ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT

For

GENESIS ENERGY LIMITED

Prepared by Rebecca Elliot and Tara Gannon

Date audit commenced: 28 July 2020

Date audit report completed: 3 September 2020

Audit report due date: 13 September 2020

TABLE OF CONTENTS

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 2019 audit:

- Genesis began development of an internal audit framework in October 2018, which was reviewed and refined during the audit period. 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. An internal audit of bridged meter processes has been completed, and has identified that process improvements are required to prevent bridging, promptly unbridge where bridging has occurred, and ensure that bridged consumption is consistently identified and corrected. The implementation of these improvements will be monitored through Genesis' internal audit processes. Further internal audits relevant to the scope of this audit are planned, including vacant consuming ICP processes.
- The reconciliation team has continued to help to identify and update missed corrections, and inconsistent information.

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

In general, we found that data accuracy issues were being identified at a system level, but users were not consistently investigating and resolving the identified issues. This appears to be due to work queues not being cleared due to workloads and other priorities, and jobs and cases being closed (sometimes in bulk) before they were resolved.

Some key areas of non-compliance were identified.

- **NHH read validation**
  NHH read validation processes are in place, but exceptions which impact on submission are not consistently investigated and resolved on a timely basis. I saw evidence that inactive consumption and zero consumption exceptions were directed to work queues and appearing on exception reports, but were not always actioned and followed up which led to non-compliance for submission accuracy.
  Meter condition events for manually read meters are not routinely reviewed, which led to no action being taken for meters the meter readers had indicated to be tampered with, damaged, faulty, or had missing or broken seals.

- **Distributed generation**
  GENE and GEOL are not consistently ensuring that generating ICPs have compliant metering installed or a notification of gifting in place. I found that the home generation team had not consistently followed up instances where the customer had declined or not approved a meter upgrade, or the first attempt to complete the meter replacement was turned down.

- **Read attainment**
  The read attainment processes do not consistently ensure that the best endeavours requirements are met. In some cases, focus is placed on obtaining a customer or photo read for billing rather than resolving the access issues preventing regular readings.

GENE's automated process ensures compliance for longer periods of supply, but AMI and account managed ICPs are exempted. I frequently found that ICPs which did not meet the best endeavours requirements for read attainment were account managed.
The AMI read attainment process for GEOL and GENE requires improvement to ensure that ICPs are not invalidly placed on AMI routes, and action is taken for long term unread ICPs.
GEOL's NHH read attainment process is managed through work queues generated from "no read reasons" returned by Wells. I found that action taken on these queue items was sometimes inconsistent, and did not always meet the best endeavours requirements.

- **Meter information maintenance**
  There are sometimes errors and delays when processing meter changes, which led to submission accuracy issues. These errors were often detected and corrected by the reconciliation team.

- **Registry information timeliness**
  Overall the timeliness of registry updates is the similar to that found last year. The new connection process has been partially automated during the audit period. This has largely worked and is expected to improve the timeliness of new connection updates. The automaton has caused some new issues which are causing some backdated new connections and some incorrect active dates to be populated for unmetered new connections. A material change audit should have been undertaken for this. The issues now identified would likely have been identified as part of this process.

- **Registry information accuracy**
  Some inaccurate information was recorded on the registry and in switching files. The accuracy of new connections, reconnections and disconnections was high overall. The level of errors found in the transfer and switch move CS files is relatively high for the sample checked indicating that the last read is not as accurate as possible causing consumption to be pushed to the gaining trader in some instances. Genesis are reviewing the labelling of reads which will at least indicate to the gaining trader that the read is an estimate and then the RR process can be used to address this. Unmetered loads are generally managed well, and Genesis continue to work with their customers to resolve these.

All 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:

- Genesis have their own internal audit process which continually reviews and implements processes.
- 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.

I recommend that the next audit is completed in 12 months.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Material change audits	1.11	16A.11	Material change audit not conducted for automation new connection process.	Weak	Low	3	Investigating
Relevant information	2.1	15.2	Some inaccurate data is recorded and was not updated as soon as practicable	Moderate	Medium	4	Unknown
Electrical Connection of Point of Connection	2.11	10.33A	**GENE** ICP 1002070461UNAD6 not certified within five business days of electrical connection. 232 reconnections were not certified within five business days. **GEOL** 31 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** Six incorrect MEP nominations. **GEOL** Two incorrect MEP nominations.	Moderate	Low	2	Identified
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** Three ICPs had incorrect daily unmetered kWh. **GENH** Missing unmetered details for one ICP.	Strong	Low	1	Investigating
Management of "active" status	3.8	17 Schedule 11.1	**GENE** 54 (7+4+5+20+15+3) incorrect first active dates of those ICPs sampled. **GEOL**	Weak	Low	3	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Six (2+1+3) incorrect first active dates.				
Management of "inactive" status	3.9	19 Schedule 11.1	**GENE and GEOL** Some incorrect inactive statuses.	Medium	Moderate	4	Investigating
Losing trader response to switch request and event dates - standard switch	4.2	3 and 4 Schedule 11.3	**GENE** One incorrect AN code sent of the sample checked.	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 last read period. **GENE** Four of five ICPs checked with an incorrect average daily consumption read of zero sent were found to be incorrect. Four of ten ICPs checked with incorrect last read labelled as actual but should have been sent as estimates. One of ten ICPs checked where the last read date was the last billed date and the last read date was earlier. **GEOL** The one ICP with a negative average daily consumption is incorrect as it is not consumption. All five ICPs checked with an incorrect average daily consumption read of zero sent were found to be incorrect. One of ten ICPs checked where the last read date was the last billed date and the last read date was earlier.	Weak	Low	3	Identified
Retailers must use same reading - standard switch	4.4	6(1) and 6A Schedule 11.3	**GENE** 19 late RR files. **GEOL** Two RRs not supported by two actual reads. Two late RR files.	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** Three incorrect AN response codes sent. 907 late CS files. **GEOL** Event date for one ICP set earlier than the gaining trader's requested date. 216 late CS files. **GENH** One late AN file sent. Seven late CS files sent.	Weak	Low	3	Investigating
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** 14 ICPs sent with a negative average daily consumption are incorrect as it is not consumption and of the five sampled all were sent with an incorrect final read. Three of the six ICPs sampled with an incorrect average daily consumption read of zero sent. Two of the five ICPs sampled with a high average daily consumption figure were found to be incorrect and were sent with an incorrect final read. Two of ten ICPs checked with incorrect last read labelled as actual but should have been sent as estimates. One of ten ICPs checked where the last read date was the last billed date and the last read date was earlier. One of ten ICPs checked where an estimate was sent but the last read date is incorrectly recorded as the switch event date One of the ten ICPs where the incorrect final read was entered by a CSR. **GEOL** All three ICPs with a negative average daily consumption are incorrect as it is not consumption	Weak	Low	3	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			and all were sent with an incorrect final read. One of the five ICPs sampled with an incorrect average daily consumption read of zero sent. One of the five ICPs with a high average daily consumption figure was found to be incorrect. Six of ten ICPs checked with incorrect last read labelled as actual but should have been sent as estimates. Two of ten ICPs checked where the last actual read date is recorded incorrectly. One of ten ICPs checked where the average daily consumption is incorrect.				
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	**GENE** 48 late RR files The agreed switch reading was not applied for settlement for ICP 0000491003WE1BC (04/03/20), because the switch reading included 5 kWh of consumption during an inactive period which was excluded from the historic estimate calculations. **GEOL** One RR requested as an estimated read when the actual read for the correct event date was ignored. 26 late RR files.	Moderate	Low	2	Investigating
Losing trader provision of information - gaining trader switch	4.13	15 Schedule 11.3	**GENH** 11 late AN files.	Strong	Low	1	Investigating
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 Schedule 11.3	**GENH** 21 late CS files.	Strong	Low	1	Investigating
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	**GENE** 141 late NW requests. **GEOL** One incorrectly rejected NW request	Strong	Low	1	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			74 late NW requests. **GENH** 29 late NW request. Eight late AW response.				
Metering information	4.16	16 Schedule 11.3	**GENE** Seven incorrect last reads sent of those sampled. **GENE** Two incorrect last reads sent of those sampled.	Moderate	Low	2	Identified
Switch saving protection	4.17	11.15AA to 11.15AC	**GENE** Two customers won back post the switch save protection code change	Moderate	Low	2	Identified
Maintaining shared unmetered load	5.1	11.14	**GENE** Two ICPs with the incorrect shared daily unmetered kWh. Missing shared unmetered load for four ICPs. **GEOL** One ICPs with the incorrect shared daily unmetered kWh.	Moderate	Low	2	Investigating
Unmetered threshold	5.2	10.14 (2)(b)	**GENE** 11 ICPs with unmetered load over 6,000 kWh per annum.	Moderate	Low	2	Investigating
Unmetered threshold exceeded	5.3	10.14 (5)	**GENE** Unmetered load over 6,000 kWh per annum and not resolved within the allowable timeframes.	Moderate	Low	2	Investigating
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. Six database audits not completed.	Moderate	High	6	Investigating
Electricity conveyed & notification by embedded generators	6.1	10.13, Clause 10.24 and 15.13	**GENE** 23 ICPs were generating or likely to be generating but did not have compliant metering installed, and notification of gifting had not been provided.	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			ICP 0000100101TR513 had wind generation with PV1 profile, and was updated to EG1 for submission and on the registry during the audit. 41 meters were bridged during the audit period. While meters are bridged energy is not quantified in accordance with the code. **GEOL** ICP 1001152044CK79A had wind generation with PV1 profile, and was updated to EG1 profile during the audit.				
Reporting of defective meters	6.4	10.43(2) and (3)	**GENE** The MEP was not advised of three bridged meters, and five of the 15 bridged meters checked were not unbridged.	Moderate	Low	2	Investigating
Derivation of meter readings	6.6	3(1), 3(2) and 5 Schedule 15.2	**GENE** At least one ICP with signs of tampering or damage, and one ICP with missing or broken seals, and two meter digit discrepancies identified by Wells were not investigated. Customer readings provided by Wells during COVID-19 lockdown were recorded as actual readings. 1000517104PC993 had customer readings on 31/07/19 and 18/09/19 which were not validated against a set of readings from another source. **GEOL** At least one ICP with signs of tampering or damage, and one ICP with missing or broken seals, and one meter digit discrepancy identified by Wells were not investigated. Customer readings provided by Wells during COVID-19 lockdown were recorded as actual readings. 0000289010TE558 had a customer reading on 30/08/20 which was not validated against a set of readings from another source.	Moderate	Low	2	Investigating
NHH meter reading application	6.7	6 Schedule 15.2	**GENE and GENH**	Strong	Low	1	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			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.				
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	**GENE** For at least ten ICPs unread during the period of supply, exceptional circumstances did not apply, and the best endeavours requirement was not met. **GEOL** For at least nine ICPs unread during the period of supply, exceptional circumstances did not apply, and the best endeavours requirement was not met.	Weak	Low	3	Identified
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	**GENE** For at least 11 ICPs unread in the 12 months ended March 2020, exceptional circumstances did not apply, and the best endeavours requirement was not met. **GEOL** For at least four ICPs unread in the 12 months ended March 2020, exceptional circumstances did not apply, and the best endeavours requirement was not met.	Moderate	Low	2	Identified
NHH meters 90% read rate	6.10	9(1) and (2) Schedule 15.2	**GENE** 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. **GEOL** For at least five ICPs unread in the four months ended March 2020, exceptional circumstances did not apply, and the best endeavours requirement was not met.	Moderate	Low	2	Investigating
Identification of readings	9.1	3(3) Schedule 15.2	**GENE and GEOL** Because all meter removal reads are recorded as actual, estimated meter removal readings which capture consumption during stopped, faulty or bridged periods are incorrectly classified as actual readings.	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Some CS files had estimated readings classified as actual readings.Customer readings provided by Wells during COVID-19 lockdown were recorded as actual readings. 10,500 GENE and 1,800 GEOL readings were affected. **GENE** • 0000160951CK1EB had a manually entered actual AMI reading misclassified as a web reading. Both read types are treated as actual validated readings. • 1000517104PC993 had customer readings on 31/07/19 and 18/09/19 which were treated as actual validated readings but were not validated against a set of readings from another source. **GEOL** • 0000289010TE558 had a customer reading on 30/08/20 which was not validated against a set of readings from another source.				
Meter data used to derive volume information	9.3	3(5) of schedule 15.2	AMI meter reading data is truncated for import into Gentrack and Derive.	Moderate	Low	2	Unknown
Calculation of ICP days	11.2	15.6	**GENE and GEOL** For instances where an ICP is supplied for one day with no consumption, Derive reports zero ICP days.	Strong	Low	1	Identified
Electricity supplied information provision to the reconciliation manager	11.3	15.7	**GENE** GENE submitted as billed consumption late due to a correction. Alleged breach 2004GENE2 was raised by the reconciliation manager.	Strong	Low	1	Cleared
HHR aggregates information provision to the reconciliation manager	11.4	15.8	**GENE, GEOL and GENHG** HHR aggregates files do not contain electricity supplied information.	Strong	Low	1	Cleared

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Creation of submission information	12.2	15.4	**GENE** There were delays in providing distributed generation submissions for ICPs 0000039785CP0FE, 1000585864PCBEE and 1000587982PCA9F. 23 GENE ICPs which are believed to be generating did not have compliant metering installed or notification of gifting provided. GENE ICP 0000100101TR513 had wind generation and was updated from PV1 to EG1 profile for submission during the audit. Some inactive consumption was missing from submissions because corrections had not been processed as soon as practicable. Some consumption during bridged periods was missing from submissions because corrections were not processed as soon as practicable. ICP 0000167710UN91D's meter change was processed effective from 10/06/20 instead of 16/06/20. GENE submitted NSP volumes 43 minutes late for April 2020, due to a data processing error. Alleged breach 2005GENE2 was raised by the reconciliation manager. GENE submitted as billed consumption late due to a correction. Alleged breach 2004GENE2 was raised by the reconciliation manager. **GEOL** ICP 1001152044CK79A had wind generation and was updated to EG1 profile during the audit. Some inactive consumption was missing from submissions because corrections had not been processed as soon as practicable. **GENH** ICPs 0000000516NTE49, 0000000544NT6C4 and 0000370001TU645 did not have unmetered load reported.	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Accuracy of submission information	12.7	15.12	**GENE, GEOL and GENH** Some submission data was inaccurate and was not corrected at the next available opportunity.	Moderate	Medium	4	Investigating
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** ICP 0001130018PSF65 has meter category 3 and a NHH submission type and profile. **GENH** ICPs 0000000516NTE49, 0000000544NT6C4, and 0000370001TU645 were not included in submission information because no instruction had been received from the commercial team, resulting in under submission of 1,547 kWh up to 31/07/20. ICP 0000275289HB0B4 (1.5 kWh per day UML) was included in GENE's NHH submissions instead of being submitted with the GENH participant code.	Strong	Low	1	Investigating
Forward estimate process	12.12	6 Schedule 15.3	**GENE and GEOL** The accuracy threshold was not met for some months and revisions, because forward estimate was too high or too low.	Moderate	Low	2	Investigating
Reporting resolution	13.2	9 schedule 15.3	**GENE and GEOL** HHR aggregates submissions are produced with three decimal places.	Moderate	Low	2	Identified
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						94	

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	Recommendation
Relevant Information	2.1	Use the audit compliance report for: • 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.
Certification of metering upon reconnection	2.11	Review the reconnection process to ensure that uncertified meters are certified or replaced when reconnected.
Monitoring of new and ready ICPs	3.10	Run a monthly list from the registry of all ICPs where GENE or GEOL are the proposed trader to ensure Gentrack records align.
Installation of compliant metering for generating ICPs	6.1	For any ICP where generation is present, either: 1. Ensure that compliant metering is installed, and monitor and follow up any jobs to be completed or approved, or 2. Advise the reconciliation team that compliant metering has not been installed, so that a notification of gifting can be provided to the reconciliation manager.
Confirm whether GENH ICPs are generating	6.1	Confirm whether the following ICPs are generating: • 1002046050UN986 (B installation type since 02/11/18) • 0000103361TR204 (switched in with B installation type 01/10/19) • 0006679030RNFE2 (switched in with B installation type 01/01/20), and • 0303925043LC693 (switched in with B installation type 01/02/20). If they are generating arrange for compliant metering to be installed or notification of gifting to be provided to the reconciliation manager.
Review of Wells meter condition information	6.6	Ensure that memos are created for all meter condition issues provided by Wells. Develop processes to review and take action on these meter condition issues, which could affect meter accuracy.
Validation of customer, web and photo readings	6.6	Update processes to ensure that customer, web, and photo readings must be validated against at least two actual validated readings from another source.
AMI read attainment	6.8	Investigate how the efficiency of the AMS job approval process can be improved. Regularly work through the unread AMI meters on the query, raise fault jobs as required and move the ICPs to manually read sequences until the issues are confirmed to be resolved. Investigate whether addition of extra report fields could make this process more efficient. Identify WASN AMI meters which have incorrectly been assigned to AMI sequences, and move them to manual reading routes.
Account managed ICP read attainment	6.8	Develop clear processes for read attainment for account managed customers to ensure that the read attainment requirements are met.
Identification of generating ICPs	9.5	Ensure that the Billing team is aware that sudden low or negative consumption could be caused by home generation without an EG register installed.

Subject	Section	Recommendation
		These exceptions could be checked against the high-risk database, customer account notes, or google satellite information to determine whether it is likely that solar is installed. Any ICPs which appear likely to have home generation should be passed to the home generation team, so that compliant metering can be installed where necessary.
Zero consumption validation	9.5	Review the zero-consumption validation process to help to identify stopped, faulty, and bridged meters more promptly, so that corrective action can be taken.
Inactive ICPs with consumption	9.5	Review the inactive consumption validation process to help to inactive consumption more promptly, so that corrective action can be taken.
Unmetered load process for GENH	12.2	**GENH** Strengthen the process to ensure that GENH ICPs with unmetered load are identified on switch in and/or connection, so that unmetered load is captured and submitted.
Reconciled elsewhere ICPs for GENH	12.2	**GENH** Check ICPs 1001158205LC354 and 1001158207LC3D1 to confirm where the load is reconciled and that they are treated correctly.

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

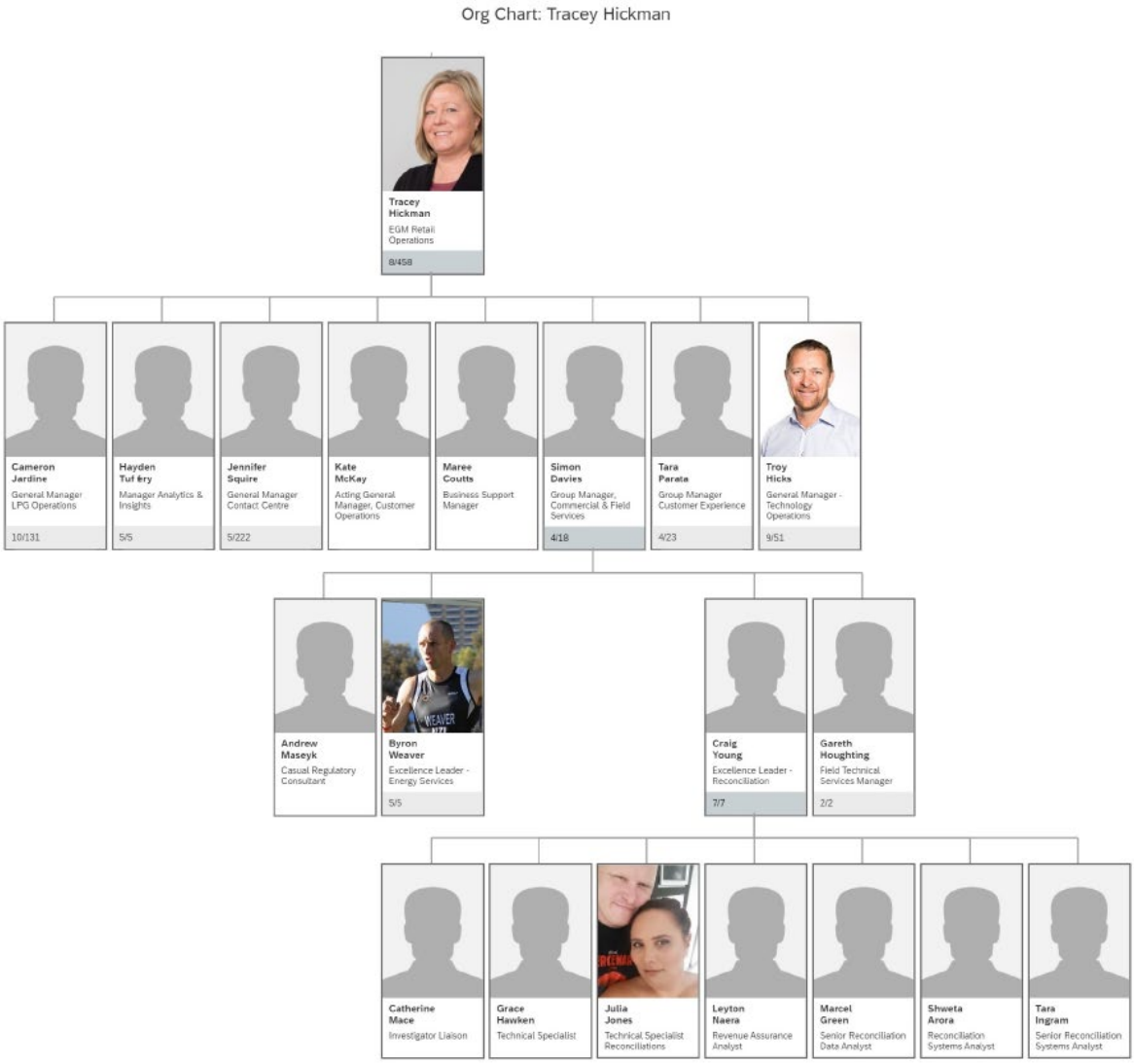
I checked the Authority's website to identify any relevant exemptions.

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
Rebecca Elliot	Veritek Limited	Lead Auditor
Tara Gannon	Veritek Limited	Supporting Auditor

Personnel assisting in this audit were:

Name	Title
Craig Young	Excellence Leader – Reconciliation
Grace Hawken	Technical Specialist - Reconciliation Team
Laura Martin	Team Leader
Leah Davie-Curran	Back Office Metering
Leyton Naera	Revenue Assurance Analyst
Rosie Alison	Team Leader
Sacha Edwards	Customer Excellence Leader
Shweta Arora	Reconciliation Systems Analyst
Wenli Zhu	Accounting Technician, Finance Operations
Alysha Majury	Team Leader
Gwen Gilbert	Customer Service Representative
Anna Fraser-Jones	Customer Service Representative
Julia Jones	Technical Specialist – Reconciliations Compliance
Mamai Cooper	TOU Technical Facilitator
Nirav Teli	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

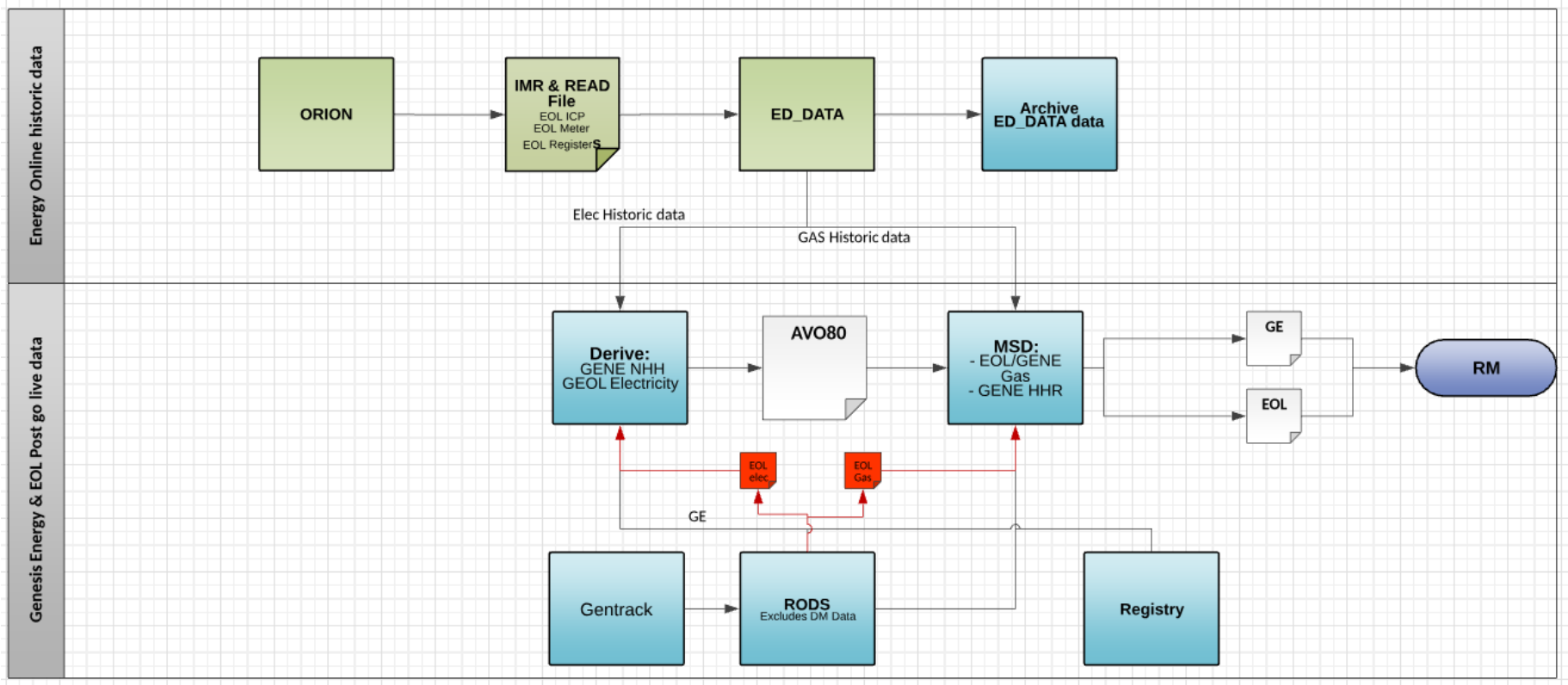
Genesis engages the following service providers:

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

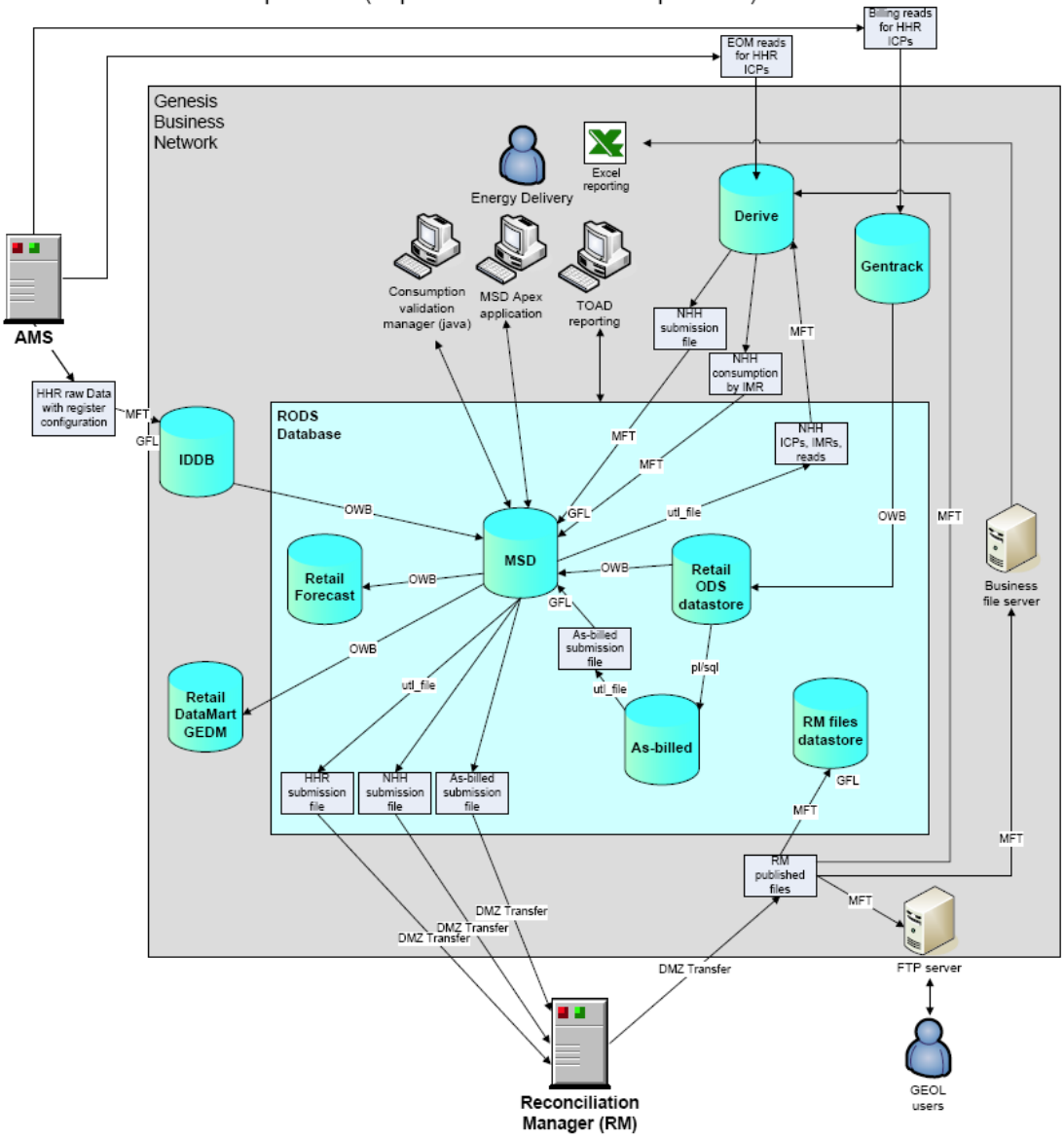
A diagram of the systems is shown below. The areas shaded green are now discontinued. The Orion system is no longer used and all GEOL ICPs are managed in Gentrack.



