
0427052565LCF1B	01/05/17	Gifting has been notified	No change.
0000130740WEA40	12/05/15	Gifting has been notified	No change.
0000601136HBB5D	01/01/17	Gifting has been notified	No change.
0006085016RNC43	01/08/14	Gifting has been notified	No change.
0006085121RNF75	01/08/14	Gifting has been notified	No change.
0007110201RN312	01/08/14	Gifting has been notified	Import/export metering was installed 02/08/18.

Registry profiles were checked for the 66 ICPs with import/export metering installed, all have the HHR profile and are compliant.

No ICPs had profiles indicating generation with no generation recorded by the distributor.

Bridged meters

Bridged meters are typically identified through reconnection paperwork returned from the contractor, but may also be identified where a stopped meter case is raised. ICPs with zero consumption are currently not actively monitored, as discussed in **section 9.5**.

An internal audit of bridged meter processes is underway, and has identified that process improvements are required to ensure that bridged consumption is consistently identified and corrected. The implementation of these improvements will be monitored through Genesis' internal audit processes.

GENE

GENE provided a list of 15 meters which were bridged during the audit period, which are recorded as non-compliance below. All the meters were later unbridged, and corrections for consumption during the bridged period are discussed in **section 8.1.**

GEOL

GEOL provided a list of three meters which were bridged during the audit period, which are recorded as non-compliance below. All the meters were later unbridged, and corrections for consumption during the bridged period are discussed in **section 8.1.**

GENH

No bridged meters were identified during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.1 With: Clause 10.13, Clause 10.24 and 15.13 From: Aug-18 To: Aug-19	**GENE** ICP 0000024381CPF34 has generation installed but does not have an EG register installed, and notification of gifting has not been provided. Eight ICPs with solar generation indicated had EG1 profiles recorded on the registry. The correct profiles were applied for submission, and the incorrect profiles were updated during the audit. 0001409185UNC41 and 1099576199CN15D have non-solar generation and had PV1 profile applied in Derive, Gentrack, and the Registry. Both ICPs were corrected to EG1 profile in the three systems during the audit. Ten ICPs were updated to PV1 profile in error on the registry, but the correct profiles were applied for submission. Seven have been corrected or switched out, and three remain incorrect. 15 meters were bridged during the audit period. While meters are bridged energy is not quantified in accordance with the code. **GEOL** ICPs 0002201640WMA5B, 0002403021TUB30, 0007185413RNFD8, 0014669504EL546 and 0110004600EL6AB have generation installed but do not have an EG register installed, and notification of gifting has not been provided. Three meters were bridged during the audit period. While meters are bridged energy is not quantified in accordance with the code. **GENH** ICPs 0005876656RNF26 has generation installed but does not have an EG register installed, and notification of gifting has not been provided. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate because improvements can be made with regard to remedial actions when DG is identified. Bridging should occur very rarely as 24-hour 7 day per week arrangements are in place for most soft reconnections. Bridging should only occur where communications do not allow remote reconnection and energy supply is urgently required for health and safety reasons. The impact on settlement is minor therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis have conducted internal process audit on Bridged Metering. The findings have been presented to the working group (09/09/2019) actions from the finding are likely to take place over the coming months. Temporary reporting has been set in place to monitor current processes.	01/06/2020	Identified
Preventative actions taken to ensure no further issue will occur	**Completion date**	
Internal process audit regime measures the controls in place to mitigate the risk. The audit findings will be reviewed, with recommendations from the audit to be actioned.	01/06/2020	

6.2. Responsibility for metering at GIP (Clause 10.26 (6), (7) and (8))

Code reference

Clause 10.26 (6), (7) and (8)

Code related audit information

For each proposed metering installation or change to a metering installation that is a connection to the grid, the participant, must:

- *provide to the grid owner a copy of the metering installation design (before ordering the equipment)*
- *provide at least three months for the grid owner to review and comment on the design*
- *respond within three business days of receipt to any request from the grid owner for additional details or changes to the design*
- *ensure any reasonable changes from the grid owner are carried out.*

The participant responsible for the metering installation must:

- *advise the reconciliation manager of the certification expiry date not later than 10 business days after certification of the metering installation*
- *become the MEP or contract with a person to be the MEP*
- *advise the reconciliation manager of the MEP identifier no later than 20 days after entering into a contract or assuming responsibility to be the MEP.*

Audit observation

The NSP table was reviewed to confirm the GIPs which Genesis is responsible for, and the certification expiry date for those GIPs.

Changes to the NSP table were reviewed to determine whether they had been processed accurately.

Audit commentary

Genesis is responsible for the GIPs shown in the table below.

Responsible party	Description	NSP	MEP	Reconciliation Type	Certification expiry date (NSP table)
GENE	HUNTLY	HLY2201GENEGG	GENE	GG	20/11/2020
GENE	RANGIPO	RPO2201GENEGG	GENE	GG	11/01/2021
GENE	TEKAPO A	TKA0111GENEGG	GENE	GG	7/02/2021
GENE	TEKAPO B	TKB2201GENEGG	GENE	GG	16/03/2021
GENE	TOKAANU	TKU0331GENEGD	GENE	GD	20/02/2021
GENE	TOKAANU	TKU2201GENEGG	GENE	GG	13/12/2020
GENE	TUAI	TUI1101GENEGG	GENE	GG	14/02/2021

Genesis has not made any new connections to the grid during the audit period. All grid connection points Genesis responsible for have current certification recorded on the NSP table.

The certification expiry date for TKU2201GENEGG was updated from 12/05/19 to 13/12/2020 during the audit period, and the certification details were provided to the reconciliation manager on time. Genesis' engineer provides the updated certification details to the reconciliation manager using the NSPMTRG file.

Audit outcome

Compliant

6.3. Certification of control devices (Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3)

Code reference

Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3

Code related audit information

The reconciliation participant must advise the metering equipment provider if a control device is used to control load or switch meter registers.

The reconciliation participant must ensure the control device is certified prior to using it for reconciliation purposes.

Audit observation

A registry list as at 18/06/19 was reviewed to confirm the profiles used by Genesis.

Audit commentary

GENE

GENE uses the HHR, RPS, PV1, and EG1 profiles for metered ICPs. The CST, NST, RPS, SST, and UNM profiles are used for unmetered load. These profiles do not rely on the use of control devices for reconciliation purposes.

GENH

GENH uses the HHR profile, which does not rely on the use of control devices for reconciliation purposes.

GEOL

GEOL uses the RPS profile and PV1 profiles, which do not rely on the use of control devices for reconciliation purposes.

Audit outcome

Compliant

6.4. Reporting of defective metering installations (Clause 10.43(2) and (3))

Code reference

Clause 10.43(2) and (3)

Code related audit information

If a participant becomes aware of an event or circumstance that lead it to believe a metering installation could be inaccurate, defective, or not fit for purpose they must:

- *advise the MEP*
- *include in the advice all relevant details.*

Audit observation

Processes relating to defective metering were examined.

A sample of defective meters were reviewed, to determine whether the MEP was advised, and if appropriate action was taken.

Audit commentary

Defective meters are typically identified through the meter reading validation process, or from information provided by the meter reader, agent, the MEP, or the customer. Upon identifying a possible defective meter, a field services job is raised to investigate and resolve the defect and a consumption correction is processed if necessary.

Corrections for stopped and faulty meters are discussed in **sections 8.1** and **8.2**.

GENE

I reviewed 29 examples of potential defective meters, including 15 bridged meters and 14 stopped meters. In all cases a field services job was raised, and the MEP was advised.

GEOL

I reviewed nine examples of potential defective meters, including three bridged meters and six stopped meters. In all cases a field services job was raised, and the MEP was advised.

GENH

No meters with defects preventing consumption from being recorded accurately were identified during the period. Four ICPs had meters with communication issues which prevented readings from being obtained within the maximum interrogation cycle as discussed in **section 6.5**. I found that the MEP was advised and the issues were resolved during July 2019.

Audit outcome

Compliant

6.5. Collection of information by certified reconciliation participant (Clause 2 Schedule 15.2)

Code reference

Clause 2 Schedule 15.2

Code related audit information

Only a certified reconciliation participant may collect raw meter data, unless only the MEP can interrogate the meter, or the MEP has an arrangement which prevents the reconciliation participant from electronically interrogating the meter:

> *2(2) - The reconciliation participant must collect raw meter data used to determine volume information from the services interface or the metering installation or from the MEP.*
>
> *2(3) - The reconciliation participant must ensure the interrogation cycle is such that is does not exceed the maximum interrogation cycle in the registry .*
>
> *2(4) - The reconciliation participant must interrogate the meter at least once every maximum interrogation cycle.*
>
> *2(5) - When electronically interrogating the meter the participant must:*
>
> *a) ensure the system is to within +/- 5 seconds of NZST or NZDST*
> *b) compare the meter time to the system time*
> *c) determine the time error of the metering installation*
> *d) if the error is less than the maximum permitted error, correct the meter's clock*
> *e) if the time error is greater than the maximum permitted error then:*
> *i) correct the metering installation's clock*
> *ii) compare the metering installation's time with the system time*
> *iii) correct any affected raw meter data.*
> *f) download the event log.*
>
> *2(6) – The interrogation systems must record:*
>
> - *the time*
> - *the date*
> - *the extent of any change made to the meter clock.*

Audit observation

The data collection process was examined.

- AMS collects HHR data for GENE and GENH.
- AMS collects NHH AMI data for GENE and GEOL.
- Wells collects manual NHH data for GENE and GEOL.
- HHR generation data is collected by Genesis using their Stark data collection system.

Genesis's agents and MEPs are responsible for the collection of HHR and AMI data. Collection of data and clock synchronisation were reviewed as part of their agent and MEP audits.

Genesis's own data collection processes for generation data were reviewed. I walked through the clock synchronisations and viewed port settings to confirm how the clocks are synchronised.

Audit commentary

GENE and GEOL

All information used to determine volume is collected by agents. Agents and MEPs monitor clock synchronisation, this is covered as part of their audits.

Clock synchronisation event information is emailed to GENE and GEOL's billing mailboxes. The notifications include details of the ICPs affected and the time difference. The emails usually state no action is required, and will ask for a metering job to be raised if it is required.

GENH

AMS' agent audit report confirms compliance for clock synchronisation processes.

Four ICPs with Broadspectrum as the MEP did not have data collected within the maximum interrogation cycle. AMS and Genesis both communicated this issue to Broadspectrum, and the communication issues were resolved during July 2019 onwards for the affected ICPs:

ICP	Max interrogation cycle	Last date data was collected	Next data collection after issues were resolved
0800092066LCEAB	60	11/07/18	23/07/19
0000100255UN5CA	60	15/10/18	16/07/19
0800616065LCAA9	60	14/11/18	18/07/19
0800219066LC6B6	60	15/03/19	23/07/19

Generation

Genesis synchronises STARK time to the server time, and this is synchronised against an internet time source at 30-minute intervals. During interrogation, a comparison occurs between the data logger and STARK clocks. During the audit, the server time was compared to Stark time and they were the same.

If the time differs by more than five seconds, the channels are "disabled". To correct the time, the parameters are "opened" manually to allow data to be collected, then Stark will automatically synchronise the clock. I checked recent reports and noted there were no time differences outside the threshold for meters used for submission.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.5 With: Clause 2(4) of schedule 15.2 From: 11-Sep-18 To: 22-Jul-19	**GENH** Four GENH meters not interrogated within the maximum interrogation cycle. Potential impact: Medium Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Issues were continuously raised with Broad Spectrum during the period to the point that Genesis was about to lodge breach when the EA investigation was advised. We have joined that investigation and await further action. As non-conformance is caused by another participant we feel risk rating should not contribute to total.	Ongoing	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
n/a	n/a	

6.6. Derivation of meter readings (Clause 3(1), 3(2) and 5 Schedule 15.2)

Code reference

Clause 3(1), 3(2) and 5 Schedule 15.2

Code related audit information

All meter readings must in accordance with the participants certified processes and procedures and using its certified facilities be sourced directly from raw meter data and, if appropriate, be derived and calculated from financial records.

All validated meter readings must be derived from meter readings.

A meter reading provided by a consumer may be used as a validated meter reading only if another set of validated meter readings not provided by the consumer are used during the validation process.

During the manual interrogation of each NHH metering installation the reconciliation participant must:

- *a) obtain the meter register*
- *b) ensure seals are present and intact*
- *c) check for phase failure (if supported by the meter)*
- *d) check for signs of tampering and damage*
- *e) check for electrically unsafe situations.*

If the relevant parts of the metering installation are visible and it is safe to do so.

Audit observation

The data collection process was examined.

Processes to provide meter condition information were reviewed as part of the Wells agent audit. Genesis' processes to manage meter condition information were reviewed, including viewing a sample of meter condition events.

Processes for customer and photo reads were reviewed.

Audit commentary

Wells readings

Wells' data collection processes were reviewed as part of their agent audit and found to be compliant. I checked a sample of readings for ten ICPs provided by Wells for GENE and GEOL and confirmed that they are loaded into Gentrack as actual readings and are validated.

Wells sends meter condition information with their read files, a monthly file of missing or broken seals, and also email Genesis with information about suspect theft soon after it is found.

GENE and GEOL

All meter condition information is loaded into MRI as "reader notes", which can be queried to view all notes for an ICP. Meter condition events are only directed to work queues where they also coincide with a no read reason, which triggers a work flow.

Where Wells emails information on meter condition events, the emails are processed as they are received.

Meter condition issues can also be identified through the meter read validation process. CSRs can refer cases to revenue assurance for investigation.

I reviewed a sample of meter condition events provided during Wells' agent audit to determine whether appropriate action had been taken:

Meter condition issue	GENE	GEOL
Different meter register present	**Compliant.** One example, switch withdrawn no action required.	**Compliant.** One example, actioned appropriately.
Seals are not present and intact	**Compliant.** 0045199892HBAF0 (05/02/19) – backdated switch out, no action required. **Non-compliant.** 0000175485UN317 (07/02/19) – no action taken.	**Non-compliant.** 0000453345HB02B (04/03/19) – no action taken.
Signs of tampering or damage	**Non-compliant.** 0083710203PC031 (13/07/18) - no action taken.	No examples available
Phase failure	No examples available	No examples available
Electrically unsafe	No examples available	No examples available

GENH

GENH does not deal with NHH readings.

Customer and photo readings

Customer and photo readings are clearly identified in Gentrack. Customer readings provided through the website are recorded as "WR", photo readings as "PH", and customer readings provided by email or phone are recorded as "CR".

The readings are validated as part of the data entry process:

- if website readings do not fall within the expected range based on historic readings, they will be rejected and not recorded against the ICP; and

- other customer readings and photo readings are manually validated by the CSR prior to being entered into Gentrack, this process requires them to ensure that the reading is higher than the previous reading (unless the previous reading is estimated and the reading looks reasonable compared to earlier actual readings), and appears reasonable based on the ICP history.

The "WR", "PH" and "CR" readings are treated as "non-actual" by the switching process, but are always treated as validated readings by the reconciliation process. This could create non-compliance where customer or photo readings are not validated against a set of validated actual readings from another source as required by the code. "WR" readings may be automatically accepted without validation against a set of readings from another source, and CSRs have not been advised to ensure that reads are not validated against at least two actual readings.

Description	Recommendation	Audited party comment	Remedial action
Regarding Clause 3(1) and 3(2) Schedule 15.2 Customer, web and photo readings	Update processes to ensure that customer, web and photo readings must be validated against at least two actual validated readings from another source.	Genesis will be reviewing process documentation to clarify operational procedures.	Investigating

GENE

I checked examples of customer and photo readings and found they had been appropriately validated against a set of readings from another source.

GEOL

I checked examples of customer, photo, and web readings and found they had been appropriately validated against a set of readings from another source.

GENH

GENH does not deal with NHH readings.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.6 With: Clause 3(1), 3(2) and 5 Schedule 15.2 From: 13-Jul-18 To: 04-Mar-19	**GENE** At least one ICP with signs of tampering or damage, and one ICP with missing or broken seals identified by Wells were not investigated. **GEOL** At least one ICP with missing or broken seals identified by Wells was not investigated. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating
Low	Controls are considered moderate because they are not sufficient to ensure that all meter condition events identified by Wells are investigated and resolved. The impact is assessed to be low, based on the exceptions identified.

Actions taken to resolve the issue	Completion date	Remedial action status
A review of current processes will take place through internal process audit.	01/03/2020	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will review its process to look at the opportunity to gain enough exception reporting to minimise the risks associated with potential tampers/broken seals.	01/03/2020	

6.7. NHH meter reading application (Clause 6 Schedule 15.2)

Code reference

Clause 6 Schedule 15.2

Code related audit information

For NHH switch event meter reads, for the gaining trader the reading applies from 0000 hours on the day of the relevant event date and for the losing trader at 2400 hours at the end of the day before the relevant event date.

In all other cases, All NHH readings apply from 0000hrs on the day after the last meter interrogation up to and including 2400hrs on the day of the meter interrogation.

Audit observation

The process of the application of meter readings was examined.

Audit commentary

GENE

NHH readings apply from 0000hrs on the day after the last meter interrogation up to and including 2400hrs on the day of the meter interrogation except in the case of a switch event meter reading which applies to the end of the day prior to the event date for the losing trader and the start of the event date for the gaining trader as required by this clause.

