ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT

VERITEK

For

ECOTRICITY LIMITED PARTNERSHIP (NZBN: **9429043295340**)

Prepared by: Bernie Cross

Date audit commenced: 7 October 2022

Date audit report completed: 10 January 2023

Audit report due date: 01 February 2023

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EXECUTIVE SUMMARY

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of **Ecotricity Limited Partnership (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.

Ecotricity has grown from 11,373 active ICPs at the previous audit to 22,391 active ICPs at the time of this audit. The rapid growth of ICPs has seen the respective switching, metering and reconciliation teams trying to keep up with the increased volume of transactions while onboarding additional resources to keep pace with this growth. Each of these teams has also experienced loss of key personnel/SMEs which has impacted the timeliness and accuracy of some tasks as other members of these teams are subsequently upskilled. The team was very helpful during the audit and showed willingness to learn from the audit process and make improvements.

The key areas which require improvement are:

Switch losses	Not all switch breach types were being monitored using the switch breach history report, which caused some late files. CS content for files which are manually generated files was sometimes inaccurate.
Readings	Some readings were incorrectly classified as actual or estimated in switching files. Read attainment is monitored and escalated as and when resources are available to investigate these issues.
Registry information	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. While changes to submission type are applied directly into the registry by a user, a manual update the reporting groups in robotron*esales is also required to be applied to reflect the change in submission methodology. The initial active status dates applied by Ecotricity based on field work paperwork for new connections are not being verified against AMI data, resulting in some HHR consumption not being reported where the field work information is incorrect. Robotron*esales will only report HHR volumes in the AV-090 (HHRVOLS) file for ICPs recorded as being active on the registry therefore the incorrect active dates are causing some volume to be missed from the reconciliation process. A high proportion of ICPs with non-residential ANZSIC codes had incorrect codes applied.
Submission	AV-080 (NHHVOLS), AV090 (HHRVOLS) and AV140 (HHRAGGS) files are modified outside of the file creation process where the set-up of an ICP is not yet completed for a newly gained ICP or where the reporting group set-up in robotron*esales is incomplete or incorrect. Where consumption for a newly gained ICP is unknown for a new ICP a zero value is applied as a placeholder in the respective files.

	In some cases, volumes are deducted from the AV-080 file and then added to the AV-090 file using a flat profile and vice versa to attempt to align the submission data with the registry information. These file adjustments are made due to a late identification of these issues during the submission file creation process and the limited time then available to investigate and undertake a correction within the respective system. Some of these corrections result in volume mismatches between these files. AV120 electricity supplied volume is trending 5% lower than submitted volumes over the previous 12-month period. AV110 ICP days data is directly sourced from a registry LIS data file and not from Ecotricity's reconciliation information. NHH submission accuracy (+/- 15%) was not met on five occasions between June 2021 and July 2022 at file level. One was due to misreads being released in error, one was due to late set-up of an ICP and for three the cause was not determined. The largest submission inaccuracy was for May 2022 resulting in an inaccuracy of 72% (902,008 kWh).
Read validation	Further validation of AMI meter events and clock synchronisation events is needed to identify potentially inaccurate data.

This audit found 38 non-compliances and an audit risk rating of 118. This is an increase from the previous audit which found 34 non-compliances and an audit risk rating of 78. 12 of the non-compliances listed below have weak controls recorded.

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 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 9 months to enable Ecotricity to increase the resourcing levels in the teams involved in compliance functions .

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	High	6	Identified
Electrical Connection of Point of Connection	2.11	10.33A	ICP's 0000228889UN9E5 and 0005783615RND85 were not certified within five business days of reconnection.	Weak	Low	3	Identified
Arrangements for line function services	2.12	11.16	Line function service agreements not in place for three embedded networks.	Weak	Low	3	Identified
Changes to registry information	3.3	10 of Schedule 11.1	40 late updates to active status. 24 late updates to inactive status. 696 late trader updates including seven late ANZSIC code updates.	Moderate	Low	2	Identified
Provision of information to the registry manager	3.5	9 Schedule 11.1	38 late status updates to active for new connections. 14 ICPs initially had incorrect active status event dates.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
ANZSIC codes	3.6	9 (1)(k) of Schedule 11.1	At least 13 incorrect ANZSIC codes.	Moderate	Low	2	Identified
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	15 ICPs with incorrect daily average kWh calculated and applied where the volume impact was calculated as 24,901 kWh pa. Two ICPs (0001351650PCA57, 0005808588RN085) where the unmetered load flag is yes, but the daily unmetered kWh is incorrectly recorded as zero. 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.	Weak	Medium	6	Identified
Management of "active" status	3.8	Clause 17 Schedule 11.1	14 ICPs initially had incorrect active status event dates. Two reconnected ICPs had incorrect active status dates.	Moderate	High	6	Identified
Management of "inactive" status	3.9	19 Schedule 11.1	15 ICPs with consumption recorded during inactive periods resulting in under submission of 546,006 kWh. One ICP (0000680226WTA92) with incorrect inactive status reason code.	Moderate	High	6	Identified
Inform registry of switch request for ICPs - standard switch	4.1	Clause 2 Schedule 11.3	NT files sent late after preconditions were met for three ICPs.	Strong	Low	1	Identified
Losing trader response to switch request and event dates - standard switch	4.2	Clauses 3 and 4 Schedule 11.3	17 ICPs had the AA (acknowledge and accept) response code applied but should have had AD (advanced metering). Five AN breaches for late AN files relating to standard switches.	Strong	Low	1	Identified