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 six breach allegations relevant to the scope of this audit recorded by the Electricity Authority during the audit period:

Ref	Breach Description	Clause	Target EGR Date	Outcome
2004GENE1	On 31 March 2020, Genesis called a Flick customer who had switched from Genesis on 25/03/2020 and tried to offer a lower price than Flick to lure customer back to Gene. Customer declined their offer and reported this to Flick.	Part 11 clause 11.15AA	05/08/20	No result yet, the investigator is fact finding
2006GENE1	ICP # 1000756140UNAB7 Electric Kiwi received a transfer switch from Genesis for ICP # 1000756140UNAB7 on 5 May 2020. The customer then contacted Electric Kiwi to say they were switching back to Genesis, who they had left on 22 January 2020, due to receiving a counteroffer from Genesis. Based on the communication provided by the customer to Electric Kiwi, Genesis made the offer on 16 April 2020 which is after the ban on win-back came into force and occurred within the 180 days stand down period specified in the regulation.	Part 11 clause 11.15AA	05/08/20	No result yet, the investigator is fact finding
2004GENE3	On 17 April 2020, Genesis sent an email containing a survey link to customer who had switched providers from Genesis in the past couple of months. Potential breach clause 11.15AC(1)(b).	Part 11 clause 11.15AC (1) (b)	05/08/20	No result yet, the investigator is fact finding
2006GENE2	Genesis as the losing retailer did not provide to the registry a switch event meter reading as at the event date. Paua provided one example but claim this is a widespread issue.	Part 11 Schedule 11.3 clause 5 (b)	05/08/20	No result yet, the investigator is fact finding
2004GENE2	Genesis failed to provide AV120 billed information to the reconciliation manager by 4:00 pm on business day 13. A file was initially provided on time, but a transposed meter error was	Part 15 clause 15.4 (2)	05/08/20	No result yet, the investigator is fact finding

Ref	Breach Description	Clause	Target EGR Date	Outcome
	found following submission and a corrected file was issued.			
2005GENE2	Genesis Power (GENE) has failed to submit data NSP volumes submission information to the reconciliation manager by 16:00 on 6 May 2020 in breach of Part 15.4 (2) of the Code. The data was provided by 16.43 on 6 May 2020. The delay was caused by a processing error, the file was uploaded to the file checker first and due to an interruption the user thought that the file had been successfully uploaded to the portal.	Part 15 clause 15.4 (2)	05/08/20	No result yet, the investigator is fact finding

1.7. ICP Data

GENE

All active ICPs are summarised by metering category in the table below. 2,930 of the 2,957 active ICPs with a metering category of 9 or blank have trader unmetered load details recorded. The remaining 27 ICPs are active but have no metering details entered on the registry and are discussed in **section 2.9**.

Metering Category	2020	2019	2018	2017	2016
1	402,274	405,579	409,403	418,547	442,114
2	2,928	3027	2,918	2,703	2,865
3	1	1	1	1	0
4	0	0	0	0	0
5	2	2	2	2	2
9	719	822	927	1,172	1,132
Blank	2,238	2,178	2,318	2,387	1,161

Status	Number of ICPs (2020)	Number of ICPs (2019)	Number of ICPs (2018)	Number of ICPs (2017)	Number of ICPs (2016)
Active (2,0)	408,162	411,609	415,569	424,722	447,274
Inactive - new connection in progress (1,12)	1,836	1,515	1,212	966	806

Inactive – vacant (1,4)	9,926	10,172	10,646	10,966	13,099
Inactive – AMI remote disconnection (1,7)	1,800	1,919	2,199	1,831	44
Inactive – de-energised due to meter disconnected (1,9)	24	26	36	33	0
Inactive – at pole fuse (1,8)	30	37	53	46	0
Inactive – de-energised at meter box fuse (1,10)	6	7	20	10	0
Inactive – at meter box switch (1,11)	7	6	10	8	0
Inactive – ready for decommissioning (1,6)	1,969	1,988	2,270	2,957	4,441
Inactive – reconciled elsewhere (1,5)	4	2	0	4	2
Decommissioned (3)	43,756	42,090	40,249	37,654	33,876

GEOL

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

Metering Category	2020	2019	2018	2017	2016
1	88,632	89,865	90,011	86,110	82,861
2	146	154	170	191	237
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0
9	5	7	11	12	9
Blank	4	3	2	7	7

Status	Number of ICPs (2020)	Number of ICPs (2019)	Number of ICPs (2018)	Number of ICPs (2017)	Number of ICPs (2016)
Active (2,0)	88,787	90,029	90,194	86,230	83,114
Inactive - new connection in progress (1,12)	91	80	69	88	48
Inactive – vacant (1,4)	816	964	850	834	737
Inactive – AMI remote disconnection (1,7)	268	411	61	64	34
Inactive – de-energised due to meter disconnected (1,9)	9	3	2	0	0
Inactive – at pole fuse (1,8)	14	7	3	3	1
Inactive – de-energised at meter box fuse (1,10)	8	1	0	1	0
Inactive – at meter box switch (1,11)	4	0	1	0	0
Inactive – ready for decommissioning (1,6)	89	180	189	206	218
Inactive – reconciled elsewhere (1,5)	0	0	0	0	0
Decommissioned (3)	2,650	2,340	2,115	1,868	1,605

GENH

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

Metering Category	2020	2019	2018	2017	2016
1	123	99	100	82	77
2	1165	908	922	753	635
3	710	649	632	452	347
4	234	218	192	150	91
5	28	24	22	11	15
9	4	4	1	1	0
Blank	4	0	2	1	0

Status	Number of ICPs (2020)	Number of ICPs (2019)	Number of ICPs (2018)	Number of ICPs (2017)	Number of ICPs (2016)
Active (2,0)	2,268	1,902	1,841	1,450	1,165
Inactive - new connection in progress (1,12)	11	8	11	13	11
Inactive – vacant (1,4)	0	0	0	2	3
Inactive – AMI remote disconnection (1,7)	0	0	0	0	0
Inactive – de-energised due to meter disconnected (1,9)	0	0	0	1	0
Inactive – at pole fuse (1,8)	0	0	0	1	0
Inactive – de-energised at meter box fuse (1,10)	0	0	0	0	0
Inactive – at meter box switch (1,11)	0	0	0	0	0
Inactive – ready for decommissioning (1,6)	1	1	0	1	1
Inactive – reconciled elsewhere (1,5)	2	2	2	2	0
Decommissioned (3)	433	419	406	0	365

1.8. Authorisation Received

A letter of authorisation was received.

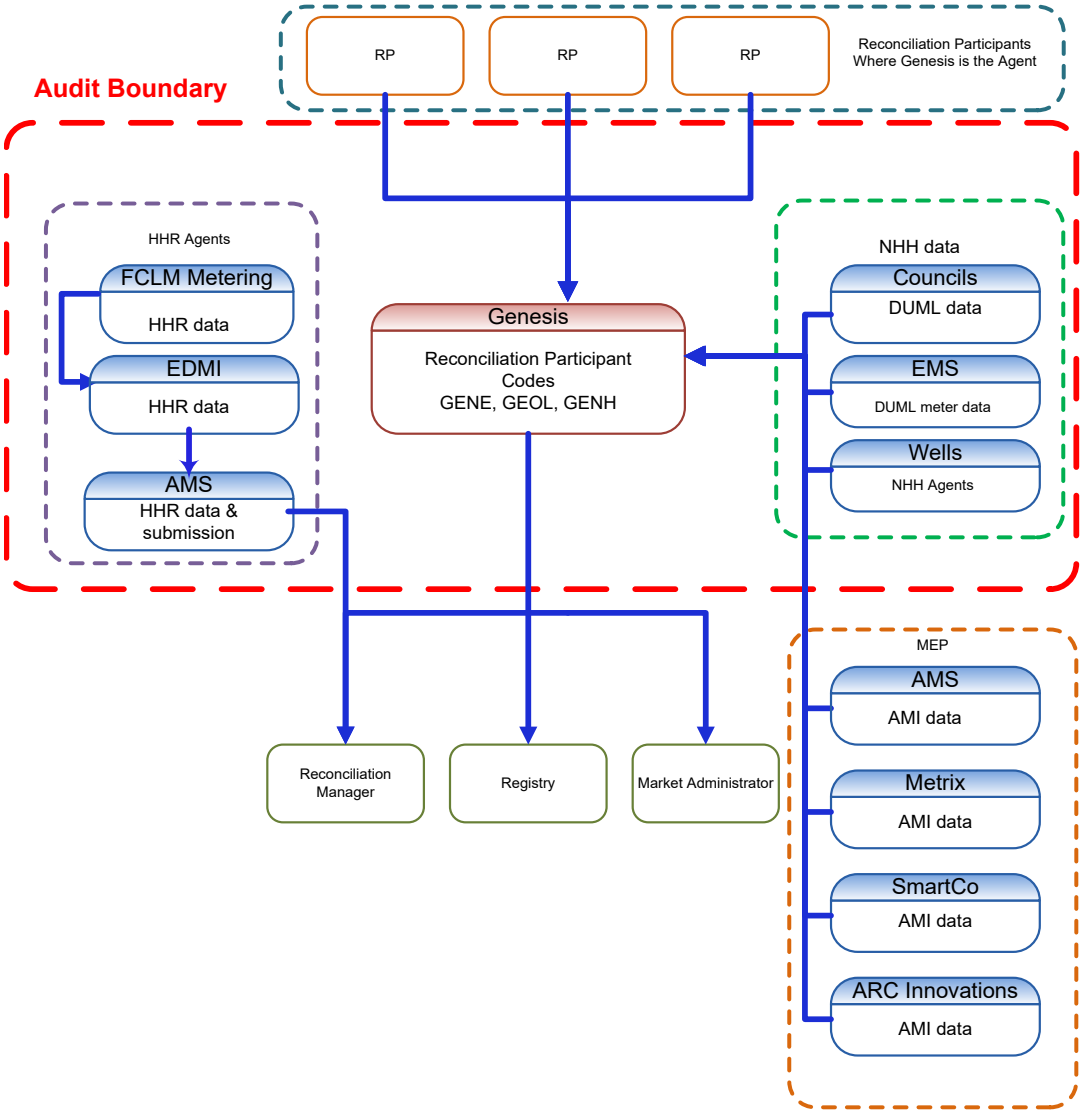
1.9. Scope of Audit

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 28-30 July 2020 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 2019 by Tara Gannon (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.

Table of Non-compliances

Subject	Section	Clause	Non-compliance	Status
Relevant information	2.1	15.2	Small number of registry discrepancies. Some late status updates and trader updates. Some corrections not conducted.	Still existing
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**	Still existing

Subject	Section	Clause	Non-compliance	Status
			21 reconnections were not certified within five business days.	
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.	Still existing
Trader responsibility for an ICP	3.4	11.18	**GENE** 20 incorrect MEP nominations.	Still existing
Provision of information to the registry manager	3.5	9 Schedule 11.1	Some late and incorrect status updates.	Still existing
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	A small number of incorrect ANZSIC codes.	Still existing
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.	Still existing
Management of "active" status	3.8	17 Schedule 11.1	**GENE** 25 (6+19) incorrect first active dates. **GEOL** One incorrect first active date.	Still existing
Management of "inactive" status	3.9	19 Schedule 11.1	**GENE** Some incorrect inactive statuses.	Still existing
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.	Still existing
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.	Still existing

Subject	Section	Clause	Non-compliance	Status
			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.	
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.	Still existing
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.	Cleared
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.	Still existing
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.	Still existing

Subject	Section	Clause	Non-compliance	Status
			One ICP sent with an actual read incorrectly labelled as an estimate. One ICP with the incorrect last actual read date recorded.	
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.	Still existing
Losing trader provision of information - gaining trader switch	4.13	15 Schedule 11.3	**GENH** 28 late AN files.	Still existing
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 Schedule 11.3	**GENH** 5 late CS files.	Still existing
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.	Still existing
Switch saving protection	4.17	11.15AA to 11.15AB	Switch save protected customer attempt to persuade customer to remain with GENE.	Still existing
Unmetered threshold	5.2	10.14 (2)(b)	**GENE**	Still existing

Subject	Section	Clause	Non-compliance	Status
			22 ICPs with unmetered load over 6,000 kWh per annum.	
Unmetered threshold exceeded	5.3	10.14 (5)	**GENE** 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, 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.	Still existing
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. 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.	Still existing

Subject	Section	Clause	Non-compliance	Status
Collection of information by certified reconciliation participant	6.5	2 Schedule 15.2	**GENH** Four GENH meters not interrogated within the maximum interrogation cycle.	Cleared
Derivation of meter readings	6.6	3(1), 3(2) and 5 Schedule 15.2	**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.	Still existing
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.	Still existing
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.	Still existing
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.	Still existing
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	Still existing

Subject	Section	Clause	Non-compliance	Status
			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.	
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.	Cleared, correction non-compliances are now recorded in **section 2.1**
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.	Still existing
Buying and selling notifications	11.1	15.3	**GENE** 14 trading notifications were not provided.	Cleared
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.	Still existing
HHR aggregates information provision to the reconciliation manager	11.4	15.8	**GENE and GENH** HHR aggregates files do not contain electricity supplied information.	Still existing
Accuracy of submission information	12.7	15.12	**GENE** PV1 profile was applied instead of EG1 for non-solar generation for two ICPs.	Still existing

Subject	Section	Clause	Non-compliance	Status
			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.	
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.	Still existing
Reconciliation participants to prepare information	12.9	2 Schedule 15.3	**GENE** One category 3 and two category 5 ICPs with NHH submission recorded.	Still existing
Forward estimate process	12.12	6 Schedule 15.3	**GENE and GEOL** The accuracy threshold was not met for all months and revisions.	Still existing
Historical estimate reporting to RM	13.3	10 Schedule 15.3	**GENE and GEOL** Historic estimate thresholds were not met for some revisions.	Still existing

Table of Recommendations

Subject	Section	Clause	Recommendations	Status
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.	Still existing

Subject	Section	Clause	Recommendations	Status
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.	Cleared
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.	Still existing
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.	Still existing
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.	In progress
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.	Considered, but not implemented
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.	Considered, but not implemented
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.	Considered, but not implemented

1.11. Material Change Audits (Clause 16A.11)

Code reference

Clause 16A.11

Code related audit information

If there is a material change to any of a participant's systems or processes that are the subject of regular audits under clause 10.17A, 11.8B, 11.10, 15.37A or 15.37B, the participant must arrange for an additional audit, which must be completed in accordance with this Part no later than 5 business days before the change is implemented.

A material change to a system or process is a change that is likely to affect the ability of the participant to comply with any relevant provision of this Code.

Audit observation

I checked whether any material changes had occurred during the audit period.

Audit commentary

The new connection process was partially automated during the audit period. This has created two issues:

- the MEP nominations are not always being sent to the registry at the same time as service request is issued to the field and the new connection cannot be completed until the MEP is nominated in Gentrack, therefore this is causing backdated new connections and MEP nominations, and
- unmetered new connections are being auto completed and overwriting already correctly populated active dates as is detailed in **section 3.5**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 1.11 With: Clause 16A.11 From: 01-Jul-19 To: 30-Jul-20	Material change audit not conducted for automation new connection process. Potential impact: Medium Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as weak because this development was put into production without undertaking a material audit to confirm Genesis can meet their code obligations. The automation of the new connection process has impacted Genesis' compliance resulting in late updates to the registry and incorrect active dates for some unmetered new connections but 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 will need to ensure what improvement initiatives will require a materiality audit and if so undertake an audit prior to implementation. The EA needs to understand that this clause will delay all improvements to processes or systems having a material impact on settlement.	09/2021	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will need to revise their program of work to discuss the materiality and whether any process/system change, or improvement will be measured by this code section and how that may impact any current and future improvement initiatives. Compliance to be included in impact assessments for process and system changes.	09/2021	

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 list files as at 28/05/20 for GEOL, 02/06/20 for GENH and 25/05/20 for GENE and AC020 reports were examined to identify any registry discrepancies, and to confirm that all information was correct and not misleading.

Audit commentary

Registry and static data accuracy

Gentrack updates to the registry on a daily basis. There is a dedicated team to manage registry discrepancies. Registry rejection notifications are managed on a daily basis. Some of these are worked by the registry discrepancy team and some are issued to the work area for action. 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 analysis of the list file and AC020 report returned the following findings for each code:

GENE

Issue	2020 Qty	2019 Qty	2018 Qty	2017 Qty	2016 Qty	Comments
ICPs at status (1,11) "De-energised at meter box" in the registry	7	6	10	8	0	See **section 3.9**.
Status of (1,12) "New connection in progress" with an initial electrical connection date populated	1,836	138	44	44	62	See **section 3.9**.
Active with Blank ANZSIC codes	-	1	-	-	-	None found in this audit.

Issue	2020 Qty	2019 Qty	2018 Qty	2017 Qty	2016 Qty	Comments
Active with ANZSIC T994/994000 "Don't know"	-	1	4	3	768	None found in this audit.
Active with ANZSIC "T999" not stated	-	-	-	-	-	None found in this audit.
Meter category 9 or blank and active with MEP and UML "N"	42	67	15	23	22	See **section 3.4**.
Active ICP with no MEP	-	49	-	32	1	None found in this audit.
ICPs with Distributor unmetered load populated but retail unmetered load is blank	12	13	2	17	14	See **section 3.7**.
Standard unmetered load different to distributor field	76	42	10	10	27	See **section 3.7**.
ICPs with unmetered load flag Y but load is recorded as zero	43	-	-	-	67	All were confirmed to be DUML ICPs. See **section 3.7**.
Shared unmetered load ICPs with no UML	4	4	-	-	1	See **section 5.1**.
Shared unmetered load ICPs with incorrect load	4	-	-	5	5	See **section 5.1**.
Unmetered load differences between registry and Derive	-	-	-	-	1,226	None found in this audit.
Incorrect EG1 profiles	0	2	2,882	-	-	None found in this audit.
Incorrect RPS profiles	97	372	-	-	-	97 ICPs had RPS profile recorded on the registry, when RPS PV1 was applied for submission. The profiles were corrected though the profile validation process prior to the audit. See **section 6.1**.
Incorrect PV1 profiles	1	10	-	-	-	ICP 0000100101TR513 had wind generation with PV1 profile and was updated to EG1 for submission and

Issue	2020 Qty	2019 Qty	2018 Qty	2017 Qty	2016 Qty	Comments
						on the registry during the audit. See **section 6.1**.

GEOL

Issue	2020 Qty	2019 Qty	2018 Qty	2017 Qty	2016 Qty	Comments
Status of (1,12) "New connection in progress" with an initial electrical connection date populated	91	16	5	8	2	See **section 3.9**.
ICPs at status (1,11) "De-energised at meter box" in the Registry	4	-	1	-	0	See **section 3.9**.
Blank ANZSIC codes	-	-	-	-	30	None found in this audit.
ANZSIC T994/994000 "Don't know"	-	1	10	16	49	None found in this audit.
Active with ANZSIC "T999" not stated	-	-	-	-	-	None found in this audit.
Meter category 9 or blank and active with MEP and UML "N"	3	4	-	-	-	See **section 3.4**.
Active ICP with no MEP	-	1	-	-	-	None found in this audit.
Standard unmetered load different to distributor field	-	6	-	-	-	None found in this audit.
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	None found in this audit.
ICPs with incorrect shared unmetered load	1	-	4	-	1	See **section 5.1**.

Issue	2020 Qty	2019 Qty	2018 Qty	2017 Qty	2016 Qty	Comments
Incorrect EG1 profiles	0	50	69	-	-	None found in this audit.
Incorrect RPS profiles	9	-	-	-	-	Nine ICPs had RPS profile recorded on the registry, when RPS PV1 was applied for submission. The profiles were corrected though the profile validation process prior to the audit. See **section 6.1**.
Incorrect PV1 profiles	1	-	-	-	-	ICP 1001152044CK79A had wind generation with PV1 profile and was updated to EG1 profile during the audit. See **section 6.1**.

GENH

Issue	2020 Qty	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 electrical connection date populated	11	1	-	See **section 3.9**.
Active with Blank ANZSIC codes	-	-	-	None found this audit.
Active with ANZSIC T994/994000 "Don't know"	1	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"	8	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	1	-	See **section 3.7**.

Issue	2020 Qty	2019 Qty	2018 Qty	Comments
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**. No ICPs were confirmed to be generating without import/export metering or arrangements for gifting in place.

The validation processes worked by the reconciliation team are driven around the submission time frames so this will result in late updates as these are worked prior to day 4 and day 13 submissions. It also appears that whilst discrepancies are identified, these are sometimes slow to be corrected due to resourcing issues in the different areas. The last audit identified two additional validations be added.

- The validation query for variations between the Distributor and trader unmetered load fields is still being developed. 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.

The audit compliance reports contain reporting for both of these validations. I recommend that this is used.

Description	Recommendation	Audited party comment	Remedial action
Regarding Clause 15.2 Validations	Use the audit compliance report for: • 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 has in the past requested the distributors to provide the livening details in which majority have not been able present, therefor Genesis is unable to validate all the details populated by distributors. Genesis will continue to develop gains in reporting of unmetered load increasing unmetered data accuracy levels. Genesis will review reporting of electrical connection dates for validation processes.	Investigating

Other issues recorded are as follows:

- some incorrect statuses recorded, and
- some late status updates and trader updates.

Read and volume data accuracy

Read and volume accuracy issues are identified in the validation processes described in detail in **sections 9.5** and **9.6**. I checked a sample of NHH corrections as described in the table below:

Defective meters	Defective meters are typically identified through the zero-consumption 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. I reviewed ten examples of stopped or faulty meters for GENE and six for GEOL, and found corrections had been processed by recording an estimated closing read on the replaced meter, which was calculated using the daily average consumption for the new meter or the replaced meter prior to the fault. Six of the corrections were traced through to Derive and were correctly recorded in the submission information. Because all meter removal reads are recorded as actual, these estimated removal reads were incorrectly classified. This is recorded as non-compliance in **section 9.1**. I rechecked corrections for 0037942216PC4D0 (November 2018) and 0000507493DEA7C (February 2019) which were outstanding following the 2019 audit and found they had not been processed.
Incorrect multipliers	If an ICP with an incorrect multiplier is unbilled the multiplier will be replaced. If the ICP has one or two invoices, the invoice(s) will be reversed, the multiplier will be corrected, and then the ICP will be reinvoiced. The corrected data will flow from Gentrack to Derive overnight. If the ICP has more than two invoices, it is corrected 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. I reviewed two multiplier corrections for GENE and one for GEOL and confirmed that the corrected data flowed through to revision submissions. I rechecked the correction for ICP 2810040000CH3A8 found in the 2019 audit. This was corrected from 17/08/18 but should have been corrected from 31/03/16. This has not been updated.

<table>
<tr><td>Bridged meters</td><td>Bridged meters are typically identified through the zero-consumption validation process, reconnection paperwork returned from the contractor, or stopped meter cases.

An internal audit of bridged meter processes has been completed. The audit identified that process improvements were required to prevent bridging, promptly unbridge where bridging has occurred, and ensure that bridged consumption is consistently identified and corrected where it does occur. The implementation of these improvements will be monitored through Genesis' internal audit processes.

GENE

I reviewed a sample of 15 bridged meters. Five of the bridged meters were not unbridged; a work order to unbridge has been issued but not completed for two ICPs, and three ICPs switched out before unbridging was completed. Ten bridged meters were unbridged, and corrections were accurately processed for eight of these.

• No correction was entered for ICP 0000124164UN239 which was bridged from January to June 2020. Consumption on the new meter is approximately 0.5 kWh per day.
• ICP 0000167710UN91D's meter change was processed effective from 10/06/20 instead of 16/06/20 because the booked date was used instead of the completed date.

I rechecked the correction for ICP 0000014674UN2D6 which was outstanding following the 2019 audit and found it had not been processed.

GEOL

No bridged meters were identified during the audit period.</td></tr>
<tr><td>Consumption while inactive</td><td>ICPs with inactive consumption

Review of historic estimate examples found that where part of a read to read period was inactive, the SASV inactive days were excluded from both the numerator and denominator when calculating the historic estimate, forcing all consumption to be reported within the active portion of the read to read period. Where an entire read to read period has inactive status, the numerator and denominator will be zero and no historic estimate will be reported. The status must be returned to active to allow consumption during inactive periods to be correctly reported.

GENE

GENE provided a report with 260 ICPs with inactive consumption, totalling 205,796 kWh. I reviewed the 20 ICPs with the most disconnected consumption, and found one had a correction processed. The other 19 ICPs had total inactive consumption of 163,319 kWh.

ICP 0000491003WE1BC became inactive on 25/02/20 and switched out effective 04/03/20. Historic estimate was captured up to the last actual reading before the ICP became inactive. Because the consumption between this reading and the switch out reading fell during a period which was entirely inactive, no historic estimate was reported.

<table>
<tr><th>Meter and register</th><th>Switch event read effective 04/03/20</th><th>Historic estimate end read 25/02/20</th><th>Difference</th></tr>
<tr><td>208113328,1</td><td>44640 (A)</td><td>44636 (A)</td><td>-4 kWh</td></tr>
<tr><td>208113328,2</td><td>15640 (A)</td><td>15639 (A)</td><td>-1 kWh</td></tr>
</table>

I rechecked corrections for 0005418617WEBCA (3450 kWh after 28/05/19) and 0100010811BC4DF (2994 kWh after 04/06/19), which were outstanding following the 2019 audit, and found they had not been processed.

GEOL</td></tr>
</table>

	GEOL provided a report with 28 ICPs with inactive consumption, totalling 36,624 kWh. I reviewed the ten ICPs with the most disconnected consumption and found two had corrections processed. The other eight ICPs had total inactive consumption of 32,476 kWh.
Unmetered load corrections	Gentrack records the unmetered load as a fixture, and dummy meter readings are created and loaded into Derive for submission. I reviewed two unmetered load corrections for GENE and found they had been processed correctly in Derive. No unmetered load corrections occurred for GEOL.

The following read and volume issues were identified during the audit for GENE which were not resolved as soon as practicable:

Issue	Description	Section
NHH bridged meter corrections	No bridged meter correction was processed for ICP 0000124164UN239 which was bridged from January to June 2020. Consumption on the new meter is approximately 0.5 kWh per day. ICP 0000167710UN91D's meter change was processed effective from 10/06/20 instead of 16/06/20 because the booked date was used instead of the completed date. Five bridged meters (0000540643WEC82, 0000119904UN6C8, 0005765757RNE1C, 0049202053PCA93 and 0131447424LC9D2) were not unbridged because no job was raised, or the job could not be completed prior to switch out. No correction for the bridged consumption was processed.	2.1
NHH inactive consumption corrections	At least 19 ICPs with total inactive consumption of 163,319 kWh had not had status corrections processed. ICP 0000491003WE1BC became inactive on 25/02/20 and switched out effective 04/03/20. Historic estimate was captured up to the last actual reading before the ICP became inactive, because the consumption between this reading and the switch out reading fell during a period which was entirely inactive and resulted in under reporting of 5 kWh.	2.1
Reporting of distributed generation volumes	There were delays in providing distributed generation submission information for 0000039785CP0FE, 1000585864PCBEE and 1000587982PCA9F because meter changes were not processed on time or correctly. 23 ICPs which are believed to be generating did not have compliant metering installed or notification of gifting provided. ICP 0000100101TR513 had wind generation and was updated from PV1 to EG1 profile for submission during the audit.	6.1, 12.2, 12.7
Validation of customer readings	1000517104PC993 had customer readings on 31/07/19 and 18/09/19 which were treated as actual validated readings but were not validated against a set of readings from another source.	6.6

The following read and volume issues were identified during the audit for GEOL which were not resolved as soon as practicable:

Issue	Description	Section
NHH inactive consumption corrections	At least eight ICPs with total inactive consumption of 32,476 kWh had not had status corrections processed.	2.1
Reporting of distributed generation volumes	ICP 1001152044CK79A had wind generation and was updated to EG1 profile during the audit.	6.1, 12.7
Validation of customer readings	ICP 0000289010TE558 had a customer reading on 30/08/20 which was treated as an actual validated reading but was not validated against a set of readings from another source.	6.6

The following read and volume issues were identified during the audit for GENH which were not resolved as soon as practicable:

Issue	Description	Section
Unmetered load	ICPs 0000000516NTE49, 0000000544NT6C4, and 0000370001TU645 were not included in submission information because no instruction had been received from the commercial team, resulting in under submission of 1,547 kWh up to 31/07/20.	12.2, 12.7

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 15.2 From: 01-Jul-19 To: 30-Jul-20	Some inaccurate data is recorded and was not updated as soon as practicable. Potential impact: High 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 recorded as moderate because the scope of this clause is broad, and most areas have moderate or strong controls. The audit risk rating is medium due to the incorrect data being submitted to the market and sent to other traders as part of the switching process.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis will need to consider the changes required in order to assess materiality to any process change to resolve the issues at hand prior to any solution being implemented. Genesis will need to review system and processes to identify potential gains in timeliness and accuracy of data.	unknown	Unknown
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis has introduced internal control audits which will help identify areas with potential risk. The internal audit recommendations are currently being actioned with the business owners, Genesis will be considering the actions based on whether it is determined to be a material change and will then need to consider the materiality due to code sections 16A.11 (15.37a).	unknown	

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) and IDDB.
- Wells provides NHH data as an agent via SFTP.
- Generation data is collected using Stark.

Theta monitors HHR data and readings entered into IDDB, and daily reads at register level entered into DRDS, and makes sure that files are loaded and pass validation. Any issues are referred to AMS and the Genesis reconciliation team.

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 IDDB and DRDS by AMS, which store daily readings and interval data. Gentrack and the Market Submission Database (MSD) receive data from DRDS and IDDB 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 two HHR settled ICPs from DRDS/IDDB to MSD and the HHR aggregates submissions, and
- I traced readings for two NHH settled ICPs from DRDS, to Gentrack and Derive.

Wells readings are loaded directly into Gentrack, and then transferred from Gentrack to Derive overnight. To confirm the process, I traced readings for 12 manually read ICPs from the read files provided by Wells to Gentrack and Derive. All readings matched except 0031670138PCA92 for 18/05/2020 where the read was not loaded because it failed validation due to an incorrect number of dials and high reading. It was later confirmed that the meter reader had visited the wrong location, and the validation process had correctly rejected the reading.

GENE ICPs 0696299004PC30D and 0696299005PCF48 relate to the Haunui wind farm. The Genesis generation team read the meter and provide the data in a spreadsheet which is formatted into a HHR volumes submission using SQL scripts. I walked through the process and traced a sample of data from the source files to submission.

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. Email trails are also retained for any estimates or corrections.

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 list files as at 28/05/20 for GEOL, 02/06/20 for GENH and 25/05/20 for GENE and AC020 reports were examined to confirm process compliance and that controls are functioning as expected.

The registry list and AC020 reports were reviewed to identify all active ICPs with a metering category of 9 or blank for each code. Each ICP was checked.

Audit commentary

GENE and GEOL have blanket acceptance agreements in place with some 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.

GENE

The process in Salesforce has been automated so once the customer is confirmed and all the required details have been completed, Salesforce issues a service request. At the same time the ICP claim and the MEP nomination are expected to be sent to the registry. This is not happening in all instances and there is no reporting in place to identify when this fails. In those cases, this can cause delays in updating the registry to push through the MEP nomination and complete the new connection. Once the service request is returned and providing all the details are complete, Salesforce automatically closes the service request and this updates to Gentrack which then writes to the registry. If the service order is unable to be autocompleted an exception is sent to a work queue. These are then reviewed and actioned by the new connection team through to completion.

