ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT

For

ECOTRICITY SUPERCEDED LIMITED (NZBN: 4759299)

Prepared by: Steve Woods

Date audit commenced: 29 March 2022

Date audit report completed: 1 May 2022

Audit report due date: 01 May 2022

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EXECUTIVE SUMMARY

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of **Ecotricity Superceded Limited (Ecotricity)**, to support their application for renewal of certification in accordance with clauses 5 and 7 of schedule 15.1. The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits version 7.1.

Since the last audit Ecotricity has addressed the non-compliances identified as urgent around UDL/Powerswitch information being present on all customer communications, and also refining the switch away correspondence to comply with the win back requirements.

Efforts can also be seen in implementing additional manual correction processes as an attempt to improve submission accuracy. However, these additional manual corrections are not fully effective and are diverting resources away from identifying/escalating and resolving the root cause of the exceptions.

The manual nature of a number of processes, especially around populating and maintaining registry information once a system update has been completed is the root cause of a number of the submission related non-compliances. The submission files are compared to Registry LIS files prior to submission and manual adjustments are made to the submission data prior to any investigation as to whether the issue is with the system set up of the registry population. Regular, more consistent registry exception reporting and corrective actions during the month will reduce the need for any manual corrections to submission data files and improve overall compliance in a number of areas.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and contains a future risk rating score of 78, which results in an indicative audit frequency of three months.

I have considered this result in conjunction with Ecotricity's responses and recommend that the next audit be in nine months.

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
Relevant information	2.1	11.2	Some registry discrepancies exist. Several scenarios leading to incorrect submission information. Inaccurate HHR data where ARC is the MEP due to having only one decimal place.	Moderate	Medium	4	Identified
Electrical Connection of Point of Connection	2.11	10.33A	ICP 0218136013LC96D was not certified within five business days of reconnection.	Weak	Low	3	Identified
Changes to registry information	3.3	10 of Schedule 11.1	32 late updates to active status. 9 late updates to inactive status. 476 late trader updates.	Moderate	Medium	4	Identified
Provision of information to the registry manager	3.5	9 Schedule 11.1	19 late status updates to active for new connections.	Moderate	Low	2	Investigating
ANZSIC codes	3.6	9 (1)(k) of Schedule 11.1	At least six incorrect ANZSIC codes.	Moderate	Low	2	Cleared
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	One ICP (0282046071LCEB5) with incorrect daily average kWh calculated and applied.	Moderate	Low	2	Cleared
Management of “inactive” status	3.9	19 Schedule 11.1	One ICP (0000007594NTFE6) with incorrect inactive status event date.	Moderate	Low	2	Cleared

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	Two CS breaches for late delivery of a CS file. Switch reads do not reflect the correct boundary read between traders in all cases. Incorrect average daily consumption for ICP 0006560352HBF75.	Moderate	Low	2	Identified
Retailers must use the same readings	4.4	6(1) of Schedule 11.3	Incorrect readings used for five of six ICPs sampled where Ecotricity settle as HHR, the CS read was estimated, and no adjustment was applied to the interval data to reflect the volume between the estimated switch read and the derived actual switch read from AMI data.	Moderate	Low	2	Identified
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	One AN breach relating to incorrect response code where a communicating AMI meter was present. One AN breach relating to incorrect event date populated. One CS breach. Five late AN files for switch moves. 26 ET breaches for switch moves.	Moderate	Low	2	Identified
Losing trader determines a different date - switch move	4.9	10(2) Schedule 11.3	Two ET breaches for switch moves.	Strong	Low	1	Identified
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	Switch reads do not reflect the correct boundary read between traders in all cases. Incorrect daily kWh for three ICPs.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Gaining trader changes to switch meter reading – switch move	4.11	12 of Schedule 11.3	Incorrect readings used for two ICPs where the read from the accepted RR was not used in robotron*esales Incorrect readings used for two ICPs where the ICP is settled as HHR. One late AC file.	Moderate	Low	2	Identified
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 Schedule 11.3	One late HH CS file.	Strong	Low	1	Identified
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	Five NA breaches. Two NW breaches. One SR breach. One WR breach.	Strong	Low	1	Identified
Electricity conveyed & notification by embedded generators	6.1	10.13, Clause 10.24 and 15.13	Submission had not occurred for 15 HHR ICPs and seven NHH ICPs with distributed generation and the RM was not notified of gifting.	Moderate	Low	2	Identified
NHH meter reading application	6.7	6 Schedule 15.2	Reads applied for two profile changes were not reflective of the read/consumption from the last interrogation of the meter.	Moderate	Low	2	Identified
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	Best endeavours not met for two ICPs not read in the 12-month period.	Weak	Low	3	Identified
NHH meters 90% read rate	6.10	9(1) and (2) Schedule 15.2	Two ICPs not read in the 4-month period.	Weak	Low	3	Identified
Correction of HHR metering information	8.2	19(2) Schedule 15.2	Estimation quality flag reporting is not monitored, which can lead to inaccurate corrections.	Strong	Low	1	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Meter data used to derive volume information	9.3	3(5) of schedule 15.2	AMS and EDMI's EIEP3 file format rounds trading period data to two decimal places.	Moderate	Low	2	Investigating
Half hour estimates	9.4	15 Schedule 15.2	HHR estimates across meter changes not including volume from removed meter between last midnight read and removal read. Reasonable endeavors not met where some HHR estimates continue for long term non communicating AMI ICPs where the estimations are no longer able to be related to either historical consumption patterns or scaled to match volumes calculated between reads either side of the estimation gap.	Moderate	Low	2	Identified
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	Event logs not routinely checked across all AMI providers.	Moderate	Low	2	Identified
Calculation of ICP days	11.2	15.6	ICP Days file does not accurately reflect the reconciliation system.	Weak	Low	3	Investigating
Electricity supplied information provision to the reconciliation manager	11.3	15.7	Precision of the AV120 (BILLED) submission file displays the volumes to zero decimal places where billed volumes from customers invoices has volumes to two decimal places.	Moderate	Low	2	Identified
HHR aggregates information provision to the reconciliation manager	11.4	15.8	Errors in HHRAGGS file between July and September 2021. Under submission of 54,165 kWh due to ICPs missing from aggs file.	Weak	Medium	6	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Creation of submission information	12.2	15.4	Errors in both HHRVOLS and HHRAGGS file between July and September 2021. Under submission of 54,165 kWh due to ICPs missing from aggs file. Submission of 1,627 kWh yet to occur for two inactive NHH ICPs with consumption. Five incorrect UML daily kWh values used in submission. NHH generation kWh not submitted at the earliest opportunity.	Moderate	Medium	4	Identified
Accuracy of submission information	12.7	15.12	The most accurate data is not submitted in submission files when the following issues are identified: • missing ICPs, • additional ICPs, • consumption on inactive ICPs, and • generation present at ICPs.	Moderate	Medium	4	Identified
Permanence of meter readings for reconciliation	12.8	4 Schedule 15.2	Estimates not all replaced by the 14-month revision.	Weak	Low	3	Identified
Reconciliation participants to prepare information	12.9	2 Schedule 15.3	Five of nine ICPs with unmetered load had inaccurate submission volumes due to incorrect daily kWh calculations.	Moderate	Low	2	Identified
Historical estimate process	12.11	4 and 5 Schedule 15.3	Historic estimate calculations incorrect for one scenario.	Strong	Low	1	Identified
Compulsory meter reading after profile change	12.13	7 Schedule 15.3	Profile change for ICP 0000009128TEE4D was not completed using a validated meter reading or permanent estimate.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Historical estimate reporting to RM	13.3	10 Schedule 15.3	Historic estimate thresholds were not met for some revisions.	Moderate	Low	2	Identified
Future Risk Rating							78

Future Risk Rating	0	1-3	4-15	16-40	41-55	55+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Clause	Recommendation
CS readings	4.3	clause 5 Schedule 11.3	For HHR settled ICPs where a suitable actual read cannot be identified for population of the CS, develop a process to transition the ICP to NHH submission type prior to completing the population of the CS file.
Distributed generation	6.1	10.13, Clause 10.24 and 15.13	Conduct regular checks of reporting to identify DG discrepancies.
			Review the process to require customers provide ROIs for new solar installations where the meter is already configured for I flow.
NHH validation	9.5	16 Schedule 15.2	Add an additional NHH validation for changes from consumption to zero consumption for consecutive periods.
Identification and escalation of missing AMI interval data to MEPs	9.6	Clause 17 Schedule 15.2	Recommence regular reporting of missing/estimated interval data used in submission and escalate these instances to the relevant AMI MEP for resolution.
Electricity supplied	11.3	15.7	Investigate the rolling 12-month differences between Electricity Supplied (BILLED) and Electricity Submitted (NHHVOLS and HHRVOLS) to determine what is causing the current divergent in totals
FE reporting	12.8	4 Schedule 15.2	Implement FE reporting at each of the 3-, 7- and 14-month revisions to enable root cause analysis to be determined and more timely resolution of FE related issues.
Shape files	12.11	4 Schedule 15.3	Check that all seasonal shapes to NSP mapping are correct especially where a GXP may supply more than one network (HEP0331, INV0331, FKN0331, HWB0331, OKN0111, TWZ0331).

Subject	Section	Clause	Recommendation
FE process	12.12	6 Schedule 15.3	Review estimation algorithm effectiveness to ensure submission (and billing) accuracy is maintained within the +/- 15% accuracy.

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

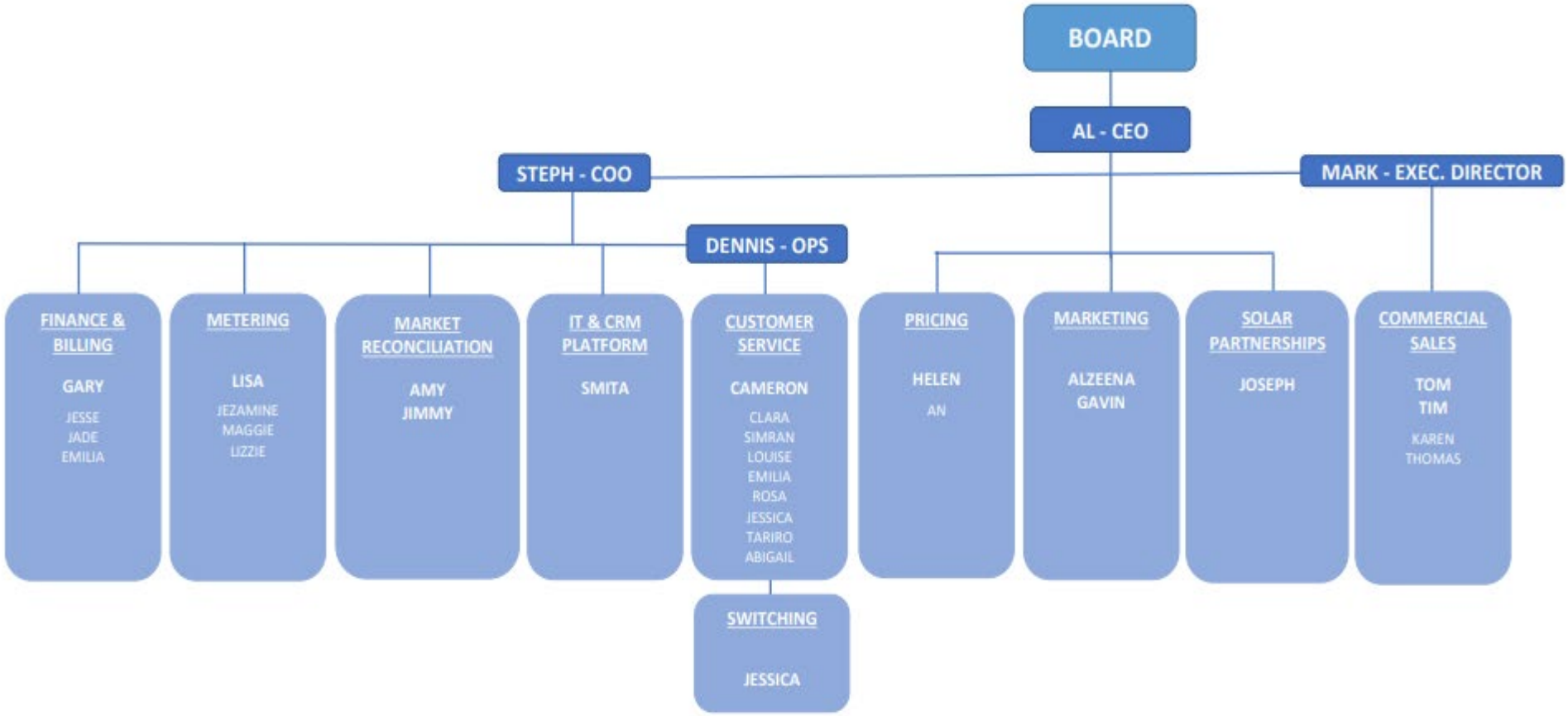
Current code exemptions were reviewed on the Electricity Authority website.

Audit commentary

There are no exemptions in place that are relevant to the scope of this audit.

1.2. Structure of Organisation

Ecotricity provided a copy of their organisation structure for the relevant parts of their business.



1.3. Persons involved in this audit

Auditor:

Steve Woods

Veritek Limited

Electricity Authority Approved Auditor

Ecotricity personnel assisting in this audit were:

Name	Title
Stephanie Blucher	Chief Operating Officer
Amy Chai	Market Reconciliation
Jimmy Gao	Market Reconciliation
Jessica Inners	Switching Specialist
Jezimine Notoa	Metering Team
Cameron Gumtau-Ryan	Switching Specialist
Dennis Mckechnie	CS Operations Manager
Lisa Anderton	Metering Team Leader
Christoph Sachse	Robotron

1.4. Use of Agents (Clause 15.34)

Code reference

Clause 15.34

Code related audit information

A reconciliation participant who uses an agent

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

Audit observation

Ecotricity receives HHR data from MEPs, who are subject to their own audit regime and are not considered agents. Wells provides ad hoc NHH manual reads and is considered an agent. EDMI and AMS provide HHR data as agents.

Audit commentary

Ecotricity receives HHR data from MEPs, who are subject to their own audit regime and are not considered agents. Wells provides ad hoc NHH manual reads and is considered an agent. EDMI and AMS provide HHR data as agents.

All agent reports were conducted more than seven months ago, therefore additional checks were conducted to ensure processes and systems had not changed.

1.5. Hardware and Software

Ecotricity uses the robotron*esales system. This is a cloud-based application, written and maintained by Robotron NZ.

The database is stored in Sydney where it is regularly backed up. There is also a copy of raw metering data stored in NZ.

1.6. Breaches or Breach Allegations

There were no alleged breaches relevant to the scope of this audit during the audit period.

1.7. ICP Data

Active ICPs are summarised by meter category in the table below. Four active ICPs with a metering category of blank have both distributor and trader unmetered load details recorded.

Metering Category	Feb 2022	May 2021	Nov 2020	Mar 2020	2019	2018
1	10,945	9,034	8,204	7,453	5,773	5,142
2	357	214	181	173	147	139
3	55	25	23	20	18	15
4	12	5	6	5	5	5
5	0	0	0	0	0	0
9	0	3	0	15	0	16
Blank	4	3	1	0	0	0

Status	Number of ICPs (Feb 2022)	Number of ICPs (May 2021)	Number of ICPs (Nov 2020)	Number of ICPs (March 2020)	Number of ICPs (2019)	Number of ICPs (2018)
Active (2,0)	11,373	9,284	8,415	7,555	5,895	5,238
Inactive – new connection in progress (1,12)	49	17	27	17	19	31
Inactive – electrically disconnected vacant property (1,4)	46	26	15	20	31	25
Inactive – electrically disconnected remotely by AMI meter (1,7)	37	52	22	38	12	17
Inactive – electrically disconnected at pole fuse (1,8)	2	2	1	2	1	1
Inactive – electrically disconnected due to meter disconnected (1,9)	2	2	6	5	3	3
Inactive – electrically disconnected at meter box fuse (1,10)	1	2	0	0	0	0
Inactive – electrically disconnected at meter box switch (1,11)	0	0	0	0	1	2
Inactive – electrically disconnected ready for decommissioning (1,6)	4	3	3	3	5	6
Inactive – reconciled elsewhere (1,5)	0	0	0	0	0	0
Decommissioned (3)	99	80	65	43	29	18

1.8. Authorisation Received

An authorisation letter was not required.

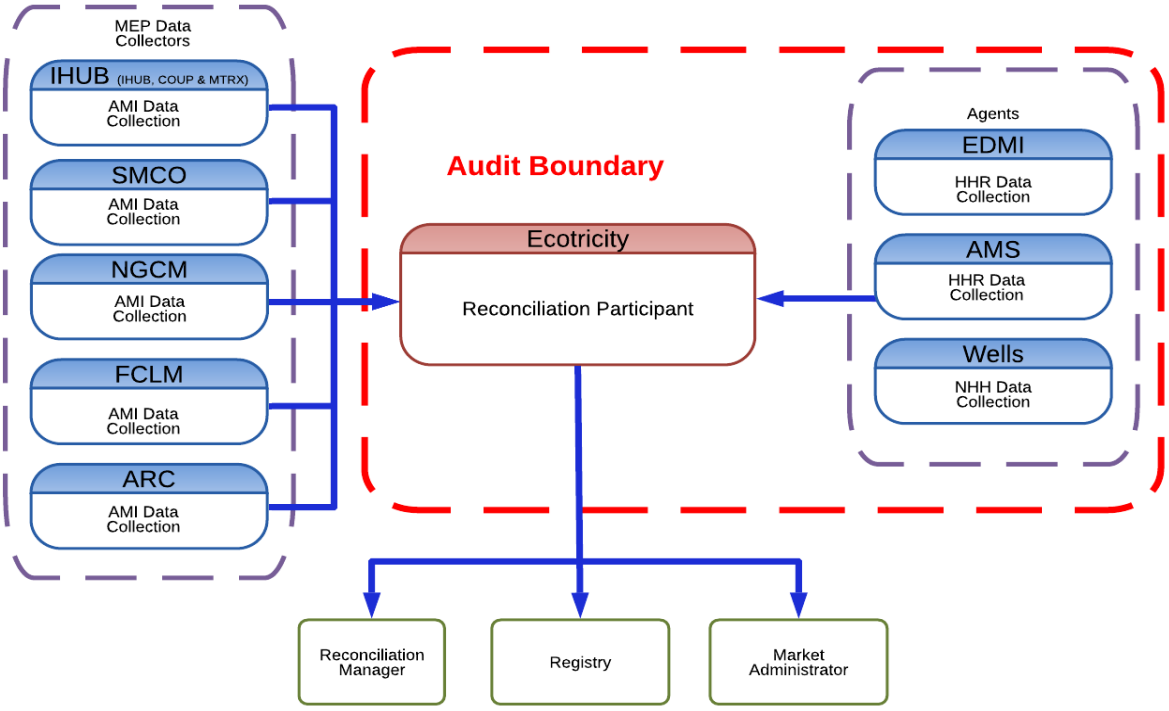
1.9. Scope of Audit

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of Ecotricity, to support their application for renewal of certification in accordance with clauses 5 and 7 of schedule 15.1. The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits V7.1.

The audit was carried out via online google meetings on 29, 30 and 31 March 2022.

A registry list, event detail report, and audit compliance report for 1 July 2021 to 31 Jan 2022, and a registry list and meter installation details report for 2 February 2022 were reviewed.

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



The table below shows the tasks under clause 15.38 of part 15 for which Ecotricity requires certification. AMS, ARC, IHUB, MTRX, SMCO and FCLM provide AMI data as MEPs, not as agents. Wells provides NHH data as an agent.