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	16 CS breaches for late delivery of a CS file. Four of a sample of seven manually created standard switch CS files had an incorrect read type. One from a sample of seven manually created standard switch CS files contained incorrect switch event reads. Two from a sample of seven manually created standard switch CS files had an incorrect last actual read date. Two CS files (ICPs 0000957903TU1CD, 0000512586CE540) had an incorrect average daily kWh value calculated.	Moderate	Low	2	Identified
Retailers must use the same readings	4.4	6(1) of Schedule 11.3	Incorrect readings used for five ICPs sampled where Ecotricity settle as HHR, the CS read was estimated, and no read request change was sent to ensure the transfer read is accurate across the change of trader and submission types. Incorrect readings used for four ICPs where the ICP is settled as HHR, and the RR was rejected by the losing trader but used by Ecotricity. One RR file sent more than four months after the CS transfer date.	Moderate	Low	2	Identified
Gaining trader informs registry of switch request - switch move	4.7	Clause 9 Schedule 11.3	NT files sent late after preconditions were met for three ICPs.	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	Seven ICPs with an incorrect response code of AA (acknowledge and accept) where a communicating AMI meter was present, and the AD (advanced metering) response code should have been applied. Six ICPs were disconnected at the time of receipt of the NT file and did not have the response code applied of PD (premise disconnected) provided in the AN file. ICP 0009904229LNF74 had a metering event indicating the AMI meter was not communicating at the time of the NT file and a response code of AD (advanced meter) was incorrectly applied. Eight AN breaches for late AN files relating to switch moves. Three CS breaches. 27 T2 breaches for switch moves. Eight E2 breaches where the NT proposed transfer date and actual transfer date did not match, and the CS event date was earlier than the gaining trader's proposed event date. Two WR breaches where the AN and/or CS is delivered more than two business days after AW rejection. Three ET breaches for switch moves.	Moderate	Low	2	Identified
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	Two of a sample of three manually created switch move CS files had an incorrect read type. Four of a sample of five manually created switch move CS files contained incorrect switch event reads. Two of a sample of five manually created switch move CS files had an incorrect last actual read date. Four of a sample of ten manually created CS files (ICP 0086327200WRAE1, 0000202927DEEE7, 0000602030HB136, and 0006516084RNBD6) had incorrect average daily kWh value calculated.	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 five ICPs sampled where Ecotricity settle as HHR, the CS read was estimated, and no read request change was sent to ensure the transfer read is accurate across the change of trader and submission types. Incorrect readings used for four ICPs where the ICP is settled as HHR, and the RR was rejected by the losing trader but used by Ecotricity. Incorrect readings used for one ICP where the ICP is settled as NHH, and the RR was rejected by the losing trader but used by Ecotricity.	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. Four NW breaches. Four AW breaches. Two SR breaches.	Strong	Low	1	Identified
Metering information	4.16	21 Schedule 11.3	Three CS files contained event readings which did not reflect the actual reading or best estimate of actual consumption at the end of the last day of supply. 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. Ecotricity did not use the provided CS read for five ICPs where the RR file was rejected by the losing trader.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Maintaining shared unmetered load	5.1	11.14	Two ICPs (0001351650PCA57, 0005808588RN085) where the daily unmetered kWh value is incorrectly recorded as zero.	Weak	Low	3	Identified
Electricity conveyed & notification by embedded generators	6.1	10.13, Clause 10.24 and 15.13	Submission had not occurred for 21 HHR ICPs and 72 NHH ICPs with distributed generation and the RM was not notified of gifting. For one ICP (0005380049ALD95) the meter was bridged during the audit period meaning volumes were not quantified in accordance with the code.	Moderate	Low	2	Identified
Collection of information by certified reconciliation participant	6.5	2 Schedule 15.2	23 ICPs not interrogated within the maximum interrogation cycle.	Moderate	Low	2	Identified
NHH meter reading application	6.7	6 Schedule 15.2	One standard switch ICP sent with incorrect read for the transfer date. Four switch move ICPs sent with incorrect reads for the transfer date.	Moderate	Low	2	Identified
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	Best endeavours not met for six ICPs not read in the 12-month period ending 31 August 2022.	Weak	Low	3	Identified
NHH meters 90% read rate	6.10	9(1) and (2) Schedule 15.2	Eight ICPs not read in the 4-month period up to August 2022.	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. Corrections for all nine sampled meter changes did not ensure all consumption recorded by the removed meter was included in the volume correction.	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Identification of readings	9.1	3(3) Schedule 15.2	Six estimated switch event reads were incorrectly classified as actual reads.	Moderate	Low	2	Identified
Half hour estimates	9.4	15 Schedule 15.2	HHR estimates across meter changes for nine ICPs not including volume from removed meter between last midnight read and removal read. Initial estimates of interval data not revised when the missing period is partially replaced by actual data from the AMI MEP. Actual interval data where the AMI MEP has indicated the data has failed a sum check validation is replaced with estimated interval data without investigation to verify if the failed validation is due to corrupt interval data or midnight reads.	Moderate	Low	2	Investigating
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	Event logs not routinely reviewed across all AMI providers.	Moderate	Low	2	Identified
Calculation of ICP days	11.2	15.6	ICP Days file is not sourced from Ecotricity's reconciliation data. Alleged breach 2207ECOT1 for late provision of AV110 submissions for June 2022 r1 and May 2021 r14.	Weak	Medium	6	Identified
HHR aggregates information provision to the reconciliation manager	11.4	15.8	Errors in both HHRVOLS and HHRAGGS file between July and September 2021 with differences ranging between 129 and 80,535 kWh.	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 with differences ranging between 129 and 80,535 kWh. Submission of 548,228 kWh yet to occur for 14 inactive ICPs with consumption. 17 incorrect UML daily kWh values used in submission. Under submission of 2,137.84 kWh due to vacant ICP 0001442650UN73B not included in submission due to missing vacant account set-up. NHH generation kWh not submitted at the earliest opportunity for at least 20 ICPs. HHR generation kWh not submitted at the earliest opportunity for 21 ICPs.	Weak	High	9	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Accuracy of submission information	12.7	15.12	15 ICPs with standard UML had an incorrect calculation of daily kWh values with an annual impact of 24,938 kWh. Submission of 548,228 kWh yet to occur for 14 inactive ICPs with consumption. Incorrect readings used for five ICPs sampled where Ecotricity settle as HHR, the CS read was estimated, and no read request change was sent to ensure the transfer read is accurate across the change of trader and submission types. Ecotricity did not use the provided CS read for five ICPs where the RR file was rejected by the losing trader. Two shared UML ICPs (0001351650PCA57, 0005808588RN085) where the unmetered load flag is yes, but the daily unmetered kWh is incorrectly recorded as zero. Submission had not occurred for 21 HHR ICPs and 72 NHH ICPs with distributed generation and the RM was not notified of gifting. HHR corrections for AMI meter changes did not ensure all consumption recorded by the removed meter was included in the volume correction. ICP Days file is not sourced from Ecotricity's reconciliation data. Errors in both HHRVOLS and HHRAGGS file between July and September 2021 with differences ranging between 129 and 80,535 kWh. Under submission of 2,137.84 kWh due to vacant ICP 0001442650UN73B was not included in submission due to missing vacant account set-up. On three occasions the NHH submission accuracy was outside the ± 15% accuracy due to misreads being released resulting in over submission of volume.	Weak	High	9	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
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 sampled ICPs with unmetered load had inaccurate submission volumes due to incorrect daily kWh calculations. Aggregation of the AV090 and AV140 reports is not compliant as manual adjustments are made to the aggregated files that result in the files no longer being aligned.	Moderate	Medium	4	Identified
Forward estimate process	12.12	Clause 6 Schedule 15.3	Some balancing area differences between revisions were over the ± 15% threshold because of inaccurate forward estimates Five occurrences where the submission accuracy at AV-080 file level was outside +/- 15%.	Weak	Low	3	Identified
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							118