The automation of the new connection process should have been considered a material change as this has an impact on Genesis' ability to comply with the code and issues such as this would likely have been identified prior to this going live. This is recorded as non-compliance in **section 1.11**.

Review of the AC020 report confirmed that all active metered ICPs had an MEP recorded.

Review of the AC020 report and registry list identified 42 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- 24 had metering details populated on the registry after the reports were run,
- 10 had MEP nominations accepted and were awaiting population of metering data,
- two had MEP nominations issued and were awaiting the MEP's response, and
- five are either in the process of being decommissioned or have already been decommissioned after the reports were run.

The remaining ICP 0005914019AL770, has a meter installed in Gentrack that is indicated as an Alpine meter, but Alpine have rejected the MEP nomination. Genesis are contacting Alpine to resolve this.

GEOL

There has been no change to the new connection process during the audit period. GEOL do not use Salesforce. New connections are managed via email inboxes. Some reporting has been put in place to assist with management of this workflow. Review of the AC020 report confirmed that all active metered ICPs had an MEP recorded.

Review of the AC020 report and registry list identified three ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- two had MEP nominations accepted and were awaiting population of metering data, and
- one had its status updated to decommissioned after the reports were run.

GENH

Review of the AC020 report confirmed that all active metered ICPs had an MEP recorded.

Review of the AC020 report and registry list identified eight ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- four had metering details populated on the registry after the reports were run,
- one had a MEP nomination accepted and was awaiting population of metering data,
- one had MEP nomination issued and was awaiting the MEP's response, and
- one had its status updated to decommissioned after the reports were run.

The remaining ICP 0000032811CPEFC has had the meters removed and the supply disconnected. The status is incorrectly recorded as "active" on the registry. This is recorded as non-compliance in **section 3.8**.

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.

Audit commentary

GENE

GENE usually claims ICPs at 1,12 ("inactive new connection in progress") status which helps to ensure that the trader is recorded on the registry if an ICP is temporarily electrically connected.

Temporary electrical connections occur rarely. No examples were identified.

GEOL

GEOL usually claims ICPs at 1,12 ("inactive new connection in progress") status which helps to ensure that the trader is recorded on the registry if an ICP is temporarily electrically connected.

Temporary electrical connections occur rarely. No examples were identified.

GENH

GENH usually claims ICPs at 1,12 ("inactive new connection in progress") status which helps to ensure that the trader is recorded on the registry if an ICP is temporarily electrically connected.

Temporary electrical connections occur rarely. No examples were identified.

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

The AC020 reports were examined 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

Review of the AC020 report and registry list identified 42 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- 24 had metering details populated on the registry after the reports were run,
- 10 had MEP nominations accepted, and were awaiting population of metering data,
- two had MEP nominations issued, and were awaiting the MEP's response, and
- five are either in the process of being decommissioned or have already been decommissioned after the reports were run.

The remaining ICP 0005914019AL770, has a meter installed in Gentrack that is being read and is indicated as an Alpine meter, but Alpine have rejected the MEP nomination. Genesis are contacting Alpine to resolve this.

GEOL

Review of the AC020 report confirmed that all active metered ICPs had an MEP recorded.

Review of the AC020 report and registry list identified three ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- two had MEP nominations accepted and were awaiting population of metering data, and
- one had its status updated to decommissioned after the reports were run.

GENH

Review of the AC020 report and registry list identified eight ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- four had metering details populated on the registry after the reports were run,
- one had a MEP nomination accepted and was awaiting population of metering data,
- one had MEP nomination issued and was awaiting the MEP's response, and
- one had its status updated to decommissioned after the reports were run.

The remaining ICP 0000032811CPEFC has had the meters removed and the supply disconnected. The status is incorrectly recorded as "active" on the registry. This is recorded as non-compliance in **section 3.8**.

New Connections

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

GENE

The AC020 report recorded 146 metered ICPs which did not have full certification within five business days of initial electrical connection. All were examined and found:

- 113 ICPs were unmetered builders temporary supplies so are compliant,
- 18 ICPs had no metering recorded at the time the report was run and have since had metering populated to the registry with the same certification date as the first active date so are compliant,
- seven ICPs were made active for one day and then decommissioned; these were never electrically connected therefore they should have been returned to "ready" and "decommissioned set up in error" and this is recorded as non-compliance in **section 3.8**,
- four ICPs where the builders temporary supply meter was never loaded to the registry, but these were sighted in Gentrack therefore compliance is confirmed,
- ICP 1002076042UN282 has metering recorded in Gentrack but the MEP has yet to load this to the registry, so compliance is confirmed, and
- ICP 1002070461UNAD6 was not certified at the time of electrical connection due to insufficient load; the MEP should have certified this meter as a lower category and monitored its load until it was sufficient to be fully certified and their actions have caused Genesis to be non-compliant.

GEOL

The AC020 report recorded two metered ICPs which did not have full certification within five business days of initial electrical connection. Both were examined and found that certified metering is recorded in Gentrack, but the MEP has yet to load the metering to the registry.

GENH

The AC020 report recorded six metered ICPs which did not have full certification within five business days of initial electrical connection. All were examined and found that in all had certified metering recorded in Gentrack, but the MEP has yet to load the metering to the registry.

Reconnections

GENE

The AC020 report recorded 232 metered ICPs did not have full certification within five business days of reconnection. Genesis have put reporting in place to identify ICPs that are reconnected with expired metering but there is no process in place to get these recertified. I recommend that the process is reviewed.

Description	Recommendation	Audited party comment	Remedial action
Regarding Clause 10.33A Certification of metering upon reconnection	Review the reconnection process to ensure that uncertified meters are certified or replaced when reconnected.	Genesis has internally discussed this and will need to develop a report to provide MEP's enabling both trader and MEP to ensure compliant metering is on site.	Indentified

The 232 ICPs reconnected with no certified metering are recorded as non-compliance.

GEOL

The AC020 report recorded 31 metered ICPs did not have full certification within five business days of reconnection. As detailed for GENE above, there is reporting in place to identify ICPs that are reconnected with expired metering but there is no process in place to get these recertified and I recommend that this process is reviewed. The 31 ICPs reconnected with no certified metering are recorded as non-compliance.

GENH

The AC020 report did not record any metered ICPs which did not have full certification within five business days of reconnection.

Bridged meters

GENE

GENE provided a list of meters which were bridged during the audit period**.** I checked a sample of 15 bridged meters and found nine had been unbridged and were appropriately certified on unbridging.

GEOL

No bridged meters were identified during the audit period.

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-Jul-19 To: 31-Jul-20	**GENE** ICP 1002070461UNAD6 not certified within five business days of electrical connection. 232 reconnections were not certified within five business days. **GEOL** 31 reconnections were not certified within five business days. Potential impact: Medium 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 as they will ensure compliance most of the time but the process to ensure certified metering is in place at the point of reconnection needs some improvement. 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
Genesis to implement reporting controls to notify the MEP of their obligation surrounding metering equipment certification. Genesis, however will need to investigate how to notify the MEP within 5 days of reconnecting the meter due to onboarding processes where we have gained the expired metering site from another trader, as this may require a material change audit?	01/03/2021	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will introduce reporting 3 months in advance to notify the MEP of any meter equipment nearing certification expiry.	01/12/2020	

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.

The registry list files as at 28/05/20 for GEOL, 02/06/20 for GENH and 25/05/20 for GENE were examined to identify any new networks which Genesis began trading on during the audit period.

Audit commentary

Before Genesis begins trading on a new network, the commercial team enters into a UoSA and then advises the reconciliation team to create the new network in Gentrack. The schema of valid networks in Gentrack is used to check that a valid trading notification is in place.

Genesis confirmed that a UoSA or other trading arrangement for all relevant networks, including the LAKE network which they began trading on from September 2019.

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.

The registry list files as at 28/05/20 for GEOL, 02/06/20 for GENH and 25/05/20 for GENE were examined to identify any new MEPs which Genesis began using during the audit period.

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. 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.

GENE, GEOL, and GENH did not begin using any MEPs during the audit period.

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. This clause links directly to **section 3.5** below. The findings for the timeliness of updates is detailed there. The registry list files as at 28/05/20 for GEOL, 02/06/20 for GENH and 25/05/20 for GENE and AC020 reports were examined to confirm process compliance.

Audit commentary

The new connection process is detailed in **section 2.9** above. Some of this process has been automated during the audit period. Overall is working as expected but in some instances the MEP nomination is not sent to the registry. This is eventually identified and corrected but this can cause delays in completing the new connection. 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 89 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.

The AC020 reports for each code were reviewed. A sample of late status updates, trader updates and MEP nominations were checked as described in the audit commentary.

Audit commentary

Updates to active status

The timeliness of status updates to active (for reconnections) is set out on the tables below.

There is an apparent increase in the volume of late updates from the last audit, but this is due to the audit compliance reporting across the whole audit period being measured rather than a shorter event detail report which was used in the last audit.

GENE

Code	Year	ICPs notified greater than 5 days	Average Business Days between Status Event and Status Input Dates	Percentage on time
GENE	2016	1,155	11.2	66%
GENE	2017	1,443	10.7	61%
GENE	2018	696	9.4	79%
GENE	2019	1,106	8	69%
GENE	**2020**	**2,148**	**11.6**	**76.14%**

The reconnection process is described in **section 3.8**.

GENE had 352 reconnections updated more than 30 business days after the event, and 137 updated more than 100 business days after the event, and 12 updated more than 1000 business days after the event.

The 15 latest updates, and the ten late updates between 30 and 500 business days late were checked. In all instances the reconciliation team have identified the consumption and corrected it so that if flowed through to submission with the exception of ICP 0000370270ENFF0. This was a credit disconnection. Genesis were not updating credit disconnections to the registry until October 2019. In this instance the file wasn't sent to the registry until December causing it to be backdated.

GENH

Code	Year	ICPs notified greater than 5 days	Average Business Days between Status Event and Status Input Dates	Percentage on time
GENH	2016	-	-	-
GENH	2017	-	-	-
GENH	2018	-	-	-
GENH	2019	-	-	-
GENH	**2020**	**1**	**9**	**0.00%**

The reporting indicated that there was one reconnection. This was examined and found that it was a correction to the start date for ICP 0000027782EA1A1.

GEOL

Code	Year	ICPs notified greater than 5 days	Average Business Days between Status Event and Status Input Dates	Percentage on time
GEOL	2016	290	11.8	47%
GEOL	2017	475	21	29%
GEOL	2018	648	13.2	52%
GEOL	2019	752	11	38%
GEOL	**2020**	**1,870**	**13.11**	**43.98%**

The reconnection process is described in **section 3.8**.

GEOL had 236 reconnections updated more than 30 business days after the event, and 20 updated more than 100 business days after the event. The ten latest updates, and ten late updates between 30 and 100 business days late were checked. All were corrections carried out by the reconciliation team as part of the reconciliation process. This is done as part of the reconciliation process prior to day 4 and 13 therefore these updates have been backdated to the correct date.

Updates to inactive status

The timeliness of status updates to inactive is set out on the tables below.

GENE

Code	Year	ICPs notified greater than 5 days	Average Business Days between Status Event and Status Input Dates	Percentage on time
GENE	2016	849	6.30	85.42%
GENE	2017	493	5.85	87.58%
GENE	2018	373	5.40	87.98%
GENE	2019	696	2.60	91.56%
GENE	**2020**	**959**	**9.77**	**95.08%**

The process is automated, and the overall level of compliance is high. GENE had 387 disconnections updated more than 30 business days after the event, 190 updated more than 100 business days after the event, and 27 updated more than 1,000 business days after the event.

I checked the ten latest (or all late) status updates to each disconnection status reason code and found for those set to inactive codes other than “inactive-ready to decommission” were due to either corrections to the disconnected reasons i.e. a change from “inactive-vacant” to “inactive - remotely disconnected or due to non-payment disconnections now being updated to the registry. The late updates for the ICPs ready to be decommissioned were due to data cleansing activity being undertaken by Wellington Electricity decommissioning historic unmetered BTS supplies. These were already disconnected but were updated to “disconnected - ready to decommission” therefore there is no material impact to the market.

I checked all 464 late updates to inactive - new connection in progress identified on the AC020 report. These updates are only considered late if the update occurs after the initial electrical connection date, and 169 were not genuinely late. I checked the latest ten updates confirmed to be genuinely late and found they all relate to the same issue of the MEP nomination not being sent as expected from Salesforce as described in **section 2.9**. In these instances, the status change as well as the MEP nomination will be on the same date as the ICP is updated to active.

GENH

Code	Year	ICPs notified greater than 5 days	Average Business Days between Status Event and Status Input Dates	Percentage on time
GENH	2016	0	0	100.00%
GENH	2017	4	18.83	33.33%
GENH	2018	2	19.50	0.00%
GENH	2019	4	4.53	76.74%
GENH	**2020**	6	7.36	84.85%

I checked all four late status updates for disconnections and found all were advised late by either the customer or the MEP.

I checked the two late updates to inactive - new connection in progress identified on the AC020 report. These updates are only considered late if the update occurs after the initial electrical connection date, and one was not genuinely late. The other update was checked and found it was due to the correction of the first active date.

GEOL

Code	Year	ICPs notified greater than 5 days	Average Business Days between Status Event and Status Input Dates	Percentage on time
GEOL	2016	47	9.45	84.33%
GEOL	2017	282	25.54	21.01%
GEOL	2018	148	65.73	37.29%
GEOL	2019	494	2.13	73.08%
GEOL	**2020**	**354**	**7.92**	**84.45%**

GEOL had 69 disconnections updated more than 30 business days after the event, and 31 updated more than 100 business days after the event.

I checked the ten latest (or all late) status updates to each disconnection status reason code and found for those set to inactive codes other than “inactive - ready to decommission” were due to either were due to either corrections identified as part of the discrepancy reporting or due to non-payment disconnections which are now being updated to the registry.

I checked the ten latest (or all late) status updates to each disconnection status reason code. And found for all those other than those set to "ready for decommissioning" were either corrections to status or due to late notification from the field.

For all other inactive statuses, the samples checked found that they were due to corrections or due to non-payment disconnections which are now being updated to the registry.

I checked all 114 late updates to inactive - new connection in progress identified on the AC020 report. These updates are only considered late if the update occurs after the initial electrical connection date, and 78 were not genuinely late. The ten latest updates were checked, and these were due to the same issue of the MEP nomination not being sent as expected from Salesforce as described in **section 2.9**. In these instances, the status change as well as the MEP nomination will be on the same date as the ICP is updated to active.

Trader updates

The timeliness of status updates to active (for reconnections) is set out on the tables below.

GENE

Code	Year	ICPs notified greater than 5 days	Average Business Days between Status Event and Status Input Dates	Percentage on time
GENE	2019	22,017	20.5	17.3%
GENE	**2020**	**55,838**	**18.01**	**8.14%**

GENE had 2,323 trader updates made more than 30 business days after the event, 766 updated more than 100 business days after the event, and 13 updated more than 1,000 business days after the event. Most of the late updates over 1,000 business days related to ANZSIC code corrections, submission type changes, unmetered load changes, or MEP nominations. I checked a sample of late updates recorded on the AC020 report for GENE as described in the table below:

ANZSIC updates - changes	Five late ANZSIC code updates made over 350 business days after the event date were checked and found to be corrections. The updates were processed after receiving confirmation of the correct ANZSIC code.
ANZSIC updates – new connections and switch ins	There were 322 late ANZSIC code updates for new connections and switch ins. 181 of those were more than 30 business days after the event date. I checked the ten latest updates and found they were caused by: • backdated switches in, and • backdated new connections.
Unmetered daily kWh and/or trader unmetered load details changes	A sample of ten updates which were over 100 business days late were checked and found to be corrections. The updates were processed after receiving confirmation of the correct unmetered load details.
Profile updates	A sample of ten updates which were over 100 business days late were checked and found all 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.

Submission type updates	A sample of ten updates which were over 100 business days late were checked, found they were all due to a correction to the submission type either due to generation being added or changes from NHH to HHR or vice versa, based on meters communicating or not.
MEP nominations	I checked the ten latest MEP nominations (between 236 and 1,636 business days late) and five late MEP nominations between 30 and 100 business days late. These were due to either an MEP requesting nomination for a backdated meter install or installation of distributed generation metering and in one instance the removal of distributed generation.

GENH

Code	Year	ICPs notified greater than 5 days	Average Business Days between Status Event and Status Input Dates	Percentage on time
GENH	2019	32	2	**47.5%**
GENH	**2020**	**8**	**14.5**	**60.0%**

GENH had five trader updates made more than 30 business days after the event, none updated more than 63 business days after the event. I checked all late updates recorded on the AC020 report for GENH as described in the table below:

ANZSIC updates - changes	All six late updates were checked. The updates were processed after receiving confirmation of the correct ANZSIC code.
ANZSIC updates – new connections and switch ins	There were 76 late ANZSIC code updates for new connections and switch ins. 37 of those were more than 30 business days after the event date. I checked the ten latest updates and found they were caused by: • backdated switches in, and • backdated new connections.
MEP nominations	I checked both the late updates. ICP 0000005252DE943 was a correction to the start date of the meter. ICP 0009803940AL7F0 was due to late notification.

GEOL

Code	Year	ICPs notified greater than 5 days	Average Business Days between Status Event and Status Input Dates	Percentage on time
GEOL	2019	37	3	85.8%
GEOL	**2020**	**78,004**	**16.76**	**1.03%**

GEOL had 207 trader updates made more than 30 business days after the event, 98 updated more than 100 business days after the event, and 69 updated more than 1,000 business days after the event. Most of the late updates over 1,000 business days related to ANZSIC code corrections or MEP nominations. I checked a sample of late updates recorded on the AC020 report for GEOL as described in the table below:

ANZSIC updates - changes	Five late ANZSIC code updates where three were due to the operator not changing the effective date in Gentrack causing them to appear backdated, and the remaining two were corrections. The updates were processed after receiving confirmation of the correct ANZSIC code.
ANZSIC updates – new connections and switch ins	There were 29 late ANZSIC code updates over 30 business days after the event date for new connections and switch ins. 18 of those were more than 30 business days after the event date. I checked the ten latest updates and found they were caused by: • backdated switches in, and • backdated new connection.
Unmetered daily kWh and/or trader unmetered load details changes	All unmetered load updates made over seven business days after the event date were checked and found to be corrections. The updates were processed after receiving confirmation of the correct unmetered load details.
Profile updates	A sample of the five latest profile updates (between 227 and 266 business days late) were checked and found they were corrections from PV1 to EG1.
Submission type updates	A sample of five late submission type updates (between 30 and 66 business days late) were checked and found all of these had switched in from GENE and had their profiles corrected late to RPS from HHR.
MEP nominations	A sample of the ten latest MEP nominations (between 1,387 and 1,581 business days late) and five late MEP nominations between 30 and 100 business days late were checked and found all were due to corrections to the incorrect MEP being nominated in the first instance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.3 With: Clause 10 of schedule 11.1 From: 01-Jul-19 To: 31-Jul-20	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 rated as moderate as they are generally robust, but the automation of the new connection process has created some gaps in controls. The audit risk rating is assessed to be low as whilst the events are backdated this is done to ensure submission occurs correctly.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis continues to improve the provision and accuracy of registry data and will review new connections automation and its exception management processes.	Continuous improvements	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis has proactively been rectifying anomalies and the corrections made to the relative systems and/or processes.	Continuous improvements	

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 AC020 and event detail reports were examined to confirm whether all active ICPs have an MEP recorded, and MEP nominations were accepted.

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

Review of the AC020 report confirmed that all active metered ICPs had an MEP recorded.

Review of the AC020 report and registry list identified 42 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- 24 had metering details populated on the registry after the reports were run,
- 10 had MEP nominations accepted and were awaiting population of metering data,
- two had MEP nominations issued and were awaiting the MEP's response, and
- five are either in the process of being decommissioned or have already been decommissioned after the reports were run.

The remaining ICP 0005914019AL770, has a meter installed in Gentrack that is being read and is indicated as an Alpine meter, but Alpine have rejected the MEP nomination. Genesis are contacting Alpine to resolve this.

The AC020 report recorded six MEP nominations which were not accepted within 14 business days of being issued. These were reviewed and found that the MN was accepted the next day and the audit compliance report was reporting false positives.

Six of the 7,708 MEP nominations made were rejected. These were examined and found that:

- five requests were issued to the incorrect MEP due to human error, and
- ICP 0000375972TU1F1 was issued in error to the existing MEP – this was withdrawn.

GEOL

Review of the AC020 report confirmed that all active metered ICPs had an MEP recorded.

Review of the AC020 report and registry list identified three ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- two had MEP nominations accepted and were awaiting population of metering data, and
- one had its status updated to decommissioned after the reports were run.

Two of the 895 MEP nominations recorded on the event detail report were rejected. These were examined and found this was due to the incorrect MEP being nominated in the first instance.

GENH

Review of the AC020 report confirmed that all active metered ICPs had an MEP recorded.

Review of the AC020 report and registry list identified eight ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- four had metering details populated on the registry after the reports were run,
- one had a MEP nomination accepted and was awaiting population of metering data,
- one had MEP nomination issued and was awaiting the MEP's response, and
- one had its status updated to decommissioned after the reports were run.

The remaining ICP 0000032811CPEFC has had the meters removed and the supply disconnected. The status is incorrectly recorded as "active" on the registry. This is recorded as non-compliance in **section 3.8**.

The AC020 report recorded three MEP nominations which were not accepted within 14 business days of being issued. This was due to an issue at AMCI who were not receiving nominations from the registry. Genesis alerted them to the nominations which were then 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 disconnection. 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

All six decommissioned ICPs were 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-Jul-19 To: 31-Jul-20	**GENE** Six incorrect MEP nominations. **GEOL** Two incorrect MEP nominations. Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate as the controls will mitigate risk most of the time. The audit risk rating is low as settlement and billing are still occurring because Genesis has the metering details recorded.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has automated the nomination process, however where manual intervention is required then there is always potential risk, with controls in place to help minimise or remove any potential impact.	01/10/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Automation of nomination process	01/10/2020	

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. The AC020 reports were reviewed, and a sample of late updates were examined.

The accuracy of all status event dates for new connections was checked by comparing the earliest active date, meter certification date (if available) and initial electrical connection date (if available) using the AC020 report. A sample of discrepancies were checked against supporting information to confirm the correct status date.

Audit commentary

New connection information timeliness

The new connection process is described in detail in **section 2.9**. The MEP nomination is expected to be issued at the same time as the ICP is claimed at the "inactive new connection in progress" status. Late updates to "inactive new connection in progress" status and late MEP nominations are discussed in **section 3.3**.

As discussed in **section 3.4**, the AC020 report six MEP nominations which were not accepted within 14 business days of being issued for GENE and three for GENH. The GENE audit compliance report was reporting false positives as all MEP nominations were accepted the day after being issued. The three late acceptances for GENH were due to AMCI not receiving nominations from the registry. Genesis alerted them to the nominations which were then accepted.

The timeliness of status updates to active (for new connections) is set out on the tables below. There is an apparent increase in the volume of late updates from the last audit, but this is due to the audit compliance reporting across the whole audit period being measured rather than a shorter event detail report which was used in the last audit.

GENE

Code	Year	ICPs notified greater than 5 days	Average Business Days between Status Event and Status Input Dates	Percentage on time
GENE	2016	685	6.2	54%
GENE	2017	911	8.04	51%
GENE	2018	824	7.8	57%
GENE	2019	597	4	84%
GENE	**2020**	**4,032**	**6.99**	**65.09%**

Genesis use Salesforce to manage the new connection process. As detailed in **section 2.9**, this process has been automated during the audit period. Once the customer is confirmed and all the required details have been completed, Salesforce issues a service request. At the same time the ICP claim and the MEP nomination are expected to be sent to the registry. This is not happening in all instances and there is no reporting in place to identify when this fails. In those cases, this can cause delays in updating the registry to push through the MEP nomination and complete the new connection. Once the service request is returned and providing all the details are complete, Salesforce automatically closes the service request and this updates to Gentrack which then writes to the registry. If the service order is unable to be autocompleted an exception is sent to a work queue. These are then reviewed and actioned by the new connection team through to completion.

The automation of the new connection process should have been considered a material change as this has an impact on Genesis' ability to comply with the code and issues such as this would likely have been identified prior to this going live. This is recorded as non-compliance in **section 1.11**.

The accuracy of the electrical connection date is examined in **section 3.8**.

305 updates were made more than 30 business days after the event date, and 43 updates were made more than 100 business days after the event date. The latest update was 1,409 business days after the event date. I reviewed the ten latest updates, and ten late updates over 30 business days. Ten ICPs with NHH submission type and ten ICPs with HHR submission type were checked in total.

NHH

- Four ICPs were unmetered new connections. The new connection process is meter driven, therefore unmetered connections are managed via emails and the process appears to be haphazard. In addition to this the automated process is autocompleting in some instances populating incorrect active dates.
- Three ICPs were identified as electrically connected by the reconciliation team and corrected upon discovery.
- ICP 1099578791CND8F was updated late as the meter docket went straight to the archive file rather than being received into the main mailbox. This is a known intermittent issue. These are corrected upon discovery. This was the only example of this occurring found.
- ICP 0000045092HB73E is Account Managed and was updated late due to pricing needing to be advised from the sales team before this could be completed.
- ICP 0007194050RN4FD was affected by COVID 19 causing it to be updated late.

HHR

- Three ICPs were updated late as the metering team received the paperwork and closed the work order without updating the ICP (this was prior to automation).
- The start date was corrected for three ICPs.
- Two were late due to metering location issues that needed to be investigated before these were completed.
- The last two ICPs were late due to contractor issues. ICP 1002055282LCE53 was found to have metering installed on the second field visit after the first field visit was recorded as a turn down i.e. not able to be completed. The contractor has been spoken to for providing incorrect information. The metering paperwork was provided late for ICP 1099578459CNB77.

GENH

Code	Year	ICPs notified greater than 5 days	Average Business Days between Status Event and Status Input Dates	Percentage on time
GENH	2016	0	3	100%
GENH	2017	1	1.9	92%
GENH	2018	4	6	43%
GENH	2019	3	9	77%
GENH	**2020**	**21**	**18.43**	**40.00%**

Three updates were made more than 30 business days after the event date, and one update was made more than 100 business days after the event date. The latest update was 294 business days after the event date. I reviewed all late updates over ten business days:

- four were corrections to the first start date,
- three were due to the CSR missing the step to update the status on the registry, and
- two were due to late notification from the field.

GEOL

Code	Year	ICPs notified greater than 5 days	Average Business Days between Status Event and Status Input Dates	Percentage on time
GEOL	2016	29	6.8	53%
GEOL	2017	16	7.4	76%
GEOL	2018	16	5.7	82%
GEOL	2019	37	8	59%
GEOL	**2020**	**163**	**11.56**	**48.09%**

Ten updates were made more than 30 business days after the event date, and one update was made more than 100 business days after the event date. The latest update was 661 business days after the event date. I reviewed the ten latest updates, and ten late updates over 15 business days. Ten ICPs with NHH submission type and ten ICPs with HHR submission type were checked in total and found three causes:

- corrections to start dates,
- the step to make the ICP active was missed by the CSR, and
- late paperwork from the field.

Genesis have adopted the last audit's recommendation to monitor the new connections process. Reporting is run by the reconciliation team and is worked through as resource allows to assist with identifying new connections that are not at the expected status.

New connection information accuracy

The last audit recommended that validation be put in place to compare the initial electrical connection date and first meter certification date with the first active date. This hasn't been adopted as yet and there are still resourcing constraints to review and action such a report. I recommend in **section 2.1** that the audit compliance reporting available on the registry be used. This will improve the accuracy of the first active date.

GENE

The AC020 report recorded 112 ICPs which had an initial electrical connection date populated and which remained at "inactive - new connection in progress" or "ready" status. 98 were timing differences and the status was updated to "active" through GENE's normal processes prior to the audit. The other 16 ICPs were checked.

- Nine are at the "ready" status and Genesis has no customer or applications for these sites. All of these are on the Electricity Ashburton network and it appears that Genesis are not receiving their nominations. This is being investigated.
- Two new connections are still in progress and the initial electrical connection date has been populated in error.
- ICP 1000548836PCDF3 should be "decommissioned set up in error", but Genesis have to backdate their claim so the Distributor can action this.
- ICP 0007300489AL42C was issued to AMS but an LMGL meter was found when AMS went to the site. The job was turned down by AMS so the note about the metering on site was discovered as a part of this audit. The ICP has since been made "active".
- ICP 0000047646WE87E has an open service request, but I confirmed during the site audit that metering has been installed and this has been updated to "active".
- ICP 1099579579CNE86 has had metering installed, but the paperwork was still to be received by Genesis. The ICP has since been made "active".

Active dates for new connections were compared to the distributor's initial electrical connection date, and MEP's certification date using the AC020 report. The AC020 report identified 4,666 ICPs with date discrepancies, and 4,381 were confirmed not to be genuine at the time of the audit. The remaining discrepancies were reviewed:

Exception type	Quantity	Commentary
Active, no initial electrical connection date or meter cert date	70	A sample of ten ICPs were checked and confirmed that all are active.
Active, no initial electrical connection date Active date ≠ meter certification date	5	All affected ICPs were checked and found the incorrect active date had been manually populated. These were being corrected.
Active date ≠ initial electrical connection date No meter cert	20	A sample of ten ICPs were checked and found that these were unmetered BTS supplies. These are completed manually but the new connection automation is over writing and populating an incorrect active date.
Active date ≠ initial electrical connection date Active date = meter certification date	171	A sample of ten ICPs were checked and confirmed that all have the correct active.
Active date ≠ initial electrical connection date Active date ≠ meter certification date	15	A sample of ten ICPs were checked and found that the incorrect active date had been manually populated. These were being corrected.
Active date = initial electrical connection date Active date ≠ meter certification date	4	All affected ICPs were checked and found that three ICPs had the incorrect active date manually populated. The remaining ICP was confirmed to be correct.

GENH

The AC020 report did not record any ICPs which had an initial electrical connection date populated which remained at "inactive - new connection in progress" or "ready" status.

Active dates for new connections were compared to the distributor's initial electrical connection date, and MEP's certification date using the AC020 report. The AC020 report identified 20 ICPs with date discrepancies, and six were confirmed not to be genuine at the time of the audit. The remaining discrepancies were reviewed:

Exception type	Quantity	Commentary
Active, no initial electrical connection date Active date ≠ meter certification date	3	All affected ICPs were checked and confirmed that the correct active date was correctly recorded based on consumption.
Active date ≠ initial electrical connection date Active date = meter certification date	2	All affected ICPs were checked and confirmed that the correct active date was correctly recorded based on consumption.
Active date ≠ initial electrical connection date Active date ≠ meter certification date	2	All affected ICPs were checked and confirmed that the correct active date was correctly recorded based on consumption.

