ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT

VERITEK

For

GENESIS ENERGY LIMITED
NZBN: 9429037706609
NHH RECONCILIATION MATERIAL CHANGE

Prepared by: Tara Gannon

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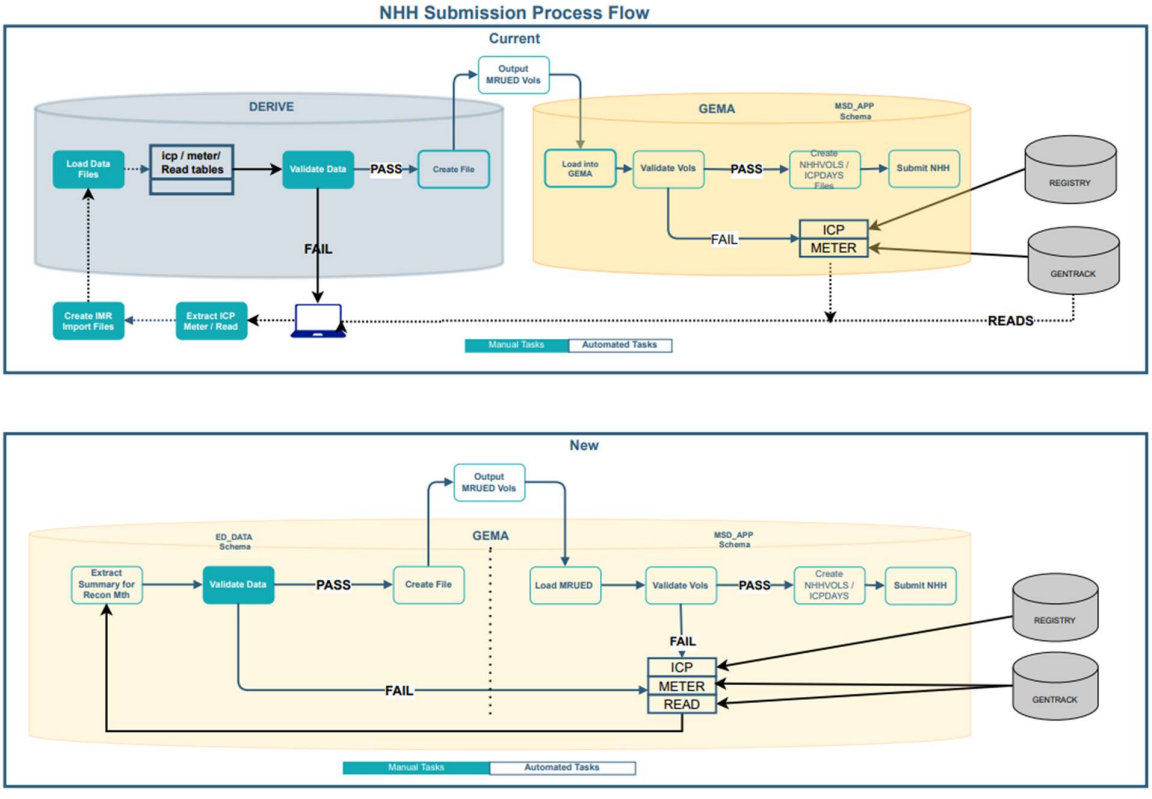
EXECUTIVE SUMMARY

Genesis Energy Limited (Genesis) intends to replace its Derive NHH reconciliation system with Derive+. Clause 8(1) of Schedule 15.1 requires that if a reconciliation participant intends to make a "material" change to any certified facilities, processes, or procedures then the changes must be subject to an audit prior to the change taking place. This audit was therefore performed at the request of Genesis so that it can be supplied to the Electricity Authority to satisfy the requirements of Clause 8(1). The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits V7.2.

Summary of changes

Derive uses read and meter information from Gentrack, aggregation factor information from the registry, and shape value information from the reconciliation manager to calculate NHH volumes and ICP days. The raw submission data is then transferred to MSD for aggregation and validation before being submitted to the reconciliation manager.

Derive+ will form part of Genesis' existing GEMA (Genesis Energy Market Analytics) database, which also includes MSD. Derive+ will replace Derive's portion of the NHH reconciliation process; other processes are not affected by the change.



A summary of how the implementation of Derive+ will affect the NHH reconciliation process is below.

Process area	Existing process (using Derive)	New process (using Derive+)
Gentrack read import and validation	Manual meter readings from Wells are imported into Gentrack, and AMI readings are loaded into GDW and then imported into Gentrack according to an automated schedule. The readings are validated in Gentrack.	No change.

Process area	Existing process (using Derive)	New process (using Derive+)
Transfer of Gentrack read and meter data to the reconciliation system	Validated readings and static meter register data are transferred to Derive overnight.	No change, except that data is transferred to Derive+.
Transfer of registry ICP data to the reconciliation system	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.	No change, except that data is transferred to Derive+.
Transfer of reconciliation manager seasonal adjusted shape values to the reconciliation system	Shape values are downloaded from the reconciliation manager portal after each set of allocation results are published, and uploaded into Derive. The upload process has controls which inform the user whether the upload has completed successfully.	No change, except that data is transferred to Derive+.
Calculate total estimate, historic estimate, forward estimate and ICP days	NHH volumes and ICP days reconciliation submissions are produced in Derive using the validated readings, shape values and ICP information available.	Calculation occurs in Derive+ using the same inputs.
Produce and validate submission files	The submission data is imported into GEMA's MSD_APP schema for review using the Consumption Validation Manager Tool (MVMT). As part of this process zero rows are inserted where an aggregation factor combination is present in a previous submission for the month but not the current revision.	No change, except that data is received from Derive+. Although Derive+ and MSD are both part of GEMA a file will be extracted from Derive+ and imported into MSD.

Conclusion

Compliance was assessed for all areas which could be impacted by the material change, by discussing processes and viewing documentation and testing.

Some non-compliances which impact on reconciliation found in previous audits are caused by system and process issues outside of the reconciliation system, such as rounding of readings in Gentrack, and process issues around identification and correction of stopped and bridged meters. Because the material change only affects Derive's processes some of these previous non-compliances are not expected to be resolved by the implementation of Derive+. Based on my analysis and the information provided by Genesis, I do not expect the material change to have a negative effect on compliance.

To improve future compliance, I have made recommendations to:

- develop a process to consistently enter actual or permanent estimate disconnection and reconnection reads, ensuring that there is no consumption between disconnection and reconnection to ensure that all volumes are reported against the correct days, and
- develop a process to ensure that the agreed switch reading is applied on the reconnection date where an ICP switches in with inactive status and is later reconnected.

The next audit is scheduled for 13 April 2023, and I recommend that this date is retained. The matters raised are shown in the tables below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Nil				
Future Risk Rating							

Future risk rating	0	1-3	4-14	16-40	41-55	55+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Description	Recommendation
Management of "active" status	3.8	Disconnection and reconnection reads	Develop a process to consistently enter actual or permanent estimate disconnection and reconnection reads, ensuring that there is no consumption between disconnection and reconnection to ensure that all volumes are reported against the correct days. Develop a process to ensure that the agreed switch reading is applied on the reconnection date where an ICP switches in with inactive status and is later reconnected.