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
Management of "inactive" status	3.9	Clause 19 Schedule 11.1	Ecotricity develops a monitoring report to regularly review ICPs with this registry status to confirm if they are still required.
Develop process to monitor CS reads applied to manually generated CS files aligns with reads held in robotron*esales.	4.3	Clause 5 Schedule 11.3	Recommended that Ecotricity develops a process to monitor all manually created CS files against reads in robotron*esales to identify any read differences and to determine whether RR files need to be sent or whether submission needs to be revised.
Monitoring of Read requests (RR) where Ecotricity trades gained ICP as HHR	4.4	Clause 6(1) and 6A Schedule 11.3	Recommend that Ecotricity implements monitoring to ensure read requests are pursued to a successful completion for all move switches and HHR transfer switches using mechanisms available within the code.
NTs following withdrawals	4.7	Clause 9 Schedule 11.3.	Provide training and update procedures to ensure that NTs are reissued where required after a withdrawal is completed. As a rule, wrong switch type withdrawals are expected to be issued promptly with the correct switch type.
Ensure CS read estimates aligns with HHR volumes up to the switch transfer date	4.16	Clause 21 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	Clause10.13, Clause 10.24 and 15.13	Conduct regular checks of reporting to identify DG discrepancies.
Clock synchronisation events	6.5	Clause 2 Schedule 15.2	Where a clock synchronisation over 1700 seconds occurs, and data for multiple trading periods is pushed into the period of adjustment, develop a process to spread the total consumption for the adjustment period across the periods it actually occurred within.
Meter read frequency report accuracy.	6.8	Clause 7(1) and (2) Schedule 15.2	Ecotricity to review the selection criteria of the meter read frequency reports to ensure both the internal report at ICP level and the external report at NSP level, provided to the Authority, considers all ICPs flagged as being included in Ecotricity's NHH submission, is accurate and only includes ICPs that Ecotricity currently supplies.
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.