Exception type	Quantity	Commentary
Active date = initial electrical connection date Active date ≠ meter certification date	7	All affected ICPs were checked and confirmed that the correct active date was correctly recorded based on consumption.

GEOL

The AC020 report recorded seven ICPs which had an initial electrical connection date populated which remained at "inactive - new connection in progress" or "ready" status. Three were timing differences and the status was updated to "active" through GEOL's normal processes prior to the audit. The other four ICPs were checked and found:

- two ICPs are in the process of being completed but are awaiting information from the MEP before these can be updated to "active",
- ICP 0000012200EA767 is at the "ready" status and Genesis has no customer or application for this site, and as recorded in the GENE commentary above, it appears that Genesis are not receiving their nominations which is being investigated, and
- ICP 0110010118ELF71 was confirmed as no longer being required as part of this audit. Genesis have reversed their claim so the Distributor can decommission this as "set up in error".

Active dates for new connections were compared to the distributor's initial electrical connection date, and MEP's certification date using the AC020 report. The AC020 report identified 78 ICPs with date discrepancies, and 63 were confirmed not to be genuine at the time of the audit. The remaining discrepancies were reviewed:

Exception type	Quantity	Commentary
Active, no initial electrical connection date Active date ≠ meter certification date	2	Both affected ICPs were checked and found both were made "active" for the incorrect date. These are being corrected.
Active date ≠ initial electrical connection date Active date = meter certification date	8	All affected ICPs were checked and confirmed to have the correct active date populated.
Active date ≠ initial electrical connection date Active date ≠ meter certification date	2	Both affected ICPs were checked and found ICP 0000801011CA6E6 was made "active" for the incorrect date. ICP 1099575874CNF55 was confirmed to be correct.
Active date = initial electrical connection date Active date ≠ meter certification date	3	All affected ICPs were checked and found both were made active for the incorrect date. These are being corrected.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.5 With: Clause 9 of schedule 11.1 From: 01-Jul-19 To: 31-Jul-20	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 but there are opportunities for improved controls. Particularly in relation to the reporting on the automated new connection process to identify potential discrepancies. The audit risk rating is low as the number of errors found were small and will be corrected through the revision cycle.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has automated the new connection process, however where manual intervention is required then there is always potential risk, with controls in place to help minimise or remove any potential impact.	01/11/2020	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Automation of new connection process, a review of the performance of the automation will need to be conducted to ensure functionality is sound.	01/11/2020	

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 list files as at 28/05/20 for GEOL, 02/06/20 for GENH and 25/05/20 for GENE and AC020 reports were examined to identify ANZSIC code discrepancies.

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

Audit commentary

GENE

GENE does not supply any active ICPs with blank or unknown ANZSIC codes.

The AC020 report found no GENE ICPs with metering categories of three or above had residential ANZSIC codes. 93 ICPs with metering category 2 had residential ANZSIC codes, a sample of ten were checked and confirmed to be correct.

A diverse sample of 150 active ICPs were checked to confirm the validity of ANZSIC codes, including ICPs assigned each of the 30 most frequently used codes. This identified seven incorrect ANZSIC codes representing a 5% error rate, and the exceptions have been provided to GENE.

GEOL

GEOL does not supply any active ICPs with blank or unknown ANZSIC codes.

GEOL does not supply any ICPs with metering category three or above. The AC020 report found 82 ICPs with metering category 2 had residential ANZSIC codes, a sample of ten were checked and confirmed to be correct.

A diverse sample of 100 active 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 5% error rate, and the exceptions have been provided to GEOL.

GENH

GENH supplies no active ICPs with blank ANZSIC codes, and one ICP with a T994 ANZSIC code. This has since been updated to a valid ANZSIC code as part of the BAU process.

No ICPs with metering category two 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 but five ICPs had the correct ANZSIC code applied representing a 6% error rate, and the exceptions have been provided to GENH.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.6 With: Clause 9(1)(k) of schedule 11.1 From: 31-Jul-19 To: 31-Jul-20	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. 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 have strong controls in place to mitigate risk and update registry information as soon as practicable once corrective information has been obtained.	01/10/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Where Genesis receives information pertaining to an update of the ANZSIC code Genesis corrects asap.	01/10/2020	

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 registry list files as at 28/05/20 for GEOL, 02/06/20 for GENH and 25/05/20 for GENE and AC020 reports were examined to examined to identify any ICPs where:

- unmetered load is identified by the distributor and none is recorded by Genesis,
- unmetered load is identified by Genesis and none is recorded by the distributor,
- unmetered load is indicated but the unmetered daily kWh is zero or blank, and
- Genesis' unmetered load figure does not match with the distributor's figure (where it is possible to calculate this if the distributor is using the recommended format) and the variance is greater than 0.1 kWh per day (0.1 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 0.1 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

Review of the AC020 report and registry list identified 42 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- 24 had metering details populated on the registry after the reports were run,
- 10 had MEP nominations accepted, and were awaiting population of metering data,
- two had MEP nominations issued, and were awaiting the MEP's response, and
- five are either in the process of being decommissioned or have already been decommissioned after the reports were run.

The remaining ICP 0005914019AL770, has a meter installed in Gentrack that is being read and is indicated as an Alpine meter, but Alpine have rejected the MEP nomination. Genesis are contacting Alpine to resolve this.

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

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

- for seven ICPs GENE have correctly recorded no unmetered load and the Distributor's details are incorrect,
- four ICPs have shared unmetered load indicated by the Distributor, which is recorded as non-compliance in **section 5.1**, and
- as was reported in the last audit, the Distributor has added under verandah lighting to ICP 0007433053NVFE4 in September 2018, but GENE have not added it to the ICP which is recorded as non-compliance.

ICPs with unmetered load recorded by GENE but not the distributor

249 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

Review of the AC020 report found 43 ICPs had the unmetered flag set to Y with a zero or ENG. All were confirmed to be DUML ICPs.

The AC020 report recorded 120 ICPs where the daily unmetered kWh differed from the recalculation based on the distributor information by more than ± 0.1 kWh.

- Two were not genuine differences because the distributor unmetered load details were not in the format expected by the report.
- 43 differences related to DUML ICPs.
- I checked a typical sample ten of the remaining 53 ICPs with differences over 1 kWh and found two with the incorrect values applied. These are being corrected.

GEOL

Active ICPs with no metering or unmetered load recorded by GEOL

Review of the AC020 report confirmed that all active metered ICPs had an MEP recorded.

Review of the AC020 report and registry list identified three ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- two had MEP nominations accepted and were awaiting population of metering data, and
- one had its status updated to decommissioned after the reports were run.

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

All ICPs with distributor unmetered load details have unmetered load populated by GEOL.

ICPs with unmetered load recorded by GEOL but not the distributor

Seven ICPs have unmetered load details recorded by GEOL, but not the distributor. These were checked and found five have had the unmetered load correctly recorded. Two ICPs have shared unmetered load incorrectly recorded. These are being corrected. This is recorded as non-compliance in **section 5.1**.

Accuracy of trader unmetered daily kWh

Review of the AC020 report found no ICPs had the unmetered flag set to Y with a zero or blank daily unmetered kWh value.

The AC020 report recorded two ICPs where the daily unmetered kWh differed from the recalculation based on the distributor information by more than ± 0.1 kWh. One was not a genuine difference because the distributor unmetered load details were not in the format expected by the report. The incorrect shared unmetered load details were recorded for ICP 0000018829CPC9D. This is recorded as non-compliance in **section 5.1**.

GENH

Active ICPs with no metering or unmetered load recorded by GENH

Review of the AC020 report and registry list identified eight ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- four had metering details populated on the registry after the reports were run,
- one had a MEP nomination accepted and was awaiting population of metering data,
- one had MEP nomination issued and was awaiting the MEP's response, and
- one had its status updated to decommissioned after the reports were run.

The remaining ICP 0000032811CPEFC has had the meters removed and the supply disconnected. The status is incorrectly recorded as "active" on the registry. This is recorded as non-compliance in **section 3.8**.

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

As reported in the last audit, 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

Review of the AC020 report found no ICPs had the unmetered flag set to Y with a zero or blank daily unmetered kWh value.

GENH supplies four active ICPs with unmetered load recorded, and all had a value recorded in the daily unmetered kWh field. Analysis of the AC020 report did not identify any differences between the unmetered daily kWh recorded by GENH and the load calculated from the distributor information.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.7 With: Clause 9(1)(f) of Schedule 11.1 From: 31-Jul-19 To: 31-Jul-20	**GENE** Three ICPs had incorrect daily unmetered kWh. **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
Genesis continues to monitor and where possible provide corrective information to the registry when information is obtain highlights a corrective action.	continuous improvements	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Continues to review UML details to ensure corrective actions are initiated upon the provision of corrective information.	continuous improvements.	

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 new connection process was examined in detail as discussed in **sections 2.9** and **3.5**.

The registry list files as at 28/05/20 for GEOL, 02/06/20 for GENH and 25/05/20 for GENE and AC020 reports were reviewed to determine compliance.

- 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 40 updates were checked for accuracy.

Audit commentary

GENE

<u>New connections</u>

The process in Salesforce has been automated so once the customer is confirmed and all the required details have been completed, Salesforce issues a service request. At the same time the ICP claim and the MEP nomination are expected to be sent to the registry. This is not happening in all instances and there is no reporting in place to identify when this fails. In those cases, this can cause delays in updating the registry to push through the MEP nomination and complete the new connection. Once the service request is returned and providing all the details are complete, Salesforce automatically closes the service request and this updates to Gentrack which then writes to the registry. If the service order is unable to be autocompleted an exception is sent to a work queue. These are then reviewed and actioned by the new connection team through to completion.

The automation of the new connection process should have been considered a material change as this has an impact on Genesis' ability to comply with the code and issues such as this would likely have been identified prior to this going live. This is recorded as non-compliance in **section 1.11**.

I recommend in **section 2.1** that the audit compliance reporting is used to check for alignment between the initial electrical connection date, first meter certification date and first active date. This will assist with identifying potential missed new connections or incorrect first active dates.

As detailed in **section 2.11**, seven ICPs were made active for one day and then decommissioned. These were never electrically connected therefore they should have been returned to "ready" and "decommissioned - set up in error". This is recorded as non-compliance below.

The AC020 report recorded 112 ICPs which had an initial electrical connection date populated which remained at "inactive - new connection in progress" or "ready" status. 98 were timing differences and the status was updated to "active" through GENE's normal processes prior to the audit. The other 16 ICPs were checked.

- Nine are at the ready status and Genesis has no customer or applications for these sites. All of these are on the Electricity Ashburton network. It appears that Genesis are not receiving their nominations. This is being investigated.
- Two new connections are still in progress the initial electrical connection date has been populated in error.
- ICP 1000548836PCDF3 should be decommissioned set up in error but Genesis have to backdate their claim so the Distributor can action this.
- ICP 0007300489AL42C was issued to AMS but an LMGL meter was found when AMS went to site. The job was turned down by AMS so the note about the metering on site was discovered as a part of this audit. The ICP has since been made "active".
- ICP 0000047646WE87E has an open service request but I confirmed during the site audit that metering has been installed and this has been updated to "active".
- ICP 1099579579CNE86 has had metering installed but the paperwork was still to be received by Genesis. The ICP has since been made "active".

Active dates for new connections were compared to the distributor's initial electrical connection date, and MEP's certification date using the AC020 report. The AC020 report identified 4,666 ICPs with date discrepancies, and 4,381 were confirmed not to be genuine at the time of the audit. The remaining discrepancies were reviewed:

Exception type	Quantity	Commentary
Active, no initial electrical connection date or meter cert date	70	A sample of ten ICPs were checked and confirmed that all are active.
Active, no initial electrical connection date Active date ≠ meter certification date	5	All affected ICPs were checked and found the incorrect active date had been manually populated. These were being corrected.
Active date ≠ initial electrical connection date No meter cert	20	A sample of ten ICPs were checked and found that these were unmetered BTS supplies These are completed manually but the new connection automation is over writing and populating an incorrect active date.
Active date ≠ initial electrical connection date Active date = meter certification date	171	A sample of ten ICPs were checked and confirmed that all have the correct active f
Active date ≠ initial electrical connection date Active date ≠ meter certification date	15	A sample of ten ICPs were checked and found that the incorrect active date had been manually populated. These were being corrected.
Active date = initial electrical connection date Active date ≠ meter certification date	4	All affected ICPs were checked and found that three ICPs had the incorrect active date manually populated. The remaining ICP was confirmed to be correct.

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.

Disconnected vacant and active vacant consumption is expected to be monitored by the Billing team and any disconnected ICPs are expected to be returned to "active" to ensure the consumption is submitted. This is not always being completed by the Billing team. The reconciliation team also monitor a disconnected and consuming report as part of the reconciliation process and will correct the ICP status where required to ensure that volumes are reconciled. This is done as part of the reconciliation process prior to day 4 and 13 therefore these updates will be backdated. The timeliness of updates is discussed in **section 3.3**.

A sample of 20 reconnections were checked and found to be processed accurately.

GEOL

New connections

The AC020 report recorded seven ICPs which had an initial electrical connection date populated which remained at "inactive - new connection in progress" or "ready" status. Three were timing differences and the status was updated to "active" through GEOL's normal processes prior to the audit. The other four ICPs were checked and found:

- two ICPs are in the process of being completed but are awaiting information from the MEP before these can be updated to "active",
- ICP 0000012200EA767 is at the ready status and Genesis has no customer or application for this site (as recorded in the GENE commentary above, it appears that Genesis are not receiving their nominations and this is being investigated), and
- ICP 0110010118ELF71 was confirmed as no longer being required as part of this audit; Genesis have reversed their claim so the Distributor can decommission this as "set up in error".

Active dates for new connections were compared to the distributor's initial electrical connection date, and MEP's certification date using the AC020 report. The AC020 report identified 78 ICPs with date discrepancies, and 63 were confirmed not to be genuine at the time of the audit. The remaining discrepancies were reviewed:

Exception type	Quantity	Commentary
Active, no initial electrical connection date Active date ≠ meter certification date	2	Both affected ICPs were checked and found both were made active for the incorrect date. These are being corrected.
Active date ≠ initial electrical connection date Active date = meter certification date	8	All affected ICPs were checked and confirmed to have the correct active date populated.
Active date ≠ initial electrical connection date Active date ≠ meter certification date	2	Both affected ICPs were checked and found ICP 0000801011CA6E6 was made active for the incorrect date. ICP 1099575874CNF55 was confirmed to be correct.
Active date = initial electrical connection date Active date ≠ meter certification date	3	All affected ICPs were checked and found both were made active for the incorrect date. These are being corrected.

I recommend in **section 2.1** that the audit compliance reporting is used to check for alignment between the initial electrical connection date, first meter certification date and first active date. This will assist with identifying potential missed new connections or 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.

GEOL use the same process as GENE for disconnected vacant and active vacant with consumption. These are expected to be monitored by the Billing team and any disconnected ICPs are expected to be returned to "active" to ensure the consumption is submitted. This is not always being completed by the Billing team. The reconciliation team also monitor a disconnected and consuming report as part of the reconciliation process and will correct the ICP status where required to ensure that volumes are reconciled. This is done as part of the reconciliation process prior to day 4 and 13 therefore these updates will be backdated. The timeliness of updates is discussed in **section 3.3**.

A sample of 20 reconnections were checked and found to be processed accurately.

GENH

New connections

The AC020 report did not record any ICPs which had an initial electrical connection date populated which remained at inactive new connection in progress or ready status.

Active dates for new connections were compared to the distributor's initial electrical connection date, and MEP's certification date using the AC020 report. The AC020 report identified 20 ICPs with date discrepancies, and six were confirmed not to be genuine at the time of the audit. The remaining discrepancies were reviewed:

Exception type	Quantity	Commentary
Active, no initial electrical connection date Active date ≠ meter certification date	3	All affected ICPs were checked and confirmed that the correct active date was recorded based on consumption.
Active date ≠ initial electrical connection date Active date = meter certification date	2	All affected ICPs were checked and confirmed that the correct active date was recorded based on consumption.
Active date ≠ initial electrical connection date Active date ≠ meter certification date	2	All affected ICPs were checked and confirmed that the correct active date was recorded based on consumption.
Active date = initial electrical connection date Active date ≠ meter certification date	7	All affected ICPs were checked and confirmed that the correct active date was recorded based on consumption.

Reconnections

Reconnections are managed by the HHR team. These are updated directly onto the registry via the registry interface. None have occurred during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.8 With: Clause 17 of schedule 11.1 From: 01-Jul-19 To: 31-Jul-20	**GENE** 54 (7+4+5+20+15+3) incorrect first active dates of those ICPs sampled. **GEOL** Six (2+1+3) incorrect first active dates. 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 errors found for the sample checked is small in relation to the overall number of electrical connections completed. .

Actions taken to resolve the issue	Completion date	Remedial action status
Review AC-020 reporting frequently to identify variances as they occur.	1/11/2020	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Review processes in current automation to improve compliance, or as an alternative implement regular frequent reporting from the AC-020 as a measuring control	1/2/2021	

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 all codes 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 files were 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

GENE

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

51 status updates to inactive were checked and found all to be accurate with the exception of two ICPs (4%). These were both unmetered BTS supplies and the notes indicate that the ICP should be decommissioned.

The AC020 report recorded 23 ICPs with status reason indicated they were remotely disconnected by AMI metering, but the AMI flag was set to no. A sample of ten of these ICPs were checked and found all were correct and the ICP was subsequently updated to non-communicating after the disconnection.

As detailed in **section 12.2**, ICP 0048241402PCD13 should have had 1,4 (inactive vacant) applied instead of 1,5 (inactive - reconciled elsewhere) and was corrected during the audit.

GEOL

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

70 status updates to inactive were checked and found to be accurate with the exception of two ICPs:

- ICP 0001446722UND67 was recorded as disconnected at the meter box fuse but should have been recorded as "ready to decommission", and
- ICP 0000052239UND7C was disconnected at the pole fuse and not the meter box switch.

The AC020 report recorded 23 ICPs with status reason indicated they were remotely disconnected by AMI metering, but the AMI flag was set to no. A sample of ten of these ICPs were checked and found all were correct and the ICP was subsequently updated to non-communicating after the disconnection.

GENH

GENH will update the status to "inactive" once confirmation has been received from the field. They then update the registry via the registry interface.

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

The AC020 report recorded no ICPs with status reason indicated they were remotely disconnected by AMI metering, but the AMI flag was set to no.

Inactive new connections in progress

GENE

115 ICPs have been at "inactive - new connection in progress" status for more than 24 months.

The reconciliation team produce a report for all ICPs that have been at this status. This is reviewed and worked by the new connection team as resource allows. A sample of the ten oldest ICPs were checked and found:

- five ICPs have been cancelled in Gentrack but the network has not been advised and the ICP returned to the "ready" status,
- three ICPs have since been made active, and
- two connections have been electrically connected under a different ICP and these ICPs need to be "decommissioned - set up in error".

GEOL

59 ICPs have been at "inactive - new connection in progress" status for more than 24 months. A sample of the ten oldest ICPs were checked and found:

- six require investigation to confirm if they are still required, and
- four have since been made active.

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

Review of historic estimate examples found that where part of a read to read period was inactive, the SASV inactive days were excluded from both the numerator and denominator when calculating the historic estimate, forcing all consumption to be reported within the active portion of the read to read period. Where an entire read to read period has inactive status, the numerator and denominator will be zero and no historic estimate will be reported. The status must be returned to "active" to allow consumption during inactive periods to be correctly reported.

Disconnected ICPs with consumption are primarily identified through the GBR0020 (disconnected register with consumption) billing validation described in **section 9.5**. These are not considered critical or same day validations and may not always be investigated and resolved quickly.

The Billing team also generates a weekly report on the GBR0020 exception showing ICPs with consumption while disconnected registered, including the date of disconnection, the read type which created the consumption, connection status and trader code. The report is reviewed, and I saw evidence that the report was reviewed and acted upon although not all ICPs are reviewed each week.

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.

GENE

GENE provided a report with 260 ICPs with inactive consumption, totalling 205,796 kWh. I reviewed the 20 ICPs with the most disconnected consumption, and found one had a correction processed. The other 19 ICPs had total inactive consumption of 163,319 kWh.

ICP 0000491003WE1BC became inactive on 25/02/20 and switched out effective 04/03/20. Historic estimate was captured up to the last actual reading before the ICP became inactive. Because the 5 kWh of consumption between disconnection and the switch out reading fell during a period which was entirely inactive, no historic estimate was reported.

I rechecked corrections for 0005418617WEBCA (3450 kWh after 28/05/19) and 0100010811BC4DF (2994 kWh after 04/06/19), which were outstanding following the 2019 audit, and found they had not been processed.

GEOL

GEOL provided a report with 28 ICPs with inactive consumption, totalling 36,624 kWh. I reviewed the ten ICPs with the most disconnected consumption and found two had corrections processed. The other eight ICPs had total inactive consumption of 32,476 kWh.

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: 01-Jul-19 To: 30-Jul-19	**GENE and GEOL** 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 and correction 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
Review AC-020 reporting frequently to identify variances as they occur.	1/11/2020	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Review processes in current automation to improve compliance, or as an alternative implement regular frequent reporting from the AC-020 as a measuring control	1/2/2021	

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 registry lists 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 that 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.	Implement monthly reporting to detect new and ready status for 24 months+	Identified

GENE

Analysis of the registry list found 39 ICPs at "ready" status for two years or more, and 21 ICPs at "new" status for two years or more. A sample of 23 ICPs at "ready" and seven ICPs at "new" were checked and found that two are in Gentrack and are in progress. Genesis have no customer registered for the remaining 21 ICPs and they intend to advise the Distributor.

GEOL

Analysis of the registry list found 28 ICPs at "ready" status for two years or more, and one ICP at "new" status for two years or more. All are being investigated to confirm if they are still required and the Distributor will be advised of the outcome.

GENH

Analysis of the registry list did not find any ICPs at "ready" or "new" status for more than 24 months.

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 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 8,414 transfer switch NTs for GENE. I matched the NTs to the meter category recorded on the registry list for 6,353 ICPs and found none had a metering category of three or above.

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 1,607 transfer switch NTs for GEOL. I matched the NTs to the meter category recorded on the registry list for 1,337 ICPs and found none had a metering category of three or above.

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 one transfer switch NTs for GENH, which had meter category 2.

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

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 01/12/19 to 25/05/20 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 but one case, the correct codes were used. ICP 0032758465PC3AE was sent with a premise electrically disconnected "PD" code, but the site was electrically connected. This is recorded as non-compliance. This appears to be a one-off issue as this was the only example found.

The event detail report was reviewed for all 13,304 transfer ANs to assess compliance with the setting of event dates requirements.

- 13,266 (99.7%) 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 did not record any late AN files.

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

The event detail report was reviewed for all 3,465 transfer ANs to assess compliance with the setting of event dates requirements.

- 3,462 (99.9%) 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, and the switch breach report did not record any late transfer AN files.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.2 With: Clause 3 of schedule 11.3 From: 24-Feb-20 To: 28-Feb-20	**GENE** One incorrect AN code sent of the sample checked. 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 process is driven off the ICP attributes based on a hierarchy. The audit risk rating is low to none as there was only one incorrect code identified and this has no direct impact on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis continues to vigorously investigate potentially incorrect reads	Date Continuous Improvement	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will ensure the RR response is accurate which can take longer than the required time frames ?due to factors often outside of Genesis control?.	Date Continuous Improvement	

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 01/12/19 to 25/05/20 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 ten 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

As reported in the last audit, 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 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' 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	Findings
Negative	-	-
Zero	419	I sampled five ICPs and found that one was valid but four were calculated incorrectly due to the timing of the last actual billed and the switch process closing on the same day. This causes the consumption between the last billed read and the switch out read to be zero.
More than 200 kWh	152	I sampled the five ICPs with the largest average daily consumption and confirmed they were correct.

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

- four 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 0000420234WEE20, 0000046137TR95D, 0001030400PC714 & 0000147777TR832), and
- one instance where the last read date is recorded as the last billed date but the last actual read was earlier (ICP 0000781106WE1A2). Genesis expect to have a fix in place for this soon.

Four files had only a CS premises line, these are all HHR read category 2 ICPs, so no reads are expected to be sent.

The switch breach history report recorded two late transfer CS files, and neither were genuinely late.

There is one alleged breach for GENE in relation to CS file content

Ref	Breach Description	Clause	Target EGR Date	Outcome
2006GENE2	Genesis as the losing retailer did not provide to the registry a switch event meter reading as at the event date. Paua provided one example but claim this is a widespread issue.	Part 11 Schedule 11.3 clause 5 (b)	05/08/20	No result yet, the investigator is fact finding

This was discussed during the site audit. Whilst AMI reads are available Gentrack's switching process does not call on these and therefore the last billed read is sent. The labelling of the reads is being reviewed to ensure that in these cases the reads are sent as estimates and not actuals.

GEOL

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

Count of transfer CS files	Estimated daily kWh	Findings
Negative	1	ICP 0075243445WE902 was gained on a higher read hence the calculated negative daily consumption. It was only with Genesis from 10/12/19-29/1219 and the volume was less than 200 kWh, so no read request was issued to correct the start read. Negative consumption is not expected to be used for the average daily consumption as it is not consumption.
Zero	116	I sampled five ICPs and found that all were calculated incorrectly due to the timing of the last actual billed and the switch process closing on the same day. This causes the consumption between the last billed read and the switch out read to be zero.
More than 200 kWh	7	I sampled the five ICPs with the largest average daily consumption and confirmed they were correct.

The accuracy of the content of CS files was confirmed by checking the sample. This found one CS file content error. ICP 1000508084PC45C where the last read date is recorded as the last billed date but the last actual read was earlier. Genesis expect to have a fix in place for this soon.

The switch breach history report recorded one late transfer CS files, which was not genuinely late.

GENH

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

Count of transfer CS files	Estimated daily kWh	Findings
Negative	-	
Zero	2	As these are reconciled half hourly, hence a zero is recorded.
More than 200 kWh	-	

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

The switch breach history report did not record any late transfer CS files.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.3 With: Clause 5 of schedule 11.3 From: 01-Jul-19 To: 31-Jul-20	The average daily consumption calculation is not calculated from the last read period. **GENE** Four of five ICPs checked with an incorrect average daily consumption read of zero sent were found to be incorrect. Four of ten ICPs checked with incorrect last read labelled as actual but should have been sent as estimates. One of ten ICPs checked where the last read date was the last billed date and the last read date was earlier. **GEOL** The one ICP with a negative average daily consumption is incorrect as it is not consumption. All five ICPs checked with an incorrect average daily consumption read of zero sent were found to be incorrect. One of ten ICPs checked where the last read date was the last billed date and the last read date was earlier. 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 recorded as weak as the volume of errors found in the ICPs sample was high indicating that the logic in Gentrack needs to review to improve accuracy. The audit risk rating is low as any variances between gain read and reads sent in the CS file 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
Genesis revised the process once the RP audit had identified the non-compliance. The fix was developed but halted implementation due constraints surrounding COVID-19. Genesis has since reassessed the fix and implementation is currently under way.	31/10/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis is currently in the process of implementing a logic fix that will address this issue moving forward	31/10/2020	

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 01/12/19 to 25/05/20 were analysed to identify all read change requests and acknowledgements during the audit period. A sample of RR and AC files were checked.

I also checked a sample of ten 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 50 RR files for transfer switches. 43 were accepted and seven were rejected. A sample of five accepted and five 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 202 AC files for transfer switches. 76 were accepted, and 126 were rejected. A sample of five AC rejections and five acceptances were checked. All were correct and the five rejected were accepted on a subsequent corrected RR file.

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 29 late transfer RR files, and no late AC files. 19 of the RR files were genuinely late. I reviewed the ten latest genuinely late RR files and found all were late due to the time required to get two actual reads.

GEOL

GEOL issued 15 RR files for transfer switches. 14 were accepted and one was rejected. A sample of ten files including the rejection were checked. There was a genuine reason for GENE's RRs, they were supported by at least two validated readings with the exception of two ICPs (0000550434HB0BD & 0001183917HB597). In both cases the RR was sent based on one actual and one customer read. This is recorded as non-compliance. The reads recorded in Gentrack reflected the outcome of the RR process.

GEOL issued 95 AC files for transfer switches. 49 were accepted and 46 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 three late transfer RR files, and no late AC files. Two of the RR files were genuinely 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. The switch breach report did not record any late RR or AC files for transfer switches.

There were no transfer CS files with estimated reads where no RR was issued.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.4 With: Clause 6(1) and 6A Schedule 11.3 From: 01-Jul-19 To: 31-Jul-20	**GENE** 19 late RR files. **GEOL** Two RRs not supported by two actual reads. Two late RR 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 continues to vigorously investigate potentially incorrect reads	Continuous Improvement	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will ensure the RR response is accurate which can take longer than the required time frames due to factors often outside of Genesis control.	Continuous Improvement	

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 01/12/19 to 25/05/20 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 130 RR files for transfer switches issued to GENE within five business days of CS completion where the NT specified a HHR profile.

- For 116 of the RRs, the CS contained actual readings and clause 6(2) and (3) of schedule 11.3 did not apply.
- 12 of the RRs were correctly accepted.
- The RR for ICP 0000020110EACA5 was initially rejected but accepted on reissue as Flick had sent the read from the midnight of their gain date rather than midnight of the day before.
- The RR for ICP 0001611545AL2D2 was rejected as this was due to rounding and Genesis' read was valid.

GEOL

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

I identified 42 RR files for transfer switches issued to GEOL within five business days of CS completion where the NT specified a HHR profile.

- For 36 of the RRs, the CS contained actual readings and clause 6(2) and (3) of schedule 11.3 did not apply.
- The remaining six RRs were correctly accepted.

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 18,628 switch move NTs for GENE. I matched the NTs to the meter category recorded on the registry list for 15,552 ICPs, and found none had a metering category of three or above.

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 12,945 switch move NTs for GEOL. I matched the NTs to the meter category recorded on the registry list for 11,829 ICPs and found none had a metering category of three or above.

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 408 switch move NTs for GENH. I matched the NTs to the meter category recorded on the registry list for 402 ICPs and found none had a metering category of three or above.

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

Audit outcome

Compliant

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 01/12/19 to 25/05/20 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 three cases, the correct codes were used. The meters were not loaded to the ICPs at the time of switch as they were new connections and they were sent incorrectly as unmetered supply "MU". All had their meters loaded prior to the switch completing. This is recorded as non-compliance below.

The event detail report was reviewed for all 25,064 switch move ANs to assess compliance with the setting of event dates requirements.

- 25,060 (99.98%) had proposed event dates within ten business days of the NT receipt date. Four 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 no late AN files and 2,936 late switch move CS files. I matched 1,737 late files to the event detail report to confirm the NT receipt date and then recalculated the business days overdue. Based on this analysis 907 of the 1,737 files checked appeared genuinely late. I checked the latest 20 files and found there is a process issue that if a bill is due for a date on or after the requested switch event date then these are held and have to be cleared by a CSR causing the CS file to be late. This is recorded as non-compliance.