All AMI systems have a clock synchronisation function, which ensures correct time-stamping. Manual readings taken by Wells are applied correctly.

Application of reads was reviewed as part of the historic estimate checks in **section 12.11** and found to be compliant. The content of CS and RR files was examined in **sections 4.3**, **4.4**, **4.10** and **4.11**. I identified one instance where the switch event meter read sent was the midnight read for event date rather than the midnight read of the day before the event date. This is a known Gentrack issue which is being investigated (ICP 0039607000WR3C4).

I checked the process for NHH to HHR meter changes in relation to this clause.

If an ICP is physically upgraded from category 1 or 2 NHH to category 3 or higher HHR the change is processed as a switch from GENE to GENH. GENE's last day of responsibility is the last full day with NHH metering, and the meter removal reading is provided as the switch event reading. GENH's first day of responsibility is the day of the meter change, with the trading periods up until the meter change being populated with zeros. I checked one upgrade to confirm the process. Whilst this process achieves accuracy, non-compliance exists because the NHH meter reading is not applied at 2400 on the day of the reading.

Similarly, if an ICP is downgraded, it is treated as GENH HHR until the end of the day the HHR meter is removed with zeros populated for any trading periods after the meter removal. The GENE NHH period begins with the opening read on the NHH meter the following day. I checked one downgrade to confirm the process.

If an upgrade does not coincide with a meter change, the swap between NHH and HHR aligns with the actual volume data. Most of the upgrades and downgrades completed are for category 1 and 2 meters, which remain with GENE.

I checked a sample of five GENE upgrades to HHR and five GENE downgrades to NHH, and found they did not coincide with a meter change and the readings were correctly applied.

GEOL

NHH readings apply from 0000hrs on the day after the last meter interrogation up to and including 2400hrs on the day of the meter interrogation except in the case of a switch event meter reading which applies to the end of the day prior to the event date for the losing trader and the start of the event date for the gaining trader as required by this clause.

All AMI systems have a clock synchronisation function, which ensures correct time-stamping. Manual readings taken by Wells are applied correctly.

Application of reads was reviewed as part of the historic estimate checks in **section 12.11** and found to be compliant. The content of CS and RR files was examined in **sections 4.3**, **4.4**, **4.10** and **4.11**.

GENH

GENH does not deal with NHH readings. ICPs which are downgraded are switched to GENE, as discussed in the GENE section above.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.7 With: Clause 6 Schedule 15.2 From: 28-Oct-18 To: 07-Jun-19	**GENE and GENH** NHH meter readings not applied at 2400 on the day of the meter reading for NHH to HHR upgrades and downgrades where the meter is replaced. **GENE** For ICP 0039607000WR3C4 the CS file contained the midnight read for the event date, instead of the midnight read for the day before the event date. Potential impact: None Actual impact: None Audit history: Once Controls: Strong Breach risk rating: 1

Audit risk rating	Rationale for audit risk rating
Low	The controls are recorded as strong because the process achieves accuracy. There is no impact on settlement or other participants for upgrades and downgrades. There is a minor impact on the customer, other participants and settlement for the incorrectly applied switch event read.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis is currently reviewing the process involving switching read process to eliminate the minor impact.	01/11/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Changes identified from review will be implemented.	01/12/2020	

6.8. Interrogate meters once (Clause 7(1) and (2) Schedule 15.2)

Code reference

Clause 7(1) and (2) Schedule 15.2

Code related audit information

Each reconciliation participant must ensure that a validated meter reading is obtained in respect of every meter register for every non half hour metered ICP for which the participant is responsible, at least once during the period of supply to the ICP by the reconciliation participant, and used to create volume information.

This may be a validated meter reading at the time the ICP is switched to, or from, the reconciliation participant.

If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 7(1).

Audit observation

The process to manage missed reads was examined, including review of reports used in the process and individual unread ICPs.

Genesis provided lists of ICPs not read during the period of supply, where the period of supply had ended during the audit period. The extreme case sampling method was used to select 26 unread ICPs where the period of supply was over 200 days for review.

Audit commentary

A validated meter reading must be obtained in respect of every meter register for every non-half hour metered ICP for which the participant is responsible, at least once during the period of supply to the ICP by the reconciliation participant, unless exceptional circumstances prevent this from occurring. This may be a validated meter reading at the time the ICP is switched to, or from, the reconciliation participant.

The NHH meter reading frequency guidelines published by the Electricity Authority define "exceptional circumstances" as meaning "circumstances in which access to the relevant meter is not achieved despite the reconciliation participant's best endeavours". "Best endeavours" is defined as:

"Where a reconciliation participant failed to interrogate an ICP as a result of access issues, the reconciliation participant had made a minimum of three attempts to contact the customer, by using at least two methods of communication".

GENE

Gentrack automatically estimates ICPs which do not receive actual readings for billing. When two billing estimates in a row are applied, an automated read attainment process begins, unless the ICP is excluded from the process because the ICP is on an AMI reading sequence, or the customer is account managed. Where followed, the read attainment process will ensure compliance with the best endeavours requirement if the period of supply is over 114 days.

1. An automated call or text is made after the second account estimate.
2. A letter is issued seven days after the call or text.
3. An automated call or text is made 45 days after the letter.
4. A letter is issued 60 days after the second call or text.
5. The ICP is added to billing queue and reviewed by a CSR, 45 days after the second letter.
6. A letter is issued 14 days after the ICP was directed to the work queue.

Under certain circumstances reads may not be attained, but the ICP may not have two account estimates in a row and the read attainment process will not be triggered. This typically occurs were there are other readings between the estimated readings (such as customer readings, web readings, or photo readings), or the ICP is not in a valid meter reading route and no estimates are generated.

Read attainment for AMI meters is managed through weekly reports which identify ICPs with AMI meters which were billed on estimated readings in the past month. The report dated 02/08/19 contained 4,962 ICPs. A CSR works through the report to investigate and raise jobs to resolve communications issues, prioritising the ICPs with the highest number of estimates in a row. Genesis is also working to improve and automate their processes to log communications faults.

Read attainment for account managed customers is managed by the business sales support team, who review unread account managed ICPs and liaise with the customer to resolve any issues preventing reads from being obtained.

A report of 592 ICPs not read during the period of supply was provided for ICPs with an end date between 01/08/18 and 09/06/19. Of these, 416 (81.3%) were supplied for less than 90 days. A sample of 16 ICPs with the periods of supply over 200 days were checked:

- For six ICPs exceptional circumstances existed.
- For nine ICPs the best endeavours requirements were not met, and exceptional circumstances did not exist. Six ICPs were excluded from the automated process because they were account managed, on a holding meter reading sequence, or an AMI meter reading sequence. For other

ICPs the customer was providing customer readings between the account estimates, or the full automated process had not been completed during the period of supply.

GEOL

GEOL's read attainment processes changed following migration to Gentrack. A report of unread ICPs is generated and manually worked through. CSRs phone, text and issue letters to customers as required.

Wells' no read codes 15 (meter location moved/not found) and 24 (meter removed) create a no read installation queue item. I reviewed the work queues and found that these items are reviewed and actioned.

AMI meters with no actual reads for three months or more are identified through reporting and followed up with the MEP and/or moved to a manual meter reading route.

GEOL is expected to move to GENE's automated read attainment process by the end of 2019.

A report of 325 ICPs not read during the period of supply was provided for ICPs with an end date between 03/08/18 and 17/06/19. Of these, 253 (77.8%) were supplied for less than 90 days. A sample of ten ICPs with periods of supply over 200 days were checked:

- for two ICPs exceptional circumstances existed; and
- for eight ICPs the best endeavours requirements were not met, and exceptional circumstances did not exist.

GENH

GENH does not deal with NHH readings.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.8 With: Clause 7(1) and (2) Schedule 15.2 From: 20-Jan-02 To: 19-May-19	**GENE** For at least nine ICPs unread during the period of supply, exceptional circumstances did not apply, and the best endeavours requirement was not met. **GEOL** For at least eight ICPs unread during the period of supply, exceptional circumstances did not apply, and the best endeavours requirement was not met. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are moderate as they will ensure that most ICPs will receive a read during the period of supply. Some residual risk remains for ICPs with short periods of supply. The impact on billing and settlement is considered to be minor because a small number of ICPs are affected, and the period of supply is generally short.

Actions taken to resolve the issue	Completion date	Remedial action status
The non-compliance is immaterial, and the controls are enough to meet the requirements. Genesis will establish gains where the period of supply is short. In most cases these sites are non-advanced metering or have non-communicating meters with bi-monthly read sequences.	01/06/2020	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis makes attempts to read each site in majority of the cases the processes are suffice. Genesis will review these controls to establish completeness.	01/06/2020	

6.9. NHH meters interrogated annually (Clause 8(1) and (2) Schedule 15.2)

Code reference

Clause 8(1) and (2) Schedule 15.2

Code related audit information

At least once every 12 months, each reconciliation participant must obtain a validated meter reading for every meter register for non half hour metered ICPs, at which the reconciliation participant trades continuously for each 12-month period.

If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 8(1).

Audit observation

The meter reading process was examined. Monthly reports for the months of December 2018 to April 2019 were provided. I reviewed the sample of reports to ensure they met the report requirements and were submitted on time.

A sample of ICPs not read in the previous 12 months were reviewed for each code to determine whether reasonable endeavours were used to attain reads, and if exceptional circumstances existed.

Audit commentary

As discussed in **section 6.8**, there are processes in place monitor read attainment, and attempt to resolve issues preventing read attainment.

GENE provides the meter reading frequency reports to the Market Administrator for GENE and GEOL. Report submissions for December 2018 to April 2019 were reviewed for GENE and GEOL, which confirmed that the reports were submitted on time and contained the required information.

GENE

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
Dec 18	261	117	533	98.10%

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
Jan 19	260	113	505	98.21%
Feb 19	260	114	495	98.18%
Mar 19	259	108	436	98.25%
Apr 19	259	108	441	98.37%

The total quantity of unread ICPs and percentages read are similar to the results found in the 2018 audit.

I reviewed a diverse sample of 22 ICPs not read in the previous 12 months as at April 2019, including two (or all) ICPs which were unread for each of GENE's unread reason codes. The ICPs were checked to determine whether exceptional circumstances exist, and if GENE had used their best endeavours to obtain readings:

- for eight ICPs, the best endeavours requirement was met; and
- for 14 ICPs the best endeavours requirement was not met, and exceptional circumstances did not exist - 10 of the 14 ICPs were account managed.

GEOL

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
Dec 18	162	40	72	99.05%
Jan 19	161	38	76	99.00%
Feb 19	158	36	70	99.07%
Mar 19	158	24	47	99.29%
Apr 19	161	30	53	99.30%

The total quantity of unread ICPs continues to improve; and the average number unread for 12 months per month has decreased by around 30-50 ICPs per month since the 2018 audit.

I reviewed a diverse sample of ten ICPs not read in the previous 12 months as at April 2019, including two (or all) ICPs which were unread for each of GEOL's unread reason codes. The ICPs were checked to determine whether exceptional circumstances exist, and if GEOL had used their best endeavours to obtain readings:

- for seven ICPs, the best endeavours requirement was met or exceptional circumstances existed; and
- for three ICPs the best endeavours requirement was not met, and exceptional circumstances did not exist.

GENH

GENH does not deal with NHH readings.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.9 With: Clause 8(1) and (2) Schedule 15.2 From: 01-May-18 To: 30-Apr-19	**GENE** For at least 14 ICPs unread in the 12 months ended April 2019, exceptional circumstances did not apply, and the best endeavours requirement was not met. **GEOL** For at least three ICPs unread in the 12 months ended April 2019, exceptional circumstances did not apply, and the best endeavours requirement was not met. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The issue relating to unmetered ICPs being included in the report has been cleared. Controls are rated as moderate because there is room to improve the processes for read attainment. The impact is low, because overall read attainment rates are reasonably high.

Actions taken to resolve the issue	Completion date	Remedial action status
The non-compliance is immaterial; however we will continue to work with staff to ensure process is followed (particularly account managed sites)	ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
n/a	n/a	

6.10. NHH meters 90% read rate (Clause 9(1) and (2) Schedule 15.2)

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

In relation to each NSP, each reconciliation participant must ensure that for each NHH ICP at which the reconciliation participant trades continuously for each four months, for which consumption information is required to be reported into the reconciliation process. A validated meter reading is obtained at least once every four months for 90% of the non half hour metered ICPs.

A report is to be sent to the Authority providing the percentage, in relation to each NSP, for which consumption information has been collected no later than 20 business days after the end of each month.

If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 9(1).

Audit observation

The meter reading process was examined. Monthly reports for the months of December 2018 to April 2019 were provided.

A sample of ICPs not read in the previous four months at NSPs where less than 90% of ICPs were read were reviewed to determine whether exceptional circumstances existed and if Genesis had used their best endeavours to obtain readings.

Audit commentary

As discussed in **section 6.8**, there are processes in place monitor read attainment, and attempt to resolve issues preventing read attainment.

GENE

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	Total ICPs unread for 4 months	Overall percentage read
Dec 18	270	39	1,855	94.49%
Jan 19	271	34	1,727	94.94%
Feb 19	267	37	1,690	94.90%
Mar 19	267	34	1,468	95.17%
Apr 19	266	28	1,546	95.33%

The total quantity of unread ICPs and percentages read are similar to the results found in the 2018 audit.

I reviewed the process to determine whether exceptional circumstances exist, and if GENE had used their best endeavours to obtain readings for 15 ICPs connected to 14 NSPs where compliance was not achieved in April 2019. I found that the best endeavours requirement was not met, and exceptional circumstances did not exist.

GEOL

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	Total ICPs unread for 4 months	Overall percentage read
Dec 18	169	23	476	94.88%
Jan 19	167	16	436	95.36%
Feb 19	164	17	424	95.45%
Mar 19	163	13	320	96.13%
Apr 19	165	20	338	96.39%

The total quantity of unread ICPs has decreased by 200-300 per month since the 2018 audit.

I reviewed the process to determine whether exceptional circumstances exist, and if GENE had used their best endeavours to obtain readings for ten ICPs connected to eight NSPs where compliance was not achieved in April 2019. I found that the best endeavours requirement was not met, and exceptional circumstances did not exist.

GENH

GENH does not deal with NHH readings.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.10 With: Clause 8(1) and (2) Schedule 15.2 From: 01-Jan-19 To: 30-Apr-19	**GENE** For at least 15 ICPs unread in the four months ended April 2019, exceptional circumstances did not apply, and the best endeavours requirement was not met. **GEOL** For at least ten ICPs unread in the four months ended April 2019, exceptional circumstances did not apply, and the best endeavours requirement was not met. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate because there is room to improve the processes for read attainment. The impact is low, because overall read attainment rates are reasonably high.

Actions taken to resolve the issue	Completion date	Remedial action status
The non-compliance is immaterial; however, we will continue to work with staff to ensure process for collecting a read is followed We note that the distinction of NHH/HHR has changed with the advent of AMI metering from where it was a proxy for mass market/commercial. This clause is instance where Code has not kept up with change in industry and overall improvements in read attainment for mass market customers as a whole is not recognised.	Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
n/a	n/a	

6.11. NHH meter interrogation log (Clause 10 Schedule 15.2)

Code reference

Clause 10 Schedule 15.2

Code related audit information

The following information must be logged as the result of each interrogation of the NHH metering:

10(a) - the means to establish the identity of the individual meter reader

10(b) - the ICP identifier of the ICP, and the meter and register identification

10(c) - the method being used for the interrogation and the device ID of equipment being used for interrogation of the meter.

10(d) - the date and time of the meter interrogation.

Audit observation

NHH data is collected by AMS and Wells. The data interrogation log requirements were reviewed as part of the agent and MEP audits.

Audit commentary

GENE and GEOL

Compliance with this clause has been demonstrated by AMS and Wells as part of their own audits.

GENH

GENH does not deal with NHH readings.

Audit outcome

Compliant

6.12. HHR data collection (Clause 11(1) Schedule 15.2)

Code reference

Clause 11(1) Schedule 15.2

Code related audit information

Raw meter data from all electronically interrogated metering installations must be obtained via the services access interface.

This may be carried out by a portable device or remotely.

Audit observation

HHR data is collected by AMS. The data collection requirements were reviewed as part of their audit.

Generation data is sourced from the services access interface as required by the Code.

Audit commentary

GENE and GENH

Compliance with this clause has been demonstrated by AMS as part of their agent audit.

Generation

Generation data is sourced from the services access interface as required by the Code.

GEOL

GEOL does not deal with HHR data.

Audit outcome

Compliant

6.13. HHR interrogation data requirement (Clause 11(2) Schedule 15.2)

Code reference

Clause 11(2) Schedule 15.2

Code related audit information

The following information is collected during each interrogation:

> *11(2)(a) - the unique identifier of the data storage device*
>
> *11(2)(b) - the time from the data storage device at the commencement of the download unless the time is within specification and the interrogation log automatically records the time of interrogation*
>
> *11(2)(c) - the metering information, which represents the quantity of electricity conveyed at the point of connection, including the date and time stamp or index marker for each half hour period. This may be limited to the metering information accumulated since the last interrogation*
>
> *11(2)(d) - the event log, which may be limited to the events information accumulated since the last interrogation*
>
> *11(2)(e) - an interrogation log generated by the interrogation software to record details of all interrogations.*

The interrogation log must be examined by the reconciliation participant responsible for collecting the data and appropriate action must be taken if problems are apparent or an automated software function flags exceptions.