Subject	Section	Clause	Recommendation
High value validation thresholds	9.6	Clause 17 Schedule 15.2	Ecotricity investigates enhancing this validation to consider either capacity, metering installation category, customer type or tariff.
Electricity supplied	11.3	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.
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.
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

One exemption is currently in place.

Exemption 326 Unmetered loads exceeding 6,000 kWh per annum

Exemption 326 – allows Ecotricity to be exempt from complying with the obligation in clause 10.14(2)(b) of the Electricity Industry Participation Code 2010 ("Code") to only treat load as unmetered load if it reasonably expects, in any rolling 12-month period, the load to be not greater than 6,000 kWh if the load is predictable load of a type approved and published by the Authority for the following ICPs:

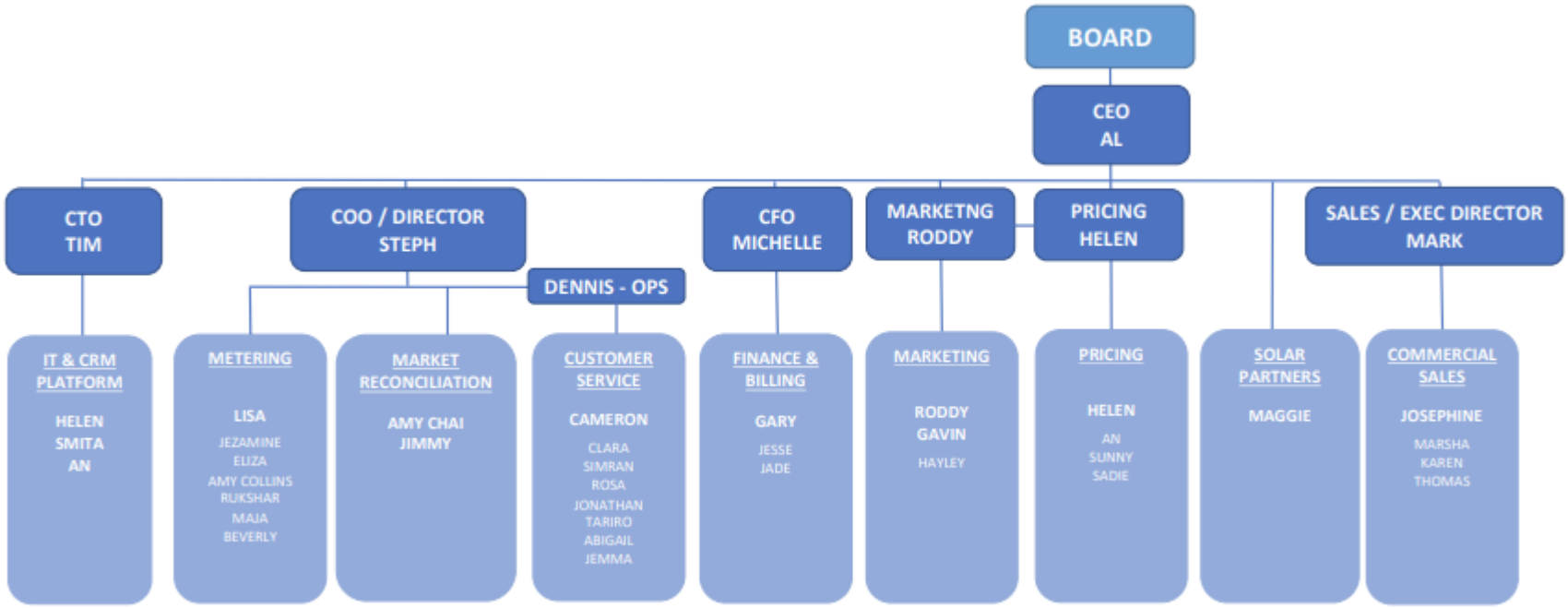
- 0007146035RN953, 0007146034RN516, 0007146032RN499, 0007146031RN859, 1000590812PC0FD, 1002078490UNB84, 0000162438CK602, 1002078527UNDF8, 1002075918UN3F2, 1000590813PCCB8, 1002075767UNF7A and 0000047856HRA33.