GEOL

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

The event detail report was reviewed for all 8,926 switch move ANs to assess compliance with the setting of event dates requirements.

- 8,925 (99.98%) had proposed event dates within ten business days of the NT receipt date. One ICP had an event dates more than ten business days after the NT receipt date, which matched the gaining trader's requested transfer date.
- One AN had a proposed event date before the gaining trader's requested date. This was due to human error and the switch was completed for the requested gain date.

The switch breach report did not record any late AN files and 849 late switch move CS files. I matched 487 late files to the event detail report to confirm the NT receipt date and then recalculated the business days overdue. Based on this analysis 216 of the 487 files checked appeared genuinely late. I checked the latest 20 files and found the same issue as found above for GENE. There is a process issue that if a bill is due for a date on or after the requested switch event date then these are held and have to be cleared by a CSR causing the CS file to be late. This is recorded as non-compliance.

GENH

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

The event detail report was reviewed for all six 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 gaining trader's requested date was applied in all cases.

The switch breach report recorded 25 late AN files and 40 late CS files for switch moves. These were examined and found:

- 24 of the AN files were not genuinely late, the one AN file was late due to human error, and
- 33 of the CS files were not genuinely late, the seven 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-Jul-19 To: 31-Jul-20	**GENE** Three incorrect AN response codes sent. 907 late CS files. **GEOL** Event date for one ICP set earlier than the gaining trader's requested date. 216 late CS files. **GENH** One late AN file sent. Seven late CS files sent. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as weak as the process is causing a large number of CS files to be sent late. The audit risk rating is low as the late files are being sent within days of their due date.

Actions taken to resolve the issue	Completion date	Remedial action status
Will need to investigate this thoroughly as a piece of work.	01/06/2021	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The investigation will provide future preventative actions	01/06/2021	

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 01/12/19 to 25/05/20 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 01/12/19 to 25/05/20 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 these CS files were checked to determine whether the average daily consumption was correct.

Audit commentary

As reported in the last audit, 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 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' 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 switch move CS files	Estimated daily kWh	Findings
Negative	14	I sampled the five ICPs with the largest negative average daily consumption and found all were incorrect. Three were due to final reads being lower than the previous read. The remaining two ICPs were due to incorrect manual final reads that were lower than the last smart read.
Zero	3,538	I sampled six ICPs and found that three were valid. Three were calculated incorrectly due to the timing of the last actual billed and the switch process closing on the same day. This causes the consumption between the last billed read and the switch out read to be zero.
More than 200 kWh	106	I sampled the five ICPs with the largest average daily consumption and found three were correct. The remaining two were both incorrect due to incorrect reads. Both were reviewed by a CSR and should not have been released.

The seven ICPs (five with negative average daily consumption and two with a high average daily consumption recorded) of those sampled with incorrect final reads are recorded as non-compliance below. Two of the above examples are being addressed via the RR process.

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 (ICPs0000004705UNA2B & 0000915449TUC24),
- one instance where the read was correctly sent as an estimate but the last read date is recorded incorrectly as the switch event date (ICPs 0000100730TR8A8),
- one instance where the last read date is recorded as the last billed date but the last actual read was earlier (Genesis expect to have a fix in place for this soon - ICP 0345926021LCEB3), and
- one instance where the incorrect last read has been entered by the CSR (1000584762PC4CE).

GEOL

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

Count of switch move CS files	Estimated daily kWh	Findings
Negative	3	All were found to be incorrect. Two were due to customer reads being lower than the previous read causing negative consumption. ICP 0000007635UN637 had a meter read that should have been made invalid by the CSR but this wasn't causing the final read to be less than the last read.
Zero	1,041	I sampled five ICPs and found four were correct. The final read from the 17/03/20 was not applied by the CSR but the read from the 16/03/20 was applied causing an average zero consumption to be calculated when it should have been 11.
More than 200 kWh	5	All five ICPs with the largest average daily consumption were reviewed and confirmed four were correct. The consumption figure was incorrectly entered as the average daily consumption figure by a CSR for ICP 0000158300TRD25.

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

- six 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 0000119418UNA73, 0000020027DE5BB, 0000726518HB053, 0000690655TE14A, 0000018462WE432 & 0416642047LCF6C),
- two instances where the last actual read date is recorded incorrectly (ICP 0110004935EL313 &0000020027DE5BB), and
- one instance where the average daily consumption is incorrect (0416642047LCF6C).

309 files had only a CS premises line, and a sample of ten were checked and found these are all HHR read category 2 ICPs so no reads are expected to be sent.

GENH

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

Count of switch move CS files	Estimated daily kWh	Findings
Negative	-	
Zero	11	As these are reconciled half hourly, hence a zero is recorded.
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.

111 switch move CS files were sent. 103 files had only a CS premises line, and a sample of ten were checked and found that as these are Category 2 HHR ICPs that are read half hourly the average daily consumption was not required. The remaining eight CS files containing all expected lines were checked and found these were all downgrades to category 1 sites and were populated correctly.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.10 With: Clause 11 of schedule 11.3	The average daily consumption calculation is not calculated from the read to read period. **GENE** 14 ICPs sent with a negative average daily consumption are incorrect as it is not consumption and of the five sampled all were sent with an incorrect final read. Three of the six ICPs sampled with an incorrect average daily consumption read of zero sent. Two of the five ICPs sampled with a high average daily consumption figure were found to be incorrect and were sent with an incorrect final read. Two of ten ICPs checked with incorrect last read labelled as actual but should have been sent as estimates. One of ten ICPs checked where the last read date was the last billed date and the last read date was earlier. One of ten ICPs checked where an estimate was sent but the last read date is incorrectly recorded as the switch event date One of the ten ICPs where the incorrect final read was entered by a CSR. **GEOL** All three ICPs with a negative average daily consumption are incorrect as it is not consumption, and all were sent with an incorrect final read. One of the five ICPs sampled with an incorrect average daily consumption read of zero sent. One of the five ICPs with a high average daily consumption figure was found to be incorrect. Six of ten ICPs checked with incorrect last read labelled as actual but should have been sent as estimates. Two of ten ICPs checked where the last actual read date is recorded incorrectly. One of ten ICPs checked where the average daily consumption is incorrect Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3
From: 01-Jul-19 To: 31-Jul-20	
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 the logic in Gentrack needs to review to improve accuracy. The audit risk rating is low as any variances between gain read and reads sent in the CS file 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
Genesis revised the process once the RP audit had identified the non-compliance. The fix was developed but halted implementation due constraints surrounding COVID-19. Genesis has since reassessed the fix and implementation is currently under way.	31/10/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Participant Comments Genesis is currently in the process of implementing a logic fix that will address this issue moving forward	31/10/2020	

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 01/12/19 to 25/05/20 were analysed to identify all read change requests and acknowledgements during the audit period. A sample of RR and AC files were checked.

I also checked a sample of 12 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. A sample of late files were reviewed.

Audit commentary

GENE

GENE issued 245 RR files for switch moves. 196 were accepted and 49 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 1,426 AC files for switch moves. 1,115 were accepted and 311 were rejected. A sample of five AC rejections and five acceptances were checked. All were correct.

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

The switch breach report recorded 59 late switch move RR files, and no late AC files. 48 of the RR files were genuinely late. I reviewed the ten latest genuinely late RR files and found all were late due to the time required to get two actual reads.

Genesis' historic estimate calculation process excludes inactive periods. Where part of a read to read period was inactive, the SASV inactive days were excluded from both the numerator and denominator when calculating the historic estimate, forcing all consumption to be reported within the active portion of the read to read period. Where an entire read to read period has inactive status, the numerator and denominator will be zero and no historic estimate will be reported. The status must be returned to active to allow consumption during inactive periods to be correctly reported. The agreed switch reading was not applied for settlement for ICP 0000491003WE1BC (04/03/20), because the switch reading included 5 kWh of consumption during an inactive period which was excluded from the historic estimate calculations. The gaining and losing trader did not apply the same readings for settlement, resulting in under reporting of 5 kWh for Genesis. Non-compliance is recorded in this section, and in **sections 2.1** and **12.7**.

GEOL

GEOL issued 127 RR files for switch moves. 106 were accepted and 21 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 one instance (ICP 0000101784DE267) 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 675 AC files for switch moves. 528 were accepted and 147 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 switch move CS files with estimated reads where no RR was issued confirmed that the correct readings were recorded in Gentrack.

The switch breach report recorded 33 late switch move RR files, and no late AC files. 26 of the RR files were genuinely late. 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. The switch breach report did not record any late RR or AC files for switch moves.

Review of both switch move CS files with estimated reads where no RR was issued contained no reads as these are reconciled half hourly and no read is expected.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.11 With: Clause 12 of schedule 11.3 From: 01-Jul-19 To: 31-Jul-20	**GENE** 48 late RR files The agreed switch reading was not applied for settlement for ICP 0000491003WE1BC (04/03/20), because the switch reading included 5 kWh of consumption during an inactive period which was excluded from the historic estimate calculations. **GEOL** One RR requested as an estimated read when the actual read for the correct event date was ignored. 26 late RR files. 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 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
Genesis are currently reviewing the C&I end to end processes in the quest to replace the current billing engine that does not cater for large commercial customers.	01/06/2022	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will be reviewing the C&I processes to remove the manual processing of C&I onboarding and exiting of commercial customers.	01/06/2022	

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 01/12/19 to 25/05/20 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 gaining trader HHR switches. Review of the event detail reports confirmed that no gaining trader switches were completed by GENE or GEOL.

186 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, 4 or 5.

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 01/12/19 to 25/05/20 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

121 HH ANs were issued by GENH, and one HH AN was issued by GENE during the period reviewed. All correctly had the AA code applied.

The switch breach report recorded 13 late HH AN files for GENH, 11 appeared genuine. I checked the ten latest files to determine the reasons for the late updates and found this was due the volume of switches being managed caused the AN's to be sent late.

No switch breach reports did not record any late HH AN files for GENE or GEOL.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.13 With: Clause 15 of schedule 11.3 From: 01-Dec-19 To: 04-Mar-20	**GENH** 11 late AN files. Potential impact: Low Actual impact: Low Audit history: Once previously 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 due to resource constraint these were late. 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
Genesis are currently reviewing the C&I end to end processes in the quest to replace the current billing engine that does not cater for large commercial customers.	01/06/2022	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will be reviewing the C&I processes to remove the manual processing of C&I onboarding and exiting of commercial customers.	01/06/2022	

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, except 0303925043LC693 which was sent with meter channel, install and comp lines. This is being investigated as the CS file is automatically generated.

The switch breach report identified 31 late CS files, and 21 were found to be genuine. These were checked and found this was due the volume of switches being managed causing the CS files to be sent late.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.14 With: Clause 16 of schedule 11.3 From: 01-Jul-19 To: 31-Jul-20	**GENH** 21 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 due to resource constraint these were late. 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
Genesis are currently reviewing the C&I end to end processes in the quest to replace the current billing engine that does not cater for large commercial customers.	01/06/2022	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will be reviewing the C&I processes to remove the manual processing of C&I onboarding and exiting of commercial customers.	01/06/2022	

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 01/12/19 to 25/05/20 were reviewed to:

- identify all switch withdrawal requests issued by Genesis and check the content of a sample of at least three (or all) ICPs from the event detail report for each withdrawal code,
- identify all switch withdrawal acknowledgements issued by Genesis, and check a sample, 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 20 NWs was checked including 18 rejections, and in all cases the withdrawal reasons provided by GENE were accurate.

355 (7.6%) of the 4,672 AWs issued by GENE were rejections. 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 139 of the 4,846 NWs were issued more than two calendar months after the switch date. 74 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 all cases, there was a complex set of circumstances leading to the delayed withdrawals.

The switch breach history report recorded:

- 195 late NW files (NA breaches) which were not genuine,
- no late AW files, and
- two late switch withdrawal completions were due a complex set of circumstances leading to the delayed withdrawal. These are included in the event detail analysis report findings above.

GEOL

The content of a sample of 21 NWs was checked including 19 rejections, and in all cases the withdrawal reasons provided by GEOL were accurate.

134 (10.7%) of the 1,256 AWs issued by GEOL were rejections. I reviewed a sample of ten rejections by GEOL, and confirmed they were correctly rejected based the information available at the time the response was issued except for one. ICP 0000014045HB562 should have been accepted. This is recorded as non-compliance below.

Analysis of the event detail report found 74 of the 1,086 NWs were issued more than two calendar months after the switch date. 37 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 seven cases, there was a complex set of circumstances leading to the delayed withdrawals. The remaining three withdrawals were sent in error.

The switch breach history report recorded

- 63 late NW files (NA breaches) which were not genuine,
- no late AW files, and
- no late switch withdrawal completions.

GENH

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

10 (38.5%) of the 26 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 29 NWs were not issued within the two calendar months after the switch date. All were sent as soon as possible but this was more than two months after the event date.

The switch breach history report recorded:

- 38 late NW files which were not genuine, and
- eight late AW files, five were late while Genesis liaised with Mercury as to why they were being withdrawn (Mercury advised late that these requests should be rejected) and the remaining three were late to the volume of switches being managed.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.15 With: Clause 17 & 18 of schedule 11.3 From: 01-Jul-19 To: 31-Jul-20	**GENE** 141 late NW requests. **GEOL** One incorrectly rejected NW request 74 late NW requests. **GENH** 29 late NW request. Eight late AW response. Potential impact: Low Actual impact: Low Audit history: Once previously 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 case 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
Process is to ensure that any impact on the consumer is mitigated, unfortunately this is to the detriment of timeliness, Genesis endeavours to meet all aspects of the NW process but at times there are exceptions that need to be managed.	01/06/2021	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will look into the efficiency of the investigations to try and achieve compliance.	01/06/2021	

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 and were confirmed to be as accurate as possible with the exception of:

GENE

- Seven ICPs sent with the incorrect last read. Five were lower than the previous read gained and two were higher than the switch event meter reading causing consumption to be pushed to the gaining trader.

GEOL

- Two ICPs sent with the incorrect last read. Both were lower than the previous read gained.

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

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.16 With: Clause 216 of schedule 11.3 From: 01-Jul-19 To: 31-Jul-20	**GENE** Seven incorrect last reads sent of those sampled. **GENE** Two incorrect last reads sent of those sampled. 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 controls will mitigate risk most of the time but there is room for errors to occur. The audit risk rating is low as these are expected to be corrected through the RR process in most cases.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis revised the process once the RP audit had identified the non-compliance. The fix was developed but halted implementation due to constraints surrounding COVID-19. Genesis has since reassessed the fix and implementation is currently under way.	31/10/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis is currently in the process of implementing a logic fix that will address this issue moving forward	31/10/2020	

4.17. Switch protection (Clause 11.15AA to 11.15AC)

Code reference

Clause 11.15AA to 11.15AC

Code related audit information

A losing retailer (including any party acting on behalf of the retailer) must not initiate contact to save or win back any customer who is switching away or has switched away for 180 days from the date of the switch.

The losing retailer may contact the customer for certain administrative reasons and may make a counteroffer only if the customer initiated contacted with the losing retailer and invited the losing retailer to make a counteroffer.

The losing retailer must not use the customer contact details to enable any other retailer (other than the gaining retailer) to contact the customer.

Audit observation

The Electricity Registry switch save protected retailer list was examined for the period up until 30/03/20.

Win-back processes were discussed. The event detail reports were analysed to identify all withdrawn switches with a CX code applied prior to the switch event date for any switch save protected retailer up to 30/03/20, or within 180 days of switch completion post 31/03/20.

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, GEOL and GENH were not switch save protected retailers during the audit period.

GENE

Seven switches were withdrawn with a CX code prior to switch completion up to 31/03/20. All the files were issued to retailers who were not switch saves protected.

232 withdrawals were issued with a CX reason code within 180 days of switch completion after 31/03/20. A sample of ten ICPs using the typical case methodology were checked and found:

- five were withdrawn as the customer contacted Genesis and requested to stay,
- three were contacted via the win-back programme prior to the 31/03/20 but did not accept the offer until after 30/03/20, and
- two were contacted on 31/03/20 as part of the win-back programme and accepted the offer made.

Genesis did not realise that the new code came into effect on 31/03/20 and ceased their win-back activity on 1/04/20. There are three alleged breach in relation to this already under investigation. These are detailed in **section 1.6**. This is recorded as non-compliance.

GEOL

No switches were withdrawn with a CX code prior to switch completion up to 31/03/20.

32 withdrawals were issued with a CX reason code within 180 days of switch completion after 31/03/20. A sample of five ICPs using the typical case methodology were checked and found all to be compliant.

GENH

No switches were withdrawn with a CX code prior to switch completion up to 31/03/20.

Four withdrawals were issued with a CX reason code within 180 days of switch completion after 31/03/20 and all were confirmed to be complaint.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.17 With: clause 11.15AA to 11.15AB From: 31-Mar-20 To: 01-Jul-20	**GENE** Two customers won back post the switch save protection code change. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	No win-back activity is expected to be undertaken post the code change coming into effect but alleged breach 2006GENE1 indicates this may not be the case hence I have rated the controls as moderate. 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
Genesis has already corrected the process to comply with the code		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis has been breached in relation to these events and have already replied to the breach allegations.		

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 process to manage unmetered load was examined. The registry list files as at 28/05/20 for GEOL, 02/06/20 for GENH and 25/05/20 for GENE and AC020 reports were reviewed identify all shared unmetered load and check the accuracy of the unmetered daily kWh.

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.

GENE

The AC020 report recorded six ICPs with shared unmetered load where the daily unmetered kWh differed from the recalculation based on the distributor information by more than ± 0.1 kWh.

- Two were not genuine differences because the distributor unmetered load details were not in the format expected by the report.
- The other four differences were examined and found that Genesis' daily unmetered kWh were incorrect when checked against the parent ICP.

Four ICPs with shared unmetered load have distributor unmetered load details and no unmetered load populated by GENE. These were checked and found that these were missing from the trader details. These are being corrected.

GEOL

Review of the AC020 report found no ICPs with shared unmetered load had the unmetered flag set to Y with a zero or blank daily unmetered kWh value.

The AC020 report recorded two ICPs with shared unmetered load where the daily unmetered kWh differed from the recalculation based on the distributor information by more than ± 0.1 kWh. One was not a genuine difference because the distributor unmetered load details were not in the format expected by the report. The incorrect load was recorded against ICP 0000018829CPC9D. This has been corrected.

GENH

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

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.1 With: Clause 11.14 From: 31-Jul-19 To: 31-Jul-20	**GENE** Two ICPs with the incorrect shared daily unmetered kWh. Missing shared unmetered load for four ICPs. **GEOL** One ICPs with the incorrect shared daily unmetered kWh. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate as they will manage risk to an acceptable level most of the time. 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 to improve current reporting frequency and timeliness.	01/12/2020	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis to review current reporting processes to ensure any corrective actions are managed in a timely manner	01/12/2020	

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 AC020 reports were examined to identify all unmetered load over 3,000 kWh per annum. Any ICPs with unmetered load greater than 3,000 kWh per annum were examined.

Audit commentary

GENE

Review of the AC020 report found GENE supplies 11 ICPs with estimated annual consumption over 6,000 kWh which are not included in the DUML audit regime and are settled based on the registry daily unmetered kWh. They are shown in the table below.

ICP	Annual kWh	2019 Comment	2020 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.	Still in progress.
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.	Still in progress.
1001243372UN366	52268	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.	Still in progress.
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.	Still in progress.
0900088512PCB3A	13369.95	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	Genesis are continuing to work with NZTA and NZ streetlighting consultant to provide a database to audit.

ICP	Annual kWh	2019 Comment	2020 comment
		Highway's. The Urban State Highway lighting seems to be under CTCT ownership.	
0000081066CPA8F	9745.5	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.	Genesis are continuing to work with NZTA and NZ streetlighting consultant to provide a database to audit.
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.	Genesis are continuing to work with NZTA and NZ streetlighting consultant to provide a database to audit.
1001101874UN586	30660	ICP belongs to NZTA and will be audited as part of the NZTA - Ref 60035210 account assets	Will be included in the next audit
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.	Still in progress.
0000179860TR9B6	16545.45	Wellington International Airport Limited. Genesis account manager is currently in the process of enquiries. Genesis	Still in progress.

ICP	Annual kWh	2019 Comment	2020 comment
		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.	
1000587024PCA06	8395	-	This is a new connection and indicated as a electronic sign and is being investigated

ICPs with unmetered daily kWh over 6,000 in 2019 which did not appear on the AC020 report were rechecked. All had switched out or have become DUML ICPs.

GENE supplies 36 ICPs with consumption between 3,000 and 6,000 kWh per annum. 14 of these have DUML databases and the remaining ICPs have a predicable load type.

ICPs with unmetered daily kWh between 3,000 and 6,000 kWh in 2019 which did not appear on the AC020 report were rechecked. All had switched out, been decommissioned or were confirmed to have an approved load type.

GEOL

Review of the AC020 report 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 AC020 report 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** 11 ICPs with unmetered load over 6,000 kWh per annum. 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 recorded as moderate as Genesis are working with the customers concerned to resolve these, but this is taking longer than expected. 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

• 0005000772HBA61 UML threshold has been rectified by the customer but the electrician still has not provided the paperwork supporting this. An example of how the high risk register does not always provide assistance. • 0088051701WM2E0 – ICP is currently an Active vacant consuming. The previous consumer was finaled by a CSR inadvertently, in which Genesis has been unable to resign to date. Genesis are working on a resolution for this site, the distributor has no helpful information pertaining to load details. • 1001–43372UN366 & 0000455891UN0A2 - Genesis finally have managed to contact the director of Nulite signs, Tim agrees with Genesis and would like to find a resolution to the issue. Genesis will be working with the customer to resolve this issue as quickly as possible over the next few months. The customer is reviewing their asset information to provide Genesis with locational details, so Genesis can establish, which gxp allocation is to be provided against and whether DUML can be avoided due to the extensive costs associated. • 0900088512PCB3A & 0000081066CPA8F & 0900088511PC7FA – Manawatu RURAL streetlighting assets. Genesis has completed a desk top audit using google maps and mobile roads to identify any "RURAL" assets. Genesis will be providing the information to NZTA Manawatu and will adjust historical billing and settlements based off this information until NZTA can provide asset information as requested by Genesis/Distributors/Auditors on multiple occasions. Genesis would like to add that CTCT currently only provide settlement for the NZTA Manawatu "URBAN" assets based in the Manawatu district council region only. It does not cater for all other assets across the multiple councils in the Manawatu region for "urban" assets. • 1001101874UN586 – Added to NZTA Genesis are looking at the historical provision of information and have advised auditor to include in the next NZTA Porirua audit. • 0000562361UN29B - Kinleith Mill Genesis are struggling to identify what the load is actually for. Distributor details suggest some 24 hr load which technically requires a separate ICP. Distributor has not been able to supply any further information to assist, Genesis in locating at starting point on what the connection consists of, or is for. • 0000179860TR9B6 – Unfortunately Genesis have yet to get to the bottom of this, The account manager left before Genesis were able to meet with the council and the position is still open. Genesis will re raise this as a priority to establish whether the Wellington airport upgrades have removed or replaced the lig–ting assets. • 1000587024PCA06 - This seems to be a road closure sign, google maps seems to show a light that may work at night, the sign clearly not consuming during the day. There also seems to be a cabinet below sign. Is there metering atta–hed? And the distributors 24 - hour operational time although it may have potential it clearly does not work 24/7 therefore any energy calculation would be over stated based off this information. This may need metering attached if it's not already. https://www.google.com/maps/@-40.3691183,175.6579965,3a,61.8y,46.33h,79.77t/data=!3m6!1e1!3m4!1sI-tXSb0zvBVg2zhQ-OnUqQ!2e0!7i16384!8i8192		Investigating

Preventative actions taken to ensure no further issues will occur	Completion date	
Genesis continues to investigate these as part of the UML reporting process.		

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 process for the management of unmetered load thresholds is discussed in **section 5.2** above. The AC020 reports were examined to identify all unmetered load over 6,000 kWh per annum. Any ICPs with unmetered load greater than 6,000 kWh per annum were examined.

Audit commentary

GENE

11 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 have not been completed for these ICPs within the required time frame.

GEOL

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

GENH

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

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.3 With: Clause 10.14 (5) From: 01-Jul-19 To: 31-Jul-20	**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: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate as Genesis are working with the customers concerned to resolve these, but this is taking longer than expected. 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
Genesis to improve current reporting frequency and timeliness.	01/12/2020	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis to review current reporting processes to ensure any corrective actions are managed in a timely manner	01/12/2020	

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

As reported in the last audit. 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	RAMM now used and had better accuracy than the Distributor database previously used but room for improvement	Over submission of 60,802 kWh
NZTA Northland	Inaccurate and out of date Distributor database. Genesis working with NZTA to use RAMM but it presently has no ICPs against the items of load.	Under submission of 117,675 kWh
NZTA Waikato East	TCDC lights being submitted by both NZTA and TCDC until October 2018	Over submission of 269,450 kWh
Porirua NZTA	Inaccurate database	Under submission of 206,454kWh
Wellington CCC	Inaccurate database	Over submission of 85,900 kWh
Nelson CC	Inaccurate database	Over submission of 61,400 kWh
Central Otago DC	Inaccurate database	Over submission of 19,000 kWh
	Hard wired dimmed LED lights	Over submission of 25,000 kWh
Kawerau DC	Database not provided to Genesis for billing or submission therefore the historic daily kWh figure is used	Over submission of 117,849 kWh

The table below shows that all but six 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	01/06/20	No	Yes	Yes	Yes	Yes	Yes	No	No	No
Stratford DC	01/04/20	No	Yes	Yes	No	No	Yes	Yes	No	No
NZTA West Waikato	01/06/18	No	No	No	No	No	Yes	No	No	No
NZTA Waikato West	01/06/18	No	No	No	No	No	Yes	No	No	No
Waimate DC	01/12/19	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Hauraki DC	01/10/20	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Whangarei DC	01/10/19	No	Yes	Yes	No	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
Hastings DC	01/06/19	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Horowhenua DC	18/12/19	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	15/06/20 overdue	No	Yes	Yes	No	No	Yes	Yes	No	No
Wairoa DC	01/12/19	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Western BOP DC	26/12/19	No	Yes	Yes	Yes	No	Yes	Yes	No	No
Kaipara DC	26/11/19	No	Yes	Yes	Yes	No	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	01/10/19	No	No	No	No	No	Yes	Yes	No	No
Opotiki DC	17/04/20	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Whakatane DC	17/09/20	No	Yes	Yes	Yes	No	Yes	Yes	No	No
BOP East NZTA	25/05/18 overdue	No	Yes	Yes	No	No	No	Yes	No	No
Marlborough Lines	01/12/19	No	Yes	Yes	Yes	Yes	No	No	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)
Far North DC	01/09/20	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Kaiangaroa Forest Village Lights	31/05/20 overdue	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Napier CC	01/06/19 overdue	No	No	Yes	Yes	No	Yes	Yes	No	No
Central Otago DC	01/09/20	No	Yes	No	No	No	Yes	Yes	No	No
Otorohonga DC	01/06/19	No	Yes	No	Yes	No	Yes	Yes	No	No
Alandale Retirement Village	01/12/18 This report was completed but is not on the DUML audit list	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	06/03/20	No	Yes	No	No	No	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)
Wellington CC	01/04/20	No	No	Yes	No	No	Yes	Yes	No	No
NZTA Scanpower	01/12/19 overdue	No	Yes	Yes	Yes	No	Yes	Yes	No	No
Tararua DC	01/09/20	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Porirua NZTA	01/11/19	No	No	Yes	No	Yes	Yes	Yes	No	No
Tasman DC	01/09/20	No	Yes	No	Yes	Yes	Yes	Yes	No	No
Nelson CC	01/04/20	No	Yes	Yes	No	No	Yes	Yes	No	No
Timaru DC	01/12/19	No	No	Yes	Yes	No	Yes	Yes	No	No
Waitaki DC	01/05/20	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Queenstown Lakes DC	01/04/20	No	Yes	No	Yes	No	Yes	Yes	No	No
Southland DC	01/03/20	No	Yes	Yes	Yes	No	Yes	Yes	No	No

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.4 With: Clause 11 Schedule 15.3 From: 01-Jul-19 To: 31-Jul-20	**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. Six database audits not completed. 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 continues to work with their customers to improve or maintain accuracy level of asset database information pertaining to DUML.	Continuous improvement	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Continue to review and provide exception reporting to the customer to assist in maintaining database information.	Continuous improvement	

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 AC020 trader compliance reports for 01/08/19 to 02/06/20, meter event details reports, and registry list files as at 28/05/20 for GEOL, 02/06/20 for GENH and 25/05/20 for GENE were reviewed to determine compliance.

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 electrical connection 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 Derive, Gentrack, and 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 arranges for compliant metering to be installed, and the ICP profile is updated as part of the meter change process. I found that the home generation team had not consistently followed up instances where the customer had declined or not approved a meter upgrade, or the first attempt to complete the meter replacement was turned down.

Description	Recommendation	Audited party comment	Remedial action
Installation of compliant metering for generating ICPs	For any ICP where generation is present, either: 3. Ensure that compliant metering is installed, and monitor and follow up any jobs to be completed or approved, or 4. Advise the reconciliation team that compliant metering has not been installed, so that a notification of gifting can be provided to the reconciliation manager.	Genesis will be revising their generation reporting to identify sites where generation is installed with either no or non-compliant metering. Genesis are currently contacting the customers where there are no meters and generation is on site to establish whether a meter is required, or gifting is to be notified.	Investigating

Instances where a customer has installed generation but not provided an application are difficult to identify. Genesis has tried to monitor ICPs where the installation type is B but has found that distributors sometimes update the installation type 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 and a settlement indicator of Y, regardless of whether they are expected to be used.

ICPs with generation volumes can also be detected through reverse rotation meter events, and they may fail billing validations if generation volumes offset load. I saw examples of ICPs with solar installed without EG metering which had low or negative consumption. In some cases, the Billing team had not investigated to determine that generation was installed and had requested check meter readings requested. In **section 9.5**, I recommend reviewing the low and negative consumption validation processes, to help to promptly identify and resolve home generation issues.

GENE

Review of the registry list identified 4,269 active ICPs with generation indicated by the distributor. The AC020, event detail, registry list and meter installation details reports were reviewed to determine compliance:

Generation recorded by the distributor and an I flow register with no generation compatible profile	Review of the AC020 report confirmed that there were 97 ICPs with generation recorded by the distributor and an I flow register where GENE did not record a generation compatible profile. 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. I confirmed that all 97 ICPs had the correct profile applied for submission, and the registry profile was corrected though the profile validation process prior to the audit. For three ICPs there were delays in providing distributed generation submission information, because meter changes were not processed on time or correctly. The discrepancies were identified through the reconciliation team's checks of ICPs with PV1 profiles on the registry, which are intended to ensure that any ICPs switching in have the correct profiles assigned. The late submission information is recorded as non-compliance in **section 12.2**: • 0000039785CP0FE had a meter change which added a generation register in November 2019, but the CSR missed adding the EG register. The error was discovered and corrected in July 2019, and revised submission information will be provided through the revision process.