Audit observation

HHR data is collected by AMS. The interrogation data requirements were reviewed as part of their audit.

Generation data is collected by Genesis using their Stark system and the requirements of this clause were checked.

Audit commentary

GENE and GENH

Compliance with this clause has been demonstrated by AMS as part of their agent audit.

Generation

Compliance with this clause has been demonstrated by Genesis for generation metering.

GEOL

GEOL does not deal with HHR data.

Audit outcome

Compliant

6.14. HHR interrogation log requirements (Clause 11(3) Schedule 15.2)

Code reference

Clause 11(3) Schedule 15.2

Code related audit information

The interrogation log forms part of the interrogation audit trail and, as a minimum, must contain the following information:

11(3)(a)- the date of interrogation

11(3)(b)- the time of commencement of interrogation

11(3)(c)- the operator identification (if available)

11(3)(d)- the unique identifier of the meter or data storage device

11(3)(e)- the clock errors outside the range specified in Table 1 of clause 2

11(3)(f)- the method of interrogation

11(3)(g)- the identifier of the reading device used for interrogation (if applicable).

Audit observation

HHR data is collected by AMS. The data interrogation log requirements were reviewed as part of their audit.

Generation data is collected by Genesis using the Stark system. The interrogation log was checked as part of the audit.

Audit commentary

GENE and GENH

Compliance with this clause has been demonstrated by AMS as part of their audit.

Generation

Compliance with this clause has been demonstrated by Genesis for the Stark system.

GEOL

GEOL does not deal with HHR data.

Audit outcome

Compliant

7. STORING RAW METER DATA

7.1. Trading period duration (Clause 13 Schedule 15.2)

Code reference

Clause 13 Schedule 15.2

Code related audit information

The trading period duration, normally 30 minutes, must be within ±0.1% (±2 seconds).

Audit observation

Trading period duration was reviewed as part of the MEP audits, and AMS' agent audit.

Genesis' clock synchronisation process for generation meters was reviewed.

Audit commentary

GENE and GENH

Compliance with this clause has been demonstrated by the agents and MEPs and is discussed in their audit reports.

Generation

The clock synchronisation process for generation meters is discussed in **section 6.5**.

GEOL

GEOL does not deal with HHR data.

Audit outcome

Compliant

7.2. Archiving and storage of raw meter data (Clause 18 Schedule 15.2)

Code reference

Clause 18 Schedule 15.2

Code related audit information

A reconciliation participant who is responsible for interrogating a metering installation must archive all raw meter data and any changes to the raw meter data for at least 48 months, in accordance with clause 8(6) of Schedule 10.6.

Procedures must be in place to ensure that raw meter data cannot be accessed by unauthorised personnel.

Meter readings cannot be modified without an audit trail being created.

Audit observation

Processes to archive and store raw meter data were reviewed. Raw meter data from at least 48 months prior was reviewed to ensure that it is retained.

MEPs and agents retain the raw meter data, and compliance was assessed as part of their MEP and agent audits.

Audit commentary

Compliance with this clause has been demonstrated by the MEPs and agents.

GENE

Review of audit trails in **section 2.4** confirmed that reads cannot be modified without an audit trail being created. Access to modify readings is restricted through log on privileges.

All meter reading data is archived and retained for over 48 months. Meter read data from 2013 was sighted during the audit.

GEOL

Review of audit trails in **section 2.4** confirmed that reads cannot be modified without an audit trail being created. Access to modify readings is restricted through log on privileges.

All meter reading data is archived and retained for over 48 months. Meter read data from 2010 was sighted during the audit.

GENH

AMS demonstrated compliance with this clause as part of their agent audit.

Generation

Generation data is stored indefinitely and can only be accessed by a small number of approved people with access rights. I viewed data from 2015 to confirm it is retained.

Audit outcome

Compliant

7.3. Non metering information collected / archived (Clause 21(5) Schedule 15.2)

Code reference

Clause 21(5) Schedule 15.2

Code related audit information

All relevant non-metering information, such as external control equipment operation logs, used in the determination of profile data must be collected, and archived in accordance with clause 18.

Audit observation

Processes to record non-metering information were discussed.

Audit commentary

GENE

EMS collects unmetered data in relation to streetlights as GENE's agent, and this information is appropriately archived. Compliance is confirmed in EMS' agent audit report.

I confirmed that GENE retains data logger and DUML database information indefinitely, and viewed DUML database information from 2014, and data logger information from 2016 when GENE first began receiving logger information.

GEOL, GENH, and Generation

No non-metering information is collected.

Audit outcome

Compliant

8. CREATING AND MANAGING (INCLUDING VALIDATING, ESTIMATING, STORING, CORRECTING AND ARCHIVING) VOLUME INFORMATION

8.1. Correction of NHH meter readings (Clause 19(1) Schedule 15.2)

Code reference

Clause 19(1) Schedule 15.2

Code related audit information

If a reconciliation participant detects errors while validating non-half hour meter readings, the reconciliation participant must:

19(1)(a) - confirm the original meter reading by carrying out another meter reading

19(1)(b) - replace the original meter reading the second meter reading (even if the second meter reading is at a different date)

19(1A) if a reconciliation participant detects errors while validating non half hour meter readings, but the reconciliation participant cannot confirm the original meter reading or replace it with a meter reading from another interrogation, the reconciliation participant must:

- *substitute the original meter reading with an estimated reading that is marked as an estimate; and*
- *subsequently replace the estimated reading in accordance with clause 4(2).*

Audit observation

Processes for correction of NHH meter readings were reviewed, including examining a sample of corrections. This included checking that updated consumption data flowed through to revision reconciliation submissions.

Audit commentary

Where errors are detected during the validation process, Genesis may request a check meter reading for meters read by Wells, or review AMI readings for surrounding dates. If an original meter reading cannot be confirmed it is invalidated and ignored by the billing and reconciliation processes. A system estimate will be created for billing if necessary.

When back billing is completed by the billing team, they normally advise the reconciliation team. The reconciliation team checks the correction is appropriately spread by invalidating previous readings where necessary. In the event that the reconciliation team is not notified, the readings will still automatically flow from Gentrack to Derive each evening.

I reviewed examples of corrections to determine whether they had been processed correctly and flowed through to revision submissions.

Defective meters

Defective meters are typically identified through the meter reading validation process, or from information provided by the meter reader, agent, the MEP, or the customer. Upon identifying a possible defective meter, a field services job is raised to investigate and resolve the defect and a consumption correction is processed if necessary.

ICPs with zero consumption for two invoices or more are identified through Gentrack's validation processes, but are not actively reviewed. The validation process is discussed further in **section 9.5**.

Stopped meter cases are directed to a work queue, and the teams responsible for billing and reconnection have been asked to raise cases if they believe a meter may be stopped or bridged. These stopped meter cases are reviewed, but there is currently a backlog of cases requiring investigation and resolution.

GENE

I reviewed 14 examples of stopped or faulty meters, and found corrections had been processed for 12 ICPs. Corrections were not processed for 0037942216PC4D0 (November 2018) or 0000507493DEA7C (February 2019).

GEOL

I reviewed six examples of stopped or faulty meters, and found corrections had been processed.

Bridged meters

Bridged meters are typically identified through reconnection paperwork returned from the contractor, but may also be identified where a stopped meter case is raised. ICPs with zero consumption are currently not actively monitored, as discussed in **section 9.5**.

An internal audit of bridged meter processes is underway, and has identified that process improvements are required to ensure that bridged consumption is consistently identified and corrected. The implementation of these improvements will be monitored through Genesis' internal audit processes.

GENE

I reviewed 15 examples of bridged meters, and found corrections were processed for 14 ICPs. No correction was processed for ICP 0000014674UN2D6, which was unbridged on 14/08/18.

GEOL

I reviewed three examples of bridged meters, and found corrections were appropriately processed.

Multiplier corrections

Multiplier corrections are processed in Gentrack by reloading the metering with the correct multiplier and transferring the reads to the reloaded meter. The corrected details flow from Gentrack to Derive overnight.

GENE

I reviewed 13 examples of multiplier corrections, and found they had been processed correctly in Gentrack and Derive.

GEOL

I reviewed five examples of multiplier corrections. Four had been processed correctly in Gentrack and Derive. For ICP 2810040000CH3A8 the multiplier correction was applied from 17/08/18 but should have been applied from 31/03/16. This is recorded as non-compliance below.

Transposed meters

Transposed meters are corrected by removing and reinstalling the registers correctly in Gentrack, or swapping the readings to the correct registers.

GENE

Two examples of transposed meter readings were checked and found to be processed correctly.

GEOL

One example of transposed meter readings was checked and found to be processed correctly.

Unmetered load

Unmetered load is calculated using an unmetered meter register, and daily unmetered load is calculated based upon the estimated daily kWh.

GENE

Two unmetered load corrections were checked for GENE, and found to be processed accurately.

GEOL

Three unmetered load corrections were checked for GEOL, and found to be processed accurately.

ICPs with inactive consumption

No consumption is submitted for periods where ICPs have inactive status. Inactive ICPs with consumption are identified, but are not consistently investigated and corrected as discussed in **section 9.5**.

GENE

GENE provided a report with 260 ICPs with inactive consumption, totalling 319,875 kWh. I reviewed the 20 ICPs with the most disconnected consumption. I found that corrections to active status were processed for all ICPs except:

- 0005418617WEBCA (3450 kWh after 28/05/19), which is under investigation to confirm whether the consumption is genuine or caused by a misread; and
- 0100010811BC4DF (2994 kWh after 04/06/19), which switched out effective 13/07/19 before a correction was processed.

Seven of the corrections were identified and made through GENE's normal processes, and 11 were corrected as part of the review of the audit samples.

GEOL

GEOL provided a report with 42 ICPs with inactive consumption, totalling 39,243 kWh. I reviewed the ten ICPs with the most disconnected consumption, and found corrections had been processed.

I rechecked ICPs identified in the 2018 audit which did not have corrections for inactive consumption processed:

ICP	Consumption while inactive (kWh)	2019 findings
0003401252WMBAC	372	Corrected.
1000014175BPB48	2,146	
0000015217HB648	147	No further reads were obtained to confirm the inactive consumption was genuine, so no correction was processed.
0000143324UNCA3	31	
0000160845HBD3A	138	
0000190769UN3ED	1,708	

ICP	Consumption while inactive (kWh)	2019 findings
0000711321TU254	153	
0004708700CAF3D	60	
0008809310CN110	14	
0107719649LCC7A	24	
Total	**4,793**	

I rechecked ICPs identified in the 2017 audit which did not have corrections for inactive consumption processed at the time of the 2018 audit:

ICP	Consumption while inactive (kWh)	2019 findings
0000188635UN41E	286	No further reads were obtained to confirm the inactive consumption was genuine, so no correction was processed.
0012510340EL5DB	68	
0061108501WM35D	21	Remains inactive for part of the consumption period 09/05-31/05/17.
Total	**307**	

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 8.1 With: Clause 19(1) Schedule 15.2 From: Mar 16 To: Aug 19	**GENE** Stopped meter corrections were not processed for 0037942216PC4D0 (November 2018) or 0000507493DEA7C (February 2019). A bridged meter correction was not processed for ICP 0000014674UN2D6, which was unbridged on 14/08/18. An inactive consumption correction was not processed for ICP 0100010811BC4DF, which switched out before the correction was processed. **GEOL** For ICP 2810040000CH3A8 the multiplier correction was applied from 17/08/18 but should have been applied from 31/03/16. Potential impact: Medium Actual impact: Unknown Audit history: Multiple times Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating
Low	The controls are rated as moderate overall for corrections, because most issues requiring correction are identified and corrections are processed. Corrections for consumption that has occurred during inactive periods is identified, but investigation and correction does not always occur. The impact is unknown but assessed to be low, based on the low number of ICPs.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis will investigate the ICP's that have been identified and assess the scenarios surrounding their non-conformances.	01/12/2020	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will assess the findings from the investigation and implement change where required.	01/03/2020	

8.2. Correction of HHR metering information (Clause 19(2) Schedule 15.2)

Code reference

Clause 19(2) Schedule 15.2

Code related audit information

If a reconciliation participant detects errors while validating half hour meter readings, the reconciliation participant must correct the meter readings as follows:

19(2)(a) - if the relevant metering installation has a check meter or data storage device, substitute the original meter reading with data from the check meter or data storage device; or

19(2)(b) - if the relevant metering installation does not have a check meter or data storage device, substitute the original meter reading with data from another period provided:

(i) The total of all substituted intervals matches the total consumption recorded on a meter, if available; and

(ii) The reconciliation participant considers the pattern of consumption to be materially similar to the period in error

Audit observation

Processes for correction of HHR meter readings were reviewed.

GENE completes its own HHR corrections using MSD, and a sample of ten HHR corrections were reviewed.

AMS completes HHR corrections on behalf of GENH as an agent. Compliance was assessed as part of their agent audit report.

I checked three generation corrections relating to power outages and shutdowns.

Audit commentary

GENE

Where actual HHR data is not available, estimates are automatically created in MSD based on the available interval consumption and midnight read data. The estimation process is discussed in detail in **section 9.4**.

Estimates are replaced with actual data if it becomes available at a later date, and are recalculated prior to each revision submission to ensure that they are calculated based on the best information available.

If an error is detected during validation of HHR data, and check metering data is not available, then data from a period with a quantity and profile like that expected is to be used. I checked 12 examples of corrections processed to record consumption during a period where a meter had been tampered with, was stopped or was bridged. I found that the meters were all category 1 or 2, and were changed to NHH submission type to process the correction.

Validation processes identified an issue with Smartco's HHR AMI data following the end of daylight savings in April 2019. The first trading period was replaced with zero values. Genesis has obtained corrected data from AMS (who provides information for Smartco's meters) and has replaced the affected data with corrected values, which will be provided through the revision process.

GENH

Where errors are detected during validation of half-hour metering information, and check metering data is not available, then data from a period with a quantity and profile like that expected is to be used. This function is carried out by AMS on behalf of GENH, and compliance is confirmed in their audit report.

Generation

Estimates and corrections occur rarely for generation data. I checked three corrections where power outages or shutdowns had occurred. The corrections were provided by a Genesis engineer. An appropriate audit trail is kept, and the trading periods are recorded as estimates. Only the "copy" channel can be edited not the "main" channel.

GEOL

GEOL does not deal with HHR data.

Audit outcome

Compliant

8.3. Error and loss compensation arrangements (Clause 19(3) Schedule 15.2)

Code reference

Clause 19(3) Schedule 15.2

Code related audit information

A reconciliation participant may use error compensation and loss compensation as part of the process of determining accurate data. Whichever methodology is used, the reconciliation participant must document the compensation process and comply with audit trail requirements set out in the Code.

Audit observation

Error and loss compensation arrangements were discussed.

Audit commentary

Genesis does not deal with any loss and compensation arrangements. If a compensation arrangement was in place, this would be identified through the load check process employed at the time of certification or recertification.

Audit outcome

Compliant

8.4. Correction of HHR and NHH raw meter data (Clause 19(4) and (5) Schedule 15.2)

Code reference

Clause 19(4) and (5) Schedule 15.2

Code related audit information

In correcting a meter reading in accordance with clause 19, the raw meter data must not be overwritten. If the raw meter data and the meter readings are the same, an automatic secure backup of the affected data must be made and archived by the processing or data correction application.

If data is corrected or altered, a journal must be generated and archived with the raw meter data file. The journal must contain the following:

19(5)(a)- the date of the correction or alteration

19(5)(b)- the time of the correction or alteration

19(5)(c)- the operator identifier for the person within the reconciliation participant who made the correction or alteration

19(5)(d)- the half-hour metering data or the non half hour metering data corrected or altered, and the total difference in volume of such corrected or altered data

19(5)(e)- the technique used to arrive at the corrected data

19(5)(f)- the reason for the correction or alteration.

Audit observation

Corrections are discussed in **sections 8.1** and **8.2**, which confirmed that raw meter data is not overwritten as part of the correction process. Audit trails are discussed in **section 2.4**.

Raw meter data retention was reviewed as part of AMS and Wells' audits.

Audit commentary

NHH and HHR raw meter data is held by Wells and AMS, and their audits confirm that it cannot be edited.

GENE and GEOL

I reviewed audit trails and supporting calculations for HHR and NHH data corrections and noted that they were compliant with the requirements of this clause for the sample of corrections checked.

GENH

The AMS report confirms compliance.

Generation

Stark contains a compliant audit trail, and all users have individual logins. Generation raw meter data is not edited. Only the copy channel can be edited.

Audit outcome

Compliant

9. ESTIMATING AND VALIDATING VOLUME INFORMATION

9.1. Identification of readings (Clause 3(3) Schedule 15.2)

Code reference

Clause 3(3) Schedule 15.2

Code related audit information

All estimated readings and permanent estimates must be clearly identified as an estimate at source and in any exchange of metering data or volume information between participants.

Audit observation

A sample of reads and volumes were traced from the source files to Genesis' systems in **section 2.3**.