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

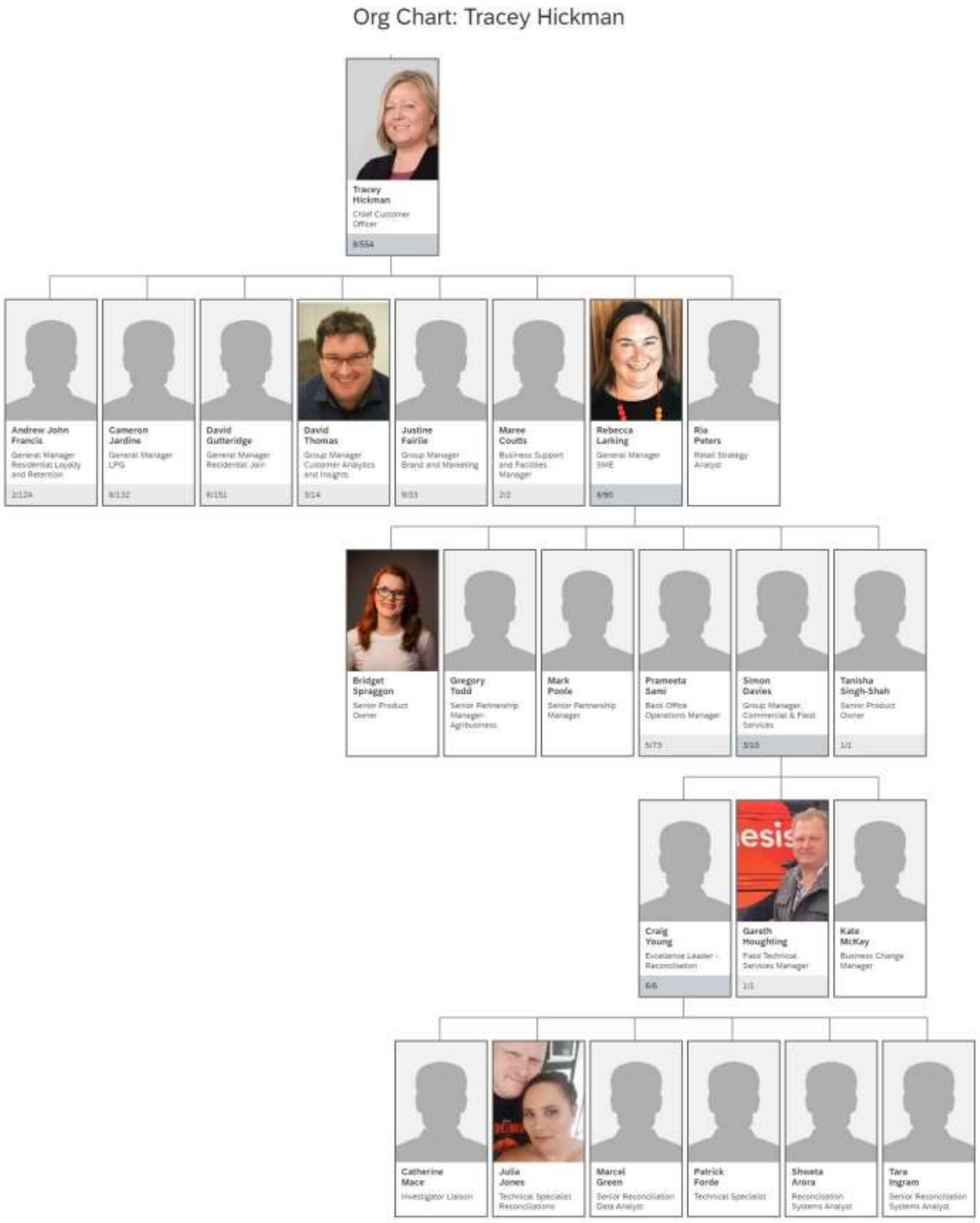
I checked the Authority's website to identify any relevant exemptions.

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

Auditor:

Tara Gannon

Veritek Limited

Electricity Authority Approved Auditor

Genesis Energy personnel assisting with this audit:

Name	Title
Tara Ingram	Senior Reconciliation Technical Analyst

1.4. Use of Agents (Clause 15.34)

Code reference

Clause 15.34

Code related audit information

A reconciliation participant who uses am 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

Agents will not change as a result of this material change.

Audit commentary

Agents will not change as a result of this material change, and are recorded in **section 1.9**.

1.5. Hardware and Software

Genesis

Genesis uses the following systems to meet its reconciliation participant obligations:

- GEMA (Genesis Energy Market Analytics) Database which contains MSD (Market Submissions database) used to prepare submission information and manage GENE HHR data. Derive+ will form part of GEMA.
- Gentrack, which is used for customer, ICP, and reading information management and billing.
- GDW (Genesis data warehouse) which is used to receive and store data, including HHR interval data.
- Stark which is used for interrogation of generation metering.

Access to systems is restricted using logins and passwords. Back-ups are in accordance with standard industry protocols. The systems are backed up every 15 minutes in production.

Agents

Agent hardware and software is discussed in their agent audit reports.

1.6. Breaches or Breach Allegations

Genesis had no breach allegations relevant to the scope of this audit recorded by the Electricity Authority.

1.7. ICP Data

GENE

All active ICPs are summarised by metering category in the table below.

Metering Category	2022	2021	2020	2019	2018	2017	2016
1	388,579	394,959	402,274	405,579	409,403	418,547	442,114
2	2,648	2,801	2,928	3027	2,918	2,703	2,865
3	0	1	1	1	1	1	0
4	0	0	0	0	0	0	0
5	2	2	2	2	2	2	2
9	626	819	719	822	927	1,172	1,132
Blank	2,222	2,335	2,238	2,178	2,318	2,387	1,161

Status	Number of ICPs 2022	Number of ICPs 2021	Number of ICPs 2020	Number of ICPs 2019	Number of ICPs 2018	Number of ICPs 2017	Number of ICPs 2016
Active (2,0)	394,077	45,249	408,162	411,609	415,569	424,722	447,274
Inactive - new connection in progress (1,12)	2,376	1,992	1,836	1,515	1,212	966	806
Inactive – vacant (1,4)	9,672	9,950	9,926	10,172	10,646	10,966	13,099
Inactive – AMI remote disconnection (1,7)	2,420	2,234	1,800	1,919	2,199	1,831	44
Inactive – de-energised due to meter disconnected (1,9)	28	31	24	26	36	33	0
Inactive – at pole fuse (1,8)	55	39	30	37	53	46	0
Inactive – de-energised at meter box fuse (1,10)	8	10	6	7	20	10	0
Inactive – at meter box switch (1,11)	5	11	7	6	10	8	0

Inactive – ready for decommissioning (1,6)	2,053	2,001	1,969	1,988	2,270	2,957	4,441
Inactive – reconciled elsewhere (1,5)	169	2	4	2	0	4	2
Decommissioned (3)	46,667	45,249	43,756	42,090	40,249	37,654	33,876

GEOL

All active ICPs are summarised by metering category in the table below.

Metering Category	2022	2021	2020	2019	2018	2017	2016
1	87,234	85,808	88,632	89,865	90,011	86,110	82,861
2	149	150	146	154	170	191	237
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
9	7	15	5	7	11	12	9
Blank	1	6	4	3	2	7	7

Status	Number of ICPs 2022	Number of ICPs 2021	Number of ICPs 2020	Number of ICPs 2019	Number of ICPs 2018	Number of ICPs 2017	Number of ICPs 2016
Active (2,0)	87,391	85,979	88,787	90,029	90,194	86,230	83,114
Inactive - new connection in progress (1,12)	104	108	91	80	69	88	48
Inactive – vacant (1,4)	772	774	816	964	850	834	737
Inactive – AMI remote disconnection (1,7)	388	275	268	411	61	64	34
Inactive – de-energised due to meter disconnected (1,9)	26	14	9	3	2	0	0
Inactive – at pole fuse (1,8)	32	24	14	7	3	3	1
Inactive – de-energised at meter box fuse (1,10)	11	7	8	1	0	1	0
Inactive – at meter box switch (1,11)	10	11	4	0	1	0	0

Inactive – ready for decommissioning (1,6)	106	93	89	180	189	206	218
Inactive – reconciled elsewhere (1,5)	0	0	0	0	0	0	0
Decommissioned (3)	3,046	2,861	2,650	2,340	2,115	1,868	1,605

GENH

All active ICPs are summarised by metering category in the table below.