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	**Agents Involved in Performance of Tasks**	**MEPs Providing AMI data**
(a) - Maintaining registry information and performing customer and embedded generator switching		
(b) – Gathering and storing raw meter data	Wells – Manual meter reading EDMI – HHR AMS - HHR	AMS – HHR (AMI) ARC – HHR (AMI) IHUB – HHR (AMI) SMCO – HHR (AMI) MTRX – HHR (AMI) FCLM – HHR (AMI) COUP – HHR (AMI)
(c)(iii) - Creation and management of NHH and HHR volume information	Wells – Manual meter reading EDMI – HHR AMS - HHR	AMS – HHR (AMI) ARC – HHR (AMI) IHUB – HHR (AMI) SMCO – HHR (AMI) MTRX – HHR (AMI) FCLM – HHR (AMI) COUP – HHR (AMI)
(d) – Calculation of ICP days		
(da) - delivery of electricity supplied information under clause 15.7		
(db) - delivery of information from retailer and direct purchaser half hourly metered ICPs under clause 15.8		
(e) – Provision of submission information for reconciliation		

1.10. Summary of previous audit

Ecotricity provided a copy of their previous audit completed in July 2021 by Steve Woods. The summary table below shows the status of the non-compliances raised in the previous audit. Further comment is made in the relevant sections of this report.

Subject	Section	Clause	Non-compliance	Status
Relevant information	2.1	11.2	Some registry discrepancies exist. Several scenarios leading to incorrect submission information. Inaccurate HHR data where ARC is the MEP due to having only one decimal place.	Still existing
Electrical Connection of Point of Connection	2.11	10.33A	ICP 0000190215TRA73 was not certified within five business days of reconnection.	Still existing
MEP arrangements.	2.13	10.36	MEP arrangement is not in place with WEL Networks.	Cleared
Meter bridging	2.17	10.33C and 2A of Schedule 15.2	Correction has not occurred for ICP 0000572387NRFFB for the bridged period.	Cleared
Provision of information on dispute resolution scheme.	2.19	11.30A	Utilities Disputes information is not present on the website or in outbound communications.	Cleared
Provision of information on electricity plan comparison site	2.20	11.30B	Powerswitch information is not present in communications.	Cleared
Changes to registry information	3.3	10 of Schedule 11.1	21 late updates to active status. Three late updates to inactive status. 149 late trader updates.	Still existing
Provision of information to the registry manager	3.5	9 Schedule 11.1	11 late status updates to active for new connections.	Still existing
ANZSIC codes	3.6	9 (1)(k) of Schedule 11.1	At least 10 incorrect ANZSIC codes.	Still existing

Subject	Section	Clause	Non-compliance	Status
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	One CS breach for a transfer switch. Incorrect average daily consumption for one ICP.	Still existing
Retailers must use the same readings	4.4	6(1) of Schedule 11.3	Incorrect (but accurate) readings used for three ICPs.	Still existing
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	Five T2 breaches for switch moves. Two ET breaches for switch moves. One CS breach.	Still existing
Losing trader determines a different date - switch move	4.9	10(2) Schedule 11.3	Two ET breaches for switch moves.	Still existing
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	Incorrect daily kWh for one ICP.	Still existing
Gaining trader changes to switch meter reading – switch move	4.11	12 of Schedule 11.3	Incorrect (but accurate) readings used for one ICP.	Still existing
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	One NA breach. One NW breach.	Still existing
Switch saving protection	4.17	11.15AA to 11.15AB	Correspondence to switching customers requests reasons for switching.	Cleared
Electricity conveyed & notification by embedded generators	6.1	10.13, Clause 10.24 and 15.13	Submission had not occurred for 27 ICPs with embedded generation and the RM was not notified of gifting. Two ICPs bridged during the audit period.	Still existing
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	Nine ICPs not read during the period of supply.	Cleared
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	Best endeavours not met for four ICPs not read in the 12-month period.	Still existing

Subject	Section	Clause	Non-compliance	Status
NHH meters 90% read rate	6.10	9(1) and (2) Schedule 15.2	Two ICPs not read in the 4-month period.	Still existing
Meter data used to derive volume information	9.3	3(5) of schedule 15.2	AMS and EDMI's EIEP3 file format rounds trading period data to 2 decimal places.	Still existing
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	Event logs not routinely checked.	Still existing
Electricity supplied information provision to the reconciliation manager	11.3	15.7	Electricity supplied file incorrect for NSP SOH0011. Incorrect electricity supplied for May 2020.	Still existing
HHR aggregates information provision to the reconciliation manager	11.4	15.8	HHR aggregates file does not contain electricity supplied information. Errors in aggs file between March and December 2020. Under submission of 18,107.6 kWh due to ICPs missing from aggs file. 1,600 kWh not included in R-14 for an inactive ICP with consumption.	Still existing
Creation of submission information	12.2	15.4	Errors in aggs file between March and December 2020. Under submission of 18,107.6 kWh due to ICPs missing from aggs file. 1,600 kWh not included in R-14 for an inactive ICP with consumption. Submission of 576 kWh yet to occur for two inactive NHH ICPs with consumption. NHH generation kWh not submitted at the earliest opportunity. Some incorrect and late files as shown in the breach report.	Still existing

Subject	Section	Clause	Non-compliance	Status
Accuracy of submission information	12.7	15.12	The most accurate data is not submitted in submission files when the following issues are identified: • missing ICPs, • additional ICPs, • consumption on inactive ICPs, and generation present at ICPs.	Still existing
Permanence of meter readings for reconciliation	12.8	4 Schedule 15.2	Estimates not all replaced by the 14-month revision.	Still existing
Historical estimate reporting to RM	13.3	10 Schedule 15.3	Historic estimate thresholds were not met for some revisions.	Still existing

Subject	Section	Clause	Recommendation	Status
ANZSIC codes	3.6	9 (1)(k) of Schedule 11.1	Check the audit compliance report is reviewed regularly to identify incorrect ANZSIC codes. Improve validation at the time of customer registration.	Cleared
Distributed generation	6.1	10.13, Clause 10.24 and 15.13	Conduct regular checks of reporting to identify DG discrepancies.	Still existing
HHR estimates	9.4	15 Schedule 15.2	Report on quantity of estimated HHR data per month per MEP for each revision	Still existing
NHH validation	9.5	16 Schedule 15.2	Add an additional NHH validation for changes from consumption to zero consumption for consecutive periods.	Still existing

2. OPERATIONAL INFRASTRUCTURE

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

Code reference

Clause 10.6, 11.2, 15.2

Code related audit information

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

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

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

Audit observation

The processes to find and correct incorrect information were examined. The registry validation processes were examined in detail in relation to the achievement of this requirement.

The registry list and AC020 reports were examined to identify any registry discrepancies, and to confirm that all information was correct and not misleading.

Audit commentary

This clause requires that Ecotricity must check the list file against their own records and correct records as soon as practicable. Ecotricity now conducts a monthly check of their records against a list file with history.

The registry discrepancies identified are shown in the table below.

Qty Feb 2022	Qty 2021	Qty 2020	Scenario	Comment
0	435	502	HHA profile used where metering is HHR certified	Compliance is achieved
1	1	1	NHH submission flag = "Y" for HHR profile	0000659012UNA7D – now correct
1	1	1	HHR submission flag = "Y" for RPS profile	0001259169UN7F6 – now correct
0	0	2	PV1 profile alone	
0	0	1	Incorrect status	

Read and volume data accuracy

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

Subject	Section	Comments	All practicable steps taken?
Defective meters	2.1	Defective meters are typically identified from information provided by the meter reader, agent, the MEP, or the customer. Upon identifying a possible defective meter, a field services job is raised to investigate and resolve the defect, and a consumption correction is processed if necessary. Corrections are normally processed by recording an estimated closing read on the replaced meter, which is calculated using the daily average consumption for the new meter or the replaced meter prior to the fault. This process was used for those ICPs where corrections were conducted. I reviewed four examples of defective meter corrections: • three corrections were processed ensuring volumes were appropriately estimated, and • one example had an affected period of more than 14 months, and the correction approach did not ensure all of the volume correction was apportioned into the available 14 month wash up window.	No
Consumption while inactive	2.1	**ICPs with inactive consumption** Review of historic estimate examples found that where part of a read-to-read period was inactive, the SASV inactive days were excluded from both the numerator and denominator when calculating the historic estimate, forcing all consumption to be reported within the active portion of the read-to-read period. Where an entire read-to-read period has inactive status, the numerator and denominator will be zero and no historic estimate will be reported. The status must be returned to active to allow consumption during inactive periods to be correctly reported. At the time of the audit there were eight ICPs to be investigated where consumption identified is greater than 1 kWh per ICP with a total volume of inactive consumption of over 1,712 kWh. These are being worked through but due to resource constraints this is taking longer than desired. ECOT provided a list with eight ICPs with inactive consumption, totalling 1,712 kWh. I reviewed the eight ICPs and found: • all identified exceptions have now been investigated while the audit has been in progress, • three have now had corrections applied in either the registry (updated status) or robotron*esales and will be fully resolved as part of the next wash up, • for four examples the investigation has identified the issues but corrections to registry data/* robotron*esales set ups are still outstanding, and • one ICP was reconnected by the gaining trader for a date prior to the switch date. Given the age of some of these examples it appears this report is not regularly reviewed.	No

Unmetered load corrections	2.1, 3.7	Robotron*sales uses the registry daily kWh value as the source for estimating unmetered load consumption against a virtual register. Where this value is incorrect on the registry then incorrect unmetered load consumption is calculated. I reviewed daily kWh values for all ECOT ICPs with unmetered details and identified the following: • two ICPs had unmetered volumes that were not being reported due to missing RPS profile set up in robotron*esales to enable reporting of the unmetered load, • three ICPs with incorrect calculation of daily kWh values, and • two ICPs where the daily kWh value has been rounded to zero decimal places where the value can be applied to three decimal places.	No

As recorded in **sections 12.2 and 12.11**, there were several submission related issues, as follows:

- errors in aggregates file between July 2021 and January 2022,
- 30 ICPs relating to STK031 TASM using incorrect seasonal shapes for calculating HE volumes,
- NHH generation kWh not submitted at the earliest opportunity,
- some incorrect and late files as shown in the breach report,
- vacant ICPs 0086327200WRAE1 and 1002035943LC4AF were not included in submission due to missing vacant account set ups (with a combined volume missing from submission of 42,935 kWh),
- six inactive ICPs with consumption are yet to be resolved to ensure submission occurs; the affected volume is 1,627 kwh, and
- five ICPs with unmetered consumption were incorrect.

There is an issue with ARC Innovations meters when used for HHR settlement. The on-site setup is that a meter pulses into a data storage device, which counts the pulses and "stores" them every 200 pulses which equals 0.1 kWh. There is only one decimal place, so the smallest increment of consumption is 0.1. Ecotricity supplies 221 HHR settled ICPs with ARCS as the MEP; all have meter category 1 and the multiplier flag set to N. Unfortunately for Ecotricity, the HHR data derived from ARC meters is not considered to be accurate in accordance with Clause 15.2. The total kWh per month will be accurate but if volumes are not recorded and reported against the correct trading period, Ecotricity may not be charged at the wholesale rate that applied during the trading period when the electricity was consumed. The affected meters do not have multipliers and have the highest metering category of 1, so the impact is expected to be minimal.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 10.6, 11.2, 15.2 From: 01-Jul-21 To: 28-Feb-22	Some registry discrepancies exist. Several scenarios leading to incorrect submission information. Inaccurate HHR data where ARC is the MEP due to having only one decimal place. Potential impact: High Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are rated as moderate at the time of the audit, because the validation reporting has improved, and submission issues are being identified and corrected in a more timely manner. Resolution of underlying issue is still taking longer to address. The impact is assessed to be medium because the kWh differences have been reduced through correction of the submission files.

Actions taken to resolve the issue	Completion date	Remedial action status
Many of the non-compliance points raised in this audit and the actions we plan to take will help resolve registry discrepancies and incorrect submission information. We are unable to prevent ARC from supplying data to one decimal place though will discuss with them.	End of Dec 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Many of the non-compliance points raised in this audit and the actions we plan to take will help resolve registry discrepancies and incorrect submission information. We are unable to prevent ARC from supplying data to one decimal place though will discuss with them.	End of Dec 2022	

2.2. Provision of information (Clause 15.35)

Code reference

Clause 15.35

Code related audit information

If an obligation exists to provide information in accordance with Part 15, a participant must deliver that information to the required person within the timeframe specified in the Code, or, in the absence of any

such timeframe, within any timeframe notified by the Authority. Such information must be delivered in the format determined from time to time by the Authority.

Audit observation

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

Audit commentary

This area is discussed in several sections in this report and compliance is confirmed.

Audit outcome

Compliant

2.3. Data transmission (Clause 20 Schedule 15.2)

Code reference

Clause 20 Schedule 15.2

Code related audit information

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

Audit observation

AMI data is provided by MEPs via SFTP.

To confirm the process, I traced a sample of reads and volumes for three ICPs from the source files to robotron*esales.

Audit commentary

All read and volume data is transferred from the MEP to Ecotricity via SFTP.

I traced a sample of data for three ICPs from the source files to robotron*esales to confirm the data transmission process. All volumes matched.

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 (clause 21(4)(c)).*

Audit observation

A complete audit trail was checked for all data gathering, validation and processing functions. I viewed audit trails in robotron*esales for a small sample of events.

Audit commentary

Audit trails include the activity identifier, date and time, and an operator identifier.

Audit outcome

Compliant

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

Code reference

Clause 10.4

Code related audit information

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

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

Audit observation

I reviewed Ecotricity's current customer terms and conditions.

Audit commentary

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

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

The trader must use its best endeavours to provide access:

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

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

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

Audit observation

I reviewed Ecotricity's current customer terms and conditions and discussed compliance with these clauses.

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 10.35(1)&(2)

Code related audit information

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

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

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

Audit observation

The physical meter location point is not specifically mentioned in the terms and conditions, but the existing practices in the electrical industry achieve compliance.

Audit commentary

There were no ICPs where loss compensation occurs.

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

Audit observation

I reviewed Ecotricity's current customer terms and conditions.

Audit commentary

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

Audit outcome

Compliant

2.9. Connection of an ICP (Clause 10.32)

Code reference

Clause 10.32

Code related audit information

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

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

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

Audit observation

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

The event detail report was reviewed to identify all new connections and confirm process controls and compliance.

Audit commentary

Ecotricity completed 56 new connections during the audit period. In all cases, Ecotricity accepted responsibility by agreeing to be the retailer and claiming the ICP on the registry at "inactive - new connection in progress" status and they had an arrangement with the MEP.

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

Audit outcome

Compliant

2.10. Temporary Electrical Connection of an ICP (Clause 10.33(1))

Code reference

Clause 10.33(1)

Code related audit information

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

- *they are recorded in the registry as being responsible for the ICP; and*
- *one or more certified metering installations are in place at the ICP in accordance with Part 10; and*
- *for an ICP that has not previously been electrically connected, the network owner has given written approval.*

Audit observation

The new connection process was examined in detail.

Audit commentary

Ecotricity claimed all 56 new ICPs at "inactive - new connection in progress" status which helps to ensure that the trader is recorded on the registry if an ICP is temporarily electrically connected.

Ecotricity did not conduct or authorise any temporary electrical connections to networks. ICP 0110012618EL333 was temporarily connected to enable the metering installation to be certified however this ICP is downstream of a customer switch board and not connected to the network. Technically the ICP is connected to a customer network and customer approval was provided to enable this.

ICP 0000061571NTF8B has a metering installation certification date (16 Oct 2021) prior to the initial energisation date (19 Oct 2021). The distributor has confirmed that the initial energisation date was 19 Oct 2021 via the completed as-built paperwork. Network Tasman has received confirmation from the MEP that the certification date on the registry is incorrect, therefore this was not a temporary electrically connected ICP.

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 two 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

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

The AC020 report was examined to confirm process compliance and that controls are functioning as expected.

Audit commentary

New connections

Ecotricity completed 56 new connections during the audit period, which were all certified within five business days of initial electrical connection.

Reconnections

Ecotricity completed 32 reconnections during the audit period. ICP 0218136013LC96D had expired interim certification at the time of reconnection and has not been recertified. Ecotricity has yet to establish a process to deal with these examples.

Bridged meters

No meters were bridged during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.11 With: Clause 10.33A From: 01-Jul-21 To: 28-Feb-22	ICP 0218136013LC96D was not certified within five business days of reconnection. Potential impact: Low Actual impact: Low Audit history: Once Controls: Weak Breach risk rating: 3

Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as weak because there isn't a process in place to request certification to occur. The impact on settlement and participants is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		**Completion date**	**Remedial action status**
The MEP has initiated contact with the other retailer to resolve the meter certification mix up and to arrange an appointment to have the meters replaced.		End of April 2022	Identified
Preventative actions taken to ensure no further issues will occur		**Completion date**	
Develop a report with Robotron. Customer service set registry to Active, pass on to metering for recertification.		End of April 2023	

2.12. Arrangements for line function services (Clause 11.16)

Code reference

Clause 11.16

Code related audit information

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

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

Audit observation

The process to ensure an arrangement is in place before trading commences on a network was examined, along with the application process.

A registry list for the audit period was reviewed to identify all networks Ecotricity has traded on during the audit period.

Audit commentary

Ecotricity has agreements in place for line function services where they trade, with the exception of two embedded Networks where trading started during the audit period. The networks are Smales Farm (trading commenced 10 May 2021) and Sarbina Ltd (trading commenced 1 October 2021). Ecotricity are currently waiting for these agreements to be countersigned by the respective distributors. The existence of draft agreements meets the requirement to have an arrangement in place.

These are stored electronically in a folder within the directory for each Network.

Audit outcome

Compliant

2.13. Arrangements for metering equipment provision (Clause 10.36)

Code reference

Clause 10.36

Code related audit information

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

Audit observation

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

A registry list for the audit period was reviewed to identify the MEPs for Ecotricity ICPs during the audit period.

Audit commentary

Ecotricity did not begin trading at any ICPs with new MEPs during the audit period.

The previous audit found that MEP arrangements were not in place with WEL Networks or Nova. Nova is now owned by Intellihub NZ Limited and there is an arrangement with Intellihub. The WEL Network agreement was implemented on 24 November 2021. This agreement now includes the following details:

- for the reconciliation participant to provide the metering equipment provider with physical access to the metering installation for the point of connection and the premises at which it is situated; and
- arranging for the electrical disconnection of the point of connection, if required by the metering equipment provider to enable the metering equipment provider to comply with its obligations under this Part; and
- for the metering equipment provider to provide the reconciliation participant with access at the services access interface to the metering data from the metering installation for the point of connection.

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

The process for reconnecting ICPs in the process of switching in was examined.

The event detail report was reviewed to identify reconnections for switch ins where the switch was withdrawn. The ICPs were checked to determine compliance.

Audit commentary

If an ICP was reconnected as part of the switching process and the switch was later withdrawn, Ecotricity would restore the disconnection and reimburse the losing trader for any direct costs incurred if requested.

No examples were identified during this audit period.

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

The disconnection process was examined.

Traders are only able to update ICP status for event dates where they are responsible for the ICP on the registry. The event detail report was reviewed to identify all ICPs which were disconnected during the audit period where an NT was received from another trader during the audit period. The ICPs were checked to determine compliance.

Audit commentary

There are likely to be examples where reconnection occurs prior to Ecotricity becoming the trader. Ecotricity is aware of the requirements of this clause and will arrange for disconnection if it is required.

Ecotricity received NTs for two ICPs which it disconnected during the audit period. In both cases the disconnection was on the NT receipt date and the NT event date. The status event in both cases was reversed by the gaining trader

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 un-bridge 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

Policies and processes for removal and breakage of seals were reviewed.

A sample of disconnections, reconnections, additions of export metering, and bridged meters were checked for compliance.

Audit commentary

All activities which could result in seals being removed or broken are completed by Wells, the MEP, or subcontractors to the MEP.