Provision of estimated reads to other participants during switching was reviewed in **sections 4.3**, **4.4**, **4.10** and **4.11**. Correct identification of estimated reads, and review of the estimation process was completed in **sections 8.1** and **8.2**.

Audit commentary

GENE

Readings are clearly identified as required by this clause. Some CS files did not have the correct read type recorded for the switch event read. Four of the 20 CS files checked had the last read labelled as actual but should have been sent as estimates as discussed in **sections 4.3** and **4.10**.

GEOL

Readings are clearly identified as required by this clause. Some CS files did not have the correct read type recorded for the switch event read. Ten of the 20 CS files checked had the last read labelled as actual but should have been sent as estimates as discussed in **sections 4.3** and **4.10**. One CS file had an actual read incorrectly labelled as an estimate as discussed in **section 4.10**.

GENH

AMS' audit report confirms compliance with this clause.

Generation

In the rare event that generation data is estimated or corrected, there is an appropriate audit trail and the data is correctly identified.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.1 With: Clause 3(3) Schedule 15.2 From: 01-Aug-18 To: 19-Jun-19	**GENE** Four CS files had estimated readings recorded as actual readings. **GEOL** Ten CS files had estimated readings recorded as actual readings. One CS file had actual readings recorded as estimated readings. Potential impact: Medium Actual impact: Unknown Audit history: None Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as weak as the volume of errors found in the ICPs sample was high indicating that there are system issues that require investigation and correction. The audit risk rating is low as the incorrect reads are addressed via the RR process initiated by the gaining trader in most instances.

Actions taken to resolve the issue	Completion date	Remedial action status
Refer 4.3 and 4.10. This is instance where risk rating is double counting for same cause.		Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Refer 4.3. and 4.10		

9.2. Derivation of volume information (Clause 3(4) Schedule 15.2)

Code reference

Clause 3(4) Schedule 15.2

Code related audit information

Volume information must be directly derived, in accordance with Schedule 15.2, from:

3(4)(a) - validated meter readings

3(4)(b) - estimated readings

3(4)(c) - permanent estimates.

Audit observation

A sample of submission data was reviewed in **sections 11** and **12**, to confirm that volume was based on readings as required.

Audit commentary

Review of submission data confirmed that it is based on readings as required by this clause.

Audit outcome

Compliant

9.3. Meter data used to derive volume information (Clause 3(5) Schedule 15.2)

Code reference

Clause 3(5) Schedule 15.2

Code related audit information

All meter data that is used to derive volume information must not be rounded or truncated from the stored data from the metering installation.

Audit observation

A sample of submission data was reviewed in **sections 11** and **12**, to confirm that volume was based on readings as required.

NHH data is collected by AMS and Wells, and HHR data is collected by AMS. Generation data was checked during the audit.

Audit commentary

The MEPs and agents retain the raw, unrounded data. Compliance with this clause has been demonstrated by Genesis' agents and the MEPs as part of their own audits.

GENE

Manual meter readings do not record decimal places and are not rounded or truncated on import into Gentrack or Derive. AMI and HHR data provided by AMS is not truncated on import into DRDS.

GEOL

Manual meter readings do not record decimal places and are not rounded or truncated on import into Gentrack or Derive. AMI data provided by AMS is not truncated on import into DRDS.

GENH

AMS's audit report confirms compliance for GENH.

Generation data

Generation data was checked during the audit, all data checked was rounded to two decimal places.

Audit outcome

Compliant

9.4. Half hour estimates (Clause 15 Schedule 15.2)

Code reference

Clause 15 Schedule 15.2

Code related audit information

If a reconciliation participant is unable to interrogate an electronically interrogated metering installation before the deadline for providing submission information, the submission to the reconciliation manager

must be the reconciliation participant's best estimate of the quantity of electricity that was purchased or sold in each trading period during any applicable consumption period for that metering installation.

The reconciliation participant must use reasonable endeavours to ensure that estimated submission information is within the percentage specified by the Authority.

Audit observation

GENE creates HHR estimates for GENE ICPs using MSD. The HHR estimation process was examined, including review of a sample of 21 estimates and technical documentation on the HHR estimation process.

AMS completes HHR estimation on behalf of GENH, their estimation processes were reviewed as part of their agent audit.

The generation estimation process was reviewed.

Audit commentary

GENE

AMS provides null values where actual HHR data is not available, and estimates are automatically created in MSD based on the available interval consumption and midnight read data. Estimates are replaced with actual data if it becomes available at a later date. Estimates are recalculated prior to each revision submission to ensure that they are calculated based on the best information available:

- where midnight readings are available and some trading periods are missing, MSD calculates the total value of the missing trading periods, and profiles the consumption based the same interval, and day of the week for the previous four weeks (and next four weeks if this information is available);
- where midnight readings are not available, MSD estimates based on the average consumption for the interval, day and week for the previous four weeks (and next four weeks if this information is available); and
- where midnight readings are not available and there is insufficient history to estimate average consumption, 0.5 kWh per trading period (24 kWh per day) is applied.

I reviewed 21 GENE HHR estimates to confirm whether the requirement to use reasonable endeavours to ensure estimates were accurate were met.

- For 15 ICPs the default estimate of 24 kWh per day was applied because insufficient history was available. The affected ICPs have all been converted back to NHH submission.
- For six ICPs the proportional average methods were used to calculate consumption based on readings and similar consumption periods. I saw evidence that the estimates were recalculated prior to each submission to improve their accuracy.

Genesis used reasonable endeavours to calculate the estimates. For ten of the estimates, actual volumes were later received for the estimated period. For four of the estimates calculated using the proportional average method, the actual data was within ± 10% of the estimate. For the other six estimates the actual data was not within ± 10% of the estimate, and I found the largest differences related to ICPs where the default 24 kWh per day had been applied which had low actual consumption (e.g. 2-4 kWh per day).

Description	Recommendation	Audited party comment	Remedial action
Regarding Clause 15 Schedule 15.2 Default estimates	Default estimates are currently set at 24 kWh per day for all ICPs, but expected consumption may vary significantly from this. Consider using a different default estimate value for different meter categories or groups of ICPs to increase the accuracy of HHR estimates.	Genesis review the HHR ICPS and where continuous nulls or estimations are established the sites will eventually be converted back to NHH to an historical period. The costs associated to changes in the estimation routine will out way any benefits gained in potential accuracy of estimation.	Investigating

In some cases, especially where data is missing for many intervals, GENE will change the ICP's submission type to NHH. I saw evidence of this process in action during the audit.

GENH

When AMS, on behalf of GENH, has not received data prior to the deadline for providing submission information, then estimated data is provided. There is a requirement to use "reasonable endeavours" to ensure this data is accurate to within 10%. The AMS audit report indicates compliance with this clause.

Generation

Estimates are rarely required for generation metering data because check metering data can be used if required. I checked three estimations where power outages or shutdowns had occurred. The estimations were provided by a Genesis engineer. An appropriate audit trail is kept, and the trading periods are recorded as estimates. Only the "copy" channel can be edited not the "main" channel.

GEOL

GEOL does not deal with HHR data.

Audit outcome

Compliant

9.5. NHH metering information data validation (Clause 16 Schedule 15.2)

Code reference

Clause 16 Schedule 15.2

Code related audit information

Each validity check of non half hour meter readings and estimated readings must include the following:

16(2)(a) - confirmation that the meter reading or estimated reading relates to the correct ICP, meter, and register

16(2)(b) - checks for invalid dates and times

16(2)(c) - confirmation that the meter reading or estimated reading lies within an acceptable range compared with the expected pattern, previous pattern, or trend

16(2)(d) - confirmation that there is no obvious corruption of the data, including unexpected 0 values.

Audit observation

I reviewed and observed the NHH data validation process, including:

- checking a sample of data validations, including emails, work queues, and reports used in the validation process;
- viewing process guides for billing validations; and
- viewing vacant cycle flow charts.

Audit commentary

GENE and GEOL

NHH data is validated by several processes.

Meter reader checks

For non-AMI reads collected by Wells, the handheld data input devices perform a localised validation to ensure that the reading is within expected high-low parameters. Readings outside these parameters must be re-entered and acknowledged by the data collector. A meter cannot be skipped without reading unless a reason is entered. Wells is required to identify issues which may affect metering information accuracy, such as stopped or damaged meters, and report this information to GENE. This is discussed further in **section 6.6**.

Read import validation

If data becomes corrupt, including dates and times, Gentrack will not allow the file to be uploaded and an investigation will then occur.

This validation checks the reads are provided for the correct registers and are consistent with the number of dials recorded.

Billing validation

Gentrack validates meter readings as part of the billing process. Any readings which fail validation generate exceptions, which are emailed to a shared mailbox and added as a queue item to be investigated and either validated or not validated. Reads that are validated are available for billing and reconciliation and reads that are not validated are not.

The validations relevant to the scope of this audit include:

Code	Description	Action
GBR0002	Read lower than previous actual or estimate reading.	If the difference is less than 1 kWh the exception is approved, and other exceptions are reviewed and either validated or not validated. All reads which are 100 kWh lower than a final read, or 200 kWh lower than a gain read are required to be investigated and corrected. Switch gain read issues are referred to the switching team for resolution.
GBR0014	Out of cycle reads	Out of cycle readings are reviewed.
GB0017	Transaction creation mismatch	Identifies ICPs where there is a discrepancy in ICP and customer information, indicating that the brand may not be recorded correctly. Discrepancies are reviewed and resolved.
GDR0052 GBR0053	High dollar bill High first bill	Identifies invoices over $900 for residential customers and $5000 for commercial customers, which are checked to confirm they are correct.

Code	Description	Action
GBR0003	No read loaded	A read is expected for billing and has not been loaded. These exceptions are investigated and action is taken as required, such as loading AMI readings where available for a nearby date, or raising a field services job where a meter cannot be read due to a meter issue.
GBR0011	No meters on metered sequence	Identifies ICPs with no billable registers, which are typically withdrawn switches where metering has not been reopened. These exceptions are reviewed and referred to the switching team as needed.
GBR0023 GBR0096	Incorrect previous read date or read	Identifies ICPs where the previous read or read date in Gentrack does not match the last billed read. This can occur where invoices have been reversed and rebilled, and exceptions are checked.
GBR0092	Not current retailer	Identifies any ICPs where GENE or GEOL are not the current retailer, which are checked.

Vacant consumption

A vacant disconnection process is followed for vacant ICPs. A letter to the occupier is generated, and if a customer does not sign up or switch to another retailer, the ICP is disconnected. I confirmed that consumption is submitted for vacant ICPs in **section 12.2**.

Reports of vacant consuming ICPs are generated, and worked through with a focus on arranging for the customer at the address to sign up.

Zero consumption

ICPs with zero consumption for two invoices or more are identified through Gentrack's validation processes. These ICPs are recorded on "0 usage check" report, which contained 611 ICPs on 08/08/19. The report is not actively reviewed. The staff member who was responsible for monitoring zero consumption is on maternity leave, and the task has not been reassigned.

The teams responsible for billing and reconnection have been asked to raise cases which are directed to a work queue if they believe a meter may be stopped or bridged. Bridged consumption is typically identified through reconnection paperwork provided by MEPs and contractors. These stopped meter cases are reviewed, but there is currently a backlog of cases requiring investigation and resolution.

The reconciliation team also uses queries to identify meters with zero consumption, and checks the ICPs to determine whether action is being taken to investigate and resolve the issue. If no action is being taken, the reconciliation team follows up with the billing team. These checks are completed during periods with lower workloads, when submissions are not due.

Potential stopped and/or faulty meters may also be referred to revenue assurance for investigation and correction.

Disconnected ICPs with consumption

Disconnected ICPs with consumption are identified through the GBR0020 (disconnected register with consumption) billing validation. It has been made a warning rather than a failure, and the system does not require the exception to be reviewed and actioned before the ICP can be billed.

Disconnected consumption on customer ICPs and vacant ICPs is handled separately.

Customer ICPs	A daily report is generated for customer ICPs with the GBR0020 exception and I found it had 98 ICPs on 06/08/19.

	The billing team adds the notes from the previous day's report to the file and works through the exceptions to determine whether consumption is genuine, and updates the status as necessary. Most commonly the consumption is caused by timing differences for reconnections, where either Genesis has reconnected but not processed the paperwork yet, or another retailer gaining a site has reconnected before the switch was complete. Sometimes discrepancies can occur because an incorrect status has been applied, or the customer has self-reconnected following disconnection. I walked through the correction process and found that investigation is completed to confirm whether the consumption is genuine, and the status is updated and/or the ICP is disconnected again as required.
Vacant ICPs	A daily report is generated for vacant ICPs with the GBR0020 exception and I found it had 284 ICPs on 08/08/19. The team leader prioritises the exceptions based on the volume of inactive consumption, and depending on workload for the team, will add some of the exceptions to the work queues. These exceptions are considered to be lower priority and will be left if the team does not have sufficient time to resolve these after processing other exception types. Where the billing team identifies vacant disconnected consumption through their other validation checks, they can raise a case which is added to the work queue. I walked through the correction process for some items where inactive consumption had been identified and found that investigation is completed to confirm whether the consumption is genuine, and the status is updated and/or the ICP is disconnected again as required.

The reconciliation team also identifies ICPs with inactive consumption by running queries to identify any inactive ICPs where the latest reading is more than 10 kWh higher than the last billed reading. The reconciliation team reviews the ICPs and processes corrections to ensure that the ICPs have the correct status and consumption is submitted. These checks are completed during periods with lower workloads, when submissions are not due.

Inactive consumption may also be referred to revenue assurance for investigation and correction.

Not consistently investigating and correcting the status for ICPs with consumption while inactive is recorded as non-compliance in **section 8.1**.

Derive and MSD validations

Readings are checked on import into Derive. Any reads which are high, low, or have potential errors are put on hold and must be released by the reconciliation team. Further consumption validation occurs within MSD, as described in **section 12.3.**

GENH

GENH does not deal with NHH data.

Audit outcome

Compliant

9.6. Electronic meter readings and estimated readings (Clause 17 Schedule 15.2)

Code reference

Clause 17 Schedule 15.2

Code related audit information

Each validity check of electronically interrogated meter readings and estimate readings must be at a frequency that will allow a further interrogation of the data storage device before the data is overwritten within the data storage device and before this data can be used for any purpose under the Code.

Each validity check of a meter reading obtained by electronic interrogation or an estimated reading must include:

17(4)(a) - checks for missing data

17(4)(b) - checks for invalid dates and times

17(4)(c) - checks of unexpected zero values

17(4)(d) - comparison with expected or previous flow patterns

17(4)(e) - comparisons of meter readings with data on any data storage device registers that are available

17(4)(f) - a review of meter and data storage device event list. Any event that could have affected the integrity of metering data must be investigated.

Audit Observation

I reviewed and observed the HHR, generation, and AMI data validation processes, including checking a sample of data validations and validation setting documentation.

AMS' agent audit report was reviewed.

Audit commentary

GENE and GEOL

Electronic meter reading information is provided by AMS. For HHR AMI installations, interrogation occurs every night so there is little risk that data can be overwritten. Data is held for a longer period at the meter and can be re-interrogated later if required.

Validation of electronic data was examined as part of AMS' audit, and compliance with the requirements of clause 17 is confirmed.

GENE and GEOL also conduct consumption validation for all AMI ICPs using the same processes as for NHH ICPs. This achieves compliance with the requirement to conduct the following validations:

- checks of unexpected zero values; and
- comparison with expected or previous flow patterns.

MEPs provide emails containing meter events which require action. I saw evidence that these emails are received and reviewed.

Selected event information is emailed to GENE and GEOL by the MEPs. In some cases, these are advisory, and no action is required, and in others the MEP asks for a job to be raised. I saw some examples of these emails received by GENE and GEOL, including lists of non-communicating ICPs, tamper alarms, and power reversed. I checked a sample of events from 05/04/19 and found that in most cases appropriate action was taken, except for GEOL ICP 0007185413RNFD8 which had likely generation but no metering upgrade was requested. This is recorded as non-compliance in **section 6.1**.

AMS provide meter event logs which are received by GENE and GEOL but are not reviewed. GENE and GEOL intend to develop processes to enable this event information to be reviewed and actioned.

GENH

AMS's audit report confirms compliance with these clauses. In situations where data fails validation and a logical reason cannot be found the issue is referred to the account manager for further investigation into possible site-specific reasons for the anomaly. A final option is for a site visit if the anomaly cannot be reasonably explained.

Generation

Interrogation occurs nightly for generation metering so there is little risk that data will be overwritten.

Each validity check for generation half-hour metering information includes the following:

- checks for missing data;
- checks for invalid dates and times (data will not be collected if dates or times are invalid);
- checks of unexpected zero values;
- comparison with expected or previous flow patterns (a comparison is made against the previous month);
- comparisons with the readings reported by meter and data logger registers where these are available; and
- a review of the Stark meter and data logger event list - any event that could have affected the integrity of metering is investigated by Genesis' engineers.

The GEMDP collection system is also used to collect data from all loggers and this data is compared to the "HHR vols" data each month. The two sets of data were compared during the audit and only small timing differences were identified.