Metering Category	2022	2021	2020	2019	2018	2017	2016
1	97	105	123	99	100	82	77
2	971	1050	1165	908	922	753	635
3	510	615	710	649	632	452	347
4	176	211	234	218	192	150	91
5	21	29	28	24	22	11	15
9	2	2	4	4	1	1	0
Blank	5	4	4	0	2	1	0

Status	Number of ICPs 2022	Number of ICPs 2021	Number of ICPs 2020	Number of ICPs 2019	Number of ICPs 2018	Number of ICPs 2017	Number of ICPs 2016
Active (2,0)	1,782	2,016	2,268	1,902	1,841	1,450	1,165
Inactive - new connection in progress (1,12)	13	9	11	8	11	13	11
Inactive – vacant (1,4)	0	0	0	0	0	2	3
Inactive – AMI remote disconnection (1,7)	0	0	0	0	0	0	0
Inactive – de-energised due to meter disconnected (1,9)	0	0	0	0	0	1	0
Inactive – at pole fuse (1,8)	0	0	0	0	0	1	0
Inactive – de-energised at meter box fuse (1,10)	0	0	0	0	0	0	0
Inactive – at meter box switch (1,11)	0	0	0	0	0	0	0

Inactive – ready for decommissioning (1,6)	4	1	1	1	0	1	1
Inactive – reconciled elsewhere (1,5)	2	2	2	2	2	2	0
Decommissioned (3)	458	444	433	419	406	0	365

1.8. Authorisation Received

A letter of authorisation was not required.

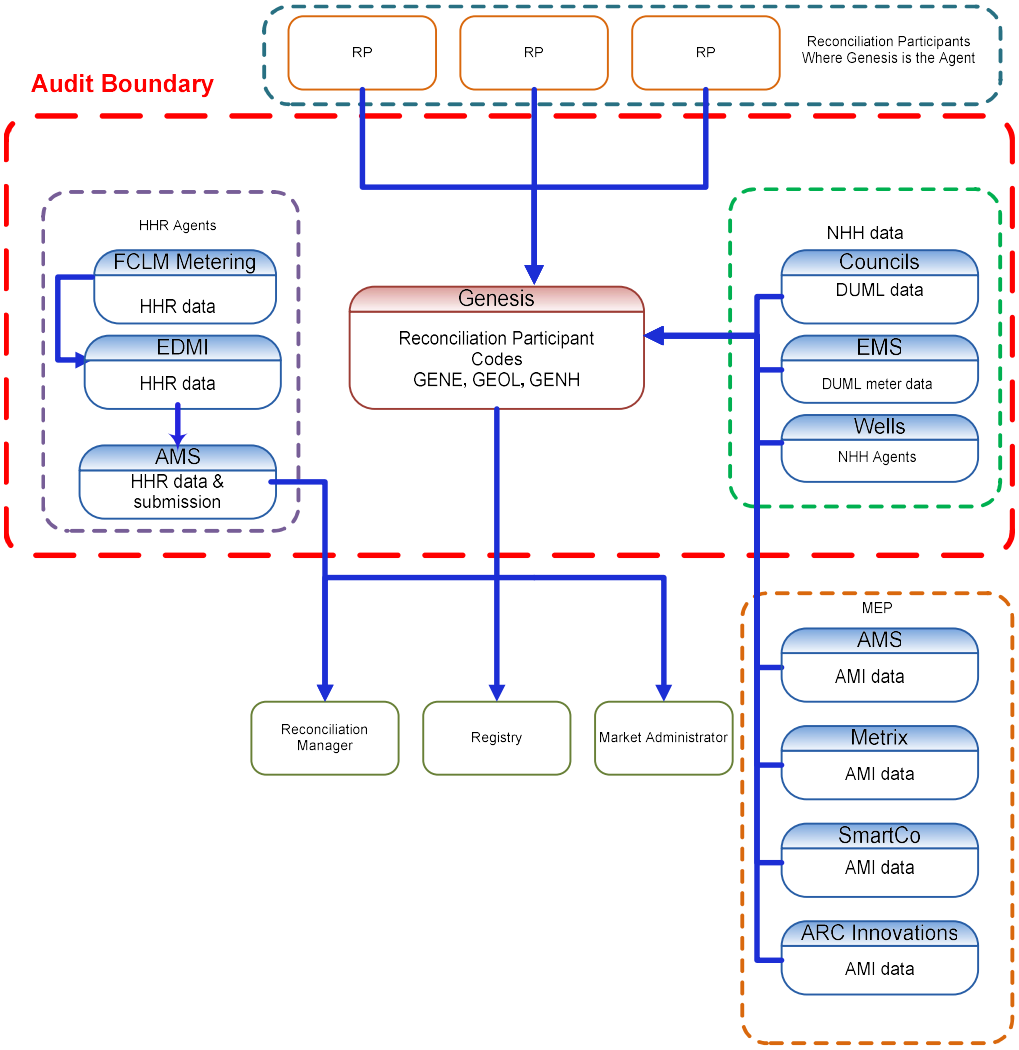
1.9. Scope of Audit

Genesis intends to replace its Derive NHH reconciliation system with Derive+. Derive is uses read and meter information from Gentrack, aggregation factor information from the registry, and shape value information from the reconciliation manager to calculate NHH volumes and ICP days. The raw submission data is then transferred to MSD for aggregation and validation before being submitted to the reconciliation manager.

Derive+ will form part of Genesis' existing GEMA (Genesis Energy Market Analytics) database, which also includes MSD. Derive+ will replace Derive's portion of the NHH reconciliation process; other processes are not affected by the change.

Clause 8(1) of Schedule 15.1 requires that if a reconciliation participant intends to make a "material" change to any certified facilities, processes, or procedures then the changes must be subject to an audit prior to the change taking place. This audit was therefore performed at the request of Genesis so that it can be supplied to the Electricity Authority to satisfy the requirements of Clause 8(1). The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits V7.2.

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
(c)(iii) - Creation and management of volume information	AMS – HHR Councils – DUML databases EMS - DUML data	

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing 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' previous was conducted in April 2022 by Steve Woods, Bernie Cross, and Rebecca Elliot of Veritek Limited.

Some of the non-compliances impacting reconciliation found in the previous audit are caused by system and process issues outside of the Derive reconciliation system, such as rounding of readings in Gentrack, and process issues around identification and correction of stopped and bridged meters. Because the material change only affects Derive's processes some of these previous non-compliances are not expected to be resolved by the implementation of Derive+. Based on my analysis and the information provided by Genesis, I do not expect the material change to have a negative effect on compliance overall.

The summary tables below show the statuses of the non-compliances, recommendations and issues raised in the previous audit relevant to the scope of this audit. Further comment is made in the relevant sections of this report.

Subject	Section	Clause	Non-compliance	Status
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.	Still existing. Rounding occurs within Gentrack and will not be affected by the material change.
NHH metering information data validation	9.5	16 Schedule 15.2	**GENE** and **GEOL** Not all vacant consumption is being captured. Not all inactive consumption is being captured.	Still existing. Vacant and inactive consumption will be reported in Derive+ but validation processes are not affected by the material change.