Ecotricity has agreements in place with Wells and the MEPs, which include service levels. Wells and the MEPs are required to ensure that only qualified personnel perform work and manage and trace seals. Wells and the MEPs do not usually provide details of seals in their job completion paperwork.

Ecotricity receives work completion paperwork from Wells and the MEPs and uses this information to confirm the correct ICP attributes including status and profile, and update robotron*esales and the registry.

Most disconnections and reconnections are completed remotely, and any metering changes or addition of distributed generation are completed by the MEP. Wells completes any on-site disconnections and reconnections.

A sample of disconnections, reconnections, and additions of distributed generation were checked. I found that the MEP had completed the work where the seals were removed or broken.

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

The process for bridging meters was discussed and a sample of bridged meters were reviewed.

Audit commentary

No ICPs were found to be bridged during the audit period. Ecotricity works hard to try and avoid this scenario.

The process for managing meter bridging from identification, escalation to MEP for resolution and then correction of volume for the affected period remains unchanged from the last audit.

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

A sample invoice was reviewed to confirm that the ICP number is present.

Audit commentary

The ICP number is present on invoice documents relating to the sale of electricity.

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

The process to ensure that information on Utilities Disputes is provided to customers was discussed. A sample of invoices, letter templates, emails, messenger correspondence, and recorded greetings for inbound calls were reviewed to determine whether clear and prominent information on Utilities Disputes is provided.

Audit commentary

Clear and prominent information on Utilities Disputes is provided:

- on invoices (refers to electricity and gas complaints commissioner but contact number is correct),
- in Ecotricity's terms and conditions,
- on the company website, and
- in directed outbound communications.

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

The process to ensure that information on Consumer Powerswitch is provided to customers was discussed. A sample of invoices, letter templates and emails were reviewed to determine whether clear and prominent information on Powerswitch is provided.

Audit commentary

Clear and prominent information on Powerswitch is present as required by this clause.

Audit outcome

Compliant

3. MAINTAINING REGISTRY INFORMATION

3.1. Obtaining ICP identifiers (Clause 11.3)

Code reference

Clause 11.3

Code related audit information

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

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

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

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

Audit observation

The event detail report for the audit period was reviewed to identify all new connections and confirm process controls and compliance.

Audit commentary

Ecotricity completed 56 new connections during the audit period and achieved compliance with the clauses above.

Audit outcome

Compliant

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

Code reference

Clause 11.7(2)

Code related audit information

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

Audit observation

The new connection processes were examined in detail to evaluate the strength of controls, and the registry list and audit compliance reports were examined to confirm process compliance. Late updates to active for new connections are discussed in **section 3.5**.

Audit commentary

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

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 five business days after the change.

Audit observation

The processes to manage status changes are discussed in detail in **sections 3.8** and **3.9** below. The processes to manage MEP nominations and trader updates were discussed.

The registry list and audit compliance reports were examined and a sample of late status updates, trader updates and MEP nominations were checked as described in the audit commentary.

Audit commentary

Status and trader event updates are made directly into the registry and the registry then updates robotron*esales once the metering details are also loaded to the registry by the MEP.

The audit compliance report was examined to confirm whether the registry is notified within five business days when information referred to in clause 10 of schedule 11.1 changes.

Status updates

Event	Year	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
Active status updates for reconnections	2019	70		50.7%
	2020 (Apr)	73	15	58.3%
	2020 (Nov)	50	98.77	21.88%
	2021	21	20.08	65.57%
	2022 (Feb)	**32**	**23.54**	**55.56%**
Inactive status updates for disconnections	2020 (Nov)	11	4.82	91.6%
	2021	3	0.73	98.43%
	2022 (Feb)	**9**	**6.10**	**95.11%**

15 of the late updates to active status were made more than 30 business days after the event date, and the latest update was 287 business days after the event date. I checked 10 of the 15 late updates made more than 30 business days after the event date and found the following issues:

- two updates were due to miscommunication/lack of paperwork from the field service provider (Wells),
- one ICP related to another trader,
- one late update was due to delay in completing the switch of the ICP, and
- there were six examples of internal processing issues where the registry status was not correctly updated.

Five of the nine late updates to inactive status were made within 30 business days of the event date. I checked the remaining four late updates, and they were due to internal processing errors.

During the previous audit it was stated that improved validation was required to ensure statuses were correct. I recommended the following checks were conducted as a minimum:

- inactive status with consumption to identify ICPs that should have an active status, and
- active status with zero consumption to identify ICPs that may require a site investigation to confirm if the ICP is disconnected and should have an inactive status.

Reporting is in place for consumption on inactive ICPs. Reporting is not yet in place for zero consumption. This is recorded again in **section 9.5** as a recommendation.

Trader updates

Event	Year	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
Trader updates	2020 (Nov)	314	20.12	60.4%
	2021	149	7.26	75.25%
	2022 (Feb)	**476**	**10.08**	**74.10%**

Late trader updates include MEP nominations and profile changes. 138 of the late trader updates were made more than 30 business days after the event date, and the latest update was 537 business days after the event date.

I checked fifteen updates between 15 and 75 business days after the event date and found:

- ten were profile corrections (of which some were identified during the previous audit) and of the profile changes:
    - two were profile changes at the end of the month between HHR and NHH depending on the quality of data available,
    - one was back dated past the 14-month wash up window resulting in some volumes not being included in submission,
- five were due to late identification of MEP changes, leading to late MEP nominations

ANZSIC code population

The audit compliance report did identify two ANZSIC codes updated more than 20 business days after trading commencing.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.3 With: Clause 10 Schedule 11.1 From: 01-Jul-21 To: 28-Feb-22	32 late updates to active status. 9 late updates to inactive status. 476 late trader updates. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are recorded as moderate. There is now a process to validate robotron*esales against a list file with history and other validation reports are being used. The impact on settlement and participants is medium as 94% (30 out of 32) late active updates were for HHR submitted ICPs and the late updates to active has impacted the Reconciliation Managers calculation of seasonal shapes for all NHH retailers; therefore, the audit risk rating is medium.

Actions taken to resolve the issue	Completion date	Remedial action status
Validation reporting is in place to help identify and update the ICPs.	End of April 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will be hiring more staff; this will lessen the overall load, prevent human errors made in haste and get all work checked before breaching. We have also started creating activities to update the registry, rather than relying on an email chain to track.	End of May 2022	

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

The new connection, MEP nomination and decommissioning processes were reviewed, and the registry list and audit compliance reports were examined to confirm process compliance.

A sample of MEP nomination rejections and decommissioned ICPs were examined.

Audit commentary

Retailers Responsibility to Nominate and Record MEP in the Registry

Ecotricity nominates the MEP based on notification of meter changes by relevant MEPs. Backdated MEP nominations are recorded as non-compliance in **section 3.3**.

Review of the AC020 report confirmed that:

- all active metered ICPs had an MEP recorded, and
- five listed late MEP nominations were replacement events to update other trader attributes and were not actual late MEP nominations.

All 460 MEP nominations identified on the event detail report were accepted.

ICP Decommissioning

Ecotricity continue with their obligations under this clause. ICPs that are vacant and active, or inactive are maintained in robotron*esales. Ecotricity's process meets the obligation to arrange a meter interrogation prior to or upon meter removal and notify the MEP.

18 ICPs were decommissioned with reason code "installation dismantled" during the audit period. Final meter readings were obtained for 14 ICPs but four ICPs were decommissioned without Ecotricity's knowledge and estimates were made for these. The MEP was advised in all cases where they had not already been advised.

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 five business days of trading (clause 9(2)).

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

Audit observation

The new connection processes were examined in detail to evaluate the strength of controls, and the registry list and audit compliance reports were examined to confirm process compliance.

Audit commentary

New connection timeliness

The audit compliance report was examined to confirm whether the registry is notified within five business days when information referred to in clause 9 of schedule 11.1 changes.

Event	Year	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
Active status updates for new connections	2020 (Nov)	19		70.37%
	2021	11	4.51	81.97%
	2022 (Feb)	**19**	**5.97**	**68.33%**

I checked ten of the 19 late updates, and they were all due to late notification from the field service providers/late paperwork.

All 19 late status updates had MEP nominations made on time, because the MEP was nominated when the ICP was claimed at “inactive - new connection in progress” status prior to initial electrical connection. The AC020 report recorded that all MEP nominations were accepted within 14 business days.

New connection information accuracy

The AC020 report confirmed that all ICPs with an initial electrical connection date populated have been moved to "active" status.

Active dates for new connections were compared to the distributor's initial electrical connection date, and MEP's certification date using the AC020 report. Five ICPs with date discrepancies were identified:

Exception type	Quantity	Commentary
IECD = active date and MCD ≠ active date	2	ICP 0110012618EL333 and 0000061571NTF8B both have the correct active dates.
IECD ≠ active date and MCD = active date	2	ICP 0000051075HR68A and 1002150154LC2D1 both have the correct active dates.
No IECD and MCD = active date	1	One exception relates to no initial energisation date being populated by the distributor however the network event has the same event date as the status event.

Audit outcome

Non-compliant

Non-compliance	**Description**
Audit Ref: 3.5 With: Clause 9 Schedule 11.1 From: 01-Jul-21 To: 28-Feb-22	19 late status updates to active for new connections. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement in terms of working with the MEPs and field service providers in improving paperwork delivery timeliness. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
We will have a conversation with the relevant MEP/s regarding timeliness of delivering paperwork	End of May 2022	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Will be setting up the conversations with relevant MEP/s.	End of May 2022	

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

Code reference

Clause 9 (1(k) of Schedule 11.1

Code related audit information

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

Audit observation

The process to capture and manage ANZISC codes was examined. The registry list and AC020 reports were reviewed and ANZSIC codes were checked for a sample of ICPs to determine compliance.

Audit commentary

ANZSIC codes are set based on information provided on the customer application.

Review of the AC020 report found:

- no ICPs with blank or T9 series ANZSIC codes,
- one active ICP with a residential ANZSIC code and meter category three; this ANZSIC code is incorrect and Ecotricity will update this, and
- six active ICPs with a residential ANZSIC code and meter category two; five of these are not residential.

I checked a sample of 13 ICPs with the ten most frequently applied codes to confirm they were correct. I compared the codes applied to google street view and registry property name information; and checked customer industry information for any ICPs I could not verify using registry and google street view information. Three of the 13 require further investigation by Ecotricity to confirm the correct ANZSIC code.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.6 With: Clause 9 (1)(k) of Schedule 11.1 From: 01-Dec-20 To: 06-Jul-21	At least six incorrect ANZSIC codes. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status

Since the audit, we believe we have fixed the codes.	End of April 2022	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Implement a more robust process to check ANZSIC codes against the registry and update more frequently.	End of May 2022	

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

Code reference

Clause 9(1)(f) of Schedule 11.1

Code related audit information

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

- *the code ENG - if the load is profiled through an engineering profile in accordance with profile class 2.1 (clause 9(1)(f)(i)); or*
- *the daily average kWh of unmetered load at the ICP - in all other cases (clause 9(1)(f)(ii)).*

Audit observation

The processes to manage unmetered load were examined. The registry list and AC020 reports were reviewed to determine compliance.

Audit commentary

Ecotricity currently supplies 23 ICPs with unmetered load. All of the ICPs have the unmetered flag set to yes and a non-zero daily unmetered kWh.

The audit compliance report found:

- no ICPs where the unmetered load flag is yes, but the daily unmetered kWh is zero,
- no ICPs where the distributor has unmetered load recorded and Ecotricity does not,
- one ICP (0282046071LCEB5) where the trader's daily unmetered kWh is different by more than ± 0.1 kWh from a calculation based on the distributor's unmetered load details (the daily unmetered kWh figure is now correctly recorded as 2.16), and
- one ICP (0000510715CEF20) where the trader UNM details do not align with the daily kWh value provided, but the daily kWh value on the registry does align with the distributor UMN record of the unmetered load present at this ICP (Ecotricity has corrected the description to align with the daily kWh).

Ecotricity does not currently supply any active unmetered builder's temporary supply ICPs.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.7 With: Clause 9(1)(f) of Schedule 11.1 From: 01-Jul-21 To: 28-Feb-22	One ICP (0282046071LCEB5) with incorrect daily average kWh calculated and applied. Potential impact: Low Actual impact: Low Audit history: none Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
The daily kwh amount was corrected in the Registry and sync'd through to esales.	End of April 2022	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Set up a process with Robotron to automate the UML process including spotting mismatches and incorrect kwh amounts.	End of Dec 2022	

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

Code reference

Clause 17 Schedule 11.1

Code related audit information

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

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

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

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

Audit observation

The new connection processes were examined in detail as discussed in **sections 2.9** and **3.5**.

The reconnection process was examined using the AC020 and event detail reports.

- The timeliness and accuracy of data for new connections is assessed in **section 3.5**.

- The timeliness of data for reconnections is assessed in **section 3.3**, and a sample of 20 updates were checked for accuracy.

For new connections which had been electrically connected during the audit period, the initial electrical connection date, earliest active date, and meter certification date were compared to determine the accuracy of the connection dates using the AC020 report.

Audit commentary

Status events are entered directly into the registry by users as part of a manual review of disconnection/ reconnection/new connection paperwork. Robotron*esales is updated from the registry every two days.

New connection information accuracy

The AC020 report confirmed that all ICPs with an initial electrical connection date populated has been moved to active status.

Active dates for new connections were compared to the distributor's initial electrical connection date, and MEP's certification date using the AC020 report. Five ICPs with date discrepancies were identified:

Exception type	Quantity	Commentary
IECD = active date and MCD ≠ active date	2	ICP 0110012618EL333 and 0000061571NTF8B both have the correct active dates.
IECD ≠ active date and MCD = active date	2	ICP 0000051075HR68A and 1002150154LC2D1 both have the correct active dates.
No IECD and MCD = active date	1	One exception relates to no initial energisation date being populated by the distributor however the network event has the same event date as the status event, indicating the active date is likely to be correct.

Reconnection information accuracy

A sample of ten reconnections were checked. All of them had the correct event date.

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

The disconnection process was examined using the AC020 and event detail reports. The timeliness of data for disconnections is assessed in **section 3.3**, and a sample of updates were checked for accuracy.

The registry list file was examined to identify any ICPs that had been at the "inactive - new connection in progress" for more than 24 months.

Audit commentary

Ecotricity conducts disconnections remotely where AMI is present and manually where AMI is not present. The registry is updated manually once confirmation of the disconnection is provided by the MEP. Status events are entered directly into the registry by the user. Robotron*esales is updated from the registry every two days.

Inactive new connection in progress status

There are currently 49 ICPs at "inactive - new connection in progress" status, and three have metering details or initial electrical connection dates recorded. ICP 0001660801TG577 had been at "inactive - new connection in progress" status for more than two years and another ICP with the same address has since been created and livened by another trader, so this has now been decommissioned.

Other inactive statuses

The AC020 report did identify six ICPs with AMI-remote disconnection, where a communicating AMI meter is not currently indicated and all six were confirmed as communicating at the time of remote disconnection.

I checked a sample of three (or all) status updates for each inactive status reason code. All status reason codes were correct. One ICP (0000007594NTFE6) had an incorrect status event date by one month.

Late registry updates are recorded as a non-compliance in **section 3.3**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.9 With: Clause 19 Schedule 11.1 From: 01-Jul-21 To: 28-Feb-22	One ICP (0000007594NTFE6) with incorrect inactive status event date. Potential impact: Low Actual impact: Low Audit history: none Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Reversed incorrect status update and added correct update	28/04/2021	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	

We will add a process to create activities when sending a Reconnection. We have also reiterated to Teams to "Double check all data before pressing UPDATE on the registry".	End of June 2022	

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

Code reference

Clause 15 Schedule 11.1

Code related audit information

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

Audit observation

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

Audit commentary

Ecotricity has not had any queries in relation to "new" or "ready" ICPs.

One ICP is at "new" status and one ICP is at "ready" status. None of the ICPs have been at "new" or "ready" for more than 24 months.

Audit outcome

Compliant

4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

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

Code reference

Clause 2 Schedule 11.3

Code related audit information

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

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

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

Audit observation

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

Audit commentary

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

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

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

I checked the metering category for all 1643 transfer switch ICPs and found none had metering categories of three or above.

Audit outcome

Compliant

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

Code reference

Clauses 3 and 4 Schedule 11.3

Code related audit information

Within three business days after receiving notice of a switch from the registry manager, the losing trader must establish a proposed event date. The event date must be no more than 10 business days after the

date of receipt of such notification, and in any 12-month period, at least 50% of the event dates must be no more than five business days after the date of notification. The losing trader must then:

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

When establishing an event date for clause 4, the losing trader must disregard every event date established by the losing trader for a customer who has been with the losing trader for less than two calendar months (clause 4(2) of Schedule 11.3).

Audit observation

The event detail report was reviewed to:

- identify AN files issued by Ecotricity during the audit period,
- assess compliance with the requirement to meet the setting of event dates requirement, and
- assess whether ANs response codes had been correctly applied.

The switch breach history report was examined for the audit period.

Audit commentary

AN content

Event dates set by losing trader must be no more than 10 business days after receipt of an NT file. Over a 12-month period 50% of event dates must be within five business days. All 21 transfer ANs had proposed event dates within five business days of the NT receipt date.

I checked response code accuracy for six ANs. All response codes were confirmed as correct.

AN timeliness

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

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 five business days after the event date, the losing trader must complete the switch by:

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

Audit observation

The event detail report was reviewed to identify CS files issued by Ecotricity during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of records. The content checked included:

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

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

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

Audit commentary

CS files are now created in robotron*esales and a file is sent to the registry.

CS timeliness

The switch breach history report recorded two CS breaches where the CS arrival date was more than five business days after the CS transfer date, both related to internal processing delays while invoices past the switch date were reversed manually to enable the CS file to be generated.

CS content

The "expected daily consumption" field is used to populate CS files and was populated for all CS files issued during the audit period. A sample of CS files were checked to determine whether the average daily consumption was correct.

One CS file (ICP 0006560352HBF75) had an average daily kWh that was negative. This was confirmed to be the result of human error when manually calculating the metering installation daily average. Three CS files had a daily average value of zero, these were confirmed as correct. One CS file was identified with a daily average of over 200 kWh, which was confirmed as correct.

Last actual read dates were not always consistent with the switch event read type applied for all transfer switches. I observed that in some cases the read applied for the transfer switch was after the period of responsibility for Ecotricity, and also recorded as an actual when the read did not occur on the transfer date.

I also observed that the reading provided in the CS file for HHR settled ICPs did not always align with the interval data volumes where the reading has been estimated for the CS file. The is because he mechanism to estimate a CS read does not consider the interval data received for the ICP/meter or estimated for submission purposes. This creates an issue for the gaining trader where the submission type changes to NHH at the time of switch, because the boundary read provided in the CS file can result in some consumption volumes either not being accounted for or billed/submitted twice between retailers and submission types. I recommend that where Ecotricity cannot identify an actual midnight read for the switch date to undertake a change of submission type to NHH for a date where a suitable validated meter reading is available prior to completing the switch. This will ensure that consumption volumes are correctly accounted for in the submission process.

Recommendation	Description	Audited party comment	Remedial action
Regarding clause 5 Schedule 11.3	For HHR settled ICPs where a suitable actual read cannot be identified for population of the CS, develop a process to transition the ICP to NHH submission type prior to completing the population of the CS file.	We will investigate this further to understand how a process could be implemented. We note that by following this recommendation, it will help with the timing/accuracy of the CS files produced.	Investigating

The previous audit also recommended running a report of all manually created CS files against reads in robotron*esales to identify any differences and to identify whether RR files need to be sent or whether submission needs to be revised. This recommendation was not adopted.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.3 With: Clause 5 Schedule 11.3 From: 01-Jul-21 To: 28-Feb-22	Two CS breaches for late delivery of a CS file. Switch reads do not reflect the correct boundary read between traders in all cases. Incorrect average daily consumption for ICP 0006560352HBF75. Potential impact: Medium Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because there is no mechanism to ensure: • for HHR settled ICPs that the switch read aligns with the HHR consumption volumes submitted up to the switch date, and • switch reads used do not relate to the ECOT period of responsibility There is an impact on settlement and participants as this generates an additional volume of RR changes where other traders are able to detect these invalid switch reads, and it also increases UFE. The total number of ICPs and the total kWh is not large, therefore the risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Significant improvements within switching have been made from the Audit. A new person has undertaken the role and we believe they will have a finer eye for detail.	End of April 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

When unable to send the CS through eSales, the switching team has been advised to send manually, to prevent breaches.	01/04/2022	

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 actual event date, provide to the losing trader a changed switch event meter reading supported by two validated meter readings.