Audit outcome

Compliant

10. PROVISION OF METERING INFORMATION TO THE GRID OWNER IN ACCORDANCE WITH SUBPART 4 OF PART 13 (CLAUSE 15.38(1)(F))

10.1. Generators to provide HHR metering information (Clause 13.136)

Code reference

Clause 13.136

Code related audit information

The generator (and/or embedded generator) must provide to the grid owner connected to the local network in which the embedded generator is located, half hour metering information in accordance with clause 13.138 in relation to generating plant that is subject to a dispatch instruction:

- *that injects electricity directly into a local network; or*
- *if the meter configuration is such that the electricity flows into a local network without first passing through a grid injection point or grid exit point metering installation.*

Audit observation

Genesis does not have responsibilities for the provision of information to the grid owner.

Audit commentary

Genesis does not have responsibilities for the provision of information to the grid owner.

Audit outcome

Not applicable

10.2. Unoffered & intermittent generation provision of metering information (Clause 13.137)

Code reference

Clause 13.137

Code related audit information

Each generator must provide the relevant grid owner half-hour metering information for:

- *any unoffered generation from a generating station with a point of connection to the grid 13.137(1)(a)*
- *any electricity supplied from an intermittent generating station with a point of connection to the grid. 13.137(1)(b)*

The generator must provide the relevant grid owner with the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of that generator's volume information. (clause 13.137(2))

If such half-hour metering information is not available, the generator must provide the pricing manager and the relevant grid owner a reasonable estimate of such data. (clause 13.137(3))

Audit observation

Genesis does not have responsibilities for the provision of information to the grid owner.

Audit commentary

Genesis does not have responsibilities for the provision of information to the grid owner.

Audit outcome

Not applicable

10.3. Loss adjustment of HHR metering information (Clause 13.138)

Code reference

Clause 13.138

Code related audit information

The generator must provide the information required by clauses 13.136 and 13.137,

13.138(1)(a)- adjusted for losses (if any) relative to the grid injection point or, for embedded generators the grid exit point, at which it offered the electricity

13.138(1)(b)- in the manner and form that the pricing manager stipulates

13.138(1)(c)- by 0500 hours on a trading day for each trading period of the previous trading day.

The generator must provide the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of the generator's volume information.

Audit observation

Genesis does not have responsibilities for the provision of information to the grid owner.

Audit commentary

Genesis does not have responsibilities for the provision of information to the grid owner.

Audit outcome

Not applicable

10.4. Notification of the provision of HHR metering information (Clause 13.140)

Code reference

Clause 13.140

Code related audit information

If the generator provides half-hourly metering information to a grid owner under clauses 13.136 to 13.138, or 13.138A, it must also, by 0500 hours of that day, advise the relevant grid owner.

Audit observation

Genesis does not have responsibilities for the provision of information to the grid owner.

Audit commentary

Genesis does not have responsibilities for the provision of information to the grid owner.

Audit outcome

Not applicable

11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

11.1. Buying and selling notifications (Clause 15.3)

Code reference

Clause 15.3

Code related audit information

Unless an embedded generator has given a notification in respect of the point of connection under clause 15.3, a trader must give notice to the reconciliation manager if it is to commence or cease trading electricity at a point of connection using a profile with a profile code other than HHR, RPS, UML, EG1, or PV1 at least five business days before commencing or ceasing trader.

The notification must comply with any procedures or requirements specified by the reconciliation manager.

Audit observation

Registry lists for 01/06/18 to 18/06/19 were reviewed to confirm the profiles used. Processes to create buying and selling notifications were reviewed.

Audit commentary

The GENE trading team are responsible for creating trading notifications for GENE, GEOL, and GENH on the reconciliation portal. The trading team becomes aware that trading notifications are needed by:

- the Reconciliation Manager providing notification of a change to an existing NSP;
- the GENE reconciliation team advising that they have set up a new NSP or added injection flow to an existing NSP; or
- checking a report from Gentrack against their open trading notifications, which are recorded in Market Submissions Database (MSD).

Notifications are only created where Genesis begins or ceases trading for all ICPs on an NSP, not where they begin or cease trading using a profile other than HHR, RPS, UML, EG1, or PV1 at an NSP. This is because there is no facility to enter a profile into a trading notification on the reconciliation manager portal.

GENE

GENE uses four profiles which require trading notifications: CST, NST, and NST. 14 combinations of NSP and profiles requiring trading notifications started or stopped being used for active ICPs during the audit period:

NSP	Profile	Start date	End date
BPE0331	CST	-	30/11/2018
CST0331	NST	-	31/01/2019
DOB0331	SST	-	31/01/2019
GFD0331	CST	-	19/03/2019
GYM0661	SST	-	31/01/2019
HIN0331	NST	-	30/06/2018

NSP	Profile	Start date	End date
HTI0331	NST	1/08/2018	31/01/2019
HTI0331	NST	1/08/2018	31/01/2019
HUI0331	NST	-	31/01/2019
KIN0331	NST	-	30/06/2018
KUM0661	SST	-	31/01/2019
RFN1102	SST	-	31/01/2019
TKR0331	CST	20/03/2019	-
WIL0331	CST	6/09/2018	-

Trading notifications were not issued, because Genesis had open trading notifications relating to other ICPs at the NSP on the start and/or end date.

GENH

GENH only uses the HHR profile, and trading notifications are not required.

GEOL

GEOL only uses the RPS profile and PV1 profiles, and trading notifications are not required.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.1 With: Clause 15.3 From: 30-Jun-18 To: 20-Mar-19	**GENE** 14 trading notifications were not provided. Potential impact: None Actual impact: None Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	It was not possible for Genesis to create the required trading notifications using the reconciliation manager portal. There is no impact, the reconciliation manager's system recorded the profiles correctly.

Actions taken to resolve the issue	Completion date	Remedial action status
As this immaterial non-conformance is created by a shortcoming of the Recompilation Manager portal the risk rating should not contribute to the total.		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

11.2. Calculation of ICP days (Clause 15.6)

Code reference

Clause 15.6

Code related audit information

Each retailer and direct purchaser (excluding direct consumers) must deliver a report to the reconciliation manager detailing the number of ICP days for each NSP for each submission file of submission information in respect of:

> *15.6(1)(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*
>
> *15.6(1)(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

The ICP days information must be calculated using the data contained in the retailer or direct purchaser's reconciliation system when it aggregates volume information for ICPs into submission information.

Audit observation

The process for the calculation of ICP days was examined by checking NSPs with a small number of ICPs to confirm the AV110 ICP days calculation was correct. I reviewed variances for 14 months of GR100 reports.

GENE prepares AV110 ICP days submissions for GENE and GEOL, and AMS prepares the submissions for GENH.

Alleged breaches were reviewed.

Audit commentary

No alleged breaches were recorded for late provision of ICP days information.

GENE

HHR and NHH ICP days are provided on separate reports. The process for the calculation of ICP days was examined by checking ten NSPs with a small number of HHR ICPs, and ten NSPs with a small number of NHH ICPs. The ICP days calculation was confirmed to be correct.

ICP days submissions are validated against the expected number of active ICP days on the registry list prior to submission. ICPs with differences are checked to determine whether they are timing differences, or information needs to be corrected.

The following table shows the ICP days difference between GENE files and the RM return file (GR100) for all available revisions for 16 months. Negative percentage figures indicate that the GENE ICP days figures are higher than those contained on the registry. The discrepancies are very small.

Month	Ri	R1	R3	R7	R14
Jan 2018	0.00%	0.00%	0.00%	0.00%	0.00%
Feb 2018	0.07%	0.00%	0.00%	0.00%	0.00%
Mar 2018	0.01%	0.01%	0.00%	0.00%	0.00%
Apr 2018	0.01%	0.00%	0.00%	0.00%	-
May 2018	0.01%	0.00%	0.00%	0.00%	-
Jun 2018	0.01%	-	0.00%	0.00%	-
Jul 2018	0.00%	0.00%	0.00%	0.00%	-
Aug 2018	0.02%	0.00%	0.00%	0.00%	-
Sep 2018	0.08%	0.00%	0.00%	0.01%	-
Oct 2018	0.00%	0.00%	-0.01%	0.00%	-
Nov 2018	-0.01%	0.00%	0.00%	-	-
Dec 2018	-0.01%	0.00%	0.00%	-	-
Jan 2019	0.02%	0.04%	0.01%	-	-
Feb 2019	0.00%	0.00%	0.00%	-	-
Mar 2019	0.00%	0.01%	-	-	-
Apr 2019	0.01%	0.00%	-	-	-

I reviewed a sample of five NSP level ICP days differences remaining at revision 7 or 14, and found they related to backdated status updates, switch events, and submission type updates. Late status and trader updates are discussed in **sections 3.3** and **3.5**, and backdated switches are discussed in **section 4.**

Genesis' processes for upgrades and downgrades achieve accuracy for consumption information, but non-compliance is recorded in **section 6.7** for the incorrect application of meter readings. The ICP days calculations are correct because they align with the consumption information.

GEOL

The process for the calculation of ICP days was examined by checking ten NSPs with a small number of ICPs. The ICP days calculation was confirmed to be correct.

The following table shows the ICP days difference between GEOL files and the RM return file (GR100) for all available revisions for 16 months. Negative percentage figures indicate that the GEOL ICP days figures are higher than those contained on the registry. The discrepancies are very small.

Month	Ri	R1	R3	R7	R14
Jan 2018	0.00%	0.00%	0.00%	0.01%	0.01%
Feb 2018	0.00%	0.00%	0.00%	0.01%	0.00%
Mar 2018	0.01%	0.00%	0.00%	0.01%	0.00%
Apr 2018	-0.01%	0.00%	0.00%	0.01%	-
May 2018	0.00%	0.00%	0.01%	0.01%	-
Jun 2018	-	-	0.01%	0.01%	-
Jul 2018	0.03%	0.02%	0.01%	0.01%	-
Aug 2018	0.03%	0.01%	0.01%	0.01%	-
Sep 2018	0.39%	0.01%	0.01%	0.00%	-
Oct 2018	0.00%	0.01%	0.02%	0.00%	-
Nov 2018	0.02%	0.01%	0.02%	-	-
Dec 2018	0.04%	0.02%	0.02%	-	-
Jan 2019	0.02%	0.03%	0.00%	-	-
Feb 2019	0.08%	0.02%	0.00%	-	-
Mar 2019	0.01%	0.00%	-	-	-
Apr 2019	0.01%	0.00%	-	-	-

I reviewed five NSP level ICP days differences remaining at revision 7 or 14 and found they related to backdated status updates and switch events. Late status updates are discussed in **sections 3.3** and **3.5**, and backdated switches are discussed in **section 4.**

GENH

Compliance is recorded in AMS' audit report.

The process for the calculation of ICP days was examined by checking 12 NSPs with a small number of ICPs. The ICP days calculation was confirmed to be correct.

The following table shows the ICP days difference between GENH files and the RM return file (GR100) for all available revisions for 16 months. Negative percentage figures indicate that the GENH ICP days figures are higher than those contained on the registry. The discrepancies are very small.

Month	Ri	R1	R3	R7	R14
Jan 2018	0.12%	0.02%	0.00%	0.00%	0.00%
Feb 2018	-0.08%	-0.02%	-0.01%	-0.01%	-0.01%
Mar 2018	0.04%	0.01%	0.00%	0.00%	0.00%
Apr 2018	0.07%	0.04%	0.00%	0.00%	-
May 2018	0.02%	0.02%	0.00%	0.00%	-
Jun 2018	-0.01%	-	0.00%	0.00%	-
Jul 2018	-0.06%	-0.01%	-0.01%	0.00%	-
Aug 2018	-0.46%	-0.46%	0.00%	-0.01%	-
Sep 2018	-0.52%	-0.06%	0.00%	0.00%	-
Oct 2018	-0.12%	0.08%	0.00%	0.00%	-
Nov 2018	0.02%	0.10%	0.00%	-	-
Dec 2018	-0.08%	0.04%	0.01%	-	-
Jan 2019	0.18%	0.13%	0.00%	-	-
Feb 2019	0.20%	0.19%	-0.02%	-	-
Mar 2019	0.07%	0.06%	-	-	-
Apr 2019	-0.05%	0.00%	-	-	-

Audit outcome

Compliant

11.3. Electricity supplied information provision to the reconciliation manager (Clause 15.7)

Code reference

Clause 15.7

Code related audit information

A retailer must deliver to the reconciliation manager its total monthly quantity of electricity supplied for each NSP, aggregated by invoice month, for which it has provided submission information to the reconciliation manager, including revised submission information for that period as non- loss adjusted values in respect of:

> *15.7(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*
>
> *15.7(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

Audit observation

The process for the calculation of as billed volumes was examined by checking five NSPs with a small number of ICPs to confirm the AV120 calculation was correct.

GR130 reports for January 2017 onwards were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

Audit commentary

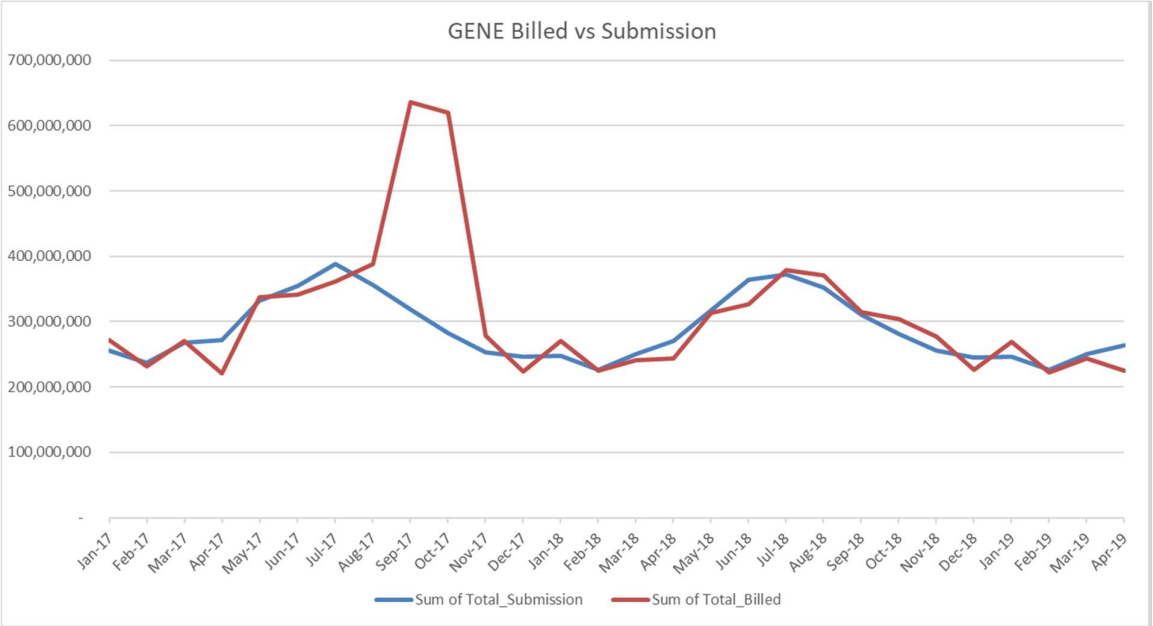
GENE

The process for the calculation of "as billed" volumes was examined by checking May 2019 AV120 submissions for five NSPs with a small number of ICPs against invoice information. The AV120 billed consumption calculation was confirmed to be correct for the NSPs checked.

GENE's as billed submissions are complicated by some streetlights which are submitted as NHH and billed as HHR. I walked through GENE's process to create as billed reports and found that these ICPs were identified and handled correctly when creating the "as billed" submissions.

I also checked the difference between submission and electricity supplied information for a 28 month period, and the results are shown below. The difference between billed and submitted data for the year ended April 2019 is 0.4% (billed lower than submitted).

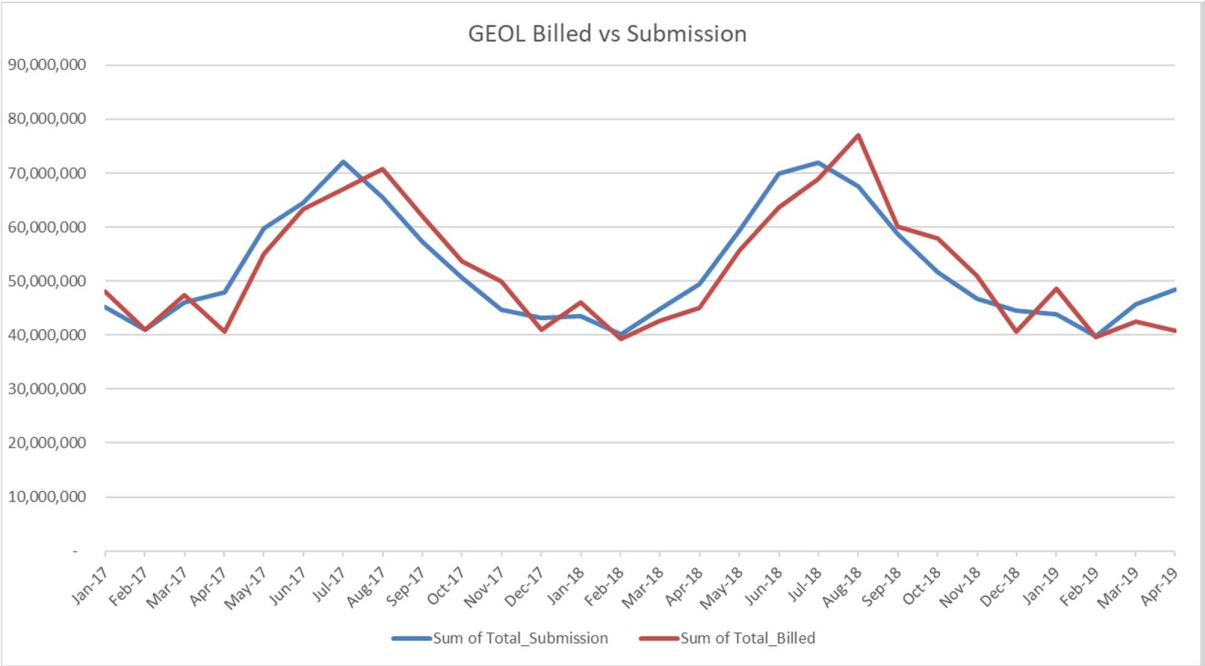
There was a spike in the billed consumption submitted for September and October 2017 r14. The anomaly occurred because of a change in process which coincided with the integration of GEOL into Gentrack, which resulted in billed data being manually loaded twice when creating the September and October 2017 submissions. The issue was identified and the process was corrected, but revised data could not be provided because revision 14 had already been completed. Other differences are small and largely appear to be timing differences.