This exemption expires on the earlier of:

- the close of 13 December 2032,
- the date when Ecotricity is no longer recorded in the registry as being the trader for any of the 12 ICPs, or
- the date when all of the 12 ICPs are metered.

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:

Bernie Cross

Veritek Limited

Electricity Authority Approved Auditor

Ecotricity personnel assisting in this audit were:

Name	Title
Stephanie Blucher	Chief Operating Officer
Dennis Mckechnie	CS Operations Manager
Jimmy Gao	Market Reconciliation
Rosa Virkki	Switching Specialist
Cameron Gumtau-Ryan	Switching Specialist
Lisa Anderton	Metering Team Leader
Lizzie Brennan	Metering Coordinator
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.

Ecotricity also uses a system called EVI to track tasks such as new applications that requires switching to be initiated.

1.6. Breaches or Breach Allegations

The Electricity Authority confirmed that there was one alleged breach relevant to the scope of this audit for Ecotricity.

Breach ref	Clause breached	Status	Comment
2207ECOT1	Part 15 clause 15.2 (1) (a)	Early closure	ECOT failed to deliver accurate information to the Reconciliation Manager in their AV-110 (ICP days submission file) for 202206 R1 and 202105 R14.

1.7. ICP Data

Active ICPs are summarised by meter category in the table below. 1,052 active ICPs with a metering category of blank have both distributor and trader unmetered load details recorded.

Metering Category	Sept 2022	Feb 2022	May 2021	Nov 2020	Mar 2020	2019	2018
1	19,947	10,945	9,034	8,204	7,453	5,773	5,142
2	531	357	214	181	173	147	139
3	70	55	25	23	20	18	15
4	30	12	5	6	5	5	5
5	0	0	0	0	0	0	0
9	761	0	3	0	15	0	16
Blank	1,052	4	3	1	0	0	0

Status	Number of ICPs (Sep 2022)	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)	22,391	11,373	9,284	8,415	7,555	5,895	5,238
Inactive – new connection in progress (1,12)	66	49	17	27	17	19	31
Inactive – electrically disconnected vacant property (1,4)	68	46	26	15	20	31	25
Inactive – electrically disconnected remotely by AMI meter (1,7)	43	37	52	22	38	12	17
Inactive – electrically disconnected at pole fuse (1,8)	6	2	2	1	2	1	1
Inactive – electrically disconnected due to meter disconnected (1,9)	2	2	2	6	5	3	3
Inactive – electrically disconnected at meter box fuse (1,10)	2	1	2	0	0	0	0
Inactive – electrically disconnected at meter box switch (1,11)	1	0	0	0	0	1	2
Inactive – electrically disconnected ready for decommissioning (1,6)	17	4	3	3	3	5	6
Inactive – reconciled elsewhere (1,5)	0	0	0	0	0	0	0
Decommissioned (3)	150	99	80	65	43	29	18

1.8. Authorisation Received

An authorisation letter was not required.