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

Audit observation

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

The event detail report was analysed to identify all read change requests and acknowledgements during the audit period. A sample of files were checked to confirm that the content was correct, and that robotron*esales reflected the outcome of the RR process.

I also checked for CS files with estimated readings provided by other traders where no RR was issued, to determine whether the correct readings were recorded in robotron*esales.

The switch breach history report for the audit period was reviewed.

Audit commentary

RR

Switch reads are checked by comparing actual AMI data to the switch read to determine whether an RR is required. Sometimes an AMI midnight read may not be available and so it is derived by deducting the sum of the trading periods for that day to determine the expected start read.

Nine RRs were issued by Ecotricity for transfer switches and five were for move switches; twelve were accepted and two were rejected. I checked the content of the two rejected files and eight accepted files.

Compliance was achieved with these clauses in all cases. RR reads are correctly supported by two validated reads.

I found discrepancies with two ICPs, as recorded below.

- ICPs 0007174122RN55C and 1001152091CK797 - RR requests were initially rejected by the losing retailer who requested an amended read type before accepting a second RR for each; the readings in the registry are correctly identified as actuals now.

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

AC

65 AC files were issued, and the switch breach history report did not record any late AC files.

Incoming CS files

I checked six transfer CS files received by Ecotricity with estimated reads where the NT proposed profile was HHR and Ecotricity had actual switch event meter readings from the MEP. Ecotricity used the actual switch event meter readings for five ICPs, which were accurate, but the Code requires them to use the losing trader's reading unless they send an RR file, and they did not send RR files. The result is that the losing trader and Ecotricity used different switch event meter readings, with a total difference of 65 kWh.

There is also likely an impact to the customer where some consumption maybe charged twice between retailers due to the change in billing/submission methodology.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.4 With: Clause 6(1) and 6A Schedule 11.3 From: 01-Dec-20 To: 27-Apr-21	Incorrect readings used for five of six ICPs sampled where Ecotricity settle as HHR, the CS read was estimated, and no adjustment was applied to the interval data to reflect the volume between the estimated switch read and the derived actual switch read from AMI data. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because as the gaining trader Ecotricity needs to ensure no volume is lost during the switch process where there is a change in submission type. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
RR processes will be reviewed. We will be creating a data base for all calculated RRs so that there is an audit trail. Ecotricity uses best efforts to ensure the correct switch read is used and will continue to monitor these.	On going	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

See above comment	On going	

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

Code reference

Clause 6(2) and (3) Schedule 11.3

Code related audit information

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

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

Audit observation

The process for the management of read requests was examined. The event detail report was analysed to identify read change requests issued and received under Clause 6(2) and (3) Schedule 11.3 and determine compliance.

Audit commentary

Ecotricity issued five RRs for transfer switches where they had recorded a HHR profile, and the RR was issued within five business days of switch completion. All of these were eventually accepted by the losing trader.

However, Ecotricity does not always issue RR files where they are to settle an ICP as HHR and the received CS read was estimated by the losing retailer, and this issue is described further in **section 4.4,** where non-compliance is recorded.

Other retailers cannot usually issue read change requests to Ecotricity under clause 6(2) and (3) of schedule 11.3 because Ecotricity is predominantly a HHR only trader. Therefore, the switch event read for these HHR settled ICPs should be an actual read reflective of the metering installation being interrogated remotely at the switch date.

30 RR files were issued to Ecotricity by other traders during the audit period. 29 were accepted and only one was initially rejected before then being accepted by Ecotricity.

Audit outcome

Compliant

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

Code reference

Clause 7 Schedule 11.3

Code related audit information

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

Audit observation

I confirmed with Ecotricity whether any disputes have needed to be resolved in accordance with this clause.

Audit commentary

Ecotricity confirmed that no disputes have needed to be resolved in accordance with this clause.

Audit outcome

Compliant

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

Code reference

Clause 9 Schedule 11.3

Code related audit information

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

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

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

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

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

Audit observation

The switch gain process was examined to determine when Ecotricity deem all conditions to be met.

All backdated switch moves were checked to confirm that they were notified to the registry within two business days, and that the correct switch type was selected.

Audit commentary

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

Audit commentary

Ecotricity's processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986.

Ecotricity maintains relationships with multiple solar installation providers who act as Ecotricity's onboarding agents. Once the primary conditions have been met for both Ecotricity and the solar installation provider then the switch will commence.

NT files are normally sent as soon as all pre-conditions are met, and the withdrawal process is used if the customer changes their mind.

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

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

I identified one MI switch that was used to achieve the customer requested switch date. This switch was accepted by the losing trader.

I checked the metering category for all 1,091 switch move ICPs and found none had metering categories of three or above at the time of the switch being initiated.

Audit outcome

Compliant

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

Code reference

Clause 10(1) Schedule 11.3

Code related audit information

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

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

Audit observation

The event detail report was reviewed to:

- identify AN files issued by Ecotricity during the audit period,
- assess compliance with the requirement to meet the setting of event dates requirement, and
- assess whether ANs response codes had been correctly applied.

The switch breach history report was examined for the audit period.

Audit commentary

AN content

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

- all had proposed event dates within ten business days of the NT receipt date, and
- one AN (0000166330UN9E9) had a proposed event date before the gaining trader's requested date; this NT was reversed by the gaining retailer and a revised NT was sent and the switch completed.

I checked response code accuracy for six ANs on the event detail report:

- two had AD (Advanced metering) correctly applied, because the AMI flag was set to yes,
- two had PD (Premises electrically disconnected) correctly applied because they were disconnected on the registry at the time of the switch,
- one had AA (Acknowledge and Accept) correctly applied, because the AMI flag was set to no at the time of the switch, and
- one (ICP 0000528579TPB38) had AA (Acknowledge and Accept) incorrectly applied where the AMI flag was set to yes at the time of the switch.

AN timeliness

The switch breach history report recorded five late AN files.

CS timeliness

The switch breach history report recorded:

- one CS breach, and
- 26 T2 breaches where the CS was delivered more than five business days after receipt of the NT and no AN was provided, or an AN was provided with a proposed event date consistent with the gaining trader's date.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.8 With: Clause 10(1) Schedule 11.3 From: 01-Jul-21 To: 31-Jan-22	One AN breach relating to incorrect response code where a communicating AMI meter was present. One AN breach relating to incorrect event date populated. One CS breach. Five late AN files for switch moves. 26 T2 breaches for switch moves. One CS breach Potential impact: Low Actual impact: Low Audit history: twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk to an acceptable level most of the time. However resourcing levels and key personnel due annual leave, means the processes as are not as robust as they need to be consistently. The impact on other participants was minor because the files were only late by one or two days. The audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
We will be hiring more staff; this will lessen the overall load, prevent human errors made in haste and ensure all work is checked/completed before breaching.	End of May 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will be hiring more staff; this will lessen the overall load, prevent human errors made in haste and ensure all work is checked/completed before breaching.	End of May 2022	

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, the losing trader must also complete the switch by providing to the registry manager as described in sub-clause (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 event detail report and switch breach history report were reviewed to identify AN files issued by Ecotricity during the audit period and assess compliance with the requirement to meet the setting of event dates requirement.

Audit commentary

For 479 of the 502 switch move ANs listed on the event detail report, the proposed event date matched the gaining trader's proposed event date. For 23 ICPs, Ecotricity proposed an event date different to the gaining trader's proposed date, and the switch was compliantly completed effective from this date.

The switch breach report recorded two ET breaches where the AN proposed event date was different to the NT received date and NT proposed event date. The switches were completed effective from the AN proposed event date. The ICPs are:

- 1099575974CN651 – one day difference, and
- 0000475238WE96A – five days difference.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.9 With: Clause 10(2) Schedule 11.3 From: 01-Jul-21 To: 31-Jan-22	Two ET breaches for switch moves. Potential impact: Low Actual impact: Low Audit history: twice Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. The impact on participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
We will be hiring more staff; this will lessen the overall load, prevent human errors made in haste and ensure all work is checked/completed before breaching.	End of May 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will be hiring more staff; this will lessen the overall load, prevent human errors made in haste and ensure all work is checked/completed before breaching.	End of May 2022	

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 event detail report was reviewed to identify CS files issued by Ecotricity during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of records. The content checked included:

- correct identification of meter readings and correct date of last meter reading,

- accuracy of meter readings, and
- accuracy of average daily consumption.

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

Audit commentary

The "expected daily consumption" field is used to populate CS files and was populated for all CS files issued during the audit period. A sample of six CS files were reviewed

One CS file had average daily kWh which was negative, this was the result of human error when manually calculating the daily average consumption at a metering installation level. Three were over 200 kWh and only one of the three were confirmed as correct. Two CS files had an average daily kWh of zero which was confirmed as correct.

Last actual read dates were not always consistent with the switch event read type applied for all move switches. I observed that in some cases the read applied for the move switch was after the period of responsibility for Ecotricity, and also recorded as an actual when the read did not occur on the transfer date.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.10 With: Clause 11 Schedule 11.3 From: 01-Jul-21 To: 31-Jan-22	Switch reads do not reflect the correct boundary read between traders in all cases. Incorrect daily kWh for three ICPs. Potential impact: Medium Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because there is no mechanism to ensure: • for HHR settled ICPs that the switch read aligns with the HHR consumption volumes submitted up to the switch date, and • switch read used do not relate to the ECOT period of responsibility There is an impact on settlement and participants as this generates an additional volume of RR changes where other traders are able to detect these invalid switch reads, and it also increases UFE. The total number of ICPs and the total kWh is not large, therefore the risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
We will be hiring more staff; this will lessen the overall load, prevent human errors made in haste and ensure all work is checked/completed before breaching.	End of May 2022	Identified

Non-compliance	Description	
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will be hiring more staff; this will lessen the overall load, prevent human errors made in haste and ensure all work is checked/completed before breaching.	End of May 2022	

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

Code reference

Clause 12 Schedule 11.3

Code related audit information

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

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

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

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

Audit observation

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

The event detail report was analysed to identify all read change requests and acknowledgements during the audit period. A sample of files were checked to confirm that the content was correct, and that robotron*esales reflected the outcome of the RR process.

I also checked for CS files with estimated readings provided by other traders where no RR was issued, to determine whether the correct readings were recorded in robotron*esales.

The switch breach history report for the audit period was reviewed.

Audit commentary

RR

Switch reads are checked by comparing actual AMI data to the switch read to determine whether an RR is required. Sometimes an AMI midnight read may not be available and so it's derived by deducting the sum of the trading periods for that day to determine the expected start read.

Eleven RRs were issued by Ecotricity for switch moves; nine were accepted and two were initially rejected but were then accepted on the resending of a revised RR file. I checked the content of ten files. For two of the accepted RR files the revised read was not applied in robotron*esales and neither was the original CS file read. Ecotricity are investigating what has occurred.

AC

The switch breach history report recorded one late AC file.

Incoming CS files

Review of five MI CS files with estimated reads where the NT proposed profile was HHR and no RR was issued identified that Ecotricity did not use used the correct start reads for two ICPs as the CS estimate read differed by more than one kWh to the derived boundary read from the AMI data.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.11 With: Clause 12 Schedule 11.3 From: 01-Jul-21 To: 31-Jan-22	Incorrect readings used for two ICPs where the read from the accepted RR was not used in robotron*esales. Incorrect readings used for two ICPs where the ICP is settled as HHR. One late AC file. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate as when a proposed read change is accepted by the losing trader it is not always updated in the robotron*esales system. Closer monitoring of CS reads is required for HHR profiled ICPs to ensure the switch read is appropriate for both the switch and change in submission type. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Activities are now being created for all future RR's and will be closed off once the read is showing as the opening read.	End of May 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

See above.	End of May 2022	

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

Code reference

Clause 13 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 through or assume responsibility for:

- *a half hour metering installation (that is not a category 1 or 2 metering installation) at an ICP with a submission type of half hour in the registry and an AMI flag of "N"; or*
- *a half hour metering installation at an ICP that has a submission type of half hour in the registry and an AMI flag of "N" and is traded by the losing trader as non-half hour; or*
- *a non-half hour metering installation at an ICP at which the losing trader trades electricity through a half hour metering installation with an AMI flag of "N".*

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

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

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

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

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

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

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

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

Audit observation

The switch gain process was examined to determine when Ecotricity deem all conditions to be met. All HH NTs were checked.

Audit commentary

Seventeen HH NT files were issued for meter category 3 and 4 ICPs. The NT files were sent within the appropriate timeframe.

I checked the metering category for all transfer switch and switch move ICPs and found none had metering categories of three or above.

Audit outcome

Compliant

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

Code reference

Clause 15 Schedule 11.3

Code related audit information

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

> *15(a) - provide to the registry manager a valid switch response code as approved by the Authority; or*
>
> *15(b) - provide a request for withdrawal of the switch in accordance with clause 17.*

Audit observation

The event detail report was reviewed to identify all HH ANs issued during the audit period, and the switch breach history report was reviewed.

Audit commentary

No HH switch outs occurred during the audit period, and no late HH ANs were recorded on the switch breach history report.

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 three business days, after receiving the valid switch response code, by advising the registry manager of the event date.

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

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

Audit observation

The event detail report was reviewed to identify all HH CS files issued during the audit period, and the switch breach history report was reviewed.

Audit commentary

Five HH CS files were issued during the audit period. Four files were sent on time and the content was accurate. One late HH CS files (ICP 0001952500TG02C) was recorded on the switch breach history report. It was identified that there were several NW requests made by the losing trader as the switch was being confirmed with the losing trader's customer. These repeated NW requests delayed the CS file from Ecotricity.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.14 With: Clause 16 Schedule 11.3 From: 05-Feb-21 To: 05-Feb-21	One late HH CS file. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong as processes are robust around monitoring HH switches. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Nothing can be done to resolve the historic late HH CS file however, eSales now sends HH files meaning there is no longer manual intervention to help ensure files are processed within timeframes.	End of April 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
eSales now sends HH files meaning there is no longer manual intervention to help ensure files are processed within timeframes.	End of April 2022	

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

Code reference

Clauses 17 and 18 Schedule 11.3

Code related audit information

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

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

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

Audit observation

The event detail report was reviewed to:

- identify all switch withdrawal requests issued by Ecotricity, and check a sample for accuracy,
- identify all switch withdrawal acknowledgements issued by Ecotricity, and check a sample of rejections, and
- confirm timeliness of switch withdrawal requests.

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

Audit commentary

NW

Three (4.2%) of the 71 NWs issued by Ecotricity were rejected by the other trader. I reviewed all rejections, and one acceptance and confirmed that the correct withdrawal advisory codes were applied. The sample included two or all NWs issued for each advisory code.

The switch breach history report recorded:

- five NA breaches where the NW arrived more than two calendar months after the CS event date; for two ICPs the customer had signed up for the incorrect property, and
- one NW breach where the customer requested to return back to their previous retailer after their solar installation was cancelled.

AW

49 (20%) of the 245 AWs issued by Ecotricity were rejections. I reviewed a sample of 11 rejections, and confirmed they were rejected based the information available at the time the response was issued.

The switch breach history report identified two late AW files, one SR breach and one WR breach.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.15 With: Clauses 17 and 18 Schedule 11.3 From: 01-Jul-21 To: 31-Jan-22	Five NA breaches. One NW breach Two AW breaches One SR breach. One WR breach. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Nothing can be done to resolve the historic breaches, however, we will be hiring more staff which will lessen the overall load, prevent human errors made in haste and ensure all work is checked/completed before breaching.	End of April 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will be hiring more staff; this will lessen the overall load, prevent human errors made in haste and ensure all work is checked/completed before breaching.	End of May 2022	

4.16. Metering information (Clause 21 Schedule 11.3)

Code reference

Clause 21 Schedule 11.3

Code related audit information

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

> *21(a)- the trader who carries out the interrogation, switch event meter reading must ensure that the interrogation is as accurate as possible, or that the switch event meter reading is fair and reasonable.*

21(b) and (c) - the cost of every interrogation or switch event meter reading carried out in accordance with clauses 5(b) or 11(b) or (c) must be met by the losing trader. The costs in every other case must be met by the gaining trader.

Audit observation

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

Audit commentary

All meter readings used in the switching process are validated meter readings or permanent estimates.

There were no examples of meter reading errors.

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

Audit outcome

Compliant

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

Code reference

Clause 11.15AA to 11.15AB

Code related audit information

A 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

I checked processes for "win-back" activity, and I checked all "CX" coded switch withdrawal requests.

Audit commentary

Ecotricity does not conduct "win-back" activity.

I identified seven NW CX which were issued within 180 days of switch completion where Ecotricity was the losing trader. All the NWs were accepted by the gaining trader and compliance is confirmed.

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

The processes to manage unmetered load were examined. The registry list and AC020 reports were reviewed to determine compliance.

Audit commentary

Ecotricity supplies 11 ICPs with shared unmetered load indicated by the distributor. All of the ICPs have the unmetered flag set to yes and a non-zero daily unmetered kWh.

The audit compliance report found:

- no ICPs where the unmetered load flag is yes, but the daily unmetered kWh is zero,
- no ICPs where the distributor has unmetered load recorded and Ecotricity does not, and
- no ICPs where the trader's daily unmetered kWh is different by more than ± 0.1 kWh from a calculation based on the distributor's unmetered load details.

Audit outcome

Compliant

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

Code reference

Clause 10.14 (2)(b)

Code related audit information

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

Audit observation

The processes to manage unmetered load were examined. The registry list and AC020 reports were reviewed to determine compliance.

Audit commentary

Ecotricity currently supplies one ICP (0000500096HB752 – 4,378 kWh annually) with unmetered load over 3,000 kWh per annum. This unmetered load relates to under veranda lights which is a type approved by the authority.

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 MEP proposes to take or is taking to reduce the unmetered load.*

Audit observation

The processes to manage unmetered load were examined. The registry list and AC020 reports were reviewed to determine compliance.

Audit commentary

Ecotricity currently supplies one ICP (0000500096HB752 – 4,378 kWh annually) with unmetered load over 3,000 kWh per annum. This unmetered load relates to under veranda lights which is a type approved by the authority.

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

The processes to manage unmetered load were examined. The registry list and AC020 reports were reviewed to determine compliance.

Audit commentary

Ecotricity does not currently supply any ICPs with distributed unmetered load.

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

Processes for metering, submission, and distributed generation were reviewed. The registry list and AC020 were examined to determine compliance.

Audit commentary

Metering installations installed

I checked all ICPs at "new connection in progress" status and they had an arrangement with the MEP.

Review of the AC020 report confirmed that:

- all active metered ICPs had an MEP recorded, and
- no submission information is determined using subtraction.

Distributed Generation

Ecotricity has reporting to identify distributed generation discrepancies, however the report is not routinely monitored due to resourcing constraints. A recommendation was made as part of the previous audit that this reporting is checked on a regular basis, and I repeat this recommendation as part of this audit.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 10.13, Clause 10.24 and 15.13	Conduct regular checks of reporting to identify DG discrepancies.	We acknowledge the recommendation and will be hiring more staff to allow more frequent checking for discrepancies.	Identified

The registry list recorded 5,431 active ICPs with generation recorded by the distributor.