GEOL

The process for the calculation of as billed volumes was examined by checking May 2019 AV120 submissions for five NSPs with a small number of ICPs against invoice information. The AV120 billed consumption calculation was confirmed to be correct for the NSPs checked.

I also checked the difference between submission and electricity supplied information for a 28 month period, and the results are shown below. The difference between billed and submitted data for the year ended April 2019 is 0.3% (billed lower than submitted). The differences between billed and submitted data largely appear to be timing differences.



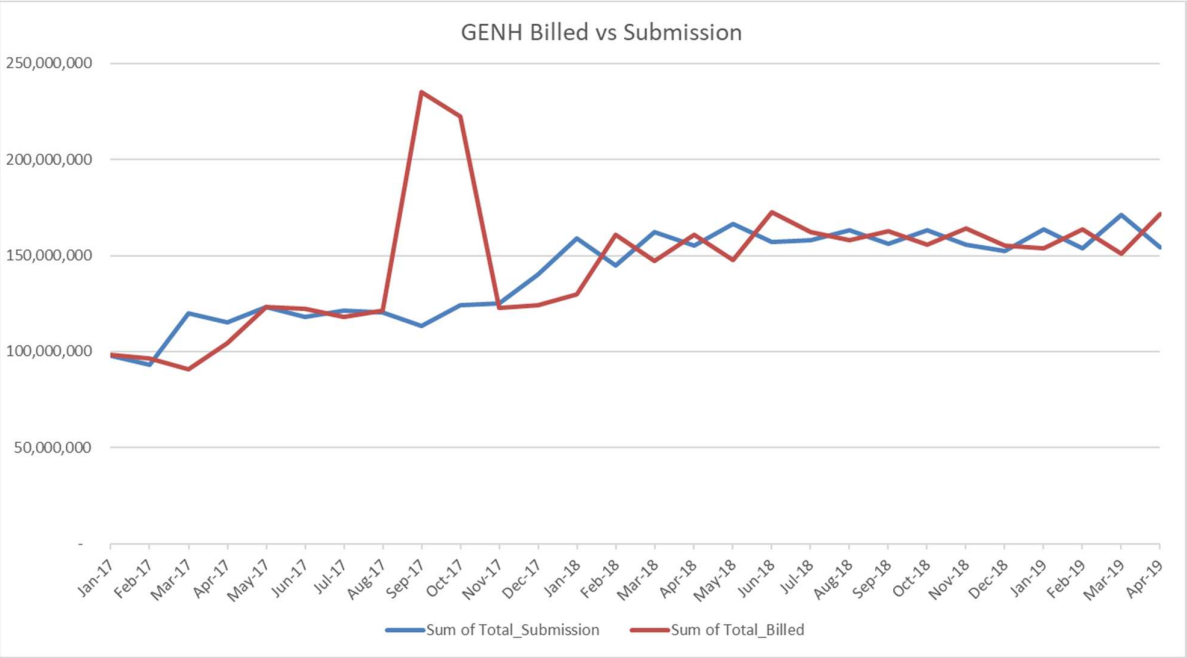
GENH

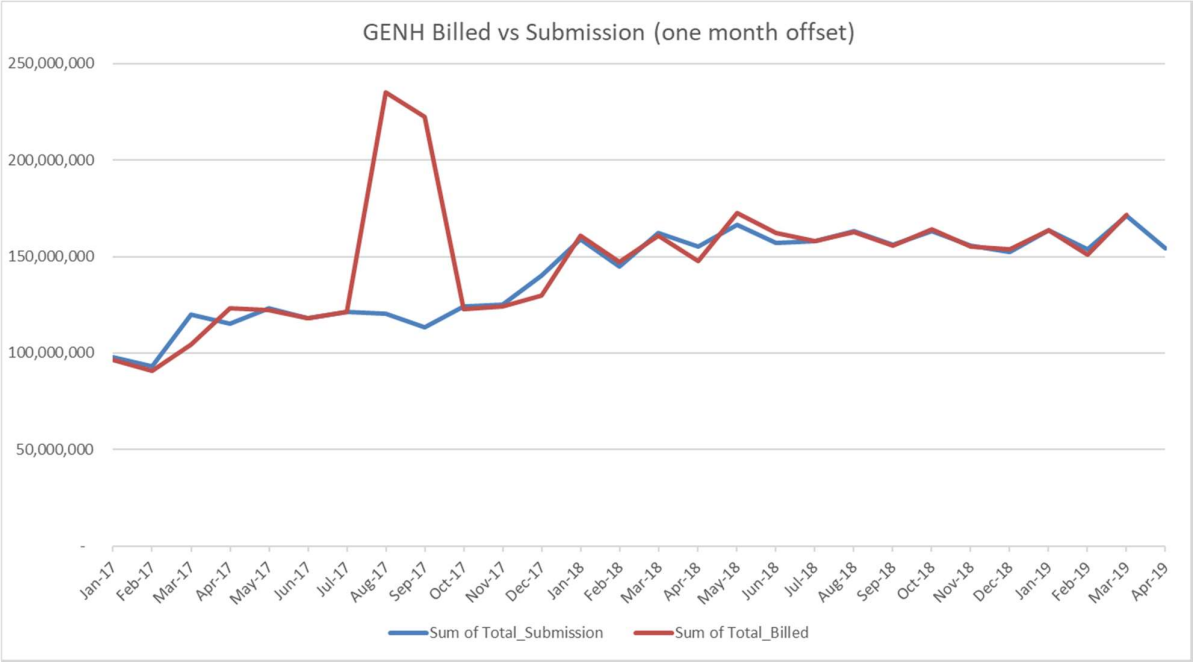
The process for the calculation of as billed volumes was examined by checking May 2019 AV120 submissions for five NSPs with a small number of ICPs against invoice information. The AV120 billed consumption calculation was confirmed to be correct for the NSPs checked.

I also checked the difference between submission and electricity supplied information for a 28 month period, and the results are shown below. The difference between billed and submitted data for the year ended April 2019 is 0.1% (billed higher than submitted).

There was a spike in the billed consumption submitted for September and October 2017 r14. The anomaly occurred because of a change in process which coincided with the integration of GEOL into Gentrack, which resulted in billed data being manually loaded twice when creating the September and October 2017 submissions. The issue was identified and the process was corrected, but revised data could not be provided because revision 14 had already been completed. Other differences are small and largely appear to be timing differences.

Once the billing and submission periods are aligned (as shown in the second chart), the other differences are minimal and appear to relate to timing.





Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.3 With: Clause 15.7 From: 01-Sep-17 To: 31-Oct-17	**GENE and GENH** Billed data was double counted in the September and October 2017 r14 billed submissions for GENE and GENH. Potential impact: None Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong, because the error occurred due to a manual processing error. The process has been corrected and the issue has not recurred. Billed submissions are validated prior to submission by checking them against previous billed submissions, and volumes submissions for reasonableness. There is no impact on the reconciliation process, and the difference has been investigated and explained. The data cannot be corrected because r14 has been completed for the affected periods.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis reviewed to information pertaining to the asbilled processes and found a duplication in asbilled invoice post migration of EOL into Genesis systems. Genesis has rectified this issue.	01/09/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Asbilled submission information reporting was established to ensure future reporting met submission requirements.	01/09/2020	

11.4. HHR aggregates information provision to the reconciliation manager (Clause 15.8)

Code reference

Clause 15.8

Code related audit information

A retailer or direct purchaser (excluding direct consumers) must deliver to the reconciliation manager its total monthly quantity of electricity supplied for each half hourly metered ICP for which it has provided submission information to the reconciliation manager, including:

> *15.8(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*
>
> *15.8(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

Audit observation

I confirmed whether the process for the calculation and aggregation of HHR data was correct, by:

- matching HHR aggregates information with the HHR volumes data for seven submissions for GENE and 11 submissions for GENH;
- tracing volumes for three HHR settled ICPs from DRDS to MSD and the HHR aggregates submissions - all volumes matched; and
- comparing a sample of data from the HHR aggregates file to the source information for GENH during the AMS agent audit, and for GENE during this audit.

The GR090 ICP Missing files were examined for all revisions for February 2018 to April 2019. An extreme case sample of the 15 ICPs missing for the most months were reviewed for GENE and GENH.

Audit commentary

GENE and GENH's HHR aggregates reports contain submission information, not electricity supplied information as specified under clause 15.8. Although the reports Genesis and AMS produce are consistent with the Reconciliation Manager Functional Specification, this is recorded as non-compliance below.

GENE

I confirmed that the process for the calculation and aggregation of HHR data is correct, by tracing volumes for three HHR settled ICPs from DRDS to MSD and the HHR aggregates submissions. All volumes matched.

I also matched HHR aggregates information with the HHR volumes data for 12 submissions. I found some small differences between the HHR volumes and aggregates reports. All differences were under ± 0.008%,

and by revision seven the largest differences were under ± 0.000%. The differences were investigated and appear to be caused by timing differences between the report run times, and rounding.

- The HHR aggregates and volumes reports may be generated hours or up to a day apart, which can result in some timing differences, particularly for earlier revisions.
- The HHR volumes data is rounded to three decimal places at trading period level, then aggregated and rounded to two decimal places.
- The HHR aggregates data is rounded to three decimal places at trading period level, then aggregated by ICP and month, and rounded to two decimal places.

Genesis intends to make a change to generate the aggregates and volumes reports at the same time, using the same rounding logic which is expected to reduce these timing and rounding differences.

The GR090 ICP Missing files were examined for all revisions for February 2018 to April 2019. I checked a sample of the 15 ICPs missing from the most submissions and found all were timing differences due to backdated switches, status changes, NSP changes, and submission type changes. The GR090 ICP missing reports are not specifically monitored by GENE, ICP differences are primarily identified through monitoring of ICP days.

I did not see evidence of the 2018 audit issue where an ICP's status changes to inactive or it switches out after the initial submission, and revisions are not consistently updated to reflect the new status.

I also reviewed HHR volumes submissions for August to October 2018 for reasonableness and did not find any evidence of under submission of volumes for these months.

GENH

I confirmed that the process for the calculation and aggregation of HHR data is correct, by matching HHR aggregates information with the HHR volumes data for 12 submissions. Only small rounding differences were present (less than 100 kWh and 0.000%).

The process or calculation of volumes was checked by comparing raw meter data from MV090 against aggregates information as part of AMS' audit.

The GR090 ICP Missing files were examined for all revisions for February 2018 to April 2019. I checked a sample of the 15 ICPs missing from the most submissions and found all were timing differences due to backdated switches, status changes, NSP changes, and submission type changes. The GR090 ICP missing reports are not specifically monitored by GENE, ICP differences are primarily identified through monitoring of ICP days.

I also reviewed HHR volumes submissions for August to October 2018 for reasonableness and did not find any evidence of under submission of volumes for these months.

GEOL

GEOL does not deal with HHR data.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.4 With: Clause 15.8 From: 01-Aug-18 To: 09-Aug-19	**GENE and GENH** HHR aggregates files do not contain electricity supplied information. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The issue relating to content of the aggregates file is an error in the code, Genesis is providing submission information as expected.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis confirms the auditor's findings	01/09/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
n/a	n/a	

12. SUBMISSION COMPUTATION

12.1. Daylight saving adjustment (Clause 15.36)

Code reference

Clause 15.36

Code related audit information

The reconciliation participant must provide submission information to the reconciliation manager that is adjusted for NZDT using 1 of the techniques set out in clause 15.36(3) specified by the Authority.

Audit observation

Daylight savings processes for MEPs and agents were reviewed as part of their audits.

A sample of changes to daylight savings on 30/09/18 and from daylight savings on 07/04/19 were checked to confirm the correct number of trading periods were recorded.

Audit commentary

GENE

Daylight savings processes for AMS were reviewed as part of their audit and found to be compliant. The correct number of trading periods were recorded for all data reviewed.

GENH

The AMS report confirms compliance.

Generation

Daylight saving is appropriately dealt with for generation metering. The correct number of trading periods were recorded for all data reviewed.

Audit outcome

Compliant

12.2. Creation of submission information (Clause 15.4)

Code reference

Clause 15.4

Code related audit information

By 1600 hours on the 4th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all NSPs for which the reconciliation participant is recorded in the registry as having traded electricity during the consumption period immediately before that reconciliation period (in accordance with Schedule 15.3).

By 1600 hours on the 13th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all points of connection for which the reconciliation participant is recorded in the registry as having traded electricity during any consumption period being reconciled in accordance with clauses 15.27 and 15.28, and in respect of which it has obtained revised submission information (in accordance with Schedule 15.3).

Audit observation

The process to create submissions was reviewed.

- **NHH submissions for GENE and GEOL** are produced using Derive. A diverse sample of NHH ICPs were checked to confirm submissions were correct. Further information on calculation of historic estimate is recorded in **section 12.11**, and the aggregation of the AV080 report was found to be compliant in **section 12.3**.
- **HHR submissions for GENE** are created using MSD and are discussed in **section 11.4**.
- **HHR submissions for GENH** are produced by AMS as GENH's agent and are discussed in **section 11.4**.
- **NSP volumes submissions** are discussed in **section 12.6**.

Alleged breaches were reviewed.

Audit commentary

No breaches had been recorded for late provision of submission information.

GENE

GENE submits HHR volume information, NHH volume information (forward and historic estimates) and unmetered volume information.

A sample of NHH ICPs were checked to confirm whether they were handled correctly:

- I reviewed submissions for a sample of ten ICPs with injection/export registers and confirmed that generation consumption is correctly submitted;
- I checked the process for vacant consumption, including reviewing submission information for ten ICPs and confirmed that vacant consumption is reported;
- consumption while inactive is only reported if the status is returned to active - status corrections do not always occur on a timely basis for ICPs with inactive consumption and this is discussed further in **sections 8.1** and **9.5**; and
- a diverse sample of 10 ICPs with unmetered volumes were checked, including standard and shared unmetered load and found to be handled correctly - unmetered load is submitted using a dummy unmetered load meter register.

HHR volumes and aggregate submissions are discussed in **section 11.4**. Genesis' processes for upgrades and downgrades achieve accuracy for consumption information, but non-compliance is recorded in **section 6.7** for the incorrect application of meter readings.

GEOL

GEOL submits NHH volume information (forward and historic estimates) and unmetered volume information.

A sample of NHH ICPs were checked to confirm whether they were handled correctly:

- I reviewed submissions for a sample of ten ICPs with injection/export registers and confirmed that generation consumption is correctly submitted;
- I checked the process for vacant consumption, including reviewing submission information for nine ICPs and confirmed that vacant consumption is reported;
- consumption while inactive is only reported if the status is returned to active;
- a diverse sample of 10 ICPs with unmetered volumes were checked, including standard and shared unmetered load and found to be handled correctly - unmetered load is submitted using a dummy unmetered load meter register (the 2018 audit found that unmetered load had not been correctly reported in June 2018 for four ICPs so the ICPs were re-checked and I found that corrected revised submission information had been provided).

GENH

HHR submissions are prepared by AMS as GENH's agent, as discussed in **section 11.4**.

GENH supplies two ICPs with unmetered load. Because AMS does not handle unmetered load, Genesis submits the unmetered load for these ICPs as part of GENE's NHH submission, and the metered load associated with the ICPs is submitted by AMS as GENH's agent.

ICP	Profile	Meter category	Submission type	Daily Unmetered kWh
0000000516NTE49	HHR	3	HHR	0.95
0000275289HB0B4	HHR	2	HHR	1.5

I checked the unmetered load submitted in June 2019 and confirmed that it was accurate.

The unmetered load for 0000000516NTE49 and 0000275289HB0B4 is submitted with the GENE submission. Because the RM's database replaces previous submissions for the aggregation factor combination and month, if two submissions are provided by GENH for the same combination and period one will overwrite the other. The submission against an incorrect participant code is recorded as non-compliance in **section 12.7**.

Generation

Generation submissions are discussed in **section 12.6**.

Audit outcome

Compliant

12.3. Allocation of submission information (Clause 15.5)

Code reference

Clause 15.5

Code related audit information

In preparing and submitting submission information, the reconciliation participant must allocate volume information for each ICP to the NSP indicated by the data held in the registry for the relevant consumption period at the time the reconciliation participant assembles the submission information. Volume information must be derived in accordance with Schedule 15.2.