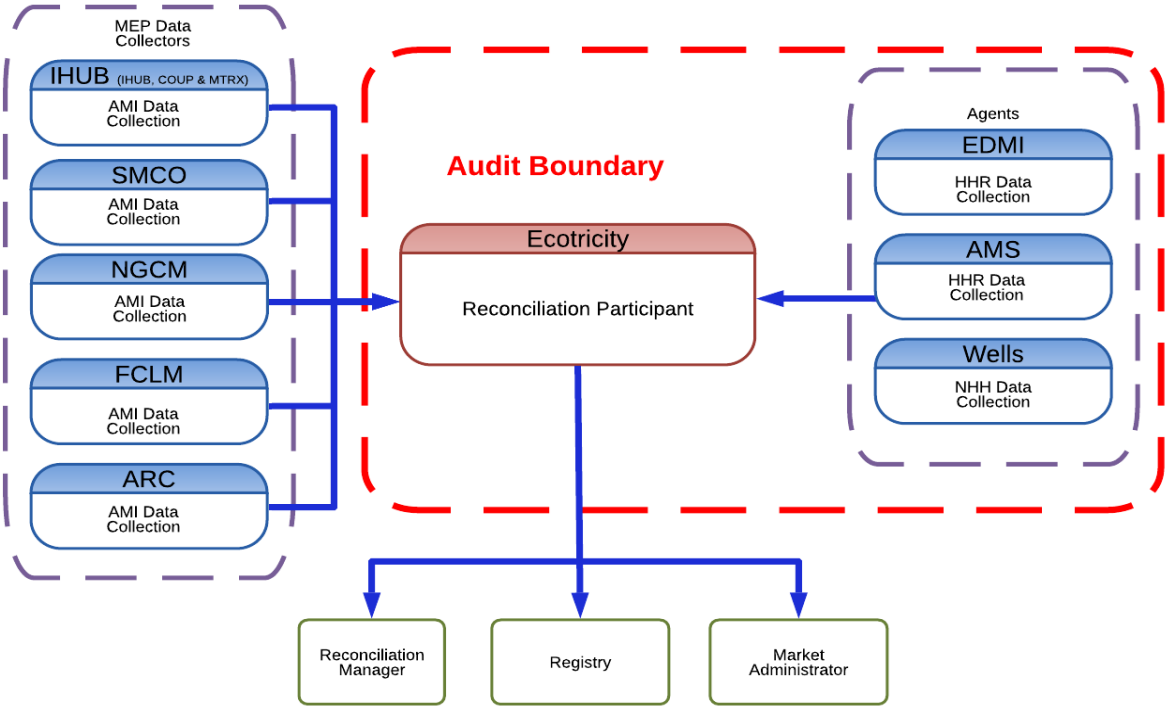
1.9. Scope of Audit

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 at Ecotricity's offices on 29 and 30 November 2022.

A registry list, event detail report, and audit compliance report for 1 Jan 2022 to 11 Oct 2022, and a registry list and meter installation details report for 29 September 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 April 2022 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 0218136013LC96D was not certified within five business days of reconnection.	Still existing
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.	Still existing
Provision of information to the registry manager	3.5	9 Schedule 11.1	19 late status updates to active for new connections.	Still existing
ANZSIC codes	3.6	9 (1)(k) of Schedule 11.1	At least six incorrect ANZSIC codes.	Still existing
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	One ICP (0282046071LCEB5) with incorrect daily average kWh calculated and applied.	Still existing
Management of "inactive" status	3.9	19 Schedule 11.1	One ICP (0000007594NTFE6) with incorrect inactive status event date.	Still existing
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	Eight 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.	Still existing
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.	Still existing

Subject	Section	Clause	Non-compliance	Status
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..	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	Switch reads do not reflect the correct boundary read between traders in all cases. Incorrect daily kWh for three ICPs.	Still existing
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.	Still existing
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 Schedule 11.3	One late HH CS file.	Still existing
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	Five NA breaches. Two NW breaches. One SR breach. One WR breach.	Still existing
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.	Still existing
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.	Still existing

Subject	Section	Clause	Non-compliance	Status
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.	Still existing
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
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.	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 two decimal places.	Still existing
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 endeavours 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.	Still existing
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	Event logs not routinely checked across all AMI providers.	Still existing
Calculation of ICP days	11.2	15.6	ICP Days file does not accurately reflect the reconciliation system.	Still existing
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	Still existing
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.	Still existing