- 5,368 ICPs have I flow meter registers with the settlement indicator set to yes. 5,351 have HHR submission, or a NHH profile indicating generation. 17 NHH ICPs did not have a PV1 or EG1

profile. Ten of these are now correct as part of BAU, and I confirmed that if the meter has an I-flow register where the Registry settlement indicator is 'Y' (Yes) then submission automatically occurs against the correct profile.

- 64 HHR ICPs do not have I-flow meter registers or have I-flow meter registers, but the settlement indicator is set to 'N' (No). 49 of the 64 had correct metering installed by the date of the audit report.

It was observed that for some ICPs where an I flow register is present, but the registry settlement indicator is currently set to 'No', the instruction to update the registry I flow settlement register is delayed as the customer is required to provide a 'Record of Inspection' for the solar installation. This requirement is valid where a meter change is required. If no meter change is required, and the distributor has confirmed their requirements for allowing this embedded generation to be connected to their network have been met, there should be no delay in the registry update.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 10.13, Clause 10.24 and 15.13	Review the process to require customers provide ROIs for new solar installations where the meter is already configured for I flow.	Speak with the relevant MEP/s and/or solar provider/s regarding providing DG approval only in order to make this update.	Identified

I checked for consistency between the profiles applied and distributor fuel types. All ICPs with PV1 profile had solar indicated by the distributor. 84 ICPs with profile EG1 had solar indicated by the distributor, but EG1 is correct because batteries are installed.

Bridged meters

The process from monitoring bridged meters is unchanged – no bridged meters were identified during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.1 With: Clause 10.13, Clause 10.24 and 15.13 From: 01-Jul-21 To: 31-Jan-22	Submission had not occurred for 15 HHR ICPs and seven NHH ICPs with distributed generation and the RM was not notified of gifting. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because although sound reporting is in place, resource constraints mean discrepancies are not resolved as soon as possible. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
We are hiring additional staff in order to run through our report for this section and fully follow up on issues in a timely manner.	End May 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We are hiring additional staff in order to run through our report for this section and fully follow up on issues in a timely manner.	End May 2022	

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

Code reference

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

Code related audit information

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

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

The participant responsible for the metering installation must:

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

Audit observation

The NSP table was reviewed to confirm whether Ecotricity is responsible for any GIPs.

Audit commentary

Review of the NSP table confirmed that Ecotricity are not responsible for any GIPs.

Audit outcome

Not applicable

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

Code reference

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

Code related audit information

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

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

Audit observation

The registry list and AC020 report were examined to determine compliance.

Audit commentary

Ecotricity has used the HHA, HHR, RPS, EG1 and PV1 profiles during the audit period. None of the profiles require control device certification.

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 leads it to believe a metering installation could be inaccurate, defective, or not fit for purpose they must:

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

Audit observation

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

Audit commentary

Defective meters are typically identified through the validation process, or from information provided by the MEP or customer. Upon identifying a possible defective meter, Ecotricity raises a field services job to investigate.

Ecotricity provided four examples of a defective meter, two were AMI comms faults and two were faulty meters. The MEP was notified in all cases.

Audit outcome

Compliant

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

Code reference

Clause 2 Schedule 15.2

Code related audit information

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

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

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

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

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

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

2(6) – The interrogation systems must record:

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

Audit observation

The data collection and clock synchronisation processes were examined.

Ecotricity's agents and MEPs are responsible for the collection of HHR and AMI data. Collection of data and clock synchronisation were reviewed as part of their agent and MEP audits. A sample of clock synchronisation events received by Ecotricity were reviewed.

Audit commentary

HHR data is provided by MEPs and agents. Interrogation requirements and clock synchronisation were reviewed as part of MEP audits and agent audits, compliance is confirmed.

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 data collection process was examined.

Processes to provide meter condition information were reviewed as part of the agent audits. Ecotricity's processes to manage meter condition information were reviewed, including viewing a sample of meter condition events.

Processes for customer and photo reads were reviewed, including a review of process documentation.

Audit commentary

AMI data is provided by MEPs and manual readings are provided by Wells. Validated readings are derived from actual meter readings.

Condition and no-read information provided by Wells is reviewed and appropriate action is taken. No examples were identified in this audit period from Wells.

Ecotricity is aware of the requirements to ensure that customer readings are validated against a set of validated actual reading from another source. If customer readings are used to calculate consumption, the interval data is labelled as estimated. One example was checked which confirmed this.

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

Ecotricity supplies 902 active and metered ICPs with NHH submission type as of 2 February 2022.

Switch event meter readings in CS files were reviewed in **sections 4.3** and **4.10**, and switch event meter readings in RR files were reviewed in **sections 4.4, 4.5** and **4.11**.

Audit commentary

NHH readings apply from 0000hrs on the day after the last meter interrogation up to and including 2400hrs on the day of the meter interrogation except in the case of a switch event meter reading which applies to the end of the day prior to the event date for the losing trader and the start of the event date for the gaining trader as required by this clause.

Readings relating to status event changes (active to inactive and vice versa) need to apply from the beginning of the day the status event change relates to. The robotron*esales system treats all meter

readings as occurring at the midnight (end of a day) therefore in order to ensure the HE volume calculations are correctly applied some reads such as switch gain and disconnection/reconnection reads are applied using the day before the actual event date.

All AMI systems have a clock synchronisation function, which ensures correct time stamping. Manual readings taken by Wells are applied correctly.

Application of reads was reviewed as part of the historic estimate checks in **section 12.11** and found to be compliant.

The content of CS and RR files was examined in **sections 4.3**, **4.4**, **4.10** and **4.11**. This found all labelling was correct.

I walked through the process for NHH to HHR and HHR to NHH meter changes, including reviewing five upgrades and all three downgrades and I identified the following:

- one ICP had two changes in submission type applied from Nov 2019 which is outside the revision window; for one of the submission type changes there was no reading present for this boundary, while another boundary read was estimated (straight line extrapolation) and applied for 1 Jan 2020 as a way to address the volume outside the revision cycle - the methodology used has resulted in some volumes not being included in submission, and
- one ICP was transitioned from HHR to NHH submission due to a communications issue with the AMI meter - the meter reading used was a manual meter reading obtained from a site visit nine months post the communications failure and outside the window (5,000 intervals) for the robotron*esales system to be able to scale estimated interval data to match volume calculated between two actual reads; because the read used for the change in submission type does not align with the sum of the interval data for the affected period (last interrogation) this profile change is non-compliant.

In other all cases, the profile change occurred on a meter reading applied to the correct date and time.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.7 With: Clause 6 Schedule 15.2 From: 01-Jul-21 To: 31-Jan-22	Reads applied for two profile changes were not reflective of the read/consumption from the last interrogation of the meter. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	In most cases profile and submission type changes are applied correctly. However, this process is manual, users are not consistently applying the process resulting in errors being applied and there is no mechanism to review these manual changes to ensure accuracy, therefore controls are considered moderate overall. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Any brought to our attention during the audit have been resolved.	End April 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We are looking into a process with Robotron to bulk upload closing and opening readings for meter changes, and an additional process to check the readings against the previous reads in the account.	End of Dec 2022	

6.8. Interrogate meters once (Clause 7(1) and (2) Schedule 15.2)

Code reference

Clause 7(1) and (2) Schedule 15.2

Code related audit information

Each reconciliation participant must ensure that a validated meter reading is obtained in respect of every meter register for every non half hour metered ICP for which the participant is responsible, at least once during the period of supply to the ICP by the reconciliation participant and used to create volume information.

This may be a validated meter reading at the time the ICP is switched to, or from, the reconciliation participant.

If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 7(1).

Audit observation

The read attainment process was reviewed. I requested a list of all NHH ICPs not read during the period of supply.

Audit commentary

There is a "no read" report containing ICPs where further action is required to obtain reads. The report provided for the audit was blank however there are two ICPs where no reads have been obtained since the ICP switched to Ecotricity. One ICP switched to Ecotricity on an actual read, therefore compliance is confirmed for this ICP. For the other ICP the meter readers have been unable to locate the metering installation, but several attempts have been made to contact the customer so compliance is achieved.

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

The meter reading process was examined. Monthly reports were provided and reviewed to determine whether they met the requirements of clauses 8 and 9 of schedule 15.2.

This report includes ICPs where the switch was withdrawn, so Ecotricity is not responsible, and also includes unmetered load ICPs which also should not be present in this report.

All ICPs not read in the 12 months ending 31 Dec 2021 were reviewed to determine whether exceptional circumstances existed and if Ecotricity had used their best endeavours to obtain readings.

Audit commentary

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
Jul 2021	90	3	3	99.08%
Aug 2021	91	4	5	98.54%
Sep 2021	90	5	7	98.01%
Oct 2021	91	7	8	97.88%
Nov 2021	92	6	7	98.25%
Dec 2021	96	9	9	97.96%

As discussed in **section 6.8**, reporting is in place to identify unread meters, but this report had not been routinely actioned during the previous audit period. Efforts have now been made to reinstate the process to investigate and resolve the issues preventing reads from being obtained which includes:

- attempt to contact the customer using multiple methods of communication (calls/emails and where successful, request the customer to provide a photo),
- arrange access to enable a scheduled special read site visit (the special read arrangement is made every 4-months until the access issue is resolved), and
- offer of metering upgrade to AMI where communication is made with the customer.

Due to resourcing issues the 4 and 12-month reports were not being reviewed every month which is reflected in the gradual increase in the number on unread ICPs for 12 months.

All ICPs not read in the 12 months ending 31 December 2021 were reviewed to determine whether exceptional circumstances existed and if Ecotricity had used their best endeavours to obtain readings. For six of the eleven ICPs, Ecotricity were not the retailer as switches had previously been withdrawn for these. Two ICPs were unmetered therefore should not be on the report. Three were genuine exceptions where one has now had a meter upgrade to AMI. For the remaining two ICPs best endeavours were not demonstrated, because the actions to get reads have only recently been taken.

Copies of the meter reading frequency reports to the Electricity Authority for July to December 2021 were provided. The content did not meet the requirements of the Code as ICPs which ECOT were not responsible are included in the calculation of the statistics of this report. The reports were sent on time.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.9 With: Clause 8(1) and (2) Schedule 15.2 From: 01-Jul-21 To: 31-Dec-21	Best endeavours not met for two ICPs not read in the 12-month period. Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Reporting is in place but is not being actioned consistently, therefore the controls are weak. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
We have contacted the customers involved to organise readings.	End of April 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will hire more staff in order to complete more frequent checks and more intensive follow up with customers to organise readings.	End of May 2022	

6.10. NHH meters 90% read rate (Clause 9(1) and (2) Schedule 15.2)

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

In relation to each NSP, each reconciliation participant must ensure that for each NHH ICP at which the reconciliation participant trades continuously for each four months, for which consumption information is required to be reported into the reconciliation process. A validated meter reading is obtained at least once every four months for 90% of the non-half hour metered ICPs.

A report is to be sent to the Authority providing the percentage, in relation to each NSP, for which consumption information has been collected no later than 20 business days after the end of each month.

If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 9(1).

Audit observation

The meter reading process was examined. Monthly reports were provided and reviewed to determine whether they met the requirements of clauses 8 and 9 of schedule 15.2.

All seven ICPs not read in the four months ending December 2021 were reviewed to determine whether exceptional circumstances existed and if Ecotricity had used their best endeavours to obtain readings.

Audit commentary

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	ICPs unread for 4 months	Overall percentage read
Jul 2021	97	4	6	96.48%
Aug 2021	103	9	15	96.46%
Sep 2021	103	8	14	97.25%
Oct 2021	104	9	13	97.48%
Nov 2021	107	3	4	99.26
Dec 2021	107	7	8	98.54

As discussed in **section 6.8**, reporting is in place to identify unread meters, but this report has not been routinely actioned during the audit period.

The seven ICPs not read in the four months ending December 2021 were reviewed to determine whether exceptional circumstances existed and if Ecotricity had used their best endeavours to obtain readings:

- one ICP related to an UML ICP that had not been correctly set up therefore incorrectly appearing on this report,
- for three ICPs reads have now been obtained,
- one relates to a vacant property where the meter is located inside; while the registry indicates an AMI meter is present, no reads have been obtained by the AMI MEP, and

- for two ICPs, best endeavours were not demonstrated.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.10 With: Clause 9(1) and (2) Schedule 15.2 From: 01-Jan-21 To: 30-Apr-21	Two ICPs not read in the 4-month period. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Reporting is in place but is not being actioned consistently, therefore the controls are weak. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
We have contacted the customers involved to organise readings.	End of April 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will hire more staff in order to do more frequent checks and more intensive follow up with customers to organise readings.	End of May 2022	

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

Ecotricity has used Wells to conduct manual meter readings. I checked the Wells audit report for compliance.

Audit commentary

The Wells audit report confirms compliance with this requirement.

Audit outcome

Compliant

6.12. HHR data collection (Clause 11(1) Schedule 15.2)

Code reference

Clause 11(1) Schedule 15.2

Code related audit information

Raw meter data from all electronically interrogated metering installations must be obtained via the services access interface.

This may be carried out by a portable device or remotely.

Audit observation

HHR data is provided by MEPs and agents. Compliance was assessed as part of their audits.

Audit commentary

HHR data is provided by MEPs and agents. Compliance was assessed as part of their audits.

Audit outcome

Compliant

6.13. HHR interrogation data requirement (Clause 11(2) Schedule 15.2)

Code reference

Clause 11(2) Schedule 15.2

Code related audit information

The following information is collected during each interrogation:

11(2)(a) - the unique identifier of the data storage device

11(2)(b) - the time from the data storage device at the commencement of the download unless the time is within specification and the interrogation log automatically records the time of interrogation

11(2)(c) - the metering information, which represents the quantity of electricity conveyed at the point of connection, including the date and time stamp or index marker for each half hour period. This may be limited to the metering information accumulated since the last interrogation

11(2)(d) - the event log, which may be limited to the events information accumulated since the last interrogation

11(2)(e) - an interrogation log generated by the interrogation software to record details of all interrogations.

The interrogation log must be examined by the reconciliation participant responsible for collecting the data and appropriate action must be taken if problems are apparent or an automated software function flags exceptions.

Audit observation

HHR data is provided by MEPs and agents. Interrogation requirements and clock synchronisation were reviewed as part of their audits.

Audit commentary

Fulfilment of the interrogation systems requirements was examined as part of the MEP and agent audits and found to be compliant.

Audit outcome

Compliant

6.14. HHR interrogation log requirements (Clause 11(3) Schedule 15.2)

Code reference

Clause 11(3) Schedule 15.2

Code related audit information

The interrogation log forms part of the interrogation audit trail and, as a minimum, must contain the following information:

11(3)(a)- the date of interrogation

11(3)(b)- the time of commencement of interrogation

11(3)(c)- the operator identification (if available)

11(3)(d)- the unique identifier of the meter or data storage device

11(3)(e)- the clock errors outside the range specified in Table 1 of clause 2

11(3)(f)- the method of interrogation

11(3)(g)- the identifier of the reading device used for interrogation (if applicable).

Audit observation

HHR data is provided by MEPs and agents. Interrogation requirements and clock synchronisation were reviewed as part of their audits.

Audit commentary

Fulfilment of the interrogation systems requirements was examined as part of the MEP and agent audits and found to be compliant.

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

HHR data is provided by MEPs and agents. Interrogation requirements and clock synchronisation were reviewed as part of their audits.

Audit commentary

Fulfilment of the interrogation systems requirements was examined as part of the MEP and agent audits and found to be compliant.

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

Raw meter data is retained by MEPs and agents, and compliance is assessed as part of their audits.

Processes to archive and store raw meter date were reviewed.

Audit commentary

Compliance is recorded in the MEP and agent audit reports.

Review of audit trails confirmed that reads cannot be modified without an audit trail being created. This is discussed further in **section 2.4**. Access to modify readings is restricted through log on privileges.

All meter reading data is archived and is retained by Ecotricity for at least 48 months.

Audit outcome

Compliant

7.3. Non metering information collected/archived (Clause 21(5) Schedule 15.2)

Code reference

Clause 21(5) Schedule 15.2

Code related audit information

All relevant non-metering information, such as external control equipment operation logs, used in the determination of profile data must be collected, and archived in accordance with clause 18.

Audit observation

Processes to record non-metering information were discussed.

Audit commentary

Non metering information is not collected by Ecotricity; therefore, compliance was not assessed.

Audit outcome

Not applicable

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 errors are detected during validation of non-half hour meter readings, one of the following must be undertaken:

> *19(1)(a) - confirmation of the original meter reading by carrying out another meter reading*
>
> *19(1)(b) - replacement of the original meter reading by another meter reading (even if the replacement meter reading may be at a different date)*
>
> *19(1)(c) - if the original meter reading cannot be confirmed or replaced by a meter reading from another interrogation, then an estimated reading is substituted and the estimated reading is marked as an estimate and it is subsequently replaced in accordance with clause 4(2).*

Audit observation

I checked the validation and correction processes in place.

Audit commentary

Ecotricity has conducted NHH meter readings and demonstrated that corrections do not overwrite the original reading. Meter readings used during the switch process are often replaced. Ecotricity's system has the ability to record readings as estimates if they are estimates.

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 errors are detected during validation of half hour metering information the correction must be as follows:

> *19(2)(a) - if a check meter or data storage device is installed at the metering installation, data from this source may be substituted*
>
> *19(2)(b) - in the absence of any check meter or data storage device, data may be substituted from another period if the total of all substituted intervals matches the total consumption recorded on the meter, if available, and the pattern of consumption is considered materially similar to the period in error.*

Audit observation

The HHR correction process was examined, and a sample of corrections were reviewed.

Audit commentary

Errors are identified through the data validation process, missing reads process, or information provided by the customer or MEP.

Where errors or missing interval data is detected, replacement data is estimated. The methodology for HHR data estimation is as follows.

- Interpolation for small gaps.

  Where the number of trading periods missing is below four, then the values will be created by the interpolation method. A straight line will be assumed between the neighbouring values. If meter reads are available, scaling will be performed to scale the estimated values, so the total consumption matches the difference between register reads.

- Copy from previous consumption patterns.

  For gaps larger than four trading periods but less than 5,000 trading periods, estimated using interpolation, a consumption pattern matching process is applied. This process uses the same day over previous weeks (excluding statutory holidays). If meter reads are available, scaling is performed to scale the estimated values to match the difference between reads. If scaling cannot be performed, then an exception is recorded in a report of estimation quality flags for users to review and respond to.

- General consumption profile.

  When there is no other information available or the missing data gap exceeds 5,000 trading periods but is less than 9,000 trading intervals, a general consumption profile representing an average customer pattern is used. If meter reads are available, scaling is performed to scale the estimated values to match the difference between reads. If scaling cannot be performed, then an exception is recorded in a report of estimation quality flags for users to review and respond to. This report is not actively monitored, which will lead to some corrections not fully meeting the requirements of the Code.

- Average consumption value.

  If the above three methods cannot be used, robotron*esales creates consumption based on the average daily kWh information received in the CS file using a generic profile (type of customer).

Clause 19(5) of Schedule 15.2 requires that if a reconciliation participant corrects or alters data under this clause, the reconciliation participant must generate and archive a journal that contains the following information:

(a) the date of the correction or alteration, and

(b) the time of the correction or alteration, and

(c) the operator identifier for the person within the reconciliation participant who made the correction or alteration, and

(d) the half hour meter reading data or the non-half hour meter reading data corrected or altered, and the total difference in volume of such corrected or altered data, and

(e) the technique used to arrive at the corrected data, and

(f) the reason for the correction or alteration.