However, if, in relation to a point of connection at which the reconciliation participant trades electricity, a notification given by an embedded generator under clause 15.13 for an embedded generating station is in force, the reconciliation participant is not required to comply with the above in relation to electricity generated by the embedded generating station.

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

The processes to ensure that submissions are accurate were discussed and observed, including review of reports used in the process.

The process for aggregating the AV080 was examined by checking five NSPs with a small number of ICPs each for GENE and GEOL. The GR170 to AV080 files for a diverse sample of 15 months and revisions were compared for GENE, and for GEOL, to confirm zeroing occurs.

Derive error code information was reviewed.

Audit commentary

GENE and GEOL

Genesis prepares NHH submissions for GENE and GEOL using reconciliation consumption generated in Derive.

The process for aggregating the AV080 was examined by checking five NSPs with a small number of ICPs each for GENE and GEOL. Compliance is confirmed.

Changes to ICP level data are transferred from Gentrack to the registry. Derive imports ICP level data directly from the registry each night, including data maintained by other parties such as NSP information. The process compares event data for the past 14 months and updates Derive.

Metering and reading data is transferred from Gentrack to MSD, then to Derive. Derive validates reading data. Any reading which fails validation is placed "on hold" and will not be used by the reconciliation process unless is it is reviewed and passed. Derive's validations include checks for incomplete data, mismatched data, replacement data, data outside GENE or GEOL's period of ownership, and data that falls outside expected values. Queries are used to obtain additional information on exceptions, and they can be passed in bulk so that outliers can be focused on. It is also possible to manually pass or fail exceptions one by one.

The zeroing process is managed within MSD. MSD identifies any contracts which are open during the submission period where an aggregation line has not been provided. The reconciliation team review these exceptions and create dummy ICPs in Derive with zero consumption and the appropriate aggregation factors, which will be incorporated into the AV080 report as zero lines. GR170 and AV080 files for 15 months and revisions each were compared for GENE and GEOL, and found to contain the same NSPs, confirming that zeroing is occurring as required.

I walked through the process to review submission information in MSD using the Consumption Validation Manager Tool (MVMT). The tool allows comparison at distributor and NSP level between previous months and revisions and presents data graphically and in tables. It is possible to drill down to meter level and compare data from Gentrack and Derive. Exceptions are created for:

- high or low compared to the previous submission; and
- monthly consumption >10,000 kWh.

Low and negative consumption is identified and resolved through Derive's validations before being viewed in MVMT. MVMT allows users to view the data only, if an exception requires correction it must be adjusted in Derive and Gentrack (if necessary), and then re-checked using MVMT.

GENE HHR data is also reviewed in MSD prior to submission. I walked through the validation process which includes checks against expected values and the previous 14 months of consumption for the ICP. The reconciliation team uses queries to prioritise the ICPs that have failed validations, focussing on the largest differences (more than ±150%) first and then working through smaller discrepancies.

GENH

HHR submissions are prepared by AMS as GENH's agent, as discussed in **section 11.4**.

Generation

Generation submissions are discussed in **section 12.6**.

Audit outcome

Compliant

12.4. Grid owner volumes information (Clause 15.9)

Code reference

Clause 15.9

Code related audit information

The participant (if a grid owner) must deliver to the reconciliation manager for each point of connection for all of its GXPs, the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.9(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period. (clause 15.9(b))*

Audit observation

The registry list and NSP table were reviewed.

Audit commentary

Genesis is not a grid owner; compliance was not assessed.

Audit outcome

Not applicable

12.5. Provision of NSP submission information (Clause 15.10)

Code reference

Clause 15.10

Code related audit information

The participant (if a local or embedded network owner) must provide to the reconciliation manager for each NSP for which the participant has given a notification under clause 25(1) Schedule 11.1 (which relates to the creation, decommissioning, and transfer of NSPs) the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.10(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period. (clause 15.10(b))*

Audit observation

The registry list and NSP table were reviewed.

Audit commentary

Genesis does not own any local or embedded networks; compliance was not assessed.

Audit outcome

Not applicable

12.6. Grid connected generation (Clause 15.11)

Code reference

Clause 15.11

Code related audit information

The participant (if a grid connected generator) must deliver to the reconciliation manager for each of its points of connection, the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.11(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period. (clause 15.11(b))*

Audit observation

Genesis is a generator and I examined the process for preparation of submission information.

Audit commentary

I matched the raw data retrieved using Stark to submissions for two NSPs and confirmed that the submissions were correct.

No alleged breaches were recorded for late provision of NSP volumes.

Audit outcome

Compliant

12.7. Accuracy of submission information (Clause 15.12)

Code reference

Clause 15.12

Code related audit information

If the reconciliation participant has submitted information and then subsequently obtained more accurate information, the participant must provide the most accurate information available to the reconciliation manager or participant, as the case may be, at the next available opportunity for submission (in accordance with clauses 15.20A, 15.27, and 15.28).

Audit observation

Alleged breaches during the audit period were reviewed to determine whether any reconciliation submissions were late. Corrections were reviewed in **section 8.1** and **8.2**.

Audit commentary

Review of alleged breaches confirmed there were no late revision submissions.

Some inaccurate submission data was identified:

Incorrect information	Description	Affects	Report section
Profiles	PV1 profile was applied instead of EG1 for non solar generation for two ICPs.	GENE (2 ICPs)	6.1

Incorrect information	Description	Affects	Report section
Inactive ICPs with consumption, stopped meters, bridged meters, incorrect multipliers	A small number of corrections had not been processed for inactive ICPs with consumption, stopped meters, bridged meters, incorrect multipliers.	GENE and GEOL	8.1
Incorrect participant code	The unmetered load for GENH ICPs 0000000516NTE49 and 0000275289HB0B4 is submitted with the GENE submission. Because the RM's database replaces previous submissions for the aggregation factor combination and month, if two submissions are provided by GENH for the same combination and period one will overwrite the other.	GENH and GENE (2 ICPs, 2.45 kWh per day)	12.2
Incorrect submission type	One category 3 and two category 5 ICPs have NHH submission recorded. Issues with compensation factors or the flow direction being inconsistent with the ICP's loss factor prevent HHR submission being applied.	GENE	12.9

The 2018 audit issue relating to GEOL meter removals has been cleared.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.7 With: Clause 15.12 From: Mar 16	**GENE** PV1 profile was applied instead of EG1 for non solar generation for two ICPs. A small number of corrections had not been processed for inactive ICPs with consumption, stopped meters and bridged meters. The unmetered load for GENH ICPs 0000000516NTE49 and 0000275289HB0B4 is submitted with the GENE submission. One category 3 and two category 5 ICPs have NHH submission recorded. Issues with compensation factors or the flow direction being inconsistent with the ICP's loss factor prevent HHR submission being applied. **GEOL** One multiplier correction was not processed from the correct date. **GENH** The unmetered load for GENH ICPs 0000000516NTE49 and 0000275289HB0B4 is submitted with the GENE submission. Potential impact: Low Actual impact: Low Audit history: Once

To: Aug 19	Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate as they are sufficient to ensure that most submission information is correct, but there is some room for improvement. The impact is low based on the number and type of issued identified. Where possible, corrected information is expected to be provided through the revision process.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
Refer individual sections above. This is instance where risk rating is double counting for same cause and should not contribute to total.		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Refer individual sections above		

12.8. Permanence of meter readings for reconciliation (Clause 4 Schedule 15.2)

Code reference

Clause 4 Schedule 15.2

Code related audit information

Only volume information created using validated meter readings, or if such values are unavailable, permanent estimates, has permanence within the reconciliation processes (unless subsequently found to be in error).

The relevant reconciliation participant must, at the earliest opportunity, and no later than the month 14 revision cycle, replace volume information created using estimated readings with volume information created using validated meter readings.

If, despite having used reasonable endeavours for at least 12 months, a reconciliation participant has been unable to obtain a validated meter reading, the reconciliation participant must replace volume information created using an estimated reading with volume information created using a permanent estimate in place of a validated meter reading.

Audit observation

NHH volumes 14-month revisions were reviewed for December 2017 to February 2018 to identify any forward estimate still existing.

Audit commentary

Review of the 14-month revisions showed that not all estimated meter readings had been replaced with validated meter readings. Estimated meter readings are not being made permanent at the 14-month point as required by the Authority.

Genesis does not make readings permanent by revision 14, because they are unable to validate the readings.

GENE

AV080 submissions were reviewed to identify the quantity of forward estimate remaining at revision 14:

Month	Forward estimate at revision 14
Dec 2017	1,129,665.09
Jan 2018	1,032,787.11
Feb 2018	816,891.98
Grand Total	2,979,344.18

A sample of ICPs with forward estimate remaining were reviewed. Forward estimate remained because ICPs had not received an actual read by revision 14, mainly due to access issues or being unable to locate the meter.

GEOL

AV080 submissions were reviewed to identify the quantity of forward estimate remaining at revision 14:

Month	Forward estimate at revision 14
Dec 2017	70,275.39
Jan 2018	72,598.52
Feb 2018	62,449.59
Grand Total	205,323.5

A sample of ICPs with forward estimate remaining were reviewed. Forward estimate remained because ICPs had not received an actual read by revision 14, mainly due to access issues.

The 2018 audit noted that some replaced meters also had forward estimate generated in error, because end dates had not been populated. This issue has now been cleared.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.8 With: Clause 4 Schedule 15.2 From: Dec 17 (r14), Jan 18 (r14) and Feb 18 (r14)	**GENE and GEOL** Some estimates were not replaced with permanent estimates by revision 14. Potential impact: Medium Actual impact: Unknown Audit history: Multiple times Controls: Moderate Breach risk rating: 4

Audit risk rating	Rationale for audit risk rating
Medium	The controls are rated as moderate, because there is room for improvement in the read attainment processes which would reduce the quantity of forward estimate. The audit risk rating is assessed to be medium. Total forward estimate across the three months reviewed was 2,979,344.18 kWh for GENE and 205,323.5 kWh for GEOL. The forward estimate may differ from the actual consumption for the affected ICPs.

Actions taken to resolve the issue	Completion date	Remedial action status
This non-conformance is a natural consequence of meter integration difficulties addressed in sections 6.8 - 6.10 and thus contribute to a double counting of the risk rating. Improvements delivered in the above sections will be reflected in this clause.		Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
n/a		

12.9. Reconciliation participants to prepare information (Clause 2 Schedule 15.3)

Code reference

Clause 2 Schedule 15.3

Code related audit information

If a reconciliation participant prepares submission information for each NSP for the relevant consumption periods in accordance with the Code, such submission information for each ICP must comprise the following:

- *half hour volume information for the total metered quantity of electricity for each ICP notified in accordance with clause 11.7(2) for which there is a category 3 or higher metering installation (clause 2(1)(a))for each ICP about which information is provided under clause 11.7(2) for which there is a category 1 or category 2 metering installation (clause 2(1)(b)):*
  - *a) any half hour volume information for the ICP; or*
  - *b) any non half hour volumes information calculated under clauses 4 to 6 (as applicable).*
  - *c) unmetered load quantities for each ICP that has unmetered load associated with it derived from the quantity recorded in the registry against the relevant ICP and the number of days in the period, the distributed unmetered load database, or other sources of relevant information. (clause 2(1)(c))*
- *to create non half hour submission information a reconciliation participant must only use information that is dependent on a control device if (clause 2(2)):*
  - *a) the certification of the control device is recorded in the registry; or*
  - *b) the metering installation in which the control device is location has interim certification.*
- *to create submission information for a point of connection the reconciliation participant must apply to the raw meter data (clause 2(3):*
  - *a) for each ICP, the compensation factor that is recorded in the registry (clause 2(3)(a))*
  - *b) for each NSP the compensation factor that is recorded in the metering installations most recent certification report. (clause 2(3)(b))*

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed **in section 2.1**.

Aggregation and content of reconciliation submissions was reviewed, and the registry lists were reviewed.

Audit commentary

GENE

Compliance with this clause was assessed.

- Three active ICPs with meter category 3 or higher have submission type NHH, these were also recorded as non-compliant in 2018. Issues with compensation factors or the flow direction being inconsistent with the ICP's loss factor prevent HHR submission being applied as described below.

ICP	Meter Cat	Comments
0001130018PSF65	3	This ICP had a category 2 meter which was recertified as category 3 on 24/11/17. It must currently be settled as NHH so that the compensation factor is applied correctly for billing and submission. Genesis requires the MEP to resolve the compensation factor issue or downgrade the meter.
0696299004PC30D	5	Haunui windfarm consumption channels are measured as HHR but they are converted to NHH and submitted as RPS. Submission is complicated by the loss factor code, which relates to generation. GENE submits the consumption separately to prevent the HHR files from failing due to an invalid flow direction for the loss code and submits as NHH to prevent the generation submission from being overwritten.
0696299005PCF48	5	

- Unmetered load submissions were checked in **section 12.2** and found to be accurate.
- No profiles requiring a certified control device are used.
- No loss or compensation arrangements are required.
- Aggregation of the AV080 report is discussed in **section 12.3** and aggregation of the AV090 and AV140 reports is discussed in **section 11.4**.

GEOL

- Analysis of the registry list file found profile and submission flags appeared consistent and correct.
- GEOL does not supply any category 3 or higher ICPs.
- Unmetered load submissions were checked in **section 12.2.**
- No profiles requiring a certified control device are used.
- No loss or compensation arrangements are required.
- Aggregation of the AV080 report is discussed in **section 12.3**

GENH

- Analysis of the GENH list file found all active ICPs have submission type HHR and HHR profile.
- Unmetered load submissions are accurate, but are submitted against the GENE participant code because AMS does not handle unmetered load. This is discussed further in **sections 12.2** and **12.7.**
- No profiles requiring a certified control device are used.
- No loss or compensation arrangements are required.

- Aggregation of the AV090 and AV140 reports is discussed in **section 11.4**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.9 With: Clause 2 Schedule 15.3 From: 01-Dec-16 To: 09-Aug-19	**GENE** One category 3 and two category 5 ICPs with NHH submission recorded. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate because these issues were not identified and resolved prior to the audit. The impact on settlement is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
0001130018PSF65 will be escalated to MEP management for resolution	1/10/2019	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	

12.10. Historical estimates and forward estimates (Clause 3 Schedule 15.3)

Code reference

Clause 3 Schedule 15.3

Code related audit information

For each ICP that has a non-half hour metering installation, volume information derived from validated meter readings, estimated readings, or permanent estimates must be allocated to consumption periods using the following techniques to create historical estimates and forward estimates. (clause 3(1))

Each estimate that is a forward estimate or a historical estimate must clearly be identified as such. (clause 3(2))

If validated meter readings are not available for the purpose of clauses 4 and 5, permanent estimates may be used in place of validated meter readings. (clause 3(3))

Audit observation

15 AV080 submissions for revisions 3 to 14 were reviewed, to confirm that historic estimates are included and identified.

Permanence of meter readings is reviewed in **section 12.8**. The methodology to create forward estimates is reviewed in **section 12.12**.

Audit commentary

GENE

I reviewed 15 AV080 submissions for a diverse sample of months and revisions and confirm that forward and historic estimates are included and identified as such.

GEOL

I reviewed 15 AV080 submissions for a diverse sample of months and revisions and confirm that forward and historic estimates are included and identified as such.

Submissions have been created using Gentrack during the audit period, and previous audit issues relating to Orion have been cleared.

GENH

GENH does not provide AV080 submissions.

Audit outcome

Compliant

12.11. Historical estimate process (Clause 4 and 5 Schedule 15.3)

Code reference

Clause 4 and 5 Schedule 15.3

Code related audit information

The methodology outlined in clause 4 of Schedule 15.3 must be used when preparing historic estimates of volume information for each ICP when the relevant seasonal adjustment shape is available.

If a seasonal adjustment shape is not available, the methodology for preparing an historical estimate of volume information for each ICP must be the same as in clause 4, except that the relevant quantities kWh_{Px} must be prorated as determined by the reconciliation participant using its own methodology or on a flat shape basis using the relevant number of days that are within the consumption period and within the period covered by kWh_{Px}.

Audit observation

To assist with determining compliance of the Historical Estimate (HE) processes, GENE and GEOL were supplied with a list of scenarios, and for some individual ICPs a manual HE calculation was conducted and compared to the result from the Derive.

Audit commentary

The process for managing shape files was examined. Shape files are downloaded from the RM website after each set of allocation results are published. The shape files are loaded into Derive by GENE. The upload process has controls which inform the user whether the upload has completed successfully.

To assist with determining compliance of the Historical Estimate (HE) processes, GENE and GEOL tested a list of scenarios, and for some individual ICPs a manual HE calculation was conducted and compared to the system result. The following table shows that compliance was demonstrated in all cases provided.