	• 1000585864PCBEE had a meter change which added a generation register in March 2020. Paperwork was received in March 2020, but the work order remained open and the meter change was not processed. The meter change was processed in in July 2019, and revised submission information will be provided through the revision process. • 1000587982PCA9F had a meter change which added a generation register in February 2020, but the CSR missed adding the EG register. The error was discovered and corrected in July 2019, and revised submission information will be provided through the revision process.
Generation recorded by the distributor with no I flow register or generation compatible profile	Review of the registry list and meter installation details report identified 32 ICPs where generation was recorded by the distributor, but there was no I flow register or profile compatible with distributed generation recorded. • Five were timing differences and the ICP switched out, or metering and profile details were updated after the registry list was run. • Four appeared to have been updated to B status by the distributor on application, and I found no evidence that they were generating. • 15 ICPs[1] were confirmed or likely to be generating and no application was received, and no meter installation was attempted. • Six ICPs[2] were confirmed or likely to be generating. An application was received, and a generation metering installation was attempted but turned down because the customer refused, or further work was required on the meter board. The turned down jobs were not followed through by the home generation team. • 0000008827UN374 and 0000042791HR839 were confirmed or likely to be generating and an application was received, but no meter installation was attempted. The 23 ICPs which are believed to be generating which did not have compliant metering installed or notification of gifting provided are recorded as non-compliance below.
Generation profile recorded but no generation details recorded by the distributor	164 ICPs had profiles indicating generation was present, but no generation was recorded by the distributor. 125 of those had non-zero volumes recorded on their I flow meters in May 2020 and were confirmed to be generating. The other 39 ICPs have I flow registers present, with zero consumption recorded. One has since had its I flow meter removed, and the registry, Derive and Gentrack were updated accordingly.
Generation profiles inconsistent with the distributor fuel type	Where generation profiles were recorded, they were consistent with the generation fuel type apart from • ICP 0007163650RN307 which had solar indicated by the distributor but EG1 recorded on the registry. I confirmed that PV1 was correctly applied for submission and the registry was updated prior to the audit. • 52 ICPs where the distributor had recorded a generation fuel type of wind or other. I checked a sample of 39 ICPs and found 38 had solar or were likely to have solar based on the information available. ICP 0000100101TR513 had

[1] 1000027701BPAD5, 1000575026PCC5F, 0001265597UN2D7, 0006949541RNCA9, 0001001351PCCD7, 0080011321PCB85, 0001112481WM688, 0007101788RN44D, 0007134784RN15F, 0000158386UN338, 1000000101BP17E, 0000047031TR076, 0002081240WM1A7, 0000321872WE3AB and 0005617142WE037

[2] 1001144500UN86C, 0000860572HBD1D, 0000025242UN82C, 0000162174UN6C1, 0000023753UNE01 and 0033301453PC50B

	wind generation and was updated to EG1 for submission and the registry during the audit.

GEOL

Review of the registry list identified 170 active ICPs with generation indicated by the distributor. The AC020, event detail, registry list and meter installation details reports were reviewed to determine compliance:

Generation recorded by the distributor and an I flow register with no generation compatible profile	Review of the AC020 report confirmed that there were nine ICPs with generation recorded by the distributor and an I flow register where GEOL did not record a generation compatible profile. All nine ICPs had the correct profile applied for submission, and the registry profile was corrected though the profile validation process prior to the audit.
Generation recorded by the distributor with no I flow register or generation compatible profile	Review of the registry list and meter installation details report found all ICPs with generation recorded by the distributor had I flow metering and generation compatible profiles.
Generation profile recorded but no generation details recorded by the distributor	14 ICPs had profiles indicating generation was present, but no generation was recorded by the distributor. All of the affected ICPs had generation registers installed, and seven of those had generation volumes recorded in May 2020.
Generation profiles inconsistent with the distributor fuel type	I checked for consistency between the distributor generation details and the profiles applied and identified three ICPs with non-solar generation indicated and PV1 profiles applied. • Two were confirmed to have solar generation and the profiles were correctly applied. • ICP 1001152044CK79A had wind generation and was updated to EG1 profile during the audit.

GENH

Review of the registry list identified 60 active ICPs with generation indicated by the distributor. All GENH ICPs have the HHR profile assigned, therefore no ICPs were identified with profiles inconsistent with the ICP's fuel type or distributor generation details. Review of the registry list and meter installation details report found that there were eight ICPs with generation recorded by the distributor which did not have an I flow register.

- 0220523875LC32A has been returned to B installation type L by the distributor and was confirmed not to be generating.
- 0006476414RNE04 (switched in with B 01/02/18) has been investigated and confirmed not to be generating. It briefly appeared to be generating due to some work carried out on the transformer.
- Notification of gifting has been provided for ICPs 0007139792RN05D and 0427052565LCF1B.
- ICPs 1002046050UN986, 0000103361TR204, 0006679030RNFE2 and 0303925043LC693 should be checked to determine whether generation is present. If generation is present, compliant metering should be installed or notification of gifting should be provided to the reconciliation manager.

Description	Recommendation	Audited party comment	Remedial action
Confirm whether GENH ICPs are generating	Confirm whether the following ICPs are generating: • 1002046050UN986 (B installation type since 02/11/18) • 0000103361TR204 (switched in with B installation type 01/10/19) • 0006679030RNFE2 (switched in with B installation type 01/01/20), and • 0303925043LC693 (switched in with B installation type 01/02/20). If they are generating arrange for compliant metering to be installed or notification of gifting to be provided to the reconciliation manager.	Genesis will be revising their generation reporting to identify sites where generation is installed with either no or non-compliant metering. Genesis are currently contacting the customers where there are no meters and generation is on site to establish whether a meter is required or gifting is to be notified.	Investigating

I re-checked all other ICPs which were indicated to have generation without generation metering installed in the 2019 audit, and found that they had switched out, had generation metering installed, or the distributor had updated the installation type to L.

Bridged meters

Bridged meters are typically identified through the zero-consumption validation process, reconnection paperwork returned from the contractor, or stopped meter cases.

An internal audit of bridged meter processes has been completed. The audit identified that process improvements were required to prevent bridging, promptly unbridge where bridging has occurred, and ensure that bridged consumption is consistently identified and corrected where it does occur. The implementation of these improvements will be monitored through Genesis' internal audit processes.

GENE

GENE provided a list of 41 meters which were bridged during the audit period, which are recorded as non-compliance below. Unbridging did not consistently occur, which is recorded as non-compliance in **section 6.4**. Corrections for bridged meters are discussed in **section 2.1**.

GEOL

No bridged meters were identified during the audit period.

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-19 To: Jul-20	**GENE** 23 ICPs were generating or likely to be generating but did not have compliant metering installed, and notification of gifting had not been provided. ICP 0000100101TR513 had wind generation with PV1 profile and was updated to EG1 for submission and on the registry during the audit. 41 meters were bridged during the audit period. While meters are bridged energy is not quantified in accordance with the code. **GEOL** ICP 1001152044CK79A had wind generation with PV1 profile and was updated to EG1 profile during the audit. 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 for distributed generation. Processes are in place but are not consistently followed through to ensure that compliant metering is installed, or notification of gifting is provided. Controls are rated as moderate for bridging. Bridging should occur very rarely. Process are in place to detect bridged meters and arrange unbridging, but they are not consistently followed through and will not always identify bridged meters promptly. 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 a bridge meter process which when processed flows through to settlement. Genesis will be reviewing this process to gain improvements in the identification of bridging events.	continuous improvements	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will revise current internal processs and contractual arrangements to mitigate the effects of bridged metering.	continuous improvements	

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.

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.

No certification expiry dates changed during the audit period. When meters are recertified, 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

The registry list files as at 28/05/20 for GEOL, 02/06/20 for GENH and 25/05/20 for GENE, and AC020 trader compliance reports were reviewed to determine compliance.

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.

GEOL

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

GENH

GENH only uses the HHR profile, which does 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 2.1, 8.1** and **8.2**.

GENE

I reviewed 29 examples of potential defective meters, including 15 bridged meters and ten stopped meters.

- All the stopped meters were replaced, and the MEP was notified.
- For three of the bridged meters the MEP was not notified of the issue, and five of the bridged meters were not unbridged because no job was raised, or the ICP switched out before the job could be completed.

An internal audit of bridged meter processes has been completed. The audit identified that process improvements were required to prevent bridging, promptly unbridge where bridging has occurred, and ensure that bridged consumption is consistently identified and corrected where it does occur. The implementation of these improvements will be monitored through Genesis' internal audit processes.

GEOL

I reviewed nine examples of potential defective meters, including four stopped meters. All the stopped meters were replaced, and the MEP was notified.

GENH

No meters with defects preventing consumption from being recorded accurately were identified during the period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.4 With: Clause 10.43(2) and (3) From: 27-Jan-20 To: 26-May-20	**GENE** The MEP was not advised of three bridged meters, and five of the 15 bridged meters checked were not unbridged. 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 recorded as moderate, the MEP is advised of defects except where meters are unbridged by other parties. The audit risk rating is low based on the number of ICPs affected.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis have a bridge meter process which when processed flows through to settlement. Genesis will be reviewing this process to gain improvements in the identification of bridging events.	continuous improvements	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will revise current internal processs and contractual arrangements to mitigate the effects of bridged metering.	continuous improvements	

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 or MEPs. 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.

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

Compliant

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 for GENE and GEOL. GENH does not deal with NHH readings.

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.

- Emailed meter condition information received into the billing crew inbox is filtered into a work queue for resolution.
- Meter condition notes received within the read files usually generate a memo note against the ICP which can be viewed in Gentrack or reported on using queries. No work queue items are generated from these notes. I found that meter condition notes are only reviewed and actioned where they are found as part of another process, such as investigating unread ICPs, because no read reason codes do generate a work queue item. I also found that meter digit discrepancies did not consistently have memo notes created.

Description	Recommendation	Audited party comment	Remedial action
Review of Wells meter condition information	Ensure that memos are created for all meter condition issues provided by Wells. Develop processes to review and take action on these meter condition issues, which could affect meter accuracy.	Genesis will need to consider the billing engine when developing any potential solution for reporting/inclusion of memo notes when importing into the system. Being that this is both a material and potentially a major change to the system this will need to go through the auditing process.	Investigating

Meter condition issues can also be identified through the meter read validation process, but without review of the meter condition information it is possible issues could be missed. 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	No examples available	No examples available
Seals are not present and intact	**Non-compliant.** 0000015610HB783 (05/03/20) a memo was created but no action was taken.	**Non-compliant.** 0000301930EN542 (12/11/19) a memo was created but no action was taken.
Signs of tampering or damage	**Non-compliant.** 0000928331TUF63 (15/07/19) a memo was created but no action was taken.	**Non-compliant.** 0000023787UN249 (13/02/20) a memo was created but no action was taken. The daily average usage is zero, and there appears to be a potential meter fault.
Meter digit discrepancy	**Non-compliant.** 0000045145CP02E (03/06/20) a meter digit discrepancy provided in read file did not trigger a memo or validation. 0000555775NREC5 (28/07/20) a dials discrepancy provided by email was added to the workflow. The item had not been reviewed at the time of the on-site audit.	**Non-compliant.** 1001147179CK9FC (28/05/20) a meter digit discrepancy provided in read file did not trigger a memo or validation.
Phase failure	No examples available	No examples available
Electrically unsafe	No examples available	No examples available

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 validated against at least two actual readings. I repeat last year's recommendation to maintain visibility.

Description	Recommendation	Audited party comment	Remedial action
Validation of 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.	either strive for increased accuracy or use the FSD processes, either way we'll not meet the codes expectations on compliance especially the HE percentages in revision 14.	Investigating

During Covid-19 lockdown, Wells developed a process to conduct outbound calling to customers to obtain customer readings. 10,500 GENE customer reads and 1,800 GEOL customer reads were collected between 6 and 22 April 2020, entered into the handheld and validated in the same way as meter reader readings. They were provided to Genesis as actual readings, and subsequently recorded in Gentrack and Derive as actual readings. Genesis applied these readings for billing and reconciliation in preference to estimating consumption, and intends to correct the read types in Derive.

GENE

I checked 14 examples of customer, photo and web readings and found they had been appropriately validated against a set of readings from another source except 1000517104PC993, which had customer readings on 31/07/19 and 18/09/19 which were not validated against a set of readings from another source.

GEOL

I checked ten examples of customer, photo, and web readings and found they had been appropriately validated against a set of readings from another source, except 0000289010TE558 which had a customer reading on 30/08/20 which was not 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: 15-Jul-19 To: 30-Jul-20	**GENE** At least one ICP with signs of tampering or damage, and one ICP with missing or broken seals, and two meter digit discrepancies identified by Wells were not investigated. Customer readings provided by Wells during COVID-19 lockdown were recorded as actual readings. 1000517104PC993 had customer readings on 31/07/19 and 18/09/19 which were not validated against a set of readings from another source. **GEOL** At least one ICP with signs of tampering or damage, and one ICP with missing or broken seals, and one meter digit discrepancy identified by Wells were not investigated. Customer readings provided by Wells during COVID-19 lockdown were recorded as actual readings. 0000289010TE558 had a customer reading on 30/08/20 which was not validated against a set of readings from another source. 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 considered moderate because they are not sufficient to ensure that all meter condition events identified by Wells are investigated and resolved, and that all customer, web and photo readings are correctly validated before being treated as validated readings. The impact is assessed to be low, based on the exceptions identified.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has already corrected the reads obtained during lockdown from OR's to Estimations. Although this would lead to inaccuracies in revisions once reads are able to be obtained through normal cyclic reads the volumes should adjust settlement revisions.	Unknown	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will need to revise its reporting attributes for the meter conditioning events. But consideration must include what system changes are required which may delay and implementation due to the requirements for audits.	Unknown	

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.** Compliance was confirmed.

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. 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.

If an upgrade or downgrade 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 two 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.** Compliance was confirmed.

I checked the process for meter upgrades and downgrades. If an upgrade or downgrade does not coincide with a meter change, the swap between NHH and HHR aligns with the actual volume data. I checked a sample of five GEOL upgrades to HHR and one GEOL downgrade to NHH and found they did not coincide with a meter change and the readings were correctly applied.

GENH

GENH does not deal with NHH readings. ICPs which are downgraded are switched to GENE, as discussed in the GENE section above. Review of the event detail report confirmed that no upgrades or downgrades occurred while ICPs were supplied by the GENH participant code.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.7 With: Clause 6 Schedule 15.2 From: 15-Jul-19 To: 30-Jul-20	**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. 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 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 to review its current processes to mitigate the minor impact on the provision of the incorrectly supplied switch read event	unknown	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will take this under review when consultation takes place on the replacement billing engine.	unknown	

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 20 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

General read attainment process

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 it is on an AMI reading sequence, or the customer is account managed.

Under certain circumstances actual reads may not be attained, but the ICP may not have had 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.

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.

The manual read and read attainment processes were suspended on 01/04/20 and resumed following COVID-19 lockdown. Any customers gained during the lockdown period were allocated to meter reading sequences as normal and began to be read as soon as meter reading processes resumed.

AMI read attainment process

For AMS AMI meters, AMS identifies ICPs with communication faults and send a list of proposed fault jobs to Genesis for approval. Genesis works through the list, which may be up to 400 ICPs per week, and authorises AMS to complete fault jobs for any occupied ICPs. AMS completes the fieldwork and returns completion paperwork. When the paperwork is processed a case is created for the ICP to be rechecked in 7-10 days to ensure that consistent reads are being provided.

For other MEPs, a query is run to identify every ICP which has not had a read for more than 60 days. It is intended that the report should be filtered to identify unread AMI meters, so that fault jobs can be raised and ICPs moved to manual meter reading routes in the meantime.

I found that one staff member is completing the AMI read attainment process. Because the process to check the proposed AMS jobs is time consuming, and there is rarely time to work through exceptions for other MEPs. I checked five AMI ICPs on the query and found:

- ICP 0000135835UN63C has been unread since 2018. Attempts had been made to gain access to read the meter manually, and GENE confirmed that the meter was switched off.
- 0000107220HB3B7 has been unread since 2018 and is still on an advanced meter reading route, with no action taken.
- ICP 0006506504WE122 has a WASN meter which is not expected to receive AMI reads, and should have been on a manual reading route. No action was taken.
- ICP 0000594346TP091 and 0005969557RN58D have been unread since 2018 and had faults logged but were turned down because the wrong job type was used. Both cases were closed down without being followed up.

Description	Recommendation	Audited party comment	Remedial action
AMI read attainment	Investigate how the efficiency of the AMS job approval process can be improved. Regularly work through the unread AMI meters on the query, raise fault jobs as required and move the ICPs to manually read sequences until the issues are confirmed to be resolved. Investigate whether addition of extra report fields could make this process more efficient. Identify WASN AMI meters which have incorrectly been assigned to AMI sequences, and move them to manual reading routes.	Genesis will review the current process for gap analysis to identify any potential process efficiencies to improve the resolution of incorrect billing sequences and to mitigate user error.	Investigating

<u>Account managed customer read attainment process</u>

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. I frequently found that ICPs which did not meet the best endeavours requirements for read attainment were account managed.

Description	Recommendation	Audited party comment	Remedial action
Account managed ICP read attainment	Develop clear processes for read attainment for account managed customers to ensure that the read attainment requirements are met.	Genesis will need to revise the current process to include SME customers in the reporting.	Investigating

ICPs unread during the period of supply

A report of 1,366 ICPs not read during the period of supply was provided for ICPs with an end date between 01/09/19 and 31/03/20. Of these, 1,182 (86.5%) were supplied for 60 days or less. A sample of the ten ICPs with the longest periods of supply were reviewed. All were account managed, and no action was taken to resolve the issues preventing access to the meter. For one of the ICPs GENE obtained a customer reading.

GEOL

General read attainment process

Wells' no read codes generate work queue items. ICPs unread for access reasons are directed to the Billing team work queues, and ICPs unread for meter related reasons are directed to the metering team work queues. Action taken is at the staff member's discretion, and I found at times the focus was on obtaining a customer or photo read for billing, rather than resolving the issue preventing read attainment.

AMI read attainment process

The GENE AMI read attainment process is the same for GENE and GEOL.

ICPs unread during the period of supply

A report of 769 ICPs not read during the period of supply was provided for ICPs with an end date between 01/09/19 and 31/03/20. I found that at least 14 of the ICPs included on the report had an actual switch gain or switch loss reading and were not genuinely unread during the period of supply. 676 (89.5%) of the genuinely unread ICPs were supplied for 60 days or less. I checked an extreme case sample of the ten ICPs with the longest periods of supply:

- for one ICP exceptional circumstances existed,
- six ICPs were on an AMI meter reading sequence, and no action was taken to resolve the communications issue preventing reads from being obtained, and
- for the other three ICPs no key was provided to access the meter, and no action was taken to resolve the issues preventing access to the meter (for one of the ICPs GEOL obtained a customer reading).

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: 01-Sep-19 To: 31-Mar-20	**GENE** For at least ten ICPs unread during the period of supply, exceptional circumstances did not apply, and the best endeavours requirement was not met. **GEOL** For at least nine 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: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are weak as they will ensure that most ICPs will receive a read during the period of supply. Controls over AMI ICPs and account managed ICPs are weaker. 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
Genesis has engaged Wells for a campaign over October for reads persistently not attained, which will involve weekend and evening visits for meter reads.	1/11/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The campaign with Wells will form a routine part of Genesis measure to attain reads.	Continuous Improvement	

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 October 2019 to March 2020 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 to 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 August 2019 to March 2020 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
Oct 19	256	110	448	98.34%
Nov 19	257	113	433	98.38%
Dec 19	257	112	435	98.38%
Jan 20	255	101	411	98.42%
Feb 20	259	110	403	98.46%
Mar 20	258	110	420	98.37%

The total quantity of unread ICPs and percentages read are similar to the results found in the 2019 audit.

I reviewed a diverse sample of 23 ICPs not read in the previous 12 months as at March 2020, 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 12 ICPs, the best endeavours requirement was met, or exceptional circumstances existed, and
- for 11 ICPs the best endeavours requirement was not met, and exceptional circumstances did not exist (five of the ICPs were account managed, and two had non-communicating AMI meters).

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
Oct 19	161	30	57	99.26%
Nov 19	161	32	62	99.19%
Dec 19	162	36	67	99.12%
Jan 20	155	27	54	99.28%
Feb 20	163	31	61	99.18%
Mar 20	160	34	77	98.96%

The total quantity of unread ICPs and percentages read are similar to the results found in the 2019 audit.

I reviewed a diverse sample of 15 ICPs not read in the previous 12 months as at March 2020, 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 11 ICPs, the best endeavours requirement was met, or exceptional circumstances existed, and
- for four ICPs the best endeavours requirement was not met, and exceptional circumstances did not exist (for one ICP a customer reading was obtained, but the access issues were not resolved).

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-Apr-19 To: 31-Mar-20	**GENE** For at least 11 ICPs unread in the 12 months ended March 2020, exceptional circumstances did not apply, and the best endeavours requirement was not met. **GEOL** For at least four ICPs unread in the 12 months ended March 2020, 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 rated as moderate because there is room to improve the processes for read attainment, particularly for account managed ICPs and AMI ICPs. The impact is low, because overall read attainment rates are reasonably high.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has engaged Wells for a campaign over October for reads persistently not attained, which will involve weekend and evening visits for meter reads.	1/11/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The campaign with Wells will form a routine part of Genesis measure to attain reads.	Continuous Improvement	

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 October 2019 to March 2020 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
Oct 19	265	34	1,590	95.12%
Nov 19	268	32	1,535	95.22%
Dec 19	267	32	1,573	95.17%
Jan 20	267	29	1,418	95.51%
Feb 20	267	40	1,485	95.37%
Mar 20	268	65	1,910	93.88%

The total quantity of unread ICPs and percentages read are similar to the results found in the 2019 audit. There was a drop in attainment for March 2020 in part due to COVID-19 restrictions.

I reviewed the process to determine whether exceptional circumstances exist, and if GENE had used their best endeavours to obtain readings for 14 ICPs connected to NSPs where compliance was not achieved in March 2020.

- for four ICPs, the best endeavours requirement was met, or exceptional circumstances existed, and
- for ten ICPs the best endeavours requirement was not met, and exceptional circumstances did not exist (five of the ICPs were account managed customers).

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
Oct 19	165	35	489	94.76%
Nov 19	165	29	452	95.10%
Dec 19	166	30	425	95.36%
Jan 20	160	23	372	95.85%
Feb 20	167	25	384	95.64%
Mar 20	165	33	489	94.34%

The total quantity of unread ICPs and percentages read are similar to the results found in the 2019 audit. There was a drop in attainment for March 2020 in part due to COVID-19 restrictions.

I reviewed the process to determine whether exceptional circumstances exist, and if GENE had used their best endeavours to obtain readings for five ICPs connected to NSPs where compliance was not achieved in March 2020. 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-Dec-19 To: 31-Mar-20	**GENE** 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. **GEOL** For at least five ICPs unread in the four months ended March 2020, 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 rated as moderate because there is room to improve the processes for read attainment, particularly for account managed ICPs and AMI ICPs. The impact is low, because overall read attainment rates are reasonably high.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis will need to review process to look at how the SME sites can be included in this process	ASAP	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will need to revise the current process to include SME customers in the reporting.	ASAP	

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, GEOL 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.

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, GEOL 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.

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, GEOL 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.

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, GEOL 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**.

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 during the agent and MEP audits. I checked that meter readings cannot be modified without an audit trail and viewed archived meter reading data.

Audit commentary

Compliance with this clause has been demonstrated by the MEPs and agents.

GENE and 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. GENE and GEOL meter read data from 2014 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 2016 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 2016.

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 the correction of NHH meter readings were reviewed. Corrections to volumes where meter readings match the value recorded by the meter, such as where a multiplier is incorrect, a meter is defective or bridged, or inactive consumption is identified were reviewed in **section 2.1**.

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.

Transposed meters are corrected by removing and reinstalling the registers correctly in Gentrack or swapping the readings to the correct registers.

Audit outcome

Compliant

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.

- Genesis completes its own HHR corrections for GENE and GEOL using MSD.
- AMS completes HHR corrections on behalf of GENH as an agent. Compliance was assessed as part of their agent audit report.
- Genesis completes generation corrections based on information provided by its engineers.

Audit commentary

GENE and GEOL

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 three examples of corrections processed to record consumption during a period where a meter was replaced, faulty or bridged. I found that the meters were all category 1 or 2 and were changed to NHH submission type to process the correction.

There were no corrections for meters with category 3 or higher during the audit period.

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 one correction where power outages had occurred. The correction was 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.

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 2.1, 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, 8.2** and **9.4**.

Audit commentary

GENE

Readings are clearly identified as required by this clause. Some readings were incorrectly classified.

- Some CS files did not have the correct read type recorded for the switch event read. Six 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**.
- Because all meter removal reads are recorded as actual, estimated meter removal readings which capture consumption during stopped, faulty or bridged periods are incorrectly classified as actual readings. It is possible to determine whether a read has been estimated by reviewing the notes in Gentrack, and there is no impact on reconciliation because estimated removal readings should be treated as permanent estimates.
- 0000160951CK1EB had a manually entered actual AMI reading misclassified as a web reading. Both read types are treated as actual validated readings.
- 1000517104PC993 had customer readings on 31/07/19 and 18/09/19 which were treated as actual validated readings, but were not validated against a set of readings from another source.
- As discussed in **section 6.6** during lockdown 10,500 GENE customer reads were provided to Genesis as actual readings by Wells, and subsequently recorded in Gentrack and Derive as actual readings. Genesis intends to correct the read types in Derive for the affected readings.

GEOL

Readings are clearly identified as required by this clause. Some readings were incorrectly classified.

- Some CS files did not have the correct read type recorded for the switch event read. Six 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**.
- Because all meter removal reads are recorded as actual, estimated meter removal readings which capture consumption during stopped, faulty or bridged periods are incorrectly classified as actual readings. It is possible to determine whether a read has been estimated by reviewing the notes in Gentrack, and there is no impact on reconciliation because estimated removal readings should be treated as permanent estimates.
- 0000289010TE558 had a customer reading on 30/08/20 which was not validated against a set of readings from another source.
- As discussed in **section 6.6** during lockdown 1,800 GEOL customer reads were provided to Genesis as actual readings by Wells, and subsequently recorded in Gentrack and Derive as actual readings. Genesis intends to correct the read types in Derive for the affected readings.

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-Jul-19 To: 30-Jul-20	**GENE and GEOL** Because all meter removal reads are recorded as actual, estimated meter removal readings which capture consumption during stopped, faulty or bridged periods are incorrectly classified as actual readings. Some CS files had estimated readings classified as actual readings. Customer readings provided by Wells during COVID-19 lockdown were recorded as actual readings. 10,500 GENE and 1,800 GEOL readings were affected. **GENE** • 0000160951CK1EB had a manually entered actual AMI reading misclassified as a web reading. Both read types are treated as actual validated readings. • 1000517104PC993 had customer readings on 31/07/19 and 18/09/19 which were treated as actual validated readings but were not validated against a set of readings from another source. **GEOL** • 0000289010TE558 had a customer reading on 30/08/20 which was not validated against a set of readings from another source. Potential impact: Medium Actual impact: Unknown Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are assessed to be moderate and the impact is assessed to be low. Most readings were correctly classified. The audit risk rating is assessed to be low as the volume of errors was small overall.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis will be reviewing this process, however when dealing with faulty/stopped meters the provision of volume during the period of supply can only then be derived from the FSE process , therefore correctly label reads will then also be a contributing factor where the Historical estimation percentage requirements are not meet in section 13.3	01/06/2021	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Review process to assign correct read type when removing faulty/stopped meters.	unknown	

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 and GEOL

Manual meter readings do not record decimal places and are not rounded or truncated on import into Gentrack or Derive.

AMI reading data provided by AMS is not truncated on import into DRDS, but it is truncated for import into Gentrack and Derive.

HHR and AMI volume data is not rounded on import into Gentrack or MSD.

GENH

AMS's audit report confirms compliance for GENH.

Generation data

A sample of generation data was checked during the audit and found not to be rounded until submission.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.3 With: Clause 3(5) of schedule 15.2 From: 01-Jul-19 To: 30-Jul-20	AMI meter reading data is truncated for import into Gentrack and Derive. 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 moderate. Only AMI meters which are settled as NHH are affected by meter readings being truncated in Gentrack and Derive. The impact is assessed to be low. Only NHH settled AMI readings provided with decimal places are affected, and the overall kWh difference is expected to be small.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis does not believe that the rounding of the reads provided by AMI will have an impact on NHH settlements due to the potential of estimation in any period if a month end read was not provided. Genesis acknowledges that there maybe a >= 0.1 and <1.0-unit impact upon switching or decommissioning of site.		Unknown
Preventative actions taken to ensure no further issues will occur	**Completion date**	
N/A		

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 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 and GEOL

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).
- 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 a diverse sample of seven HHR estimates using a variety of estimation methods to and confirmed the requirement to use reasonable endeavours to ensure estimates were accurate were met. I found that where default estimates of 24 kWh per day are applied, it is less likely that the best endeavours requirements will be met particularly for low users. Following the 2019 audit, Genesis considered whether to adjust the default estimate methodology to improve accuracy but decided that the costs outweighed the potential benefits, and will instead continue to move category 1 and 2 ICPs to NHH submission type were actual HHR data cannot consistently be obtained.

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. I checked two examples of generation estimates and found the reasonable endeavours requirements were met.

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.

<u>Meter reader checks</u>

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 validation

Gentrack validates meter readings using a multiple step validation process.

1. If data becomes corrupt, including dates and times, Gentrack will not allow the file to be uploaded and an investigation will then occur.
2. MRI (import) validations are completed when the readings are uploaded, and check that the reads are provided for the correct registers and are consistent with the number of dials recorded. Any issues found through this process are investigated and corrected.
3. IBP (invoice request maintenance) validations occur once the readings have been uploaded and check the readings against set criteria. Any readings which fail validation generate exceptions, which are emailed to a shared mailbox and added as a queue item, which is 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 are grouped into categories and prioritised as critical (e.g. import of read files, and mass production of invoices), same day, or 48-hour. Validations within the groups are classified into easy (e.g. short day invoice), moderate (e.g. credit consumption on a read to read period, out of cycle reads) or difficult (e.g. high first invoice, high invoice) based on the amount of time and effort expected to investigate and resolve the exception.

Each user's work queue is activated for all exception types they have been trained for. Exceptions are assigned one by one based on the priority order, as a user disconnects from a queue item, they will be assigned the next highest priority queue item that they are trained to complete. If a validation cannot be completed because further work is required, it can be requeued and will reappear after 48 hours.