When Ecotricity conducts corrections, the journal contains the details listed above. I checked the details for one correction to confirm compliance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 8.2 With: Clause 19(2) Schedule 15.2 From: 01-Jul-21 To: 28-Feb-22	Estimation quality flag reporting is not monitored, which can lead to inaccurate corrections. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because they deal with most scenarios accurately. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
We will discuss with Robotron to implement a way to monitor these.	End of Dec 2022	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See above.	End of Dec 2022	

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

If error compensation and loss compensation are carried out as part of the process of determining accurate data, the compensation process must be documented and must comply with audit trail requirements.

Audit observation

The registry list was reviewed to identify any ICPs which require loss compensation.

Audit commentary

Ecotricity has not supplied ICPs with error or loss compensation.

Audit outcome

Compliant

8.4. Correction of HHR and NHH raw meter data (Clause 22(1) and (2) Schedule 15.2)

Code reference

Clause 22(1) and (2) 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:

22(2)(a) - the date of the correction or alteration,
22(2)(b) - the time of the correction or alteration,
22(2)(c) - the operator identifier of the reconciliation participant,
22(2)(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,
22(2)(e) - the technique used to arrive at the corrected data,
22(2)(f) - the reason for the correction or alteration.

Audit observation

Corrections are discussed in **sections 2.1**, **8.1** and **8.2**. I confirmed that raw meter data is not overwritten as part of the correction process. Audit trails are discussed in **section 2.4**.

Raw meter data is collected by MEPs; data retention was reviewed as part of their MEP audits.

Audit commentary

Raw meter data is held by MEPs, and compliance is recorded in their MEP audits.

Ecotricity only corrects working data, and they keep an appropriate audit trail. Retention of raw metering data is discussed in **section 7.2** and audit trails are discussed in **section 2.4**.

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

Provision of estimated reads to other participants during switching was reviewed in **sections 4.3**, **4.4**, **4.5**, **4.10** and **4.11**.

Correct identification of estimated reads, and review of the estimation process was completed in **sections 2.1**, **8.1**, **8.2** and **9.4**.

Audit commentary

Read types are recorded correctly. I checked 13 examples to confirm compliance.

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

Processes for derivation of volumes were discussed and observed.

Audit commentary

Data provided by MEPs and agents is considered "actual". Estimates created by Ecotricity are identified as estimates. Some estimates become permanent if they are not replaced. All readings and interval data are correctly identified.

Audit outcome

Compliant

9.3. Meter data used to derive volume information (Clause 3(5) Schedule 15.2)

Code reference

Clause 3(5) Schedule 15.2

Code related audit information

All meter data that is used to derive volume information must not be rounded or truncated from the stored data from the metering installation.

Audit observation

A sample of submission data was reviewed in **sections 11** and **12**, to confirm that volume was based on readings as required.

HHR data is collected by MEPs and agents. Compliance was assessed as part of their MEP and agent audits.

Audit commentary

The MEPs and agents retain raw, unrounded data. Meter reading data is not rounded or truncated on import.

The AMS and EDMI audits recorded that the EIEP3 file format rounds trading period data to two decimal places. The relevant ICPs are as follows:

- 1002055780UN1C7, EDMI, and
- 0146589513LC669 for AMS.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.3 With: Clause 3(5) of schedule 15.2 From: 01-Jul-21 To: 31-Jan-22	AMS and EDMI's EIEP3 file format rounds trading period data to two decimal places. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate because data includes all decimal places provided for most ICPs. The impact is assessed to be low for the EIEP3 format, because a small number of ICPs are expected to be affected and the issue only affects the third decimal place under certain circumstances.

Actions taken to resolve the issue	Completion date	Remedial action status
We will have a conversation with both parties regarding the compliance issue around decimal places.	End of Dec 2022	Investigating

Preventative actions taken to ensure no further issues will occur	Completion date	
See above.	End of Dec 2022	

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

The HHR estimate process was examined, and a sample of estimates were reviewed. Revised data was compared to estimates where the estimates had been replaced.

Audit commentary

The process for estimation and correction is described in **section 8.2.**

I reviewed six examples of estimates and found that:

- four were estimations related to meter changes where the old meter is removed as of midnight of the day prior to the physical meter exchange using the last received midnight read as the removal read, and the new meter is installed as at the beginning of the meter exchange date; as the install read is loaded into robotron*esales the part day data from the new meter is scaled and apportioned across the whole day of the meter exchange which results in the part day data for the old meter not being accounted for in the correction/estimation process,
- one example related to an incorrect set up of a generation register that required a correction to the set up to allow interval data to be correctly loaded; missing interval data was estimated and scaled to match the sum of the volume between midnight reads either side of this gap, and
- one example related to a back dated switch where historical data was not provided by the AMI MEP as this had already been provided to the losing trader, and the switch gain read had not been loaded into robotron*esales as the ICP was being billed and submitted using the HHR interval data; the estimation performed used a daily average from the CS file and a generic shape profile.

Ecotricity has a process in place to follow up with MEPs when data is incomplete however missing data is not consistently followed up due to resourcing issues and where data issues remain for an extended period of time the affected ICPs are not always transitioned back to NHH submission methodology to reduce the potential impact to HHR submission accuracy, and also the calculation of seasonal shape files by the Reconciliation Manager.

Intellihub estimates are not used by Ecotricity.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.4 With: Clause 15 Schedule 15.2 From: 01-Jul-21 To: 31-Jan-22	HHR estimates across meter changes not including volume from removed meter between last midnight read and removal read. Reasonable endeavors not met where HHR estimates continue for long term non communicating AMI ICPs and the estimations are no longer able to be related to either historical consumption patterns or scaled to match volumes calculated between reads either side of the estimation gap. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because while estimates are created, they are not always the correct treatment for addressing non-communicating AMI ICPs. The impact is low because revised submission data is eventually provided once the submission type is backdated to NHH for historical periods. There are some impacts to seasonal shapes used for NHH submissions where these retrospective updates of submission types (HHR to NHH) occur.

Actions taken to resolve the issue	Completion date	Remedial action status
See below	End of Dec 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We need to discuss better controls with Robotron, ie., bulk uploading closing readings for meter changes. We are hiring more staff to ensure missing reads are followed up and completed to the best of our ability.	End of Dec 2022	

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 zero values.

Audit observation

I checked the validation process to confirm compliance.

Audit commentary

The following validation steps are in place using a query called "check meter reads":

- difference in average daily consumption compared to the previous read to read period,
- negative consumption, and
- zero consumption.

Meter readings will not load if there isn't an ICP, meter and register match. They also won't load if there is a date mismatch.

I recommend an additional check is implemented for consecutive zeros, where an ICP had consumption then the consumption was zero for a pre-determined period.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 16 Schedule 15.2	Add an additional NHH validation for changes from consumption to zero consumption for consecutive periods.	We acknowledge the recommendation and will work with the Robotron team for a better process involving checking for consecutive zero readings.	Identified

There is also reporting for consumption on inactive ICPs.

Audit outcome

Compliant

9.6. Electronic meter readings and estimated readings (Clause 17 Schedule 15.2)

Code reference

Clause 17 Schedule 15.2

Code related audit information

Each validity check of electronically interrogated meter readings and estimate readings must be at a frequency that will allow a further interrogation of the data storage device before the data is overwritten within the data storage device and before this data can be used for any purpose under the Code.

Each validity check of a meter reading obtained by electronic interrogation, or an estimated reading must include:

17(4)(a) - checks for missing data

17(4)(b) - checks for invalid dates and times

17(4)(c) - checks of unexpected zero values

17(4)(d) - comparison with expected or previous flow patterns

17(4)(e) - comparisons of meter readings with data on any data storage device registers that are available

17(4)(f) - a review of the meter and data storage device event log for any event that could have affected the integrity of metering data must be investigated.

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

I reviewed the HHR data validation process, including meter event logs.

Validation of electronic readings was also reviewed as part of the MEP audits.

Audit commentary

Electronic meter reading information is provided by MEPs. Meters are interrogated regularly, and there is little risk that data can be overwritten. Data is held for a longer period at the meter and can be re-interrogated later if required.

Robotron*esales validates data on import. The validation includes:

- missing values: all import objects are constantly checked for missing values for the duration of a valid contract; "missing value" status is set and can be checked by the user,
- unexpected zero values: the daily consumption is checked for the lower threshold of zero; potential bridged meters are thereby identified,
- high values: threshold for individual values is currently set to 100kWh and for daily sum to 1000kWh,
- compare to previous patterns: deviation between daily sum and previous days sum must be lower than 500%, and
- receive unexpected data: if data for dates older than one month are received, they will not be automatically imported; the user is notified and has to accept it manually.

There is also a check of the AMI providers validation flag so that any data received that has been tagged as either 'R'ejected or 'F'ailed are investigated, and data may be estimated to align the consumption with the received midnight reads

Additionally, all meter data could be viewed graphically, which is an efficient way of checking flow patterns for each customer.

Event logs are provided by all relevant MEPs, but they are not routinely checked. If emails are sent by MEPs in relation to specific ICPs, these are actioned, but there is a requirement to investigate all events.

An assessment of the count of AMI HHR intervals estimated for use in the AV-090 HHRVOLS submission for the January 2022 submission was performed. Ecotricity performed estimations for 152,727 intervals out of a total number of intervals submitted of 16 million intervals (1% of all intervals estimated). These estimates amounted to 12% of AV-090 aggregation records as having estimated data included.

While the percentage of intervals estimated is relatively low as a proportion of total intervals used for HHR submission, the number of individual ICPs impacted is a higher percentage. The impact of this outstanding estimated interval data at the 7-month wash up period in terms of both HHR submission accuracy (+/- 10%) and also the impact on the last opportunity for the Reconciliation Manager to calculate and produce accurate seasonal shapes for NHH submission for all NHH retailers cannot be quantified as while there is reporting in place to identify outstanding AMI interval data, this report is not consistently reviewed and outstanding data escalated to the AMI MEP.

Description	Recommendation	Audited party comment	Remedial action
Identification and escalation of missing AMI interval data to MEPs	Recommence regular reporting of missing/ estimated interval data used in submission and escalate these instances to the relevant AMI MEP for resolution.	A missing reads report is already sent monthly for each MEP (excluding WASN). Robotron is currently working on allowing the import of ADHOC data for each MEP.	Identified

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.6 With: Clause 17 Schedule 15.2 From: 01-Jul-21 To: 31-Jan-22	Event logs not routinely checked across all AMI providers. Potential impact: Medium Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because most validations occur. The impact on settlement and participants is minor; therefore, the audit risk rating is low. Phase failure, reverse power and meter critical events are individually emailed by MEPs.

Actions taken to resolve the issue	Completion date	Remedial action status
See below	End of June 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will speak to the relevant MEPs to further understand the actions required for different events. We are planning to implement a data management system to identify events that require follow up.	End of June 2022	

10. PROVISION OF METERING INFORMATION TO THE PRICING MANAGER 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

The NSP table on the registry was reviewed.

Audit commentary

Ecotricity is not responsible for any NSPs. No information is provided to the grid owner in accordance with this clause.

Audit outcome

Not applicable

10.2. Unoffered & intermittent generation provision of metering information (Clause 13.137)

Code reference

Clause 13.137

Code related audit information

Each generator must provide the 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 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

The NSP table on the registry was reviewed.

Audit commentary

Ecotricity is not responsible for any NSPs. No information is provided to the grid owner in accordance with this clause.

Audit outcome

Not applicable

10.3. Loss adjustment of HHR metering information (Clause 13.138)

Code reference

Clause 13.138

Code related audit information

The generator must provide the information required by clauses 13.136 and 13.137,
13.138(1)(a)- adjusted for losses (if any) relative to the grid injection point or, for embedded generators the grid exit point, at which it offered the electricity
13.138(1)(b)- in the manner and form that the pricing manager stipulates
13.138(1)(c)- by 0500 hours on a trading day for each trading period of the previous trading day.
The generator must provide the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of the generator's volume information.

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

Ecotricity is not responsible for any NSPs. No information is provided to the grid owner in accordance with this clause.

Audit outcome

Not applicable

10.4. Notification of the provision of HHR metering information (Clause 13.140)

Code reference

Clause 13.140

Code related audit information

If the generator provides half-hourly metering information to the 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

The NSP table on the registry was reviewed.

Audit commentary

Ecotricity is not responsible for any NSPs. No information is provided to the grid owner in accordance with this clause.

Audit outcome

Not applicable

11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

11.1. Buying and selling notifications (Clause 15.3)

Code reference

Clause 15.3

Code related audit information

Unless an embedded generator has given a notification in respect of the point of connection under clause 15.3, a trader must give notice to the reconciliation manager if it is to commence or cease trading electricity at a point of connection using a profile with a profile code other than HHR, RPS, UML, EG1, or PV1 at least five business days before commencing or ceasing trader.

The notification must comply with any procedures or requirements specified by the reconciliation manager.

Audit observation

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

Audit commentary

Examination of the registry list with history found that Ecotricity has used the HHA, HHR, RPS, EG1 and PV1 profiles.

Trading notifications are only required for the HHA profile.

- Ecotricity did not begin using the HHA profile at any NSPs during the audit period.
- Ecotricity ceased using the HHA profile at CPK0331 and TKR0331 on 28 February 2021. Because they continued trading at the NSPs on other profiles, a trading notification was not created.

No breach allegations were made in relation to trading notifications.

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

The process for the calculation of ICP days was examined by checking NSPs with a small number of ICPs to confirm the AV110 ICP days calculation was correct. I reviewed variances for nine months of GR100 ICP days comparison reports.

Alleged breaches were reviewed.

Audit commentary

The following table shows the ICP days difference between Ecotricity files and the RM return file (GR100) for all available revisions for nine months. Negative percentage figures indicate that the Ecotricity ICP days figures are higher than those contained on the registry.

Month	Initial	R1	R3	R7
Aug 2020	0.01%	0.00%	0.00%	0.00%
Sep 2020	0.00%	-0.02%	0.00%	0.00%
Oct 2020	-0.03%	0.00%	0.00%	-
Nov 2020	-	0.00%	0.00%	-
Dec 2020	0.00%	-0.03%	-0.02%	-
Jan 2021	-0.02%	-0.02%	-0.02%	-
Feb 2021	-0.02%	-0.02%	-	-
Mar 2021	-0.02%	-0.02%	-	-
Apr 2021	-0.01%	-0.02%	-	-

HHR and NHH ICP days are provided as separate reports. The process steps for the calculation of ICP days were reviewed and while the initial process of collecting ICP days information is sourced from robotron*esales the data is then directly compared to a Registry LIS file for the submission file and updates are applied to this file to match what is reported on the registry.

The process to align the trader ICP days report is based on the prior efforts to apply manual adjustments to the respective AV-080 (NHHVOLS) and AV-090 (HHRVOLS) submission files to account for missing or incorrectly set up ICPs within the robotron*esales system for the submission month. These manual corrections mean any ICP Days reporting out of robotron*esales would result in additional volumes being assigned to Ecotricity via the Reconciliation Manager process to apply ICP days scaling to a trader's submission volumes where a difference in ICP days is detected when comparing a traders AV-110 (ICPDAYS) submission file with the registry provided file.

Because the final result produced by Ecotricity does not resemble the source data from robotron*esales and the corrections made cannot be explicitly tracked back to specific ICPs or corrections applied, the ICP days report provided by Ecotricity cannot be considered as being from the traders' system.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.2 With: Clause 15.6 From: 01-Jul-21 To: 28-Feb-22	ICP Days file does not accurately reflect the reconciliation system. Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as weak because it's not expected that this file will be edited. The main impact is on the scaling function, which will not be accurate; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Any manual adjustments to ICPDAYS following manual adjustments to AGGR, NHHVOLS arising from late changes to Robotron*eSales will be clearly logged.	End of May 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
ECOT will run the Robotron *eSales query [ICP Days Details] sufficient days ahead of submission to investigate ICPs with number of ICPDAYs different from the Registry and escalate these ICPS to the ECOT CS team for them to resolve the contract date and other root causes.	End of Dec 2022	

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

Code reference

Clause 15.7

Code related audit information

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

> *15.7(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*

15.7(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.

Audit observation

The process for the calculation of as billed volumes was examined by checking five NSPs with a small number of ICPs to confirm the AV120 calculation was correct.

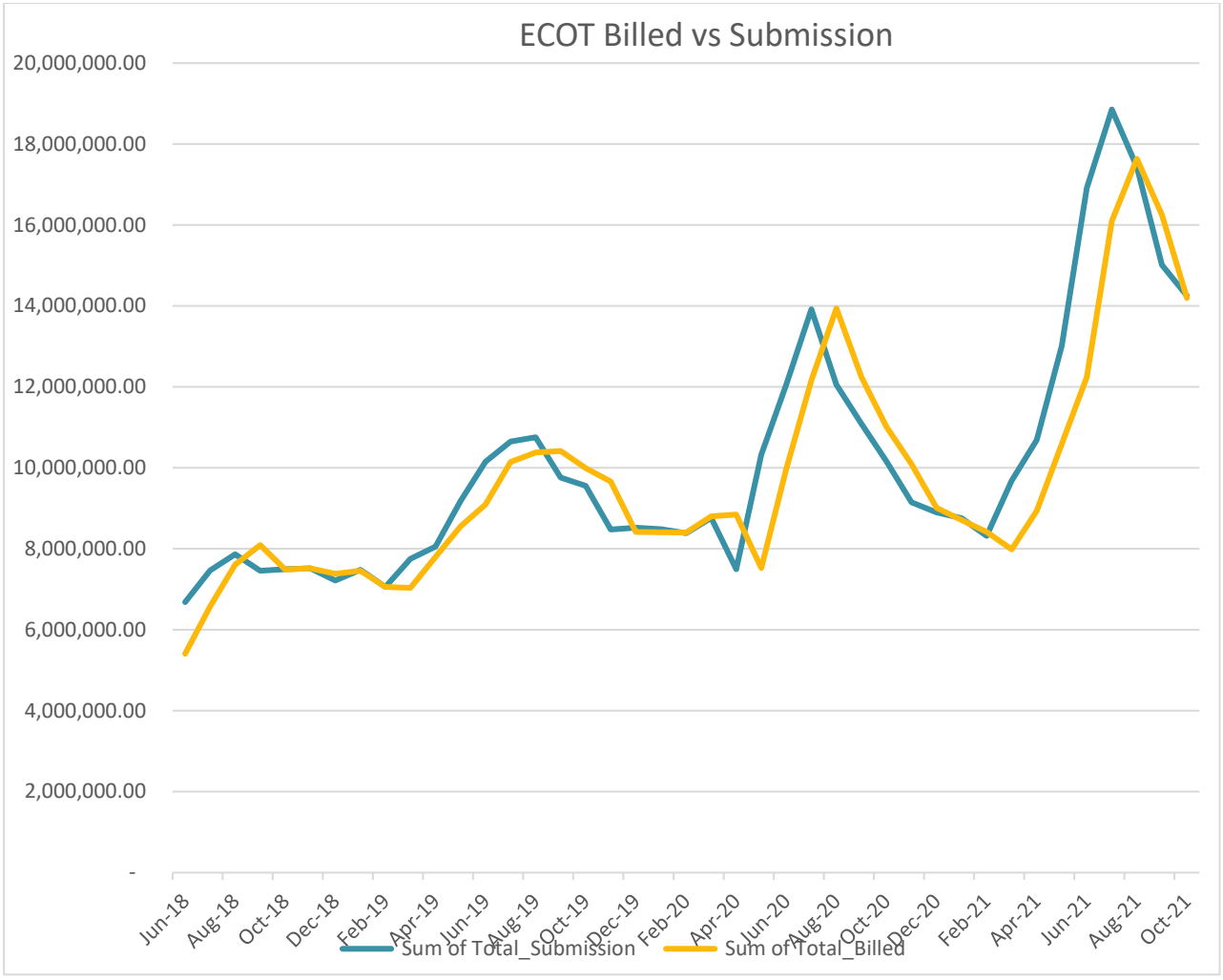
GR130 reports for June 2018 to April 2021 were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