Subject	Section	Clause	Non-compliance	Status
Creation of submission information	12.2	15.4	**GENE** and **GEOL** Two ICPs with distributed generation where no generation volumes were submitted for ICPs 0000011546HR322 and 0000029648HRF96 whilst GENE was the trader. Two GENE ICPs identified in the 2020 audit which are believed to be generating which still do not have compliant metering installed or notification of gifting provided. Some inactive consumption was missing from submissions because corrections had not been processed as soon as practicable. Some defective meter corrections not conducted. Consumption during bridged periods was missing from submissions because corrections were not processed as soon as practicable. Rounding of UML load at ICP level in Derive to zero decimal places.	**Distributed generation** Generation reporting will be correct where information transferred from Gentrack is correct. Gentrack validation processes are not affected by the material change. **Inactive consumption** Inactive consumption will be reported in Derive+ but validation processes are not affected by the material change. **Defective and bridged meters** Consumption during defective and bridged periods will be reported in Derive + as long as a correction has been processed in Gentrack. Gentrack's validation and correction processes are not affected by the material change. **Unmetered load** Cleared in Derive+.
Accuracy of submission information	12.7	15.12	**GENE** and **GEOL** Some submission data was inaccurate and was not corrected at the next available opportunity.	Inaccurate submission data will be corrected with the next revision provided that a correction is processed on the registry or in Gentrack as required. Future compliance is not expected to be affected by the material change.
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.	Permanent estimates must be entered into Gentrack to be included in Derive+ calculations. Future compliance is not expected to be affected by the material change.

Subject	Section	Clause	Non-compliance	Status
Forward estimate process	12.11	4 Schedule 15.3	**GENE** and **GEOL** UML volumes have been rounded to zero decimal places prior to aggregation into AV-080 file. UML volumes reported as Forward Estimate (FE) rather than Historic Estimate (HE) Customer and photo reads are not validated against two previous actual reads but used in HE calculation. PV1 & EG1 daily seasonal shapes not used for HE calculation.	**Unmetered volumes** Unmetered volumes will not be rounded and will be correctly classified as historic estimate. **Customer and photo readings** Customer and photo readings will not be recorded as validated readings. **PV1 and EG1 profiles** The reconciliation manager's published seasonal adjusted shape values (GR030) are used to calculate historic estimate for all profiles.
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.	The Derive+ forward estimate process is reasonable. Future compliance is not expected to be affected by the material change.
Compulsory meter reading after profile change	12.13	7 Schedule 15.3	**GENE** and **GEOL** Validated meter reading or a permanent estimate not always applied where a profile change occurs.	Profile changes will be made in Gentrack, and the process will not change. Future compliance is not expected to be affected by the material change.
Historical estimate reporting to RM	13.3	10 Schedule 15.3	**GENE** and **GEOL** Historic estimate thresholds were not met for some revisions.	Read attainment will continue to be managed in Gentrack. Future compliance is not expected to be affected by the material change.

Subject	Section	Recommendation	Status
NHH metering information data validation	9.5	Review the low and high negative consumption validation process to help to promptly identify and resolve home generation issues.	No change because there is no change to the Gentrack validation process.

Subject	Section	Recommendation	Status
Improve Gentrack consumption pattern validation by implementing meter register level consumption pattern checks	9.5	Implement meter register level consumption validation that will identify a sudden / unexpected change in consumption pattern for each meter register to better support processes to identify phase failure, stopped / faulty meters or the recent installation of distributed generation.	No change because there is no change to the Gentrack validation process. Derive+'s validation process will identify changes in consumption at total ICP level, and then mark all meter registers connected to the ICP for review.
Develop a central register of all potential bridged / stopped meters	9.5	By implementing a central register across all participant codes will ensure all potential exceptions are fully investigated, resolved, and where required consumption corrections made. This central register will also enable root cause analysis to be conducted in order to support initiatives to reduce the incidence of bridged/stopped meters.	No change because there is no change to defect identification or correction process
Improve disconnection read attainment	9.5	Work with disconnection service providers to improve the attainment of disconnection reads to ensure all active period consumption is captured and submitted.	No change because read attainment processes are not affected by the material change.
Include disconnection reads in the inactive consumption report	9.5	Extend the current inactive consumption report to include disconnection reads to capture all instances of non-zero consumption being detected while the ICP has an inactive status on the registry.	No change because read attainment processes are not affected by the material change.

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

I considered whether the changes were likely to result in incorrect or misleading information. I viewed documentation and test results.

Audit commentary

Registry and static data accuracy

There will be no changes to the process to manage registry information or validate information against the registry. Registry ICP information and Gentrack meter information will be transferred to Derive+ overnight, as it was for Derive. I reviewed testing to confirm that ICP, meter and register values applied by Derive+ were consistent with the registry and Gentrack.

HHR read and volume data accuracy

There will be no changes to HHR read, volume or submission processes.

NHH read and volume data accuracy

NHH and AMI readings will continue to be imported into Gentrack and validated before being transferred to Derive+ overnight. Reads are selected for import based on the update date/time, which ensures that changed reads as well as new reads are transferred.

Corrections will continue to be processed in Gentrack, and corrected readings will be transferred to Derive+ overnight.

Read validation in Gentrack will not be affected by the material change. Reads will be validated on import into Derive+, by comparing the normalised consumption calculated by Derive+ to a seasonally adjusted upper and lower limit calculated for each ICP. If there is insufficient ICP history to enable the comparison, data is compared to an average value calculated across all ICPs.

Raw submission data will continue to be imported into MSD for aggregation and validation.

I reviewed testing to confirm that:

- readings applied by Derive+ were consistent with Gentrack and registry switch event readings,
- historic estimate, total estimate, forward estimate and ICP days were calculated correctly for a sample of ICPs,
- ICP days and NHH volumes submissions were correctly aggregated and consistent with ICP level information from Derive+,

- ICP level ICP days information for Derive+ was consistent with expected active days based on the registry and NHH volumes calculations for a sample of ICPs, and
- ICP level NHH volumes information from Derive+ was consistent with expected volumes based on the registry aggregation factors, Gentrack reading information, registry switch event read information (where applicable), registry unmetered load information (where applicable), and the reconciliation manager's most recent seasonal adjusted shape values.

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

I considered whether the changes were likely to result in incorrect or late information. I viewed documentation and test results.

Audit commentary

The Derive+ process is expected to make submission generation more efficient and is not expected to have a negative impact on compliance. File timeliness depends on people and processes and will be checked during the first audit after go-live.

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 considered whether the changes were likely to support the security and integrity of data transmission. I viewed documentation and test results.

Audit commentary

NHH and AMI readings will continue to be imported into Gentrack and validated before being transferred to Derive+ overnight. Reads are selected for import based on the update date/time, which ensures that changed reads as well as new reads are transferred.

I reviewed testing which confirmed that readings applied by Derive+ were consistent with Gentrack and registry switch event readings.

Future compliance is not expected to be affected by the material change.

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

I viewed audit trails to determine whether they were compliant.