Test	Scenario	Test Expectation	GEOL	GENE
A	ICPs become inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	Pass	Pass
B	ICPs become active then inactive within a month.	Consumption is only calculated for the Active portion of the month.	Pass	Pass
C	ICPs become inactive, then active, then inactive again within a month.	Consumption is only calculated for the Active portion of the month.	Pass	Pass
D	Network/GXP/Connection (POC) alters partway through a month.	Consumption is separated and calculated for the separate portions of where it is to be reconciled to.	Pass	Pass
E	ICPs start on the 1st day of a month.	Consumption is calculated to include the 1st day of responsibility.	Pass	Pass
F	ICPs end on the last day of a month.	Consumption is calculated to include the last day of responsibility.	Pass	Pass
G	ICPs start part way through a month.	Consumption is calculated to include the 1st day of responsibility.	Pass	Pass
H	ICPs end part way through a month.	Consumption is calculated to include the last day of responsibility.	Pass	Pass
I & J	ICPs are lost and won back in a month.	Consumption is calculated for each day of responsibility.	Pass	Pass
K	Unmetered load for a full month	Consumption is calculating for unmetered portion of month prior to meter being added.	Pass	Pass
L	Unmetered load for a part month	Consumption is calculating for unmetered portion of month post meter being removed.	Has not occurred	Pass
M	ICPs start on 1st and end on the last day of a month.	Consumption is calculated for each day of responsibility.	Pass	Pass
N	Rollover reads	Consumption is calculated correctly in the instance of meter rollovers.	Pass	Pass

Audit outcome

Compliant

12.12. Forward estimate process (Clause 6 Schedule 15.3)

Code reference

Clause 6 Schedule 15.3

Code related audit information

Forward estimates may be used only in respect of any period for which an historical estimate cannot be calculated.

The methodology used for calculating a forward estimate may be determined by the reconciliation participant, only if it ensures that the accuracy is within the percentage of error specified by the Authority.

Audit observation

The process to create forward estimates was reviewed.

Forward estimates were checked for accuracy by analysing the GR170 file for variances between revisions over the audit period.

Audit commentary

The forward estimate method is described below:

- forward default estimate (FDE) applies where 0-1 actual readings available - FDE is set as 25 kWh per day per meter register; and
- forward standard estimate (FSE) applies where there are at least two actual readings available - FSE is calculated as the average daily consumption for each meter register, based on the actual reads available.

The daily estimate is multiplied by the number of days to be estimated. Without any adjustments for seasonality, the FDE volumes for shoulder months leading into winter are likely to be low and leading into summer are likely to be high.

GENE

The accuracy of the initial submission, in comparison to each subsequent revision is required to be within 15% and within 100,000kWh. The table below shows the number of balancing areas where this target was not met.

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Jan 2018	1	1	1	1	224
Feb 2018	0	0	0	1	231
Mar 2018	0	0	0	2	233
Apr 2018	0	0	0	-	237
May 2018	0	0	2	-	244
Jun 2018	0	0	1	-	244
Jul 2018	1	1	1	-	239
Aug 2018	0	0	0	-	242

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Sep 2018	0	0	1	-	244
Oct 2018	0	1	2	-	232
Nov 2018	0	3	-	-	237
Dec 2018	0	1	-	-	237
Jan 2018	0	1	-	-	240
Feb 2018	0	1	-	-	241

The total variation between revisions at an aggregate level is shown below:

Month	Revision 1	Revision 3	Revision 7	Revision 14
Jan 2018	-0.62%	0.07%	0.58%	0.82%
Feb 2018	0.21%	0.92%	1.02%	1.32%
Mar 2018	0.02%	0.90%	1.15%	1.37%
Apr 2018	-4.52%	-6.20%	-5.87%	-
May 2018	-5.48%	-7.78%	-7.74%	-
Jun 2018	-0.69%	-4.22%	-4.37%	-
Jul 2018	0.62%	-0.29%	-0.60%	-
Aug 2018	0.73%	1.34%	0.74%	-
Sep 2018	4.35%	6.40%	5.81%	-
Oct 2018	3.94%	8.84%	8.68%	-
Nov 2018	3.79%	7.74%	-	-
Dec 2018	1.09%	5.28%	-	-
Jan 2018	-1.57%	-1.35%	-	-

Month	Revision 1	Revision 3	Revision 7	Revision 14
Feb 2018	-0.05%	-1.19%	-	-

I reviewed 15 balancing areas with variation between revisions of more than ± 15% and ± 100,000 kWh. The differences were found to be caused by forward estimate being higher or lower than the actual consumption where reads could not be obtained until later revisions.

GEOL

The accuracy of the initial submission, in comparison to each subsequent revision is required to be within 15% and within 100,000kWh. The table below shows the number of balancing areas where this target was not met.

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Jan 2018	0	0	0	0	113
Feb 2018	0	0	0	0	114
Mar 2018	0	0	0	0	116
Apr 2018	0	0	0	-	116
May 2018	0	0	0	-	116
Jun 2018	0	0	0	-	119
Jul 2018	0	0	0	-	119
Aug 2018	0	0	0	-	120
Sep 2018	0	0	0	-	120
Oct 2018	0	1	2	-	121
Nov 2018	0	0	-	-	121
Dec 2018	0	0	-	-	122
Jan 2018	0	0	-	-	121
Feb 2018	0	0	-	-	121

The total variation between revisions at an aggregate level is shown below:

Month	Revision 1	Revision 3	Revision 7	Revision 14
Jan 2018	-0.18%	-0.56%	-0.49%	-0.42%
Feb 2018	0.11%	0.40%	0.42%	0.47%
Mar 2018	0.19%	0.69%	0.70%	0.79%
Apr 2018	-4.81%	-6.38%	-6.19%	-
May 2018	-4.31%	-6.18%	-6.19%	-
Jun 2018	-4.40%	-7.69%	-7.86%	-
Jul 2018	-1.32%	-1.43%	-1.56%	-
Aug 2018	0.49%	0.90%	0.72%	-
Sep 2018	5.78%	7.53%	7.49%	-
Oct 2018	3.61%	5.96%	6.51%	-
Nov 2018	3.59%	5.27%	-	-
Dec 2018	0.38%	2.62%	-	-
Jan 2018	-0.34%	0.42%	-	-
Feb 2018	-0.02%	0.33%	-	-

I reviewed all balancing area differences where the variation between revisions was more than ± 15% and ± 100,000 kWh. The differences were found to be caused by forward estimate being higher or lower than the actual consumption where reads could not be obtained until later revisions.

Submissions have been created using Gentrack during the audit period, and previous audit issues relating to Orion have been cleared.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.12 With: Clause 6 Schedule 15.3 From: GENE Jan 18 (r3, r7 & r14), Feb 18 (r14), Mar 18 (r14), May 18 (r7), Jun 18 (r7), Jul 18 (r7), Sep 18 (r7), Oct 18 (r3 & r7), Nov 18-Feb 18 (r3) GEOL Oct 18 (r3 & r7), Nov 17 (r3 & r7)	**GENE and GEOL** The accuracy threshold was not met for all months and revisions. Potential impact: High Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate, as there is room for improvement. Initial data is replaced with revised data and washed up. A small number of submissions had differences over the threshold.

Actions taken to resolve the issue	Completion date	Remedial action status
Factors have not been considered when investigating these percentage variances. Genesis convert NHH to HHR after the criteria has been met. This can mean that the initial submission was **NHH** for any given advanced metered site. Upon the revision of that period the possibility of site being converted to HHR from NHH is very real. Thus, exposing the balancing area to greater submission variances between revisions. As mentioned above this is another example where Code is failing to keep pace with change in industry. .	01/04/2020	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will initiate further controls to identify and correct real volume movement between revisions.	01/04/2020	

12.13. Compulsory meter reading after profile change (Clause 7 Schedule 15.3)

Code reference

Clause 7 Schedule 15.3

Code related audit information

If the reconciliation participant changes the profile associated with a meter, it must, when determining the volume information for that meter and its respective ICP, use a validated meter reading or permanent estimate on the day on which the profile change is to take effect.

The reconciliation participant must use the volume information from that validated meter reading or permanent estimate in calculating the relevant historical estimates of each profile for that meter.

Audit observation

The event detail reports for 01/03/19 to 19/06/19 for GENE, GEOL and GENH were examined to identify all ICPs which had a profile change during the report period.

A typical sample of 22 ICPs with profile changes for GENE, and all profile changes for GEOL were reviewed to confirm that there was an actual or permanent estimate reading on the day of the profile change. No profile changes were identified for GENH.

Audit commentary

GENE

In the event of a profile change, GENE uses a validated meter reading or a permanent estimate on the day that the change is effective.

I checked a sample of 22 GENE profile changes including upgrades, downgrades, addition of generation profiles and removal of unmetered profiles, and found an actual reading or permanent estimate had been correctly applied.

GEOL

I checked all profile changes identified on the event detail report for GEOL, and found an actual reading had been correctly applied.

GENH

No profile changes were identified on the event detail report for GENH.

Audit outcome

Compliant

13. SUBMISSION FORMAT AND TIMING

13.1. Provision of submission information to the RM (Clause 8 Schedule 15.3)

Code reference

Clause 8 Schedule 15.3

Code related audit information

For each category 3 of higher metering installation, a reconciliation participant must provide half hour submission information to the reconciliation manager.

For each category 1 or category 2 metering installation, a reconciliation participant must provide to the reconciliation manager:

- *Half hour submission information; or*
- *Non half hour submission information; or*
- *A combination of half hour submission information and non half hour submission information*

However, a reconciliation participant may instead use a profile if:

- *The reconciliation participant is using a profile approved in accordance with clause Schedule 15.5; and*
- *The approved profile allows the reconciliation participant to provide half hour submission information from a non half hour metering installation; and*
- *The reconciliation participant provides submission information that complies with the requirements set out in the approved profile.*

Half hour submission information provided to the reconciliation manager must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *trading period*

The non half hour submission information that a reconciliation participant submits must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *consumption period or day*

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

Aggregation of NHH volumes is discussed in **section 12.3**, aggregation of HHR volumes is discussed in **section 11.4**.

Audit commentary

GENE and GEOL

Submission information is provided to the reconciliation manager in the appropriate format and is aggregated to the following level for both GENE and GEOL:

- NSP code;
- reconciliation type;
- profile;
- loss category code;
- flow direction;
- dedicated NSP; and
- consumption period.

GENH

GENH submissions are completed by AMS as GENH's agent. Compliance is recorded in AMS' audit report.

Generation

Generation submission information is compliant.

Audit outcome

Compliant

13.2. Reporting resolution (Clause 9 Schedule 15.3)

Code reference

Clause 9 Schedule 15.3

Code related audit information

When reporting submission information, the number of decimal places must be rounded to not more than 2 decimal places.

If the unrounded digit to the right of the second decimal place is greater than or equal to 5, the second digit is rounded up, and

If the digit to the right of the second decimal place is less than 5, the second digit is unchanged.

Audit observation

I reviewed the rounding of data on the AV090, AV140 and AV080 reports as part of the aggregation checks.

Audit commentary

GENE

Review of 15 AV080 NHH volumes reports confirmed that submission data is rounded to two decimal places.

Review of 12 AV140 HHR aggregates and 12 AV090 HHR volumes reports confirmed that submission data is rounded to two decimal places.

GEOL

Review of 15 AV080 NHH volumes reports confirmed that submission data is rounded to two decimal places.

GENH

Review of 12 AV140 HHR aggregates and 12 AV090 HHR volumes reports confirmed that submission data is rounded to two decimal places.

Generation

Data is not rounded until the submission process.

Audit outcome

Compliant

13.3. Historical estimate reporting to RM (Clause 10 Schedule 15.3)

Code reference

Clause 10 Schedule 15.3

Code related audit information

By 1600 hours on the 13th business day of each reconciliation period the reconciliation participant must report to the reconciliation manager the proportion of historical estimates per NSP contained within its non half hour submission information.

The proportion of submission information per NSP that is comprised of historical estimates must (unless exceptional circumstances exist) be:

- *at least 80% for revised data provided at the month 3 revision (clause 10(3)(a))*
- *at least 90% for revised data provided at the month 7 revision (clause 10(3)(b))*
- *100% for revised data provided at the month 14 revision. (clause 10(3)(c))*

Audit observation

The timeliness of submissions of historic estimate was reviewed in **section 12.2**.

I reviewed 15 AV080 reports each for GENE and GEOL to confirm that historic estimate requirements were met.

Audit commentary

The quantity of historical estimates is contained in the submission file for GENE and GEOL and is not a separate report. The three, seven and 14-month revision files were examined for a selection of 15 submissions and the tables below show that the thresholds were not met for some NSPs for some revisions. Where the historic estimate targets were not met, it was due to reads not being able to be obtained. Read attainment is discussed further in **sections 6.8 - 6.10**.

GENE

Proportion of HE

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Dec 2017	-	289	154	311
Jan 2018	-	290	155	312
Feb 2018	-	302	167	321

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Jul 2018	309	313	-	328
Sep 2018	300	315	-	333
Oct 2018	284	301	-	320
Nov 2018	282	-	-	323
Dec 2018	290	-	-	324
Jan 2019	300	-	-	332

The table below shows that the percentage HE at a summary level for all NSPs is well above the required targets for the three and seven-month revisions, and below the target for the 14-month revisions.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Dec 2017	-	97.69%	98.74%
Jan 2018	-	97.91%	98.86%
Feb 2018	-	98.17%	99.03%
Jul 2018	96.64%	98.37%	-
Sep 2018	96.26%	98.40%	-
Oct 2018	92.83%	97.68%	-
Nov 2018	92.92%	-	-
Dec 2018	93.69%	-	-
Jan 2019	94.72%	-	-

GEOL

Proportion of HE

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Dec 2017	-	200	200	196
Jan 2018	-	201	201	193
Feb 2018	-	201	201	196
Jul 2018	206	206	-	199
Sep 2018	207	207	-	202
Oct 2018	206	206	-	199
Nov 2018	207	-	-	199
Dec 2018	208	-	-	202
Jan 2019	207	-	-	201

The table below shows that the percentage HE at a summary level for all NSPs is well above the required targets for the three and seven-month revisions, and below the target for the 14-month revisions.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Dec 2017	-	99.57%	99.84%
Jan 2018	-	99.41%	99.83%
Feb 2018	-	99.54%	99.84%
Jul 2018	98.29%	99.19%	-
Sep 2018	97.69%	99.20%	-
Oct 2018	97.05%	99.15%	-
Nov 2018	97.25%	-	-
Dec 2018	97.21%	-	-

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Jan 2019	97.62%	-	-

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 13.3 With: Clause 10 of Schedule 15.3 From: Dec 17 - Jan 18 (r14), Jul 18 - Oct 18 (r7) and Nov 18 - Jan 19 (r3)	**GENE and GEOL** Historic estimate thresholds were not met for some revisions. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate because some improvements can be made to ensure compliance. GENE and GEOL were reasonably close to the target in all cases. The impact is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
As above, further example of code not keeping pace with change – in this instance review of only AV080 means percentage is not being calculated across all traditional NHH ICPs of NSP. There is also an element of double counting of risk rating (with 6.8 -6.10).		Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	

CONCLUSION

Genesis uses three codes; GENE, GENH and GEOL. GEOL's ICPs were migrated from Orion to Gentrack during the previous audit period. Unless otherwise specified, the processes and non-compliances described in the report relate to all codes.

Genesis has made some improvements to their processes since the 2018 audit:

- Genesis began development of an internal audit framework in October 2018, which was completed in February 2019. As part of the process Genesis identified risk areas, the risk impact, and controls to reduce and manage the risks. They then prioritised and scheduled audits to check the effectiveness of the controls. Two internal audits are underway relating to the scope of this audit: revenue assurance and bridged meters. Other upcoming audits relevant to this audits scope include vacant consuming, no access, and unbilled volumes. Actions arising from the audits are assigned, and monitored to ensure that they are completed, and follow up audits are scheduled. Reporting is available and being refined as the audits progress.
- Further monitoring controls have been added by the reconciliation team to help to identify and update missed corrections, and inconsistent information. This has resulted in an increase in the number of corrections being processed.
- Further alignment of the GENE and GEOL processes following the migration to Gentrack has led to improved compliance for GEOL.

Reconciliation submission processes continue to be closely monitored and well managed, with only minor submission accuracy issues identified.

Some key areas of non-compliance were identified:

- NHH data validation processes require improvement to ensure that inactive consumption and zero consumption is investigated promptly, and corrective action is taken.
- Read attainment requirements were not met for all NHH ICPs. Some ICPs are excluded from the automated read attainment process and based on the samples reviewed during the audit these ICPs are less likely to meet the read attainment requirements.
- There were some late registry updates and late switching files, mainly caused by delays in receiving the information needed to process the file or update.
- Some inaccurate information was recorded on the registry and in switching files. In most cases the volumes of exceptions were low relative to the sample checked. For transfer and switch move CS files a reasonably high proportion of the sample had some incorrect content, indicating that there may be system issues that require investigation and correction.
- Genesis is working to resolve unmetered load issues, however there are still some unmetered load discrepancies, and some unmetered load is over the threshold. Distributed unmetered load submissions are not correct for all databases.

The matters raised are shown in the tables below.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and recommends an audit frequency of three months. Given that:

- The audit risk rating has decreased with each audit over the past two years.
- The number of non-compliances and total audit risk rating is inflated by some very minor non-compliances affecting small numbers of ICPs which are recorded in several sections of the report, and technical non-compliances with little or no impact.
- Genesis has demonstrated progress with resolving issues, and is committed to reviewing its processes and improving compliance.

I recommend that the next audit is completed in 12 months to provide enough time to complete the planned improvements.

PARTICIPANT RESPONSE

Genesis have reviewed this report, and their comments are contained within its body.