Subject	Section	Clause	Non-compliance	Status
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.	Still existing
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
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.	Still existing
Historical estimate process	12.11	4 and 5 Schedule 15.3	Historic estimate calculations incorrect for one scenario.	Cleared
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.	Cleared
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
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.	Still existing
Distributed generation	6.1	10.13, Clause 10.24 and 15.13	Conduct regular checks of reporting to identify DG discrepancies.	Still existing
Distributed generation	6.1	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.	Cleared
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
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.	Still existing
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	Still existing
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.	Still existing
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).	Cleared

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 Sept 2022	Qty Feb 2022	Qty 2021	Qty 2020	Scenario	Comment
0	0	435	502	HHA profile used where metering is HHR certified	
3	1	1	1	NHH submission flag = "Y" for HHR profile	0000044558CP879, 0000506899CEB5A, 0000520405NR502 – now correct.
1	1	1	1	HHR submission flag = "Y" for RPS profile	0411602063LC186 – now correct
0	0	0	2	PV1 profile alone	
0	0	0	1	Incorrect status	

I checked a sample of NHH corrections as described in the table below:

Defective meters	The process is described in **section 8.1**. I checked three examples where a meter was reported as defective: • one ICP (0000037126CPAE7) was identified as defective during the previous audit period as a meter with a blank screen; the affected period was 6 June 2021 to 9 February 2022 when the meter was finally replaced and the correction has not yet been applied, • one ICP (0441782078LC611) was identified as defective during the previous audit period as a meter with a blank screen; the affected period was 7 November 2020 to 10 February 2022 when the meter was finally replaced and the correction has been correctly applied, and • one ICP (1000563994PCA40) was identified as a meter with a blank screen; the affected period was 26 November 2021 to 24 March 2022 when the meter was finally replaced, and the correction has not yet been applied.
Consumption while inactive	**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 221 ICPs to be investigated where consumption identified is greater than 1 kWh per ICP with a total volume of inactive consumption of over 551,668 kWh. Ecotricity provided a list with 221 ICPs with inactive consumption, totalling 551,668 kWh. I reviewed the 15 ICPs and found: • seven related to the incorrect active status dates applied to Metering installation category 2 new connections that accounts for 546,006 kWh of missing consumption volumes; Ecotricity have now corrected the active status dates and this volume will be included in the next wash up opportunity, • one ICP was a false positive where the consumption was confirmed as being not genuine, and • seven ICPs were confirmed as having genuine consumption and the registry was updated during the audit to reflect the correct status for the affected period. Given the age of some of these examples it appears this report is not regularly reviewed.
Unmetered load corrections	Robotron*esales 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 Ecotricity ICPs with unmetered details and identified the following: • 15 ICPs with standard UML had an incorrect calculation of daily kWh values with an annual impact of 24,901 kWh.
Bridged meters	Estimated consumption for the bridged period is based on the current average daily usage for the customer multiplied by the number of days bridged. The meter is then removed using an estimated removal read calculated from the estimate of missing consumption and then the meter is reinstalled with the correct start reading for when the meter was unbridged. One ICP (0005380049ALD95) was a bridged meter where the volumes were appropriately estimated, and this volume flowed through to submission.

Read and volume data accuracy

Some submission data accuracy issues were identified:

Accuracy issue	Report section(s)
Incorrect readings used for five ICPs sampled where Ecotricity settle as HHR, the CS read was estimated, and no read request change was sent to ensure the transfer read is accurate across the change of trader and submission types. Incorrect readings used for four ICPs where the ICP is settled as HHR, and the RR was rejected by the losing trader but used by Ecotricity. Incorrect readings used for one ICP where the ICP is settled as NHH, and the RR was rejected by the losing trader but used by Ecotricity	4.16, 12.7
Two shared UML ICPs (0001351650PCA57, 0005808588RN085) where the unmetered load flag is yes, but the daily unmetered kWh is incorrectly recorded as zero.	5.1, 12.7
Submission had not occurred for 23 HHR ICPs and 72 NHH ICPs with distributed generation and the RM was not notified of gifting.	6.1, 12.2, 12.7
A sample of nine corrections relating to AMI meter changes where the ICP was settled as HHR were reviewed. In all nine cases the removed meter was end dated in robotron*esales as of midnight (2400) the day prior to the meter change using the last received midnight read from the AMI MEP and the new meter was installed as of 0000 hours of the meter change date. The system estimation performed inserted zero values for the missing intervals up to the actual meter change time as when the system performs its scaling task using the available midnight reads, no additional volume is detected by the system.	8.2, 9.4, 12.7
ICP Days file does is not sourced from Ecotricity's reconciliation data.	11.2, 12.7
Errors in both HHRVOLS and HHRAGGS files between for the periods April 2021, September 2021, December 2021, January 2022, and February 2022 with differences ranging between 129 and 80,535 kWh.	11.4, 12.7
Under submission of 2,137.84 kWh due to vacant ICP 0001442650UN73B was not included in submission due to missing vacant account set-up.	12.2
On three occasions the NHH submission accuracy was outside the ± 15% accuracy due to misreads being released resulting in over submission of volume.	12.7