Audit commentary

There will be no changes to existing audit trails. Data will not be edited within Derive+, changes will made in other systems and re-imported. Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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 trader 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 trader is recorded in the registry as the trader responsible for the ICP or has an arrangement with the customer and initiates a switch within 2 business days of electrical connection*
    - *if the ICP has metered load, 1 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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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 trader is recorded in the registry as the trader responsible for the ICP or has an arrangement with the customer and initiates a switch within 2 business days of electrical connection*
    - *if the ICP has metered load, 1 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 electrical connection.*

Audit observation

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

2.14. Connecting ICPs then withdrawing switch (Clause 10.33A(5))

Code reference

Clause 10.33B

Code related audit information

If a trader connects an ICP it is in the process of switching and the switch does not proceed or is withdrawn the trader must:

- *restore the disconnection, including removing any bypass and disconnecting using the same method the losing trader used*
- *reimburse the losing trader for any direct costs incurred.*

Audit observation

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

2.15. Electrical disconnection of ICPs (Clause 10.33B)

Code reference

Clause 10.33B

Code related audit information

Unless the trader is recorded in the registry or is meeting its obligation under 10.33A(5) it must not disconnect or electrically disconnect the ICP, or authorise the metering equipment provider to disconnect or electrically disconnect the ICP.

Audit observation

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

2.16. Removal or breakage of seals (Clause 48(1C), 48 (1D), 48 (1E), 48 (1F) of Schedule 10.7)

Code reference

Clause 48(1C), 48 (1D), 48 (1E), 48 (1F) of Schedule 10.7

Code related audit information

A trader can remove or break a seal without authorisation from the MEP to:

- reset a load control switch, bridge or unbridge a load control switch – if the load control switch does not control a tome block meter channel
- *electrically connect load or generation, of the load or generation has been disconnected at the meter*
- *electrically disconnect load or generation, if the trader has exhausted all other appropriate methods of electrical disconnection*
- *bridge the meter*

A trader that removes or breaks a seal in this way must:

- *ensure personal are qualified to remove the seal and perform the permitted work and they replace the seal in accordance with the Code*
- *replace the seal with its own seal*
- *have a process for tracing the new seal to the personnel*
- *update the registry (if the profile code has changed)*
- *notify the metering equipment provider*

Audit observation

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

2.17. Meter bridging (Clause 10.33C and 2A of Schedule 15.2

Code reference

Clause 10.33C and 2A of Schedule 15.2

Code related audit information

A trader, or a distributor or MEP which has been authorised by the trader, may only electrically connect an ICP in a way that bypasses a meter that is in place ("bridging") if, despite best endeavours:

- *the MEP is unable to remotely electrically connect the ICP,*
- *the MEP cannot repair a fault with the meter due to safety concerns*
- *the consumer will likely be without electricity for a period which would cause significant disadvantage to the consumer.*

If the trader bridges a meter, the trader must:

- *determine the quantity of electricity conveyed through the ICP for the period of time the meter was bridged*
- *submit that estimated quantity of electricity to the reconciliation manager*
- *within one business day of being advised that the meter is bridged, notify the MEP that they are required to reinstate the meter so that all electricity flows through a certified metering installation.*

The trader must determine meter readings as follows:

- *by substituting data from an installed check meter or data storage device*
- *if a check meter or data storage device is not installed, by using half hour data from another period where the trader considers the pattern of consumption is materially similar to the period during which the meter was bridged*
- *if half hour data is not available, a non half hour estimated reading that the trader considers is the best estimate during the bridging period must be used.*

Audit observation

This process is not affected by the material change.

Audit commentary

Processes for the identification and correction of bridged meters will not change. Corrections for bridged meters will continue to be processed in Gentrack, and corrected readings will be transferred to Derive+ overnight. Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

2.18. Use of ICP identifiers on invoices (Clause 11.30)

Code reference

Clause 11.30

Code related audit information

Each trader must ensure the relevant ICP identifier is printed on every invoice or document relating to the sale of electricity.

Audit observation

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

2.19. Provision of information on dispute resolution scheme (Clause 11.30A)

Code reference

Clause 11.30A

Code related audit information

A retailer must provide clear and prominent information about Utilities Disputes:

- *on their website*
- *when responding to queries from consumers*
- *in directed outbound communications to consumers about electricity services and bills.*

If there are a series of related communications between the retailer and consumer, the retailer needs to provide this information in at least one communication in that series.

Audit observation

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

2.20. Provision of information on electricity plan comparison site (Clause 11.30B)

Code reference

Clause 11.30B

Code related audit information

A retailer that trades at an ICP recorded on the registry must provide clear and prominent information about Powerswitch:

- *on their website*
- *in outbound communications to residential consumers about price and service changes*
- *to residential consumers on an annual basis*
- *in directed outbound communications about the consumer's bill.*

If there are a series of related communications between the retailer and consumer, the retailer needs to provide this information in at least one communication in that series.

Audit observation

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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 1 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

This process is not affected by the material change.

Audit commentary

Processes to manage and monitor ICPs at "active" status will not be affected by the material change.

When calculating historic estimate, Derive+ excludes the shape values for any inactive days from both the numerator and divisor of the historic estimate calculation, forcing all consumption into the active days of the read-to-read period. If an entire read-to-read period is inactive, no consumption will be reported. Actual disconnection and reconnection reads are entered into Gentrack where they are available. I recommend that Genesis consistently enters actual or permanent estimate disconnection and reconnection reads into Gentrack, to ensure that consumption is allocated against the correct days.

Description	Recommendation	Audited party comment	Remedial action
Disconnection and reconnection reads	Develop a process to consistently enter actual or permanent estimate disconnection and reconnection reads, ensuring that there is no consumption between disconnection and reconnection to ensure that all volumes are reported against the correct days. Develop a process to ensure that the agreed switch reading is applied on the reconnection date where an ICP switches in with inactive status and is later reconnected.	We are currently liaising with our suppliers to look for ways of improving the read attainment when ICPs are disconnected / reconnected.	Identified

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Processes to manage and monitor ICPs at inactive statuses will not be affected by the material change.

When calculating historic estimate, Derive+ excludes the shape values for any inactive days from both the numerator and divisor of the historic estimate calculation, forcing all consumption into the active days of the read-to-read period. If an entire read-to-read period is inactive, no consumption will be reported. I have recommended in **section 3.8** that disconnection and reconnection reads should be consistently entered.

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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 1 or more profile codes associated with that ICP.

Audit observation

The material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

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 3 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 5 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

The material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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 5 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

The material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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 4 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 2 validated meter readings.

- *the losing trader can choose not to accept the reading, however must advise the gaining trader no later than 5 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 material change will not affect NHH processes, and I checked how Genesis will ensure that the correct agreed switch reading will be applied. I viewed documentation and test results.

Audit commentary

NHH and AMI readings will continue to be imported into Gentrack and validated before being transferred to Derive+ overnight. Reads are selected for import based on the update date/time, which ensures that changed reads as well as new reads are transferred.

I reviewed testing to confirm that readings applied by Derive+ were consistent with Gentrack and registry switch event readings.

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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 5 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 material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

The material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

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 material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

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 5 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

The material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

The material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

The material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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 4 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 2 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 5 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 material change will not affect NHH processes, and I checked how Genesis will ensure that the correct agreed switch reading will be applied. I viewed documentation and test results.

Audit commentary

NHH and AMI readings will continue to be imported into Gentrack and validated before being transferred to Derive+ overnight. Reads are selected for import based on the update date/time, which ensures that changed reads as well as new reads are transferred.

I reviewed testing to confirm that readings applied by Derive+ were consistent with Gentrack and registry switch event readings.

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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 a non-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 3 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

The material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

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 3 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

The material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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 3 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 5 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 material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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 2 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

The material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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 material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

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 material change will not affect switching processes.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

Code reference

Clause 10.14 (2)(b)

Code related audit information

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

Audit observation

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Genesis does not use any profiles requiring certification of control devices and future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

Code reference

Clause 2 Schedule 15.2

Code related audit information

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

2(2) - The reconciliation participant must collect raw meter data used to determine volume information from the services interface or the metering installation or from the MEP.