Team Leaders monitor workloads and can reprioritise the queues. Critical and 24-hour queue items are normally reviewed each day, but the team does not consistently have time to work through the 48-hour queue items.

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. Reads may fail billing validations if generation volumes offset load. I saw examples of ICPs with solar installed without EG metering which had low or negative consumption. In some cases, the Billing team had not investigated to determine that generation was installed and had requested check meter readings. I recommend reviewing the low and negative consumption validation processes, to help to promptly identify and resolve home generation issues.
GBR0014	Out of cycle reads	Out of cycle readings are reviewed.
GB0017	Transaction creation mismatch	This exception 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.

Code	Description	Action
GDR0052 GBR0053	High dollar bill High first bill	The high bill exceptions identify invoices over $900 for residential customers and $5000 for commercial customers, which are checked to confirm they are correct.
GBR0003	No read loaded	An exception is generated where a read is expected for billing and has not been loaded. This typically occurs where a dual fuel customer has only received a read for one fuel type, or AMI readings have not been provided for all of the ICP's meter registers. 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	This exception 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	This exception 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, or a customer has provided a customer reading since the last invoice. Exceptions are checked and resolved.
GBR0092	Not current retailer	This exception identifies ICPs where GENE or GEOL are not the current retailer, which are checked. Typically, this occurs where a customer has switched out, or a switch has been withdrawn.
GEN0017	Short day invoice	This exception identifies any invoice periods which are ten days or less. This is most commonly caused by an actual read being received after an invoice has been estimated, and any exceptions are checked.
GBR0020	Disconnected register with consumption	This exception identifies any ICPs with disconnected consumption. 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. If an affected ICP is vacant, billing may assign the queue item to another team for further investigation.

Description	Recommendation	Audited party comment	Remedial action
Identification of generating ICPs	Ensure that the Billing team is aware that sudden low or negative consumption could be caused by home generation without an EG register installed. These exceptions could be checked against the high-risk database, customer account notes, or google satellite information to determine whether it is likely that solar is installed. Any ICPs which appear likely to have home generation should be passed to the home generation team, so that compliant metering can be installed where necessary.	Genesis will look into developing reporting to assist in the corrective action required when these instances arise.	Investigating

Vacant consumption

A vacant disconnection process is followed for vacant ICPs, and I confirmed that consumption is submitted for vacant ICPs in **section 12.2**.

A letter is sent to the occupier on the day after the ICP becomes vacant. If there is no response a second letter is sent advising that the electricity supply will be disconnected within seven days if the customer does not sign up with Genesis or another retailer. A second letter is sent seven business days after the first for residential AMI meters, 14 days after the first for residential non-AMI meters and 20 business days after the first for business meters.

If a vacant disconnection fails or there is a high bill for a vacant ICP, investigation will occur to determine who is responsible for the charges.

An occupier query is run fortnightly which shows the account balance of each occupier account. The accounts with the highest balances are investigated, mainly to determine who is responsible for the charges and to arrange disconnection if necessary.

Zero consumption

A daily report is run in Gentrack to identify meters with zero consumption for more than six months. The report is filtered to remove ICPs where zero consumption is expected, and a work queue item is loaded into the interaction client for the remaining meters with task type "RA.Stopped.Meters". I walked through the process to resolve these exceptions and viewed examples. If the user cannot determine that the zero consumption is reasonable and genuine, they contact the customer to confirm whether they have been consuming energy. A field services job is raised if it appears the meter is inaccurate, or there have been three attempts to contact the customer without a response. Once the meter has been replaced and confirmed to be faulty, a correction is processed to capture consumption during the stopped or faulty period.

As for the other billing validations, each user's work queue is activated for all exception types they have been trained for. Not all queue items are attended to each day.

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.

I saw evidence that stopped meters are not always consistently investigated and corrected in a timely manner, particularly where the zero consumption was caused by bridging. This is recorded as non-compliance in **section 6.4**.

Recommendation	Description	Audited party comment	Remedial action
Zero consumption validation	Review the zero-consumption validation process to help to identify stopped, faulty, and bridged meters more promptly, so that corrective action can be taken.	Genesis's internal auditing process has highlighted that these requirements will need to be reviewed to ensure that the corrective action is executed accurately and in a timely manner.	Investigating

Disconnected ICPs with consumption

Disconnected ICPs with consumption are primarily identified through the GBR0020 (disconnected register with consumption) billing validation described in the table above. These are not considered critical or same day validations and may not always be investigated and resolved quickly. The exception is a warning and is not required to be cleared before the ICP can be billed.

The Billing team generates a weekly report on the GBR0020 exception showing ICPs with consumption while disconnected registered, including the date of disconnection, the read type which created the consumption, connection status and trader code. The report is reviewed, and I saw evidence that the report was reviewed and acted upon although not all ICPs are reviewed each week. Action taken included updating statuses where consumption was confirmed to be genuine, processing reconnection paperwork where it had been missed, or arranging site visits. Vacant sites may be referred to other teams for further investigation. The number of ICPs included in the reports fluctuates from week to week, there were 61 ICPs on 15/06/20 and 187 ICPs on 23/07/20.

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.

I saw evidence that inactive ICPs with consumption are not consistently investigated and corrected in a timely manner. Non-compliance is recorded in **sections 2.1** and **12.7** in relation to inactive consumption corrections which were not carried out.

Recommendation	Description	Audited party comment	Remedial action
Inactive ICPs with consumption	Review the inactive consumption validation process to help to inactive consumption more promptly, so that corrective action can be taken.	Genesis's internal auditing process has highlighted that these requirements will need to be reviewed to ensure that the corrective action is executed accurately and in a timely manner.	Investigating

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. Meter events which could affect meter accuracy are emailed to GENE or GEOL's billing crew for action, which may include contacting the customer or raising a fault. I reviewed six examples of these emails received by GENE and GEOL, including tamper alarms, voltage spikes and reverse rotation and found that appropriate action had been taken in each case.

AMS provide meter event logs which are received by GENE and GEOL but are not routinely reviewed, because AMS has confirmed that they separately send any events requiring action.

GENE and GEOL 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.

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 no issues 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

Processes to create buying and selling notifications were reviewed. I checked examples of notifications provided and whether any breach allegations had been made.

Audit commentary

There have not been any breach allegations in relation to this clause during the audit period.

GENE

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.

GENH

GENH only uses the HHR profile, and trading notifications are not required.

GEOL

GEOL only uses the RPS, HHR and PV1 profiles, and trading notifications are not required.

Audit outcome

Compliant

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

GENE prepares AV110 ICP days submissions for GENE and GEOL, and AMS prepares the submissions for GENH.

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 15 months of GR100 reports.

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 20 NSPs with a small number of HHR ICPs and 20 NSPs with a small number of NHH ICPs on the March 2020 submission. 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 15 months, and very small differences were found. Negative percentage figures indicate that the GENE ICP days figures are higher than those contained on the registry.

Month	Ri	R1	R3	R4	R5	R7	R14
Feb 2019	-	-	0.00%	-	-	0.00%	-
Mar 2019	-	-	0.00%	-	-	0.00%	0.00%
Apr 2019	-	0.00%	0.00%	-	-	0.00%	-
May 2019	0.00%	0.00%	0.00%	-	0.01%	0.00%	-
Jun 2019	0.01%	0.00%	0.00%	0.00%	-	0.00%	-
Jul 2019	0.00%	0.00%	0.00%	-	-	0.00%	-
Aug 2019	0.02%	0.01%	0.00%	-	-	0.00%	-
Sep 2019	0.01%	0.01%	0.00%	0.00%	-	0.00%	-
Oct 2019	0.01%	0.00%	0.00%	-	-	0.00%	-
Nov 2019	0.00%	0.00%	0.00%	-	-	-	-
Dec 2019	0.00%	0.00%	0.00%	-	-	-	-
Jan 2020	0.00%	0.00%	0.00%	-	-	-	-
Feb 2020	0.00%	0.00%	0.00%	-	-	-	-
Mar 2020	0.01%	0.00%	-	-	-	-	-
Apr 2020	0.00%	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 registry events, and Derive reporting zero ICP days where an ICP is supplied for only one day. Late status and trader updates are discussed in **sections 3.3** and **3.5**, and backdated switches are discussed in **section 4.**

GENE's processes for upgrades and downgrades achieve accuracy for consumption information. The ICP days calculations are correct for upgrades and downgrades because they align with the consumption information.

GEOL

The process for the calculation of ICP days was examined by checking 20 NSPs with a small number of HHR ICPs and 20 NSPs with a small number of NHH ICPs on the March 2020 submission. 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 15 months, and very small differences were found. Negative percentage figures indicate that the GEOL ICP days figures are higher than those contained on the registry.

Month	Ri	R1	R3	R4	R5	R7	R14
Feb 2019	-	-	0.00%	-	-	0.00%	0.00%
Mar 2019	-	-	0.01%	-	-	0.00%	0.00%
Apr 2019	-	0.00%	0.00%	-	-	0.00%	-
May 2019	0.01%	0.02%	0.00%	-	-0.01%	0.00%	-
Jun 2019	0.02%	-0.01%	0.00%	0.00%	-	0.00%	-
Jul 2019	0.00%	0.00%	0.00%	-	-	0.00%	-
Aug 2019	0.04%	0.00%	0.00%	-	-	0.00%	-
Sep 2019	0.02%	0.00%	0.00%	0.00%	-	0.00%	-
Oct 2019	0.02%	0.01%	0.01%	-	-	0.00%	-
Nov 2019	0.01%	0.00%	0.00%	-	-	-	-
Dec 2019	0.01%	0.02%	0.00%	-	-	-	-
Jan 2020	0.02%	0.01%	0.00%	-	-	-	-
Feb 2020	0.03%	0.01%	0.00%	-	-	-	-
Mar 2020	0.01%	0.01%	-	-	-	-	-
Apr 2020	0.00%	0.00%	-	-	-	-	-

I reviewed five NSP level ICP days differences remaining at revision 7 or 14, and found they were timing differences caused by backdated registry events, or instances where an ICP had been supplied for one day with no consumption, and Derive reported zero ICP days. Late status and trader updates are discussed in **sections 3.3** and **3.5**, and backdated switches are discussed in **section 4.**

GEOL's processes for upgrades and downgrades achieve accuracy for consumption information. The ICP days calculations are correct for upgrades and downgrades because they align with the consumption information.

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 on the April 2020 report. 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 15 months, and very small differences were found. Negative percentage figures indicate that the GENH ICP days figures are higher than those contained on the registry.

Month	Ri	R1	R3	R4	R5	R7	R14
Feb 2019	-	-	-	-	-	0.00%	0.00%
Mar 2019	-	-	0.00%	-	-	0.00%	0.00%
Apr 2019	-	-	0.00%	-	-	0.00%	-
May 2019	0.32%	0.00%	0.00%	-	0.00%	0.00%	-
Jun 2019	0.08%	0.16%	0.01%	0.01%	-	0.00%	-
Jul 2019	0.04%	0.03%	0.00%	-	-	0.01%	-
Aug 2019	-0.08%	0.05%	0.00%	-	-	0.05%	-
Sep 2019	-0.05%	0.00%	0.00%	0.00%	-	0.00%	-
Oct 2019	0.10%	0.12%	0.05%	-	-	0.00%	-
Nov 2019	-0.04%	0.23%	0.06%	-	-	-	-
Dec 2019	0.12%	0.09%	0.07%	-	-	-	-
Jan 2020	0.25%	0.15%	0.04%	-	-	-	-
Feb 2020	0.04%	0.11%	0.07%	-	-	-	-
Mar 2020	0.19%	0.10%	-	-	-	-	-
Apr 2020	0.31%	0.13%	-	-	-	-	-

I reviewed a sample of five NSP level ICP days differences remaining at revision 7 or 14, and found they were timing differences caused by backdated registry events, or one day differences between the registry and submission where an ICP is made inactive or decommissioned. AMS includes the inactive or decommissioned status date in the ICP days count to ensure that all consumption up to the point of disconnection is captured, but the registry ICP days count excludes the day that the ICP is made inactive or decommissioned. Late status and trader updates are discussed in **sections 3.3** and **3.5**, and backdated switches are discussed in **section 4.**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.2 With: Clause 15.6 From: 01-Jul-19 To: 30-Jul-20	**GENE and GEOL** For instances where an ICP is supplied for one day with no consumption, Derive reports zero ICP days. Potential impact: High 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. In almost all instances ICP days will be reported correctly. The impact is low because ICPs are usually supplied for more than one day, otherwise a switch withdrawal would be processed. The instances identified had zero consumption and zero ICP days.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has already implemented change to the process to ensure that the ICP's with start and end dates being the same during the period of ownership, that the 1 day is accounted for.	14/09/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis has over time improved the accuracy levels of their ICP day reporting to the extent that the minor issues Identified are now noticeable, and have not been identified previously in the RP audits conducted.	14/09/2020	

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 2018 to March 2020 were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

Genesis monitors differences between billed and submitted volumes at an aggregate level using their dashboard.

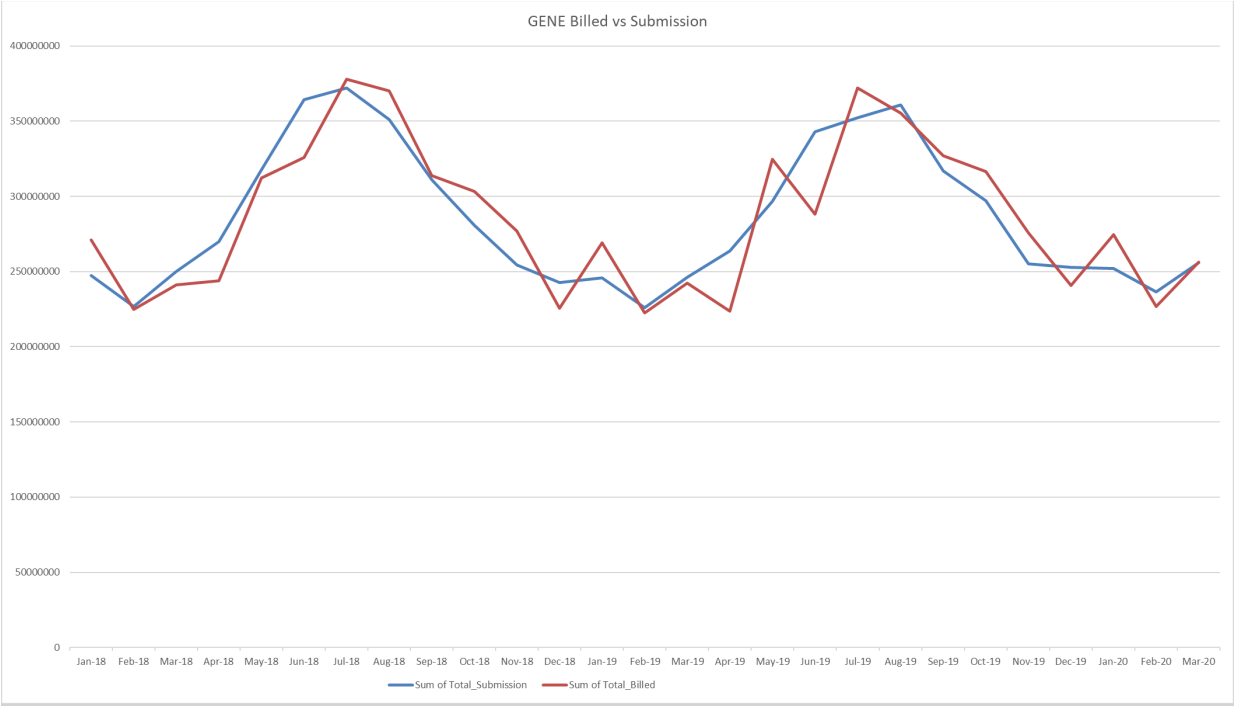
Audit commentary

GENE

The process for the calculation of "as billed" volumes was examined by checking April 2020 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 checked the difference between submission and electricity supplied information for January 2018 to March 2020, and the results are shown below. The difference between billed and submitted data for the year ended March 2020 is -0.01% (billed lower than submitted) and the two years ended March 2020 is 0.02% (billed higher than submitted). The differences between billed and submitted data largely appear to be timing differences.



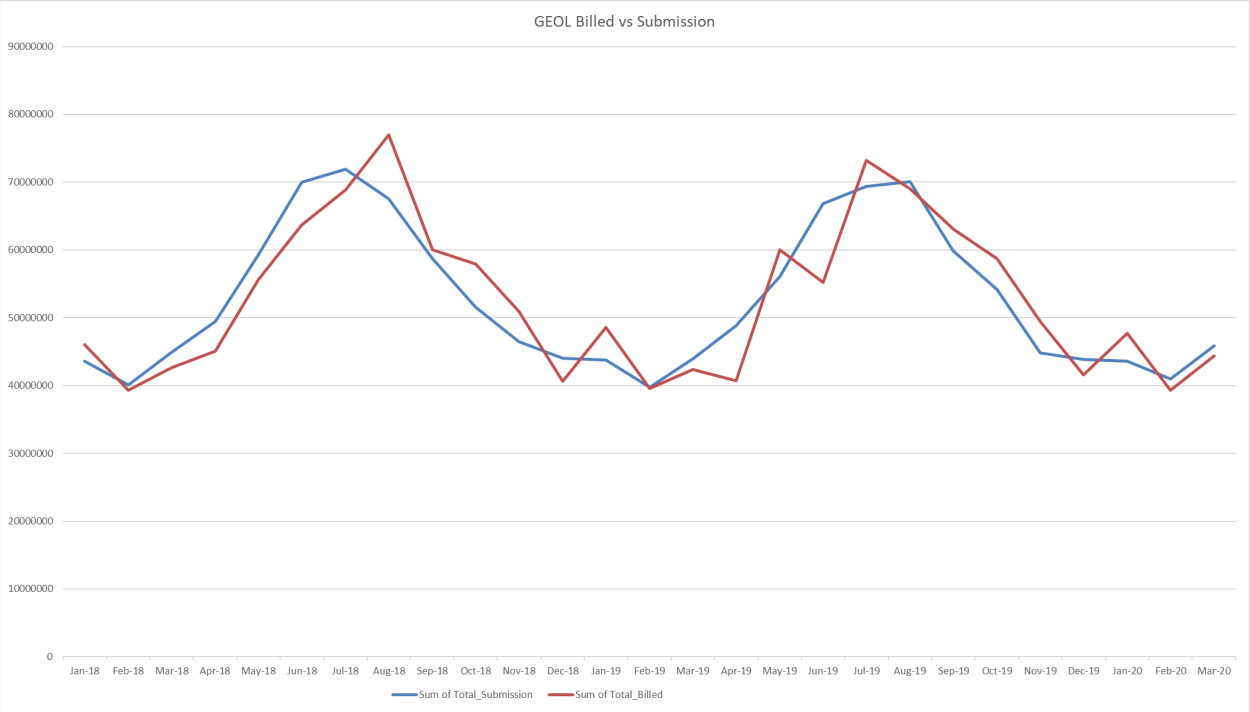
An alleged breach was recorded for late provision of as billed information.

Ref	Breach Description	Clause	Target EGR Date	Outcome
2004GENE2	Genesis failed to provide AV120 billed information to the reconciliation manager by 4:00 pm on business day 13. A file was initially provided on time, but a transposed meter error was found following submission and a corrected file was issued.	Part 15 clause 15.4 (2)	5/08/2020	No result yet, the investigator is fact finding

GEOL

The process for the calculation of "as billed" volumes was examined by checking April 2020 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.

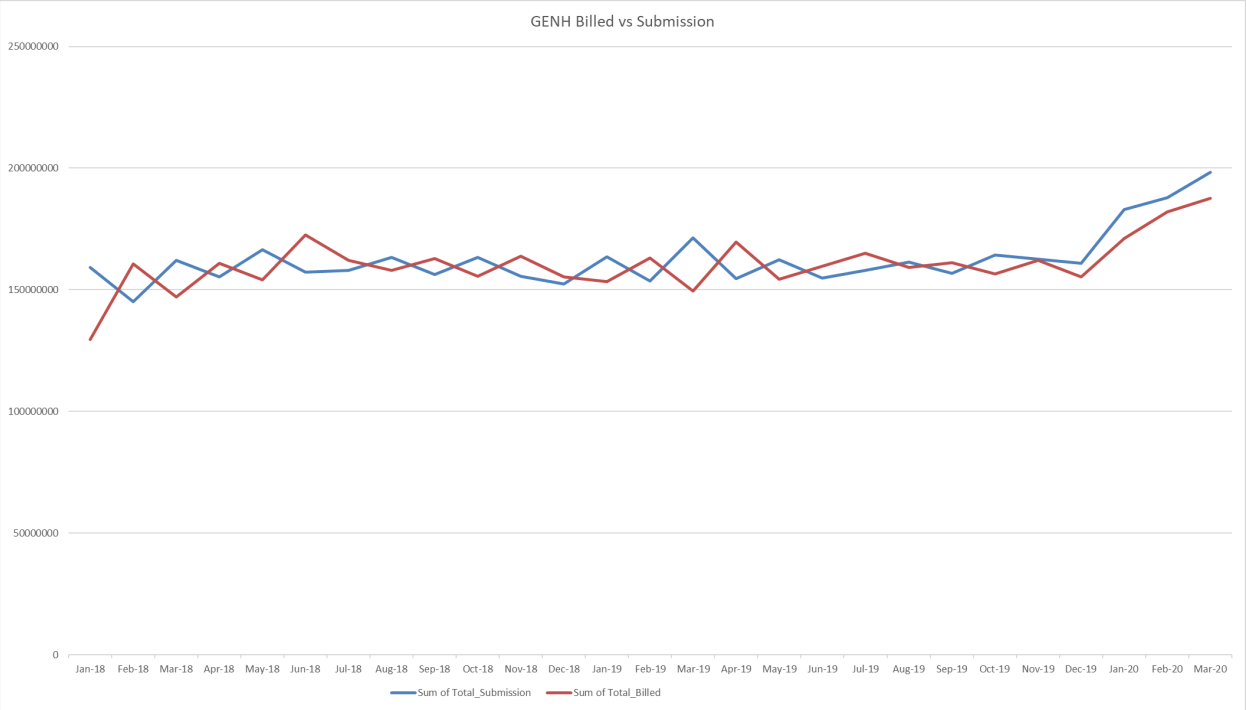
I checked the difference between submission and electricity supplied information for January 2018 to March 2020, and the results are shown below. The difference between billed and submitted data for the year ended March 2020 is -0.3% (billed lower than submitted) and the two years ended March 2020 is 0.1% (billed higher than submitted). The differences between billed and submitted data largely appear to be timing differences.



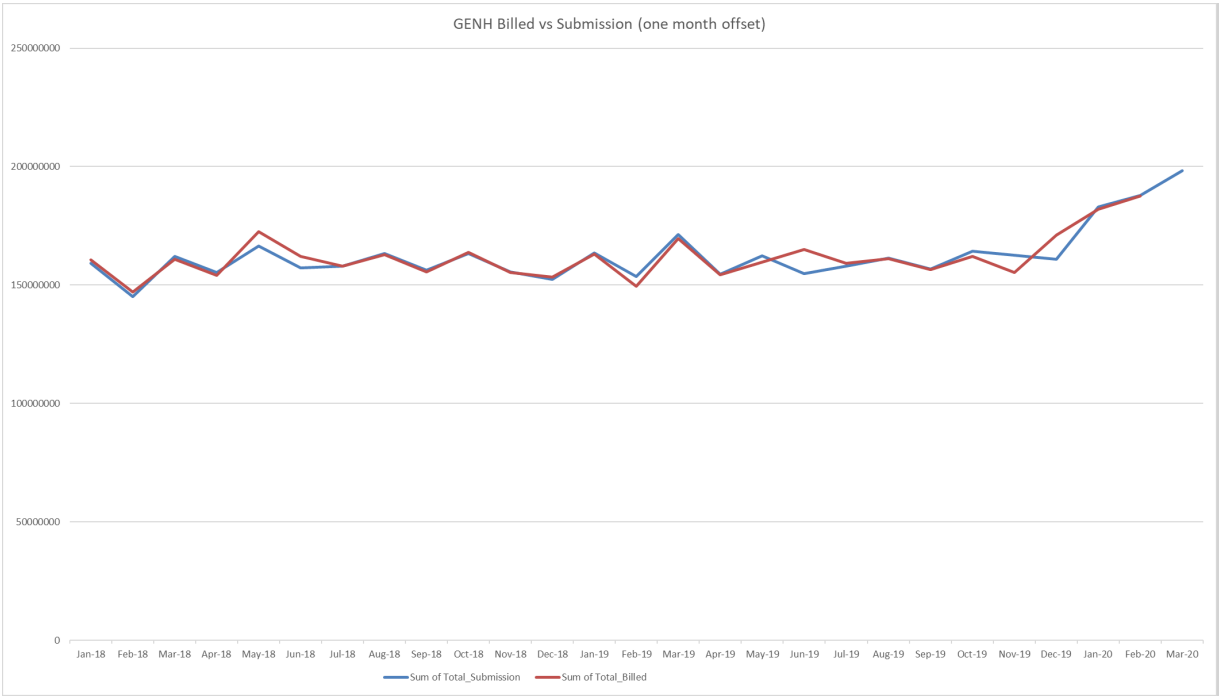
GENH

The process for the calculation of "as billed" volumes was examined by checking April 2020 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 checked the difference between submission and electricity supplied information for January 2018 to March 2020, and the results are shown below. The difference between billed and submitted data for the year ended March 2020 is -1.0% (billed lower than submitted) and the two years ended March 2020 is -0.7% (billed lower than submitted). The differences between billed and submitted data 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: May-20 To: May-20	**GENE** GENE submitted as billed consumption late due to a correction. Alleged breach 2004GENE2 was raised by the reconciliation manager. Potential impact: High 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. The late submission occurred due to correction. The impact is low because the data was provided in time to be included in the allocation results.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis received notification from the distribution company due to an initial submission being substantially greater than the NSP recorded volumes, in which Genesis proceeded to rectify their revision volumes, but unfortunately too close to the 4pm deadline and missed the window but wanted to ensure that the submitted volumes were corrected. This is an exception and is not normal practice.		Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Distribution network enquiry triggered investigation into metering configurations due to the distributor challenging reported volumes stating they believed the configurations were transposed.		

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

HHR volumes and aggregates submissions are created by AMS for GENH, and Genesis for GENE and GEOL.

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, and
- tracing volumes for two HHR settled ICPs from DRDS/IDDB to MSD and the HHR aggregates submissions.

The GR090 ICP Missing files were examined for all revisions for February 2018 to April 2019, and an extreme case sample of the ICPs which were missing from the most submissions were checked.

Audit commentary

GENE, GEOL 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 and GEOL

I confirmed that the process for the calculation and aggregation of HHR data is correct, by tracing volumes for two HHR settled ICPs from DRDS to MSD and the HHR aggregates submissions. All volumes matched.

I matched HHR aggregates information with the HHR volumes data for 18 submissions for GENE. I found two submissions for January 2019 had differences between 0.002% and 0.004%, and all other submissions had differences of 0.000%. The differences were investigated and were confirmed to be caused by timing differences between the report run times and rounding differences where the reports were generated before September 2019.

I matched HHR aggregates information with the HHR volumes data for eight submissions for GEOL and found they all matched within 0.001%. A sample of differences were investigated and were caused by rounding differences.

In September 2019 Genesis implemented a change so that the HHR volumes and aggregates used the same rounding logic, to eliminate rounding differences. Following this change, HHR aggregates submissions were rounded to three decimal places. This caused non-compliance with clause 9 Schedule 15.3 which requires submission information to be rounded to no more than two decimal places and is recorded as non-compliance in **section 13.2**.

The GR090 ICP Missing files were examined for all revisions for February 2019 to March 2020. I checked a sample of the 15 ICPs missing from the most submissions each for GENE and GEOL and found all were timing differences due to backdated switches, status changes, NSP changes, submission type changes, and generation sites which do not have aggregates data reported.

The GR090 ICP missing reports are not specifically monitored by GENE and GEOL, ICP differences are primarily identified through monitoring of ICP days.

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 18 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 2019 to March 2020. I checked a sample of the 15 ICPs missing from most submissions (including all missing for more than five submissions) and found all were timing differences due to backdated switches, status changes, NSP changes, and GR090 report accuracy issues. The GR090 ICP missing reports are monitored by AMS as GENH's agent.

Audit outcome

Non-compliant

<table>
<tr><th>Non-compliance</th><th colspan="3">Description</th></tr>
<tr><td>Audit Ref: 11.4
With: Clause 15.8

From: 01-Jul-19
To: 30-Jul-20</td><td colspan="3">GENE, GEOL and GENH
HHR aggregates files do not contain electricity supplied information.
Potential impact: Low
Actual impact: Low
Audit history: Multiple times
Controls: Strong
Breach risk rating: 1</td></tr>
<tr><th>Audit risk rating</th><th colspan="3">Rationale for audit risk rating</th></tr>
<tr><td>Low</td><td colspan="3">The issue relating to content of the aggregates file is an error in the code, Genesis is providing submission information as expected.</td></tr>
<tr><th colspan="2">Actions taken to resolve the issue</th><th>Completion date</th><th>Remedial action status</th></tr>
<tr><td colspan="2">Correct Genesis will not be changing its process.</td><td>N/A</td><td rowspan="3">Cleared</td></tr>
<tr><th colspan="2">Preventative actions taken to ensure no further issues will occur</th><th>Completion date</th></tr>
<tr><td colspan="2">N/A</td><td>N/A</td></tr>
</table>

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 one 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 29/09/19 and from daylight savings on 05/04/20 were checked to confirm the correct number of trading periods were recorded.

Audit commentary

GENE and GEOL

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

Processes to ensure that HHR, NHH and generation submissions are accurate were reviewed. A list of breaches was obtained from the Electricity Authority.

Audit commentary

GENE and GEOL

HHR submissions are created using MSD and are discussed in **section 11.4**. NHH submissions are produced using Derive and validated prior to submission as discussed in **section 12.3**. 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**.

A diverse sample of NHH ICPs were checked to confirm submissions were correct.

Distributed generation

I reviewed a sample of GENE and GEOL ICPs with injection/export registers and confirmed that generation consumption is correctly submitted.

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 with a settlement indicator of Y, regardless of whether they are expected to be used. Where BOPE and Intellihub have an I flow register with no consumption reported but the network has recorded a L, the I flow/PV1 lines are removed from submission. I walked through this process and confirmed it was operating as expected.