Audit commentary

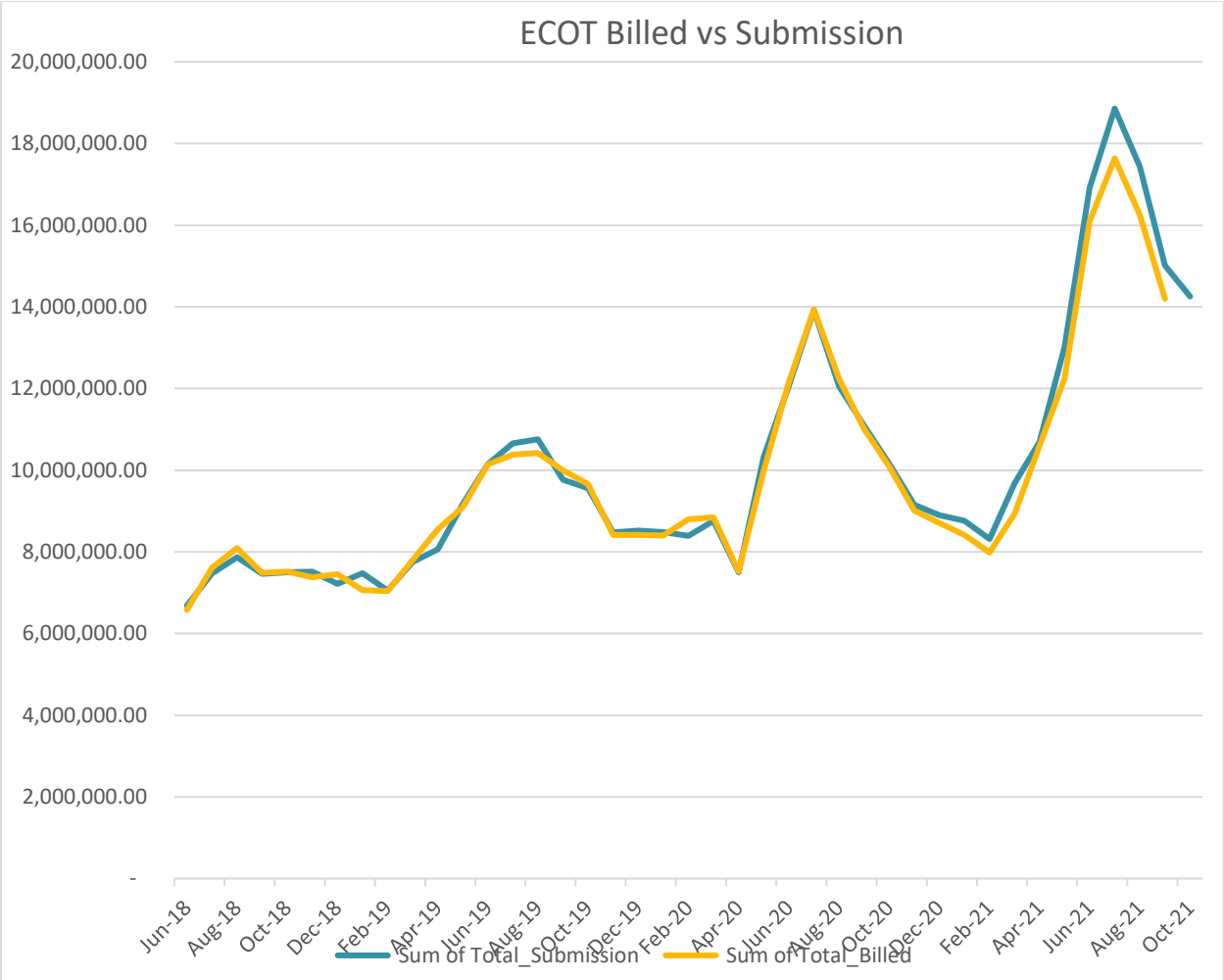
The process for the calculation of "as billed" volumes was examined by checking January 2022 AV120 submissions for five NSPs with a small number of ICPs against invoice information. The AV120 billed consumption calculation was confirmed to be correct for all five NSPs checked. However, Ecotricity bill consumption volumes to the customer to two decimal places whereas the AV-120 BILLED submission file is rounded to zero decimal places. The inconsistency between what is displayed on the customers invoice to what is reported to the Reconciliation Manager is more technical in nature rather than relating to an accuracy issue. But the precision displayed on the invoice also needs to be reflected in the AV-120 BILLED submission file as this file does cater for volumes to two decimal places.

I checked the difference between submission and electricity supplied information for June 2018 to Oct 2021, and the results are shown below. The difference between billed and submitted data for the year ended September 2021 (billed one month offset) is 4.8% (6.7 GWh submitted higher than billed) and the two years ended September 2021 is 2.5% (6.5 GWh submitted higher than billed). Some of the difference relates to May 2020, where the robotron*esales and Agility billed volumes should have been added together, but they were not. The remaining differences do not appear to relate to just timing and appear larger during the winter months. I recommend Ecotricity investigate the possible causes to determine whether the issue relates to some supplied volumes missing from the AV-120 submission file or whether the issue relates to some over submission in the AV-080 NHHVOLS or AV-090 HHRVOLS submission files.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 15.7	Investigate the rolling 12-month differences between Electricity Supplied (BILLED) and Electricity Submitted (NHHVOLS and HHRVOLS) to determine what is causing the current divergent in totals.	General investigations will be done to find possible problems. In particular, winter 2021 shows higher discrepancy.	Investigating



Once the billed and submitted data are aligned to account for the one month offset between billed and submission data, it is more closely aligned.



Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.3 With: Clause 15.7 From: 01-Jul-20 To: 31-Jan-22	Precision of the AV120 (BILLED) submission file displays the volumes to zero decimal places where billed volumes from customers invoices has volumes to two decimal places. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**

Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement in terms of monitoring accuracy and completeness of this submission file as can be seen in the current volume difference between supplied and submitted. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Code will be adjusted to present 2 decimals in file.	End of June 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Code will be adjusted to present 2 decimals in file.	End of June 2022	

11.4. HHR aggregates information provision to the reconciliation manager (Clause 15.8)

Code reference

Clause 15.8

Code related audit information

A retailer or direct purchaser (excluding direct consumers) must deliver to the reconciliation manager its total monthly quantity of electricity supplied for each half hourly metered ICP for which it has provided submission information to the reconciliation manager, including:

> *15.8(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*
>
> *15.8(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

Audit observation

I confirmed whether the process for the calculation and aggregation of HHR data was correct, by:

- matching HHR aggregates information with the HHR volumes data, and
- tracing volumes for three HHR settled ICPs from the source to the HHR aggregates submissions.

The GR090 ICP missing files for August 2020 to April 2021 were examined. A sample of the 20 ICPs missing from the most revisions were checked to determine why they were missing.

Audit commentary

I checked the process for aggregation of HHR data:

- I matched HHR aggregates volumes to the source files received from the three MEPs for three ICPs and I found a match for all three ICPs, and
- I matched HHR volumes and aggregates for ten months and revisions; the table below shows the variances and reasons for the variances.

Month	Revision	Vols	Aggs	Diff	Comments
Apr 21	Ri	9,816,563	9,816,643	79	Corrections were made to both the aggs file and the vols file, but they do not match.
Apr 21	R1	10,213,043	10,213,136	92	Corrections were made to both the aggs file and the vols file, but they do not match
Apr 21	R3	10,243,828	10,241,235	-2,592.21	Corrections were made to both the aggs file and the vols file, but they do not match
Apr 21	R7	10,276,409	10,276,231	-178	Corrections were made to both the aggs file and the vols file, but they do not match
Jul 21	Ri	17,836,236	17,836,126	-111	Corrections were made to both the aggs file and the vols file, but they do not match
Jul 21	R1	17,962,820	17,962,743	-77	Corrections were made to both the aggs file and the vols file, but they do not match
Jul 21	R3	18,137,247	18,140,020	2,773	Corrections were made to both the aggs file and the vols file, but they do not match
Sept 21	Ri	14,355,574	14,355,419	-155	Corrections were made to both the aggs file and the vols file, but they do not match
Sept 21	R1	14,379,961	14,377,356	-2,605	Corrections were made to both the aggs file and the vols file, but they do not match
Sept 21	R3	14,466,299	14,409,538	-56,761	Corrections were made to both the aggs file and the vols file, but they do not match

When compiling HHRVOLs and HHRAGGS files, Ecotricity compares the ICP population to a registry LIS file and where a discrepancy is identified these files are amended in an attempt to align the ICP population to the registry LIS file and avoid HHR ICP days scaling. These manual corrections are not being applied consistently between both files. The audit identified an issue in the process to manually adjust HHRVOLS files for months where daylight saving transitions occur as the daily totals are not all in a single column to enable a correct apportionment across all intervals using the flat line scaling method employed by Ecotricity

Ecotricity committed to conducting a manual check between the HHR aggregates and HHR volumes files each month to identify discrepancies however these checks do not appear to be being performed consistently.

The GR090 ICP missing files for August 2020 to December 2021 were examined. I checked the ten ICPs missing from the most revisions and found they were missing due to backdated profile changes or switch withdrawals.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.4 With: Clause 15.8 From: 01-Jul-21 To: 30-Sep-21	Errors in HHRAGGS file between July and September 2021. Under submission of 54,165 kWh due to ICPs missing from aggs file. Potential impact: High Actual impact: Medium Audit history: Multiple times Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are rated as weak because the approach to resolving differences between HHRVOLS/HHRAGGS and the registry LIS file is resulting in volume inaccuracies in the submission files. The efforts to resolve the differences should be directed in the ICP set ups prior to submission and where the discrepancy still exists allow the ICP Days scaling to account for these exceptions. The impact is assessed to be medium because the kWh differences have reduced from the previous audit.

Actions taken to resolve the issue	Completion date	Remedial action status
Multiple queries have been developed and added to eSales to help address the causes of missing/extra ICPs and incorrectly setup virtual meters. In addition, some missing/extra ICPs were not being synchronised by eSales. Robotron has implemented a job into the system to address this.	End of April 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Further work needs to be completed to identify root causes of incorrect ICP/meter set ups in a timely manner, communicate these to the relevant departments and follow up to ensure corrective action takes place. Queries in other departments need to be run more regularly with sufficient time to correct any issues before submission files are due. With the hiring of additional staff in Metering and Switching, this will ensure this is completed consistently. Further, the process to deal with late updates and adjust the HHRVOLS needs to be clearly documented to cover all scenarios. The steps to adjust volumes need to be strictly followed and completed with sufficient time before submission files are due.	End of Feb 2023	

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 the TPR technique.

Audit observation

HHR data is provided by MEPs. Compliance was assessed as part of their audits.

The daylight savings adjustment process was reviewed including viewing examples of ICPs moving into and out of daylight savings.

Audit commentary

Daylight savings processes for the MEPs were reviewed as part of their audits and found to be compliant.

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

A sample of HHR and NHH ICPs were checked to ensure that volumes were correctly recorded**.**

Corrections are discussed in **sections 2.1, 8.1** and **8.2**, and I checked for alleged breaches regarding late files.

Audit commentary

HHR

I checked the accuracy of the HHR aggregates and HHR volumes files in **section 11.4**.

I matched HHR volumes and aggregates for ten months and revisions. The table below shows the variances and reasons for the variances.

Month	Revision	Vols	Aggs	Diff	Comments
Apr 21	Ri	9,816,563	9,816,643	79	Corrections were made to both the aggs file and the vols file, but they do not match.
Apr 21	R1	10,213,043	10,213,136	92	Corrections were made to both the aggs file and the vols file, but they do not match
Apr 21	R3	10,243,828	10,241,235	-2,592.21	Corrections were made to both the aggs file and the vols file, but they do not match
Apr 21	R7	10,276,409	10,276,231	-178	Corrections were made to both the aggs file and the vols file, but they do not match
Jul 21	Ri	17,836,236	17,836,126	-111	Corrections were made to both the aggs file and the vols file, but they do not match
Jul 21	R1	17,962,820	17,962,743	-77	Corrections were made to both the aggs file and the vols file, but they do not match
Jul 21	R3	18,137,247	18,140,020	2,773	Corrections were made to both the aggs file and the vols file, but they do not match
Sept 21	Ri	14,355,574	14,355,419	-155	Corrections were made to both the aggs file and the vols file, but they do not match
Sept 21	R1	14,379,961	14,377,356	-2,605	Corrections were made to both the aggs file and the vols file, but they do not match
Sept 21	R3	14,466,299	14,409,538	-56,761	Corrections were made to both the aggs file and the vols file, but they do not match

When compiling HHRVOLs and HHRAGGS files, Ecotricity compares the ICP population to a registry LIS file and where a discrepancy is identified these files are amended in an attempt to align the ICP population to the registry LIS file and avoid HHR ICP days scaling. These manual corrections are not being applied consistently between both files. The audit identified an issue in the process to manually adjust HHRVOLS files for months where daylight saving transitions occur as the daily totals are not all in a single column to enable a correct apportionment across all intervals using the flat line scaling method employed by Ecotricity

Ecotricity committed to conducting a manual check between the HHR aggregates and HHR volumes files each month to identify discrepancies, however these checks do not appear to be being performed consistently.

NHH

I checked NHH ICPs with vacant consumption, distributed generation and unmetered load. The following NHH issues were identified:

- vacant ICPs 0086327200WRAE1 and 1002035943LC4AF were not included in submission due to missing vacant account set ups (with a combined volume missing from submission of 42,935 kWh),
- six inactive ICPs with consumption are yet to be resolved to ensure submission occurs; the affected volume is 1,627 kwh,
- five ICPs with unmetered consumption were incorrect, and
- distributed generation consumption was correct.

Distributed Generation

As reported in **section 6.1**, Ecotricity has reporting to identify distributed generation discrepancies, however the report is not routinely monitored due to resourcing constraints. A recommendation is made in **section 6.1** that this reporting is checked on a regular basis.

The registry list recorded 5,431 active ICPs with generation recorded by the distributor.

- 5,368 ICPs have I flow meter registers with the settlement indicator set to yes. 5,351 have HHR submission, or a NHH profile indicating generation. 17 NHH ICPs did not have a PV1 or EG1 profile. Ten of these are now correct as part of BAU, and I confirmed that if the meter has an I-flow register where the registry settlement indicator is 'Y' (Yes) then submission automatically occurs against the correct profile.
- 64 HHR ICPs do not have I-flow meter registers or have I-flow meter registers, but the settlement indicator is set to 'N' (No). 49 of the 64 had correct metering installed by the date of the audit report.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.2 With: Clause 15.4 From: 01-Jul-21 To: 31-Jan-22	Errors in both HHRVOLS and HHRAGGS file between July and September 2021. Under submission of 54,165 kWh due to ICPs missing from aggs file. Submission of 1,627 kWh yet to occur for two inactive NHH ICPs with consumption. Five incorrect UML daily kWh values used in submission. NHH generation kWh not submitted at the earliest opportunity. Potential impact: High Actual impact: Medium Audit history: Multiple Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are rated as moderate at the time of the audit, because the validation reporting has been improved and submission issues are being identified but further work is required to improve the timeliness of the corrections and ensure the correction is resolved at the source of the issue rather than manual adjustments made to submission files. The impact is assessed to be medium because the kWh differences are small.

Actions taken to resolve the issue	Completion date	Remedial action status
Further investigation/analysis needs to occur to identify and fix reasons for inaccuracies. In addition, processes will be reviewed and improved along with further training provided where needed.	End of Feb 2023	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Further investigation/analysis needs to occur to identify and fix reasons for inaccuracies. In addition, processes will be reviewed and improved along with further training provided where needed.	End of Feb 2023	

12.3. Allocation of submission information (Clause 15.5)

Code reference

Clause 15.5

Code related audit information

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

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

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

I walked through the HHR volumes and aggregates validation process, including reviewing historic validations.

Audit commentary

Ecotricity processes registry notification files to ensure aggregation factors, including NSPs, are correct. There is a monthly check of a list file with history prior to submission.

There were no incorrect NSP issues identified and there are no examples of “gifted” generation.

GR170 and AV080 files for nine months and revisions were checked, and no issues with zeroing were identified. Robotron*esales automatically populates zeros where they are required.

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

Review of the NSP table confirmed that Ecotricity is not a grid owner.

Audit commentary

Review of the NSP table confirmed that Ecotricity is not a grid owner and is not required to submit grid owner volume information.

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

A registry list was reviewed to confirm Ecotricity does not own any local or embedded networks.

Audit commentary

Ecotricity is not required to provide NSP submission information.

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

The registry list and NSP table were reviewed.

Audit commentary

Ecotricity is not a grid connected generator; therefore, compliance was not assessed.

Audit outcome

Not applicable

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

I checked processes to ensure revisions are conducted and are accurate. Corrections were reviewed in **sections 2.1**, **8.1,** and **8.2**. Alleged breaches were reviewed.

Audit commentary

Arc Innovations meters settled as HHR

There is an issue with ARC Innovations meters when used for HHR settlement. The on-site setup is that a meter pulses into a data storage device, which counts the pulses and "stores" them every 200 pulses which equals 0.1 kWh. There is only one decimal place, so the smallest increment of consumption is 0.1. Ecotricity supplies 496 HHR settled ICPs with ARCS as the MEP; all have meter category 1 and the multiplier flag set to N. Unfortunately for Ecotricity, the HHR data derived from ARC meters is not considered to be accurate in accordance with Clause 15.2. The total kWh per month will be accurate but if volumes are not recorded and reported against the correct trading period, Ecotricity may not be charged at the wholesale rate that applied during the trading period when the electricity was consumed. Compliance is recorded in this section, because Ecotricity is unable to obtain more accurate information.

Corrections

I checked that corrections were included in revision files and that when more accurate information was available it was submitted. However, the process to manually adjust the HHRVOLS file by applying a flat shape additional/subtraction where the registry LIS file identifies missing or surplus HHR ICPs results in an inaccurate HHRVOLS submission file. While the overall submission volume may be correct, Ecotricity has the actual HHR interval data for the affected ICP and this HHR volume is not being added to or subtracted from each affected interval in the submission file. The impact of this approach means the Reconciliation Manager cannot accurately calculation seasonal shape files for use by NHH retailers.

I have recorded in several sections that revisions have been conducted or will be conducted. In **sections 11.4** and **12.2**, I have recorded that some submission files are inaccurate despite more accurate data being available.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.7 With: Clause 15.12 From: 01-Jul-21 To: 31-Jan-22	The most accurate data is not submitted in submission files when the following issues are identified: • missing ICPs, • additional ICPs, • consumption on inactive ICPs, and • generation present at ICPs. Potential impact: High Actual impact: Medium Audit history: Twice Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are rated as moderate at the time of the audit, because the validation reporting has been improved and submission issues are being identified and corrections are being applied in a more timely manner – however in the case of HHR corrections the approach is not compliant. The impact is assessed to be medium because the kWh differences are small.

Actions taken to resolve the issue	Completion date	Remedial action status
The ECOT Mkt Recon Team **has developed** an SQL query and process for the actual HHR interval data of missing or surplus HHR ICPS to manually adjust the HHRVOLS file instead of a flat shape.	End of April 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The ECOT Mkt Recon Team will **from hereon query for** the actual HHR interval data of missing or surplus HHR ICPS to manually adjust the HHRVOLS file instead of a flat shape.	End of June 2022	

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).

Volume information created using estimated readings must be subsequently replaced at the earliest opportunity by the reconciliation participant by volume information that has been created using validated meter readings or permanent estimates by, at the latest, the month 14 revision cycle.

A permanent estimate may be used in place of a validated meter reading, but only if, despite having used reasonable endeavours; the reconciliation participant has been unable to obtain a validated meter reading.

Audit observation

NHH volumes 14-month revisions were reviewed for January to March 2020 to identify any forward estimate still existing. A sample of AV080 aggregation rows with forward estimate remaining at the 14-month revision were checked.