2(3) - The reconciliation participant must ensure the interrogation cycle is such that is does not exceed the maximum interrogation cycle in the registry .

2(4) - The reconciliation participant must interrogate the meter at least once every maximum interrogation cycle.

2(5) - When electronically interrogating the meter the participant must:

- *a) ensure the system is to within +/- 5 seconds of NZST or NZDST*
- *b) compare the meter time to the system time*
- *c) determine the time error of the metering installation*
- *d) if the error is less than the maximum permitted error, correct the meter's clock*
- *e) if the time error is greater than the maximum permitted error then:*
  - *i) correct the metering installation's clock*
  - *ii) compare the metering installation's time with the system time*
  - *iii) correct any affected raw meter data.*
- *f) download the event log.*

2(6) – The interrogation systems must record:

- *the time*
- *the date*
- *the extent of any change made to the meter clock.*

Audit observation

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

Code reference

Clauses 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 material change will not affect processes to collect and review readings and meter condition information. I checked processes for customer readings.

Audit commentary

Processes to collect and review readings and meter condition information are not affected by the material change.

I reviewed testing which confirmed that customer and photo readings will not be used to calculate historic estimate.

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

I considered whether the changes were likely to result in incorrect application of readings, including where upgrades and downgrades occur.

Audit commentary

The way in which readings are recorded and supplied, and the meter upgrade and downgrade processes will not be affected by the material change.

Derive+ will ensure that all readings are correctly classified as end of day readings except where it is:

- a switch in reading, or
- a re-start reading for an existing meter following a correction to capture consumption not measured by the meter due to bridging, a fault, or a multiplier correction; in these instances, consumption between the end of day reading and the start of day reading the following day is not calculated - the practice is compliant and ensures that consumption is reported correctly.

Review of testing information confirmed the process, and future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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 4 months, for which consumption information is required to be reported into the reconciliation process. A validated meter reading is obtained at least once every 4 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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

The NHH correction process was reviewed, including viewing documentation and test results.

Audit commentary

Corrections will continue to be processed in Gentrack, and corrected readings will be transferred to Derive+ overnight. I reviewed testing to confirm that readings applied by Derive+ were consistent with Gentrack, including for ICPs which had undergone corrections.

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

I viewed audit trails and correction processes to determine whether they were compliant.

Audit commentary

There will be no changes to existing audit trails. Data will not be edited within Derive+, changes will made in other systems and re-imported. Future compliance is not expected to be affected by the material change.

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

I reviewed read identification processes.

Audit commentary

Reads will continue to be identified as actual, estimates and permanent estimates. Test results were reviewed to confirm this, and future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

Test results were reviewed to confirm that volumes are based on readings, and future compliance is not expected to be affected by the material change.

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

I checked whether meter data will be rounded or truncated before the point of submission for NHH data. I viewed documentation and test results.

HHR and generation processes are not affected by the material change.

Audit commentary

As recorded in the previous audit, AMI data is truncated on import into Gentrack. This truncated data will be transferred to Derive+. Gentrack's rounding processes will not change, and compliance is recorded because future compliance is not expected to be affected by the material change.

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

Audit outcome

Compliant

9.4. Half hour estimates (Clause 15 Schedule 15.2)

Code reference

Clause 15 Schedule 15.2

Code related audit information

If a reconciliation participant is unable to interrogate an electronically interrogated metering installation before the deadline for providing submission information, the submission to the reconciliation manager must be the reconciliation participant's best estimate of the quantity of electricity that was purchased or sold in each trading period during any applicable consumption period for that metering installation.

The reconciliation participant must use reasonable endeavours to ensure that estimated submission information is within the percentage specified by the Authority.

Audit observation

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

The existing meter reader read validation processes, Gentrack NHH read validation processes and MSD submission validation processes will not be affected by the material change. Derive+ read import validations will replace Derive's validation process.

Audit commentary

Non-AMI reads will continue to be validated by Wells as part of their data collection process.

NHH and AMI readings will continue to be imported into Gentrack and validated before being transferred to Derive+ overnight. Reads are selected for import based on the update date/time, which ensures that changed and corrected reads as well as new reads are transferred.

The previous audit recorded one non-compliance and five recommendations relating to Gentrack's read validation processes, which are discussed below. Where the non-compliances are not expected to be resolved with the implementation of Derive+ I found the issue was within systems or processes which are not affected by the material change.

Subject	Non-compliance	Status
NHH metering information data validation	Not all vacant consumption is being captured. Not all inactive consumption is being captured.	When calculating historic estimate, Derive+ excludes the shape values for any inactive days from both the numerator and divisor of the historic estimate calculation, forcing all consumption into the active days of the read-to-read period. If an entire read-to-read period is inactive, no consumption will be reported. I recommend in **section 3.8** that Genesis enters actual or permanent estimate disconnection and reconnection reads into Gentrack, to ensure that consumption is allocated against the correct days.

Subject	Recommendation	Status
NHH metering information data validation	Review the low and high negative consumption validation process to help to promptly identify and resolve home generation issues.	No change because there is no change to the Gentrack validation process.
Improve Gentrack consumption pattern validation by implementing meter register level consumption pattern checks	Implement meter register level consumption validation that will identify a sudden / unexpected change in consumption pattern for each meter register to better support processes to identify phase failure, stopped / faulty meters or the recent installation of distributed generation.	No change because there is no change to the Gentrack validation process. Derive+'s validation process will identify changes in consumption at total ICP level, and then flag all meter registers connected to the ICP for review.
Develop a central register of all potential bridged / stopped meters	By implementing a central register across all participant codes will ensure all potential exceptions are fully investigated, resolved, and where required consumption corrections made. This central register will also enable root cause analysis to be conducted in order to support initiatives to reduce the incidence of bridged/stopped meters.	No change because there is no change to defect identification or correction process.
Improve disconnection read attainment	Work with disconnection service providers to improve the attainment of disconnection reads to ensure all active period consumption is captured and submitted.	No change because read attainment processes are not affected by the material change.
Include disconnection reads in the inactive consumption report	Extend the current inactive consumption report to include disconnection reads to capture all instances of non-zero consumption being detected while the ICP has an inactive status on the registry.	No change because read attainment processes are not affected by the material change.

Reads will be validated on import into Derive+, by comparing the normalised consumption calculated by Derive+ to a seasonally adjusted upper and lower limit calculated for each ICP. If there is insufficient ICP history to enable the comparison, data is compared to an average value calculated across all ICPs.

Raw submission data will continue to be imported into MSD for aggregation and validation.

Future compliance is not expected to be affected by the material change.

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 0 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 the meter and data storage device event log for any event that could have affected the integrity of metering data*
>
> *17(4)(g) – a review of the relevant metering data where there is an event that could have affected the integrity of the metering data*

If there is an event that could affect the integrity of the metering data (including events reported by MEPs, but excluding where the MEP is responsible for investigating and remediating the event) the reconciliation must investigate and remediate any events.

If the event may affect the integrity or operation of the metering installation the reconciliation participant must notify the metering equipment provider.

Audit observation

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Compliance was recorded in Genesis' April 2022 reconciliation participant audit.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Compliance was recorded in Genesis' April 2022 reconciliation participant audit.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Genesis only uses the RPS, EG1 and PV1 profiles for NHH ICPs, and trading notifications are not required. Future compliance is not expected to be affected by the material change.

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

Processes to produce ICP days submissions were reviewed, including viewing documentation and test results.