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 135 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-Mar-22 To: 30-Sep-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: High Audit history: Multiple times Controls: Moderate Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
High	Controls are rated as moderate at the time of the audit because the validation reporting is largely robust however submission issues identified are taking longer to resolve due to resource constraints. The impact is assessed to be high because the kWh volumes missing from submissions are large.

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	31/01/2024	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	31/01/2024	

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 38 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 38 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 were the initial trader for three ICPs (1002000373TCF37, 0000080062TC4C4, 0000080059TCDE8) related to customer networks that were converted to embedded networks. The MEP installed and certified the metering prior to the embedded network being commissioned and for the period between the meter certification date and the embedded network commissioning date these metering installations were considered to be check meter installations.

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

Reconnections

Ecotricity completed 58 reconnections during the audit period. ICP 0000228889UN9E5 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. ICP 0005783615RND85 had Arc metering present and the certification period of the meter was amended from 2026 to 2021 just prior to the ICP switching to Ecotricity. This meter has now been replaced.

Bridged meters

There was one ICP (0005380049ALD95) where the meter was bridged during the audit period. This was certified at the time the meter was unbridged.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.11 With: Clause 10.33A From: 01-Mar-22 To: 30-Sep-22	ICP's 0000228889UN9E5 and 0005783615RND85 were not certified within five business days of reconnection. Potential impact: Low Actual impact: Low Audit history: Twice 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
Currently working to recertify the meters.	31/03/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
A report has been developed within eSales for the Team to use. In addition, a process will be implemented for the Customer Service Team to advise Metering if a meter needs recertifying upon reconnection.	31/01/2024	

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 three embedded networks where trading started during the audit period. The networks are Waipori Village (trading commenced 1 July 2022), Mountain Power (trading commenced 1 July 2022) and 22 Stoddard Road Ltd (trading commenced 1 April 2022). Discussions have not yet commenced to enter into an agreement for these embedded networks. Non-compliance is recorded here as trading commenced prior to agreements being in place for line function services.

Where agreements have been implemented, these are stored electronically in a folder within the directory for each Network.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.12 With: Clause 11.16 From: 01-Mar-22 To: 30-Sep-22	Line function service agreements not in place for three embedded networks. 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 there is not a process in place to ensure switching does not commence for a network where Ecotricity does not have an agreement for line function services. 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 have contacted the embedded networks to gain the agreements and are now waiting on their responses.	End of December 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Create a report that shows all the networks we supply to vs a list of networks that we have agreements with.	30/06/2023	

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.

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 during the audit period for four ICPs for which Ecotricity had disconnected. In these cases, the disconnection was prior to the NT receipt date and the NT event date. The status event in these cases were updated 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

One ICP (0005380049ALD95) was found to be bridged during the audit period due to a fire at the meter board. The meter was bridged until repairs were made and a replacement meter was installed.

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.

A second ICP (0006614019AL2C1) was identified as being bridged by the distributor due to a no power fault attended by the distributor. The meter was bridged, and the MEP notified. The ICP subsequently switched away with an event date prior to the bridging event meaning the volume correction now sits with the gaining trader and not Ecotricity.

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 38 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%
	2022 (Sep)	**40**	**23.23**	**69.47%**
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%
	2022 (Sep)	**24**	**4.28**	**91.97%**

20 of the late updates to active status were made more than 30 business days after the event date, and the latest update was 403 business days after the event date. I checked 10 of the 20 late updates made more than 30 business days after the event date and found the following:

- two updates were due to lack of paperwork from the field service provider (Wells),
- there were eight examples of internal processing issues where the registry status was not updated, and
- all status changes applied the correct event date.

During the previous two audits it was stated that improved validation was required to ensure statuses were correct. It was 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 now 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%
	2022 (Sep)	**696**	**7.38**	**76.71%**

Late trader updates include MEP nominations and profile changes. 191 of the late trader updates were made more than 30 business days after the event date, and the latest update was 948 business days after the event date.

I checked 25 updates between nine and 946 business days after the event date and found:

- 13 were profile corrections (of which