Audit commentary

Standard reporting is not in place to identify the quantity of HHR estimates in the 14-month revision. All HHR estimates are considered permanent if they are not replaced.

Snapshot analysis was performed for the Jan 2022 (one month wash up) HHRVOLS data to determine the volume of estimated HHR interval data used for submission. 152,727 intervals out of 16 million intervals (approximately 1%) in total were estimated resulting in 12% of the aggregated HHRVOLS records reported to the RM as having some estimated interval data present.

As recorded in **section 9.4**, I recommend reporting is developed and monitored to record the quantity of HHR estimates per month per MEP to assist with improving service levels.

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

Month	Forward estimate at revision 14
Jul-20	44,014.45
Aug-20	33,558.35
Sep-20	26,011.96
Grand Total	103,584.76

A sample of ten AV080 aggregation lines with forward estimate remaining were reviewed. Forward estimates remained for the following reasons:

- some ICPs had missing start reads meaning HE calculations could not be performed,
- seasonal shape profile groups were not assigned to enable HE calculation to be calculated for some ICPs; reporting is being developed to identify missing shape file assignment,
- some ICPs did not have two validated actuals reads available to enable HE calculations to be performed, and

- where a manual correction is applied to the AV-080 submission file to add a missing ICP identified through a comparison of ICPs present in the submission file to a Registry LIS file, these manual corrections are applied as FE volumes.

The effort to manually adjust AV-080 volumes to account for some missing ICPs obscures the underlying set up issues within the Ecotricity system. The ICP days scaling process performed by the Reconciliation Manager would achieve a similar outcome to these manual additions to the AV-080 file which would then enable the time spent on these manual corrections to be utilised in completing corrections to the data set ups in robotron*esales enabling more volume to be reported as HE.

In order to enable Ecotricity to be able to focus on reducing the amount of FE at 3, 7 and 14-month revisions I recommend additional reporting is implemented to identify the root cause of the issue (lack of validated actual reads, set up issues, ICP/meter missing from submission file) for each ICP.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 4 Schedule 15.2	Implement FE reporting at each of the 3-, 7- and 14-month revisions to enable root cause analysis to be determined and more timely resolution of FE related issues.	We will investigate setting up reports to monitor/review FE revisions to resolve any issues in a timely manner.	Investigating

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.8 With: Clause 4 Schedule 15.2 From: 01-Jul-21 To: 31-Jan-22	Estimates not all replaced by the 14-month revision. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as weak as issues preventing ICPs being correctly reported are still present at the 14-month revision and while there are manual attempts to adjust volumes to mitigate the impact of these errors on other participants, the controls need to focus on resolving the issue at root cause rather than manual adjustments on each wash up file. The impact on settlement and participants is minor due to the efforts in applying manual adjustments to the wash up files; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Reporting for HE/FE exists which can be used to show ICP with FE date range in any recon month. Training will be scheduled. Further queries will be discussed to list by reason.	End of May 2022	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
Reporting for HE/FE exists which can be used to show ICP with FE date range in any recon month. Training will be scheduled. Further queries will be discussed to list by reason.	End of May 2022	

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 must comprise the following:

- *half hour volume information for each ICP notified in accordance with clause 11.7(2) for which there is a category 3 or higher metering installation (clause 2(1)(a))*
- *for each ICP about which information is provided under clause 11.7(2) for which there is a category 1 or category 2 metering installation (clause 2(1)(b)):*
  - *a) half hour volume information for the ICP; or*
  - *b) non half hour volumes information calculated under clauses 4 to 6 (as applicable).*
  - *c) unmetered load quantities for each ICP that has unmetered load associated with it derived from the quantity recorded in the registry against the relevant ICP and the number of days in the period, the distributed unmetered load database, or other sources of relevant information (clause 2(1)(c))*
- *to create non half hour submission information a reconciliation participant must only use information that is dependent on a control device if (clause 2(2)):*
  - *a) the certification of the control device is recorded in the registry; or*
  - *b) the metering installation in which the control device is location has interim certification.*
- *to create submission information for a point of connection the reconciliation participant must apply to the raw meter data (clause 2(3):*
  - *a) for each ICP, the compensation factor that is recorded in the registry (clause 2(3)(a))*
  - *b) for each NSP the compensation factor that is recorded in the metering installations most recent certification report (clause 2(3)(b)).*

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

Aggregation and content of reconciliation submissions was reviewed, and the registry lists were reviewed.

Audit commentary

Compliance with this clause was assessed:

- all ICPs had submission flags consistent with their metering category,
- five of nine ICPs with unmetered load had inaccurate submission,
- no profiles requiring a certified control device are used,
- no loss or compensation arrangements are required, and
- aggregation of the AV090 and AV140 reports is compliant.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.9 With: Clause 2 Schedule 15.3 From: 01-Jul-21 To: 31-Jan-22	Five of nine ICPs with unmetered load had inaccurate submission volumes due to incorrect daily kWh calculations. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate at the time of the audit, because the validation reporting has been improved with the exception of monitoring the accuracy of the Daily kWh value. The impact on settlement and participants is minor therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
See below	End of Dec 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will have a conversation with Robotron to put in place a process to identify and check incorrect information relating to UMLs	End of Dec 2022	

12.10. Historical estimates and forward estimates (Clause 3 Schedule 15.3)

Code reference

Clause 3 Schedule 15.3

Code related audit information

For each ICP that has a non-half hour metering installation, volume information derived from validated meter readings, estimated readings, or permanent estimates must be allocated to consumption periods using the following techniques to create historical estimates and forward estimates (clause 3(1)).

Each estimate that is a forward estimate or a historical estimate must clearly be identified as such (clause 3(2)).

If validated meter readings are not available for the purpose of clauses 4 and 5, permanent estimates may be used in place of validated meter readings (clause 3(3)).

Audit observation

Nine AV080 submissions for revisions 3 to 14 were reviewed to confirm that historic estimates are included and identified. Permanence of meter readings is reviewed in **section 12.8**. The methodology to create forward estimates is reviewed in **section 12.12**.

Audit commentary

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

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

Ecotricity provided examples of historic estimate calculations, which were reviewed. The check of calculations included confirming that readings and Seasonal Adjusted Shape Values (SASV) were applied correctly.

Audit commentary

The SASV (seasonal adjusted shape values) are manually imported each month when they are available.

Ecotricity provided some examples of historic estimate calculations which were reviewed. Of the 13 scenarios provided (out of 15 testing scenarios), one was found to be non-compliant. Ecotricity has investigated the cause of the issue and it was found that the mapping between the seasonal shape values to the NSP was incorrect for STK0331 TASM. Seasonal shape values from STK0331 NELS were being applied in error within robotron*esales. This error has been resolved and it is currently impacting 30 current NHH ICPs for all submission periods since the robotron*esales system was implemented.

I recommend that Ecotricity checks all of its seasonal shapes to NSP mappings to ensure no other mapping exist affecting other ICP populations.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 4 Schedule 15.3	Check that all seasonal shapes to NSP mapping are correct especially where a GXP may supply more than one network (HEP0331, INV0331, FKN0331, HWB0331, OKN0111, TWZ0331).	Query to list those cases has been created.	Identified

The table below shows that all scenarios which occurred during the audit period are calculating as expected and correct SASV are applied.

Test	Scenario	Test Expectation	Result
a	ICP becomes Active part way through a month	Consumption is only calculated for the Active portion of the month.	Fail – Incorrect shapes applied due to a mapping issue
b	ICP becomes Inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	Pass
c	ICP become Inactive then Active again within a month.	Consumption is only calculated for the Active portion of the month.	Has not occurred
d	ICP switches in part way through a month on an estimated switch reading	Consumption is calculated to include the 1st day of responsibility.	Pass
e	ICP switches out part way through a month on an estimated switch reading	Consumption is calculated to include the last day of responsibility.	Pass
f	ICP switches out then back in within a month	Consumption is calculated for each day of responsibility.	Pass
g	Continuous ICP with a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Pass for both X and I flows
h	Continuous ICP without a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Pass for both X and I flows
i	Rollover Reads	Consumption is calculated correctly in the instance of meter rollovers.	Pass
j	Unmetered load for a full month	Consumption is calculating based on daily unmetered kWh for full month.	Pass
k	Unmetered load for a part month	Consumption is calculating based on daily unmetered kWh for active days of the month.	Has not occurred
l	Network/GXP/Connection (POC) alters partway through a month.	Consumption is separated and calculated for the separate portions of where it is to be reconciled to.	Pass
m	ICP with a customer read during the month	Customer reads are not used to calculate historic estimate, unless they are validated against a set of actual reads not provided by the customer.	Pass
n	ICP with a photo read during the month	Photo reads are not used to calculate historic estimate, unless they are validated against a set of actual reads not provided by the customer.	Pass

Test	Scenario	Test Expectation	Result
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Pass

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.11 With: Clauses 4 and 5 Schedule 15.3 From: 01-Jul-21 To: 31-Jan-22	Historic estimate calculations incorrect for one scenario. Potential impact: Medium Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because NHH volumes are being correctly calculated where correct seasonal shape mapping is in place: The audit risk rating is low as the incidence of incorrect HE being calculated is limited to only 30 NHH ICPs in Ecotricity's NHH submission volumes.

Actions taken to resolve the issue	Completion date	Remedial action status
Code will be adjusted.	End of May 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Code will be adjusted.	End of May 2022	

12.12. Forward estimate process (Clause 6 Schedule 15.3)

Code reference

Clause 6 Schedule 15.3

Code related audit information

Forward estimates may be used only in respect of any period for which an historical estimate cannot be calculated.

The methodology used for calculating a forward estimate may be determined by the reconciliation participant, only if it ensures that the accuracy is within the percentage of error specified by the Authority.

Audit observation

The process to create forward estimates was reviewed.

Forward estimates were checked for accuracy by analysing the GR170 file for variances between revisions over the audit period.

Audit commentary

Forward estimates are based on a field called "expected average daily consumption", which is based on the previous read to read period, or is manually entered for newly switched in reads, using the previous retailer's average daily consumption from the CS file.

The accuracy of the initial submission, in comparison to each subsequent revision is required to be within 15% and within 100,000kWh. The table below shows the target was met for all balancing areas and revisions checked.

However, at an aggregate level there are instances where the total NHH submission is outside +/- 15% boundaries and while this is not a non-compliance due to the 100,000 kwh threshold there is an impact financially where large wash up corrections occur between financial years which can create uncertainty around financial position and also the accuracy of the prudential calculation undertaken by the clearing and settlement manager.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 6 Schedule 15.3	Review estimation algorithm effectiveness to ensure submission (and billing) accuracy is maintained within the +/- 15% accuracy.	Some analysis will be done to find the reasons for those deviations in R0 submission	Identified

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Sep 2019	0	0	0	0	54
Oct 2019	0	0	0	0	54
Nov 2019	0	0	0	0	53
Dec 2019	0	0	0	0	54
Jan 2020	0	0	0	0	55
Feb 2020	0	0	0	0	53
Mar 2020	0	0	0	0	53
Apr 2020	0	0	0	0	53

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
May 2020	0	0	0	0	54
Jun 2020	0	0	0	0	58
Jul 2020	0	0	0	0	55
Aug 2020	0	0	0	0	55
Sep 2020	0	0	0		55
Oct 2020	0	0	0		64
Nov 2020	0	0	0		65
Dec 2020	0	0	0		67
Jan 2021	0	0	0		68
Feb 2021	0	0	0		69
Mar 2021	0	0	0		70
Apr 2021	0	0			70
May 2021	0	0			61
Jun 2021	0	0			71
Jul 2021	0	0			72
Aug 2021	0	0			73
Sep 2021	0				73
Oct 2021	0				84

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Sep 2019	-19.53%	-14.51%	-14.94%	-15.27%
Oct 2019	-28.57%	-23.62%	-22.74%	-21.35%
Nov 2019	-31.45%	-29.79%	-28.34%	-27.21%
Dec 2019	-31.69%	-24.88%	-25.17%	-24.19%
Jan 2020	-36.90%	-31.64%	-30.96%	-32.16%
Feb 2020	-30.74%	-23.43%	-25.11%	-25.10%
Mar 2020	-11.15%	-17.11%	-10.48%	-11.17%
Apr 2020	-5.80%	-1.90%	6.06%	3.50%
May 2020	-1.14%	-17.33%	-17.23%	-19.35%
Jun 2020	-9.59%	-16.09%	-20.57%	-19.95%
Jul 2020	7.91%	-21.15%	-21.95%	-22.90%
Aug 2020	3.54%	-6.65%	-7.45%	-7.65%
Sep 2020	-1.36%	-6.71%	-6.58%	
Oct 2020	7.78%	5.81%	8.96%	
Nov 2020	-8.52%	-3.50%	-4.74%	
Dec 2020	-0.76%	8.29%	7.93%	
Jan 2021	-2.77%	8.66%	7.78%	
Feb 2021	6.47%	10.10%	6.86%	
Mar 2021	-10.57%	-6.11%	-9.33%	
Apr 2021	-3.32%	2.56%		
May 2021	-6.40%	-2.10%		

Month	Revision 1	Revision 3	Revision 7	Revision 14
Jun 2021	-5.08%	-10.12%		
Jul 2021	-10.94%	-16.51%		
Aug 2021	-8.02%			
Sep 2021	1.07%			
Oct 2021	-7.61%			

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

The event detail report was examined to identify all ICPs which had a profile change during the report period. A sample of ICPs with profile changes were reviewed to confirm that there was an actual or permanent estimate reading on the day of the profile change.

Audit commentary

All profile changes are conducted using an actual meter reading on the day of and/or the day before the profile change. I reviewed a sample of fifteen profile changes and found that for one ICP (0000009128TEE4D HHR to RPS profile change) no boundary read was present in the robotron*esales system for the profile change date (13 November 2019 – update date 10 Jan 2022). Additionally, as this backdated profile change was for a period outside the 14-month wash up window therefore it will not be possible for Ecotricity to correctly resubmit the NHH volume from this profile change. The volume missed from submission was assessed as being 331 kWh.

I also identified another ICP where the manner of the profile change has resulted in some incorrect submission volumes. ICP 0000039276NT337 underwent a HHR to RPS profile change on 1 June 2021 and used an actual read provided from Ecotricity's manual meter reader Wells. On further investigation it was identified that Ecotricity stopped receiving HHR interval data from the AMI MEP since 6 May 2020 and HHR data had been estimated by Ectoricity from that date. The period of interval data exceeds 9000 intervals therefore the system reverted to using general shape data for estimation and the system could not perform any scaling of estimated volumes using actual reads either side of the estimated period. The selected date for this profile change has resulted in some inaccurate HHR volume submission as the read

used for the profile change is not representative of the estimated HHR volumes up to 1 June 2021. The non-compliance relating to ICP 0000039276NT337 is recorded in **section 9.4**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.13 With: Clause 7 Schedule 15.3 From: 01-Jul-21 To: 31-Jan-22	Profile change for ICP 0000009128TEE4D was not completed using a validated meter reading or permanent estimate. Potential impact: Medium Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate due to the manual nature of this process where users can make errors in selecting appropriate dates to undertake profile changes, and also ensuring the HHR data up to the profile change date is complete and accurate: The impact on settlement and participants is minor therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
An opening reading was added to meter 219817358. A valid transition reading was already in place for 14/11/2019, sourced from the data file.	End of April 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Staff are reminded not to back-date profile changes so far. We are implementing a process to bulk upload meter change readings to ensure correct profiling and scaling, and also a process to check that these are correct against other readings. The profile will also be checked at the same time.	End of Dec 2022	

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

Submission information provided to the reconciliation manager must be aggregated to the following level:

- *NSP code (clause 8(a))*
- *reconciliation type (clause 8(b))*
- *profile (clause 8(c))*
- *loss category code (clause 8(d))*
- *flow direction (clause 8(e))*
- *dedicated NSP (clause 8(f))*
- *trading period for half hour metered ICPs and consumption period or day for all other ICPs (clause 8(g)).*

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

Aggregation of HHR volumes is discussed in **section 11.4**.

Audit commentary

Submission information is provided to the reconciliation manager in the appropriate format and is aggregated to the following level:

- NSP code,
- reconciliation type,
- profile,
- loss category code,
- flow direction,
- dedicated NSP, and
- consumption period.

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

I reviewed the rounding of data on the AV080, AV090 and AV140 reports as part of the aggregation checks.

Audit commentary

Submission information is appropriately rounded to no more than two decimal places.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 15.3

Code related audit information

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

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

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

Audit observation

The timeliness of submissions of historic estimate was reviewed in **section 12.2**.

I reviewed a sample of nine AV080 reports to confirm whether historic estimate requirements were met.

Audit commentary

The quantity of historical estimates is contained in the submission file and is not a separate report.

The three, seven and 14-month revision files were examined for a selection of nine submissions and the tables below show that the thresholds were not met for some NSPs for some revisions. Checks of a sample of ICPs confirmed that the thresholds were not met because readings were unable to be obtained, and permanent estimates were not entered in their place. Read attainment is discussed further in **sections 6.8 - 6.10**.

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

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
May 2020	-	-	409	410
Jun 2020	-	-	408	411
Jul 2020	-	-	411	414

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Dec 2020	-	415	-	416
Jan 2021	-	418	-	418
Feb 2021	-	420	-	420
Apr 2021	386	-	-	421
May 2021	396	-	-	422
Jun 2021	396	-	-	426

The table below shows that the percentage HE at a summary level for all NSPs is below the required targets for all revisions.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
May 2020	-	-	100.00%-
Jun 2020	-	-	100.00%
Jul 2020	-	-	100.00%
Dec 2020	-	99.99%	-
Jan 2021	-	99.98%	-
Feb 2021	-	99.99%	-
Apr 2021	94.34%	-	-
May 2021	95.24%	-	-
Jun 2021	94.92%	-	-

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 13.3 With: Clause 10 Schedule 15.3 From: 01-Jul-21 To: 31-Jan-22	Historic estimate thresholds were not met for some revisions. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Reporting for HE/FE exists which can be used to show ICP with FE date range in any recon month. More reporting will be discussed with team.	End of May 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Reporting for HE/FE exists which can be used to show ICP with FE date range in any recon month. More reporting (e.g. missing start reads) will be discussed with team.	End of May 2022	

CONCLUSION

Since the last audit Ecotricity has addressed the non-compliances identified as urgent around UDL/Powerswitch information being present on all customer communications, and also refining the switch away correspondence to comply with the win back requirements.

Efforts can also be seen in implementing additional manual correction processes as an attempt to improve submission accuracy. However, these additional manual corrections are not fully effective and are diverting resources away from identifying/escalating and resolving the root cause of the exceptions.

The manual nature of a number of processes, especially around populating and maintaining registry information once a system update has been completed is the root cause of a number of the submission related non-compliances. The submission files are compared to Registry LIS files prior to submission and manual adjustments are made to the submission data prior to any investigation as to whether the issue is with the system set up of the registry population. Regular, more consistent registry exception reporting and corrective actions during the month will reduce the need for any manual corrections to submission data files and improve overall compliance in a number of areas.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and contains a future risk rating score of 78, which results in an indicative audit frequency of three months.

I have considered this result in conjunction with Ecotricity's responses and recommend that the next audit be in nine months.

PARTICIPANT RESPONSE

The team at Ecotricity would like to thank Veritek for their hard work on this audit. We have reviewed the audit and have provided detailed comments throughout the report.

Since the last audit we have rectified the 3 urgent non-compliance points which were to do with UDL/Powerswtich being present on all communication and we removed the switch away correspondence completely.

We have acknowledged that we do have a large amount of manual processes across the company and are working towards automating more of these tasks with Robotron. We have struggled with resourcing issues which we are currently addressing by hiring additional staff. This should remove many of the small non-compliance points and give us more consistency.

These changes will take some time to implement but we will continue to improve our processes and reduce the non-compliance points raised in this audit.