Audit commentary

There will be no changes to the process to manage registry information or validate information against the registry. Registry ICP information and Gentrack meter information will be transferred to Derive+ overnight, as it was for Derive. This information is used to determine aggregation factors and active days for both the AV110 ICP days and AV080 NHH values submissions.

I reviewed testing to confirm that:

- ICP, meter and register values applied by Derive+ were consistent with the registry and Gentrack.
- ICP days and NHH volumes submissions were correctly aggregated and consistent with ICP level information from Derive, and
- ICP level ICP days information for Derive+ was consistent with expected active days based on the registry and NHH volumes calculations for a sample of ICPs.

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

11.3. Electricity supplied information provision to the reconciliation manager (Clause 15.7)

Code reference

Clause 15.7

Code related audit information

A retailer must deliver to the reconciliation manager its total monthly quantity of electricity supplied for each NSP, aggregated by invoice month, for which it has provided submission information to the reconciliation manager, including revised submission information for that period as non- loss adjusted values in respect of:

> *15.7(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*
>
> *15.7(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

Audit observation

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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 create NHH submissions were reviewed, including viewing documentation and test results. HHR and generation submission processes will not be affected by the material change.

Audit commentary

Timeliness of submission information

Derive+ is expected to make submission generation more efficient and is not expected to have a negative impact on compliance. File timeliness depends on people and processes and will be checked during the first audit after go-live.

NHH submission creation

Derive+ will use read and meter information from Gentrack, aggregation factor information from the registry, and shape value information from the reconciliation manager to calculate NHH volumes and ICP days. The raw submission data is then transferred to MSD for aggregation and validation before being submitted to the reconciliation manager. MSD processes will not change and are compliant.

A sample of test results for NHH ICPs were checked to make sure they are handled correctly, including vacant, disconnected, unmetered, and distributed generation ICPs and compliance is confirmed.

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

12.3. Allocation of submission information (Clause 15.5)

Code reference

Clause 15.5

Code related audit information

In preparing and submitting submission information, the reconciliation participant must allocate volume information for each ICP to the NSP indicated by the data held in the registry for the relevant consumption period at the time the reconciliation participant assembles the submission information. Volume information must be derived in accordance with Schedule 15.2.

However, if, in relation to a point of connection at which the reconciliation participant trades electricity, a notification given by an embedded generator under clause 15.13 for an embedded generating station is in force, the reconciliation participant is not required to comply with the above in relation to electricity generated by the embedded generating station.

Audit observation

Processes to create NHH submissions were reviewed, including viewing documentation and test results. HHR and generation submission processes will not be affected by the material change.

Audit commentary

Derive+ will use read and meter information from Gentrack, aggregation factor information from the registry, and shape value information from the reconciliation manager to calculate NHH volumes and ICP days. The raw submission data is then transferred to MSD for aggregation and validation (including insertion of zero lines where required) before being submitted to the reconciliation manager. MSD processes will not change and are compliant.

I reviewed testing to confirm that:

- readings applied by Derive+ were consistent with Gentrack and registry switch event readings,
- historic estimate, total estimate, forward estimate and ICP days were calculated correctly for a sample of ICPs,
- NHH volumes submissions were correctly aggregated and consistent with ICP level information from Derive+, and
- ICP level NHH volumes information from Derive+ was consistent with expected volumes based on the registry aggregation factors, Gentrack reading information, registry switch event read information (where applicable), registry unmetered load information (where applicable), and the reconciliation manager's most recent seasonal adjusted shape values.

Future compliance is not expected to be affected by the material change.

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

Genesis is not a grid owner.

Audit commentary

Genesis is not a grid owner, and 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

Genesis does not own any local or embedded networks.

Audit commentary

Genesis does not own any local or embedded networks, and 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

This process is not affected by the material change.

Audit commentary

Future compliance is not expected to be affected by the material change.

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

Processes to create NHH submissions were reviewed, including viewing documentation and test results. HHR and generation submission processes will not be affected by the material change.

Audit commentary

Timeliness of submission information

Derive+ is expected to make submission generation more efficient and is not expected to have a negative impact on compliance. File timeliness depends on people and processes and will be checked during the first audit after go-live.

NHH submission creation

Derive+ will use read and meter information from Gentrack, aggregation factor information from the registry, and shape value information from the reconciliation manager to calculate NHH volumes and ICP days. The raw submission data is then transferred to MSD for aggregation and validation before being submitted to the reconciliation manager. MSD processes will not change and are compliant.

A sample of test results for NHH ICPs were checked to make sure they are handled correctly, including vacant, disconnected, unmetered, and distributed generation ICPs and compliance is confirmed.

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

Processes to ensure that estimates are made permanent before revision 14 were reviewed, including viewing documentation and test results.

Audit commentary

Previous audits have found that permanent estimate readings are entered into Gentrack where actual validated readings cannot be obtained in time for revision 14, and the permanent estimate reading can be validated. I confirmed by reviewing testing that any permanent estimate readings recorded in Gentrack are transferred to Derive+ and used to calculate historic estimate.

Compliance is recorded because future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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)(ac) to 2(1)(ae)):*
  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 use volume information (clause 2(3))*
- *to calculate volume information the reconciliation participant must apply raw meter data :*
  a) *for each ICP, the compensation factor that is recorded in the registry (clause 2(4)(a))*
  b) *for each NSP the compensation factor that is recorded in the metering installations most recent certification report. (clause 2(4)(b))*

Audit observation

Aggregation and content of the reconciliation reports were reviewed, including viewing documentation and test results.

Audit commentary

Aggregation factors will be determined from registry list information. Compliance with this clause was assessed:

- all ICPs with metering category 3 or above will continue to be submitted as HHR and are unaffected by the material change,
- a sample of unmetered load test submissions were checked and found to be correct,
- no profiles requiring a certified control device are used,
- no loss or compensation arrangements are required, and
- aggregation of the AV080 is compliant, and the AV090 and AV140 submissions are not affected by the material change.

Audit outcome

Compliant

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

Labelling of forward and historic estimates in the AV080 reports were reviewed, including viewing documentation and test results.

Audit commentary

Review of test submission information confirmed that forward and historical estimates are correctly labelled.

Audit outcome

Compliant

12.11. Historical estimate process (Clauses 4 and 5 Schedule 15.3)

Code reference

Clauses 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

Historic estimate calculations were reviewed, including viewing documentation and test results.

Audit commentary

Historic estimate process

Derive+ will use read and meter information from Gentrack, aggregation factor information from the registry, and shape value information from the reconciliation manager to calculate NHH forward and historic estimate. The raw submission data is then transferred to MSD for aggregation and validation before being submitted to the reconciliation manager.

The reconciliation manager's published seasonal adjusted shape (GR030) files are downloaded from the reconciliation manager portal after each set of allocation results are published, and uploaded into Derive+. The upload process has controls which inform the user whether the upload has completed successfully. These published seasonal shape files are used as an input into the historic estimate process for metered NHH volumes as required by the Code. For periods where shape values are not yet available (e.g. the current month), shape values are forward estimated based on historic values for that day of the week.

Derive+ excludes the shape values for any inactive days from both the numerator and divisor of the calculation, forcing all consumption into the active days of the read-to-read period. If there is an entirely inactive read-to-read period, any consumption that falls within it will be excluded from submission. If an entire read-to-read period is inactive, no consumption will be reported. I have recommended in **section 3.8** that disconnection and reconnection reads should be consistently entered to ensure that all consumption is reported and in the correct period.

Derive+ does not treat customer or photo reads as validated reads when calculating historic estimates.