The following exceptions were identified:

1. For three GENE ICPs there were delays in providing distributed generation submission information.
    a. 0000039785CP0FE had a meter change which added a generation register in November 2019, but the CSR missed adding the EG register. The error was discovered and corrected in July 2019, and revised submission information will be provided through the revision process.
    b. 1000585864PCBEE had a meter change which added a generation register in March 2020. Paperwork was received in March 2020, but the work order remained open and the meter change was not processed. The meter change was processed in July 2020 and revised submission information will be provided through the revision process.
    c. 1000587982PCA9F had a meter change which added a generation register in February 2020, but the CSR missed adding the EG register. The error was discovered and corrected in July 2020, and revised submission information will be provided through the revision process.
2. 23 GENE ICPs which are believed to be generating did not have compliant metering installed or notification of gifting provided.
3. GENE ICP 0000100101TR513 had wind generation and was updated from PV1 to EG1 profile for submission during the audit.
4. GEOL ICP 1001152044CK79A had wind generation and was updated to EG1 profile during the audit.

Vacant consumption

I checked the process for vacant consumption and confirmed that vacant consumption is reported. Vacant ICPs continue to be read. The readings are stored within the read tables in Gentrack but not against a customer account, and the reads are transferred from the read table to Derive.

Inactive consumption

Disconnected periods are excluded when calculating historic estimate. If part of a read to read period is active, the historic estimate calculation will force the consumption into the active portion of the period. If the entire read to read period is inactive, no consumption will be reported. Status corrections do not always occur on a timely basis for ICPs with inactive consumption and this is discussed further in **sections 2.1** and **9.5.**

The following exceptions were identified.

1. At least 19 GENE ICPs with total inactive consumption of 163,319 kWh had not had status corrections processed. In addition, GENE ICP 0000491003WE1BC became inactive on 25/02/20 and switched out effective 04/03/20. Historic estimate was captured up to the last actual reading before the ICP became inactive, because the consumption between this reading and the switch out reading fell during a period which was entirely inactive and resulted in under reporting of 5 kWh.
2. At least eight GEOL ICPs with total inactive consumption of 32,476 kWh had not had status corrections processed.

Unmetered load

I checked a diverse sample of 20 GENE and GEOL ICPs with standard and shared unmetered load and confirmed that submission was correct. Gentrack records the unmetered load as a fixture, and dummy meter readings are created and loaded into Derive for submission.

Reconciled elsewhere ICPs

Three GENE ICPs had a status of reconciled elsewhere. Two were confirmed to be Powerco base power ICPs. Power is not supplied through the grid and no volumes are required to be submitted. ICP 0048241402PCD13 should have had 1,4 (inactive vacant) applied instead of 1,5 (inactive reconciled elsewhere) and was corrected during the audit.

Corrections

A sample of corrections were reviewed to ensure that they flowed through to revision submissions in **sections 2.1** and **8.1**. The following exceptions were identified:

1. No bridged meter correction was processed for ICP 0000124164UN239 which was bridged from January to June 2020. Consumption on the new meter is approximately 0.5 kWh per day.
2. ICP 0000167710UN91D's meter change was processed effective from 10/06/20 instead of 16/06/20 because the booked date was used instead of the completed date.
3. Five bridged meters (0000540643WEC82, 0000119904UN6C8, 0005765757RNE1C, 0049202053PCA93 and 0131447424LC9D2) were not unbridged because no job was raised, or the job could not be completed prior to switch out. No correction for the bridged consumption was processed.

GENH

HHR submissions are prepared by AMS as GENH's agent, as discussed in **section 11.4**.

Unmetered load

GENH supplies four ICPs with unmetered load. Because AMS does not handle unmetered load, Genesis intends to submit any GENH unmetered load as part of their GENE NHH submission as GENH's agent. It is not possible to include the volumes in GENH's submission because the RM's database replaces previous submissions for the aggregation factor combination and month, and if two submissions are provided by GENH for the same combination and period one will overwrite the other.

ICP 0000275289HB0B4 (1.5 kWh per day UML) was included in GENE's NHH submissions. The submission against an incorrect participant code is recorded as non-compliance in **section 12.7** and **12.9**.

The following ICPs were not included in submission information because no instruction had been received from the commercial team, resulting in under submission of 1547 kWh up to 31/07/20.

ICP	Profile	Meter category	Submission type	Daily Unmetered kWh	Start date	Unreported consumption up to 31/07/20
0000000516NTE49	HHR	3	HHR	0.95	01/06/19	405.65 kWh
0000000544NT6C4	HHR	3	HHR	3.86	01/01/20	822.18 kWh
0000370001TU645	HHR	2	HHR	1.5	01/01/20	319.5 kWh

Description	Recommendation	Audited party comment	Remedial action
Unmetered load process for GENH	**GENH** Strengthen the process to ensure that GENH ICPs with unmetered load are identified on switch in and/or connection, so that unmetered load is captured and submitted.	Genesis will include GENH when considering the changes to its UML discrepancy reporting	Identified

Reconciled elsewhere ICPs

ICPs 1001158205LC354 and 1001158207LC3D1 have inactive reconciled elsewhere status and are excluded from submissions. The ICPs are not set up in Gentrack but are expected to be. I recommend that these ICPs are checked to confirm where the load is reconciled and that they are treated correctly.

Description	Recommendation	Audited party comment	Remedial action
Reconciled elsewhere ICPs for GENH	**GENH** Check ICPs 1001158205LC354 and 1001158207LC3D1 to confirm where the load is reconciled and that they are treated correctly.	Genesis will need to review the ICP's and if necessary correct.	Identified

Generation

Generation submissions are discussed in **section 12.6**.

Alleged breaches

Two breaches were recorded for late provision of submission information.

Ref	Breach Description	Clause	Target EGR Date	Outcome
2004GENE2	Genesis failed to provide AV120 billed information to the reconciliation manager by 4:00 pm on business day 13. A file was initially provided on time, but a transposed meter error was found following submission and a corrected file was issued.	Part 15 clause 15.4 (2)	5/08/2020	No result yet, the investigator is fact finding
2005GENE2	Genesis Power (GENE) has failed to submit data NSP volumes submission information to the reconciliation manager by 16:00 on 6 May 2020 in breach of Part 15.4 (2) of the Code. The data was provided by 16.43 on 6 May 2020. The delay was caused by a processing error, the file was uploaded to the file checker first and due to an interruption, the user thought that the file had been successfully uploaded to the portal.	Part 15 clause 15.4 (2)	5/08/2020	No result yet, the investigator is fact finding

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.2 With: Clause 15.4 From: Jun-19 To: Jul-20	**GENE** There were delays in providing distributed generation submissions for ICPs 0000039785CP0FE, 1000585864PCBEE and 1000587982PCA9F. 23 GENE ICPs which are believed to be generating did not have compliant metering installed or notification of gifting provided. GENE ICP 0000100101TR513 had wind generation and was updated from PV1 to EG1 profile for submission during the audit. Some inactive consumption was missing from submissions because corrections had not been processed as soon as practicable. Some consumption during bridged periods was missing from submissions because corrections were not processed as soon as practicable. ICP 0000167710UN91D's meter change was processed effective from 10/06/20 instead of 16/06/20. GENE submitted NSP volumes 43 minutes late for April 2020, due to a data processing error. Alleged breach 2005GENE2 was raised by the reconciliation manager. GENE submitted as billed consumption late due to a correction. Alleged breach 2004GENE2 was raised by the reconciliation manager. **GEOL** ICP 1001152044CK79A had wind generation and was updated to EG1 profile during the audit. Some inactive consumption was missing from submissions because corrections had not been processed as soon as practicable. **GENH** ICPs 0000000516NTE49, 0000000544NT6C4 and 0000370001TU645 did not have unmetered load reported. 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 overall because processes are in place. Delays in updating systems and processing corrections meant that some submission information was not accurate and complete at the time of submission. The impact is low based on the volume differences identified, and corrected data will be provided through the revision process.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis will be reviewing the process for efficiency gains, to improve timeliness	01/06/2021	Investigating

Preventative actions taken to ensure no further issues will occur	Completion date	
Preventative actions will be a result of the investigation of these processes	01/06/2021	

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**.

I evaluated the process for ensuring the correct NSP is recorded by conducting a walk-through of the registry validation and submission processes for NHH and HHR. NSP errors will also show in the ICPCOMP and ICPMISS reports, so these were checked as well.

The process for aggregating the AV080 was examined by checking five NSPs with a small number of ICPs each for GENE and GEOL.

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 and then Derive, and end of month readings are transferred from DRDS to MSD, and then 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 (high or low compared to the previous submission, or over 10,000 kWh). 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 use scripts to 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 nine months, and revisions for GEOL for eight months, and revisions for GENE were compared 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.

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 and GEOL 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 lists 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.

One alleged breach was recorded in relation to late provision of NSP volumes, and is recorded as non-compliance in **section 12.2**. To ensure submissions are made on time calendar reminders have been created, and all submissions are now independently checked by providing a screenshot of the successful upload to management.

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 **sections 2.1, 8.1** and **8.2**.

Audit commentary

Review of alleged breaches confirmed there were no late revision submissions.

GENE

The following read and volume issues were identified during the audit for GENE which were not resolved as soon as practicable:

Issue	Description	Section
NHH bridged meter corrections	No bridged meter correction was processed for ICP 0000124164UN239 which was bridged from January to June 2020. Consumption on the new meter is approximately 0.5 kWh per day. ICP 0000167710UN91D's meter change was processed effective from 10/06/20 instead of 16/06/20 because the booked date was used instead of the completed date. Five bridged meters (0000540643WEC82, 0000119904UN6C8, 0005765757RNE1C, 0049202053PCA93 and 0131447424LC9D2) were not unbridged because no job was raised, or the job could not be completed prior to switch out. No correction for the bridged consumption was processed.	2.1
NHH inactive consumption corrections	At least 19 ICPs with total inactive consumption of 163,319 kWh had not had status corrections processed. ICP 0000491003WE1BC became inactive on 25/02/20 and switched out effective 04/03/20. Historic estimate was captured up to the last actual reading before the ICP became inactive, because the consumption between this reading and the switch out reading fell during a period which was entirely inactive and resulted in under reporting of 5 kWh.	2.1
Reporting of distributed generation volumes	There were delays in providing distributed generation submission information for 0000039785CP0FE, 1000585864PCBEE and 1000587982PCA9F because meter changes were not processed on time or correctly. 23 ICPs which are believed to be generating did not have compliant metering installed or notification of gifting provided. ICP 0000100101TR513 had wind generation and was updated from PV1 to EG1 profile for submission during the audit.	6.1, 12.2, 12.7

Issue	Description	Section
Validation of customer readings	1000517104PC993 had customer readings on 31/07/19 and 18/09/19 which were treated as actual validated readings, but they were not validated against a set of readings from another source.	6.6

The meter category 3 and 5 meters with NHH submission type have been resolved apart from 0001130018PSF65, which is discussed in **section 12.9**.

I found that corrections identified as being required during the 2019 audit have not consistently been processed, but the 14-month submission window has now passed for the affected ICPs.

GEOL

The following read and volume issues were identified during the audit for GEOL which were not resolved as soon as practicable:

Issue	Description	Section
NHH inactive consumption corrections	At least eight ICPs with total inactive consumption of 32,476 kWh had not had status corrections processed.	2.1
Reporting of distributed generation volumes	ICP 1001152044CK79A had wind generation and was updated to EG1 profile during the audit.	6.1, 12.7
Validation of customer readings	ICP 0000289010TE558 had a customer reading on 30/08/20 which was treated as an actual validated reading but was not validated against a set of readings from another source.	6.6

GENH

The following read and volume issues were identified during the audit for GENH which were not resolved as soon as practicable:

Issue	Description	Section
Unmetered load	ICPs 0000000516NTE49, 0000000544NT6C4, and 0000370001TU645 were not included in submission information because no instruction had been received from the commercial team, resulting in under submission of 1,547 kWh up to 31/07/20. ICP 0000275289HB0B4 (1.5 kWh per day UML) was included in GENE's NHH submissions instead of being submitted with the GENH participant code. Because AMS does not handle unmetered load, Genesis submits any GENH unmetered load as part of their GENE NHH submission as GENH's agent. It is not possible to include the volumes in GENH's submission because the RM's database replaces previous submissions for the aggregation factor combination and month, and if two submissions are provided by GENH for the same combination and period one will overwrite the other.	12.2, 12.7

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.7 With: Clause 15.12 From: 01-Jul-19 To: 30-Jul-20	**GENE, GEOL and GENH** Some submission data was inaccurate and was not corrected at the next available opportunity. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	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 to the read and billing validation processes which identify and correct errors. The impact is medium based on the volume differences identified, and corrected data will be provided through the revision process.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis will be reviewing its current process, changes may not yet be supported due to the pending billing engine replacement. The reconciliation team continues to support these processes where exceptions are found and corrected.	Unknown	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Comments have been made on these individual instances earlier in the report. Each process will be reviewed over the coming months as Genesis progress down the path of billing engine replacement.	Unknown	

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 November 2018 to January 2019 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 consistently being made permanent at the 14-month point as required by the Authority, because Genesis only enters permanent estimates where they can be validated against actual validated readings.

GENE

AV080 submissions were reviewed to identify the quantity of forward estimate remaining at revision 14:

Month	Forward estimate at revision 14
Nov-18	788,007.98
Dec-18	808,575.55
Jan-19	764,129.17
Grand Total	2,360,712.7

A sample of ICPs with forward estimate remaining were reviewed. Forward estimate remained because ICPs had not received an actual read by revision 14, and a permanent estimate was not entered because it could not be validated.

GEOL

AV080 submissions were reviewed to identify the quantity of forward estimate remaining at revision 14:

Month	Forward estimate at revision 14
Nov-18	132,148.97
Dec-18	117,548.11
Jan-19	87,413.7
Grand Total	337,110.78

A sample of ICPs with forward estimate remaining were reviewed. Forward estimate remained because ICPs had not received an actual read by revision 14, and a permanent estimate was not entered because it could not be validated.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.8 With: Clause 4 Schedule 15.2 From: Nov-18 (r14) to Jan 198 (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 are processes in place to attain readings by revision 14 and enter permanent estimate readings. The potential impact is rated as low. There was 2,697,823 kWh of forward estimate over three months and the impact is dependent on the accuracy of these estimates. There are sound estimation processes, therefore I have recorded the audit risk rating as medium.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis will make any necessary adjustments in accordance of the permeance of estimated reads requirements.	01/06/2021	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Revise current process to check whether permanent estimates are meeting 12.8 requirements. Also will require a revision of the read attainment processes for sites unable to be read which feeds the permeance process.	01/06/2021	

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.

- GENE supplies three active ICPs with meter category 3 or higher.
  ICPs 0696299004PC30D and 0696299005PCF48 relate to the Haunui wind farm and now have HHR submission type and profile. The generation team read the meter and provide the data in a spreadsheet which is formatted into a HHR volumes submission using SQL scripts.
  ICP 0001130018PSF65 has a NHH submission type and profile because its category 2 meter was recertified as category 3 in 2017, but must be settled as NHH so that its compensation factor is correctly applied for billing and submission. Genesis requires the MEP to resolve the compensation factor or downgrade the meter to resolve this issue.
- 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 for all but two ICPs; both were timing differences corrected prior to the audit.
- GEOL does not supply any category 3 or higher ICPs.
- 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**.

GENH

- Analysis of the GENH list file found all active ICPs have submission type HHR and HHR profile. No profiles requiring a certified control device are used.
- GENH unmetered load is submitted against the GENE participant code as discussed in **section 12.2**.
- ICPs 0000000516NTE49, 0000000544NT6C4, and 0000370001TU645 were not included in submission information because no instruction had been received from the commercial team, resulting in under submission of 1,547 kWh up to 31/07/20.
- 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: 28-Jul-20	**GENE** ICP 0001130018PSF65 has meter category 3 and a NHH submission type and profile. **GENH** ICPs 0000000516NTE49, 0000000544NT6C4, and 0000370001TU645 were not included in submission information because no instruction had been received from the commercial team, resulting in under submission of 1,547 kWh up to 31/07/20. ICP 0000275289HB0B4 (1.5 kWh per day UML) was included in GENE's NHH submissions instead of being submitted with the GENH participant code. 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	Controls are rated as strong, NHH submission type has been applied to ensure that the meter compensation factor is correctly applied. 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 will continue to review and where possible improve the processes. The implementation of a new billing engine may provide the necessary infrastructure to initiate improvements.	Unknown	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Current processes were implemented to mitigate the risk. Where possible Genesis will make improvements on those processes.	Unknown	

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

Nine AV080 submissions for revisions 3 to 14 were reviewed for GEOL and GENE, 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 and GEOL

I reviewed a diverse sample of nine AV080 submissions each for GENE and GEOL, including a diverse sample of months and revisions. Forward and historic estimates are included and identified.

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 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 reconciliation manager portal 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 processes, GENE and GEOL tested a list of scenarios, and for some individual ICPs a manual calculation was conducted and compared to the system result. The table below shows that all scenarios tested were compliant.

Test	Scenario	Test Expectation	GENE	GEOL
A	ICP becomes Active part way through a month	Consumption is only calculated for the Active portion of the month.	Pass	Pass
B	ICP becomes Inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	Pass	Pass
C	ICP become Inactive then Active again within a month.	Consumption is only calculated for the Active portion of the month.	Pass	Pass
D	ICP switches in part way through a month on an estimated switch reading	Consumption is calculated to include the 1st day of responsibility.	Pass	Pass
E	ICP switches out part way through a month on an estimated switch reading	Consumption is calculated to include the last day of responsibility.	Pass	Pass
F	ICP switches out then back in within a month	Consumption is calculated for each day of responsibility.	Pass	Pass
G	Continuous ICP with a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Pass	Pass
H	Continuous ICP without a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Pass	Pass
I	Rollover Reads	Consumption is calculated correctly in the instance of meter rollovers.	Pass	Pass
J	Unmetered load for a full month	Consumption is calculating based on daily unmetered kWh for full month.	Pass	Pass
K	Unmetered load for a part month	Consumption is calculating based on daily unmetered kWh for active days of the month.	Pass	Pass
L	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
M	ICP with a customer read during the month	Customer reads are not used to calculate historic estimate.	Pass	Pass
N	ICP with a photo read during the month	Photo reads are not used to calculate historic estimate.	Pass	Pass
O	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	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) of 25 kWh per day per meter register applies where there are less than two actual readings available.
- 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 FSE or FDE is multiplied by the number of days to be estimated. Without any adjustments for seasonality, the forward estimated 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
Nov 2018	0	3	3	3	237
Dec 2018	0	1	2	3	237
Jan 2019	1	1	2	2	240
Feb 2019	0	1	1	1	241
Mar 2019	10	10	9	-	244
Apr 2019	0	2	3	-	240

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
May 2019	0	2	1	-	246
Jun 2019	0	1	3	-	245
Jul 2019	0	1	1	-	246
Aug 2019	0	1	1	-	244
Sep 2019	0	0	-	-	247
Oct 2019	0	0	-	-	250
Nov 2019	0	1	-	-	251
Dec 2019	0	1	-	-	251
Jan 2020	0	0	-	-	251

The total variation between revisions at an aggregate level is shown below:

Month	Revision 1	Revision 3	Revision 7	Revision 14
Nov 2018	3.79%	7.74%	7.79%	7.56%
Dec 2018	1.09%	5.28%	5.84%	6.35%
Jan 2019	-1.57%	-1.35%	-1.60%	-1.38%
Feb 2019	-0.05%	-1.19%	-1.52%	-1.37%
Mar 2019	2.79%	7.39%	8.60%	-
Apr 2019	-0.96%	-3.61%	-2.85%	-
May 2019	-0.93%	-4.42%	-3.51%	-
Jun 2019	-2.31%	-6.66%	-7.11%	-
Jul 2019	-0.65%	-2.56%	-2.97%	-
Aug 2019	-0.49%	-1.99%	-2.63%	-

Month	Revision 1	Revision 3	Revision 7	Revision 14
Sep 2019	0.33%	1.81%	-	-
Oct 2019	0.92%	3.95%	-	-
Nov 2019	1.71%	4.79%	-	-
Dec 2019	0.90%	2.97%	-	-
Jan 2020	0.39%	0.57%	-	-

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,
- backdated changes from NHH to HHR submission type after the initial submission had been completed, and
- misreads which were detected after the initial submission.

Non-compliance is recorded where the differences related to forward estimate being too high or low.

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
Nov 2018	0	0	1	1	121
Dec 2018	0	0	0	1	122
Jan 2019	0	0	0	0	121
Feb 2019	0	0	0	0	121
Mar 2019	2	0	0		121
Apr 2019	0	0	0		122
May 2019	0	0	0		123
Jun 2019	0	1	1		125
Jul 2019	0	0	0		124

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Aug 2019	0	0	0		125
Sep 2019	0	0			125
Oct 2019	0	2			113
Nov 2019	0	2			115
Dec 2019	0	0			116
Jan 2020	0	0			118

The total variation between revisions at an aggregate level is shown below:

Month	Revision 1	Revision 3	Revision 7	Revision 14
Nov 2018	3.59%	5.27%	5.74%	5.89%
Dec 2018	0.38%	2.62%	3.42%	3.58%
Jan 2019	-0.34%	0.42%	0.72%	0.64%
Feb 2019	-0.02%	0.33%	0.61%	0.57%
Mar 2019	-2.10%	1.48%	1.72%	
Apr 2019	-0.08%	-1.13%	-0.80%	
May 2019	-0.54%	-1.97%	-1.57%	
Jun 2019	-0.73%	-2.58%	-2.66%	
Jul 2019	-0.51%	-1.25%	-1.27%	
Aug 2019	-0.17%	-0.42%	-0.71%	
Sep 2019	0.17%	1.47%		
Oct 2019	1.69%	10.47%		
Nov 2019	3.43%	11.76%		

Month	Revision 1	Revision 3	Revision 7	Revision 14
Dec 2019	2.16%	7.76%		
Jan 2020	1.44%	3.12%		

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, and
- misreads which were detected after the initial submission.

Non-compliance is recorded where the differences related to forward estimate being too high or low.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.12 With: Clause 6 Schedule 15.3 From: GENE Mar-19 to Aug-19 and Nov-19 to Dec-19 GEOL Nov-18 to Dec-18, Jun-19, and Oct-19 to Nov-19	**GENE and GEOL** The accuracy threshold was not met for some months and revisions, because forward estimate was too high or too low. 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. The FDE process will ensure that forward estimate is consistent with the meter's historic consumption but does not take into account seasonality. The FSE process applies the same daily average to each meter register regardless of the number of meter registers installed or customer type and does not take into account seasonality. 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
Genesis will be revising the read attainment processes to actively seek read data which will ultimately lesson the variance percentages between revisions.	01/06/2021	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The calculation of volume using seasonal adjustments only caters for historical estimation calculation. The forward estimation process does not as per the code. The systems implemented by Genesis in 2006 were and still are compliant although they are restricted, and seasonality is not currently used to adjust the initial calculation of energy volumes. With the changes coming in Genesis there will be a revision on the current NHH settlement tool which may enable the implementation of such seasonal adjustments to occur in the initial settlement process. Genesis are reviewing the read attainment process(s) to improve initial revision accuracy		

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 GENE, GEOL and GENH were examined to identify all ICPs which had a profile change during the audit period.

A typical sample of 12 ICPs with profile changes for GENE, and 11 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 and GEOL

In the event of a profile change, Genesis uses a validated meter reading or a permanent estimate on the day that the change is effective.

I checked a sample of 12 GENE and 11 GEOL profile changes including upgrades, downgrades, and addition of generation profiles, 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** and NSP volumes are discussed in **section 12.6**.

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 and GEOL

In September 2019 Genesis implemented a change so that the HHR volumes and aggregates used the same rounding logic, to eliminate rounding differences. Following this change, HHR aggregates submissions were rounded to three decimal places. This caused non-compliance with clause 9 Schedule 15.3 which requires submission information to be rounded to no more than two decimal places.

Review of 18 HHR volumes submissions for GENE and eight HHR volumes submissions for GEOL confirmed that submission data is rounded to two decimal places.

Review of nine AV080 NHH volumes reports each for GENE and GEOL confirmed that submission data is rounded to two decimal places.

GENH

Review of 18 AV140 HHR aggregates and 18 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

Non-compliant

Non-compliance	Description
Audit Ref: 13.2 With: Clause 9 Schedule 15.3 From: Sep-19 To: Jul-20	**GENE and GEOL** HHR aggregates submissions are produced with three decimal places. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate. Most submissions are provided with the correct number of decimal places. The impact is low. The affected submissions are accepted by the reconciliation manager portal, and the HHR aggregates file is used to validate the HHR volumes rather than to produce the allocation results.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis will review current processes to round to 2 decimals rather the more accurate 3 decimal places.	01/10/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis has rewritten the extraction code for HHR Aggs.	01/10/2020	

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 a sample of nine AV080 reports each for GENE and GEOL to confirm whether 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 nine submissions and the tables below show that the thresholds were not met for some NSPs for some revisions. Checks of a sample of ICPs confirmed that the thresholds were not met because readings were unable to be obtained, and permanent estimates were not entered in their place. Read attainment is discussed further in **sections 6.8 - 6.10**. Estimated meter readings are not consistently being made permanent at the 14-month point as required by the Authority, because Genesis only enters permanent estimates where they can be validated against actual validated readings.

GENE

The table below shows the number of NSPs where the threshold was met.

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Nov-18	-	-	170	327
Dec-18	-	-	176	330
Jan-19	-	-	183	334
Jun-19	-	307	-	333
Jul-19	-	307	-	332
Aug-19	-	311	-	331
Oct-19	303	-	-	336
Nov-19	290	-	-	337
Dec-19	296			337

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
Nov-18	-	-	98.81%
Dec-18	-	-	98.78%
Jan-19	-	-	98.93%
Jun-19	-	98.12%	-
Jul-19	-	98.05%	-
Aug-19	-	98.17%	-
Oct-19	94.82%	-	-
Nov-19	93.78%	-	-

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Dec-19	93.82%	-	-

GEOL

The table below shows the number of NSPs where the threshold was met.

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Nov-18	-	-	104	207
Dec-18	-	-	109	208
Jan-19	-	-	137	208
Jun-19	-	209	-	210
Jul-19	-	207	-	209
Aug-19	-	208	-	210
Oct-19	182	-	-	196
Nov-19	184	-	-	198
Dec-19	187	-	-	199

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
Nov-18	-	-	99.72%
Dec-18	-	-	99.73%
Jan-19	-	-	99.80%
Jun-19	-	99.51%	-
Jul-19	-	99.51%	-

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Aug-19	-	99.50%	-
Oct-19	92.07%	-	-
Nov-19	92.79%	-	-
Dec-19	91.57%	-	-

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 13.3 With: Clause 10 of Schedule 15.3 From: Nov 18-Jan 19 (r14), Jun 19-Aug 19 (r7) and Oct 19-Dec 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
Genesis will be reviewing the control in order to increase meter read attainment, leading to greater accuracy levels in HE on the affected NSPs	continuous improvements	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis agrees that there is room for improvement in these controls and will be recommending a review be undertaken.	continuous improvements	

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 2019 audit:

- Genesis began development of an internal audit framework in October 2018, which was reviewed and refined during the audit period. 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. An internal audit of bridged meter processes has been completed, and has identified that process improvements are required to prevent bridging, promptly unbridge where bridging has occurred, and ensure that bridged consumption is consistently identified and corrected. The implementation of these improvements will be monitored through Genesis' internal audit processes. Further internal audits relevant to the scope of this audit are planned, including vacant consuming ICP processes.
- The reconciliation team has continued to help to identify and update missed corrections, and inconsistent information.

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

In general, we found that data accuracy issues were being identified at a system level, but users were not consistently investigating and resolving the identified issues. This appears to be due to work queues not being cleared due to workloads and other priorities, and jobs and cases being closed (sometimes in bulk) before they were resolved.

Some key areas of non-compliance were identified.

- **NHH read validation**
  NHH read validation processes are in place, but exceptions which impact on submission are not consistently investigated and resolved on a timely basis. I saw evidence that inactive consumption and zero consumption exceptions were directed to work queues and appearing on exception reports, but were not always actioned and followed up which led to non-compliance for submission accuracy.
  Meter condition events for manually read meters are not routinely reviewed, which led to no action being taken for meters the meter readers had indicated to be tampered with, damaged, faulty, or had missing or broken seals.

- **Distributed generation**
  GENE and GEOL are not consistently ensuring that generating ICPs have compliant metering installed or a notification of gifting in place. I found that the home generation team had not consistently followed up instances where the customer had declined or not approved a meter upgrade, or the first attempt to complete the meter replacement was turned down.

- **Read attainment**
  The read attainment processes do not consistently ensure that the best endeavours requirements are met. In some cases, focus is placed on obtaining a customer or photo read for billing rather than resolving the access issues preventing regular readings.
  GENE's automated process ensures compliance for longer periods of supply, but AMI and account managed ICPs are exempted. I frequently found that ICPs which did not meet the best endeavours requirements for read attainment were account managed.
  The AMI read attainment process for GEOL and GENE requires improvement to ensure that ICPs are not invalidly placed on AMI routes, and action is taken for long term unread ICPs.

GEOL's NHH read attainment process is managed through work queues generated from "no read reasons" returned by Wells. I found that action taken on these queue items was sometimes inconsistent, and did not always meet the best endeavours requirements.

- **Meter information maintenance**
  There are sometimes errors and delays when processing meter changes, which led to submission accuracy issues. These errors were often detected and corrected by the reconciliation team.

- **Registry information timeliness**
  Overall the timeliness of registry updates is the similar to that found last year. The new connection process has been partially automated during the audit period. This has largely worked and is expected to improve the timeliness of new connection updates. The automaton has caused some new issues which are causing some backdated new connections and some incorrect active dates to be populated for unmetered new connections. A material change audit should have been undertaken for this. The issues now identified would likely have been identified as part of this process.

- **Registry information accuracy**
  Some inaccurate information was recorded on the registry and in switching files. The accuracy of new connections, reconnections and disconnections was high overall. The level of errors found in the transfer and switch move CS files is relatively high for the sample checked indicating that the last read is not as accurate as possible causing consumption to be pushed to the gaining trader in some instances. Genesis are reviewing the labelling of reads which will at least indicate to the gaining trader that the read is an estimate and then the RR process can be used to address this. Unmetered loads are generally managed well, and Genesis continue to work with their customers to resolve these.

All 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:

- Genesis have their own internal audit process which continually reviews and implements processes.
- 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.

I recommend that the next audit is completed in 12 months.

PARTICIPANT RESPONSE

Genesis Energy has been engaged with making improvements in processes over the last year. With the implementation of internal auditing progressing Genesis Energy has a clearer view of how it is performing in areas contributing to the audit risk rating. Genesis has been hindered by the COVID-19 in progressing improvement initiatives during that period which has caused delays.

Genesis will be prioritising its initiatives over the next year, with the aim to continue to improve reporting controls to remove the minor instances of non-compliances that has affected multiple areas across the code, as highlighted in the audit outcome.

Genesis would like to discuss the materiality of change clause and what the EA deems to material, due to this being raised in this audit, as Genesis would need to understand the EA's interpretation of this clause, and what that may mean for future systems and/or especially process improvements.