Unmetered load is reported based on the registry's average daily kWh on each day that the ICP is active. Unmetered volumes are correctly reported as historic estimates.

Historic estimate calculations

I checked test results for the following historic estimate scenarios and confirmed they were compliant, and also checked that revision submissions are created using the latest read, aggregation factor and shape value information.

Scenario	Result	Comment
New connection part way through a month	✓	
Reconnection part way through a month	✓	Numerator and denominator only include active days so consumption is forced into active period.
Disconnection part way through a month	✓	
Disconnection and reconnection during the same month	✓	
Decommissioning	✓	
ICP switches in part way through a month on an estimated reading	✓	
ICP switches out part way through a month on an estimated reading	✓	
ICP switches out and back in within a month	✓	
ICP switches out and back in within 14 months	✓	
ICP switches between GENE and GENH	✓	
ICP switches between GENE and GEOL	✓	
Continuous ICP with a read during the month	✓	
Continuous ICP without a read during the month	✓	
Rollover reads	✓	
Unmetered load for a full month	✓	Unmetered load is reported based on the registry's average daily kWh on each day that the ICP is active.
Unmetered load change during the month	✓	
Unmetered load for part of the month	✓	
NSP change part way through a month (including multiple changes within a month)	✓	
Dedicated NSP change part way through a month	✓	
Loss factor change part way through a month	✓	
Customer reads during the month	✓	Derive+ does not treat customer or photo reads as validated reads when calculating historic estimates.
Photo reads during the month	✓	
ICPs with multiple meters and multiple registers	✓	
Meter replacement	✓	
Meter removal	✓	
Meter addition	✓	
Profile change	✓	

Scenario	Result	Comment
Meter multiplier change	✓	
Addition of distributed generation	✓	
Removal of distributed generation	✓	Has not occurred, but other tests of meter removals passed.
Change of customer	✓	
Vacant ICP with consumption	✓	Numerator and denominator only include active days so consumption is forced into active period. All consumption is reported regardless of customer and customer information is not stored in Derive+.
Disconnected ICP with consumption between reads	✓	
Corrections for estimated consumption during bridged periods, or periods with stopped meters	✓	
Initial submissions where reads following the end of the reconciliation period are used to calculate historic estimate	✓	
Revision submissions where reads and/or aggregation factors have changed following the initial submission	✓	
Forward estimate for new ICPs without read history and existing ICPs with read history	✓	
Network change part way through a month	✓	Has not occurred, but all other tests of changes of aggregation factors passed.
Reconciliation type change part way through a month	✓	

Future compliance is not expected to be affected by the material change.

Previous audit non-compliances and recommendations

I checked the status of non-compliances raised in relation to NHH historic estimate during the previous audit.

Subject	Non-compliance	Status
Historical estimate process	UML volumes have been rounded to zero decimal places prior to aggregation into AV-080 file.	Cleared in Derive+.
	UML volumes reported as Forward Estimate (FE) rather than Historic Estimate (HE).	Cleared in Derive+.
	Customer and photo reads are not validated against two previous actual reads but used in HE calculation.	Cleared in Derive+. Customer and photo readings will not be recorded as validated readings.
	PV1 & EG1 daily seasonal shapes not used for HE calculation.	Cleared in Derive+. The reconciliation manager's published seasonal adjusted shape values (GR030) are used to calculate historic estimate for all profiles.

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 forward estimate process was reviewed, including viewing documentation and test results.

Audit commentary

Derive+ will calculate or forward default estimate (FDE) for any active days where historic estimate cannot be calculated because validated actual or permanent estimates are not available.

Forward standard estimate (FSE)

FSE is calculated at meter register level for active days as:

$$\frac{\text{(most recent validated reading – previous validated reading)}}{\text{sum of shape values for read-to-read period}} \times \text{shape value for day to be estimated}$$

I reviewed examples of ICPs with FSE and confirmed that FSE was calculated as expected, and only used where historic estimate could not be calculated because insufficient read information was available.

Forward default estimate (FDE)

Where there is insufficient information available to calculate historic estimate or FSE, FDE is applied. An ICP level average daily consumption value for each region and month is applied. The daily average is split evenly between the ICP's meter registers where there is more than one meter on the day to be estimated.

I reviewed examples of ICPs with FDE and confirmed that FDE was calculated as expected, and only used where historic estimate and FSE could not be calculated.

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

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

Profile change processes were reviewed, including viewing documentation and test results.

Audit commentary

Genesis only uses the RPS, EG1 and PV1 profiles for NHH ICPs, and any profile changes will coincide with installation or removal of I flow metering.

Future compliance is not expected to be affected by the material change.

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 create NHH submissions were reviewed, including viewing documentation and test results. HHR and generation submission processes will not be affected by the material change.

Audit commentary

Review of test results confirmed that AV080 NHH volumes will be correctly aggregated based on values retrieved from the registry for the reconciliation period. The material change is not expected to affect compliance.

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 two decimal places. If the unrounded digit to the right of the second decimal place is greater than or equal to five, the second digit is rounded up, and if the digit to the right of the second decimal place is less than five, the second digit is unchanged.

Audit observation

Processes to create NHH submissions were reviewed, including viewing documentation and test results. HHR and generation submission processes will not be affected by the material change.

Audit commentary

Review of test results confirmed that AV080 NHH volumes will be rounded to no more than two decimal places. The material change is not expected to affect compliance.

Audit outcome

Compliant

13.3. Historical estimate reporting to RM (Clause 10 Schedule 15.3)

Code reference

Clause 10 Schedule 15.3

Code related audit information

By 1600 hours on the 13th business day of each reconciliation period the reconciliation participant must report to the reconciliation manager the proportion of historical estimates per NSP contained within its non half hour submission information.

The proportion of submission information per NSP that is comprised of historical estimates must (unless exceptional circumstances exist) be:

- *at least 80% for revised data provided at the month 3 revision (clause 10(3)(a))*
- *at least 90% for revised data provided at the month 7 revision (clause 10(3)(b))*
- *100% for revised data provided at the month 14 revision (clause 10(3)(c)).*

Audit observation

Processes for historic estimate attainment were reviewed, including viewing documentation and test results.

Audit commentary

Where prescribed read attainment levels are not achieved, it is usually because actual readings have not been obtained. The read attainment process itself will not be affected by the material change.

Future compliance is not expected to be affected by the material change.

Audit outcome

Compliant

CONCLUSION

Derive+ will replace Derive's portion of the NHH reconciliation process; other processes are not affected by the change. Compliance was assessed for all areas which could be impacted by the material change, by discussing processes and viewing documentation and testing.

Some non-compliances which impact on reconciliation found in previous audits are caused by system and process issues outside of the reconciliation system, such as rounding of readings in Gentrack, and process issues around identification and correction of stopped and bridged meters. Because the material change only affects Derive's processes some of these previous non-compliances are not expected to be resolved by the implementation of Derive+. Based on my analysis and the information provided by Genesis, I do not expect the material change to have a negative effect on compliance.

To improve future compliance I have made recommendations to:

- develop a process to consistently enter actual or permanent estimate disconnection and reconnection reads, ensuring that there is no consumption between disconnection and reconnection to ensure that all volumes are reported against the correct days, and
- develop a process to ensure that the agreed switch reading is applied on the reconnection date where an ICP switches in with inactive status and is later reconnected.

The next audit is scheduled for 13 April 2023, and I recommend that this date is retained.

PARTICIPANT RESPONSE

Genesis is confident that this change to Derive+ will help to increase the accuracy of our NHH market submission. We continue to work on the recommendations that were raised as part of our last Reconciliation Participants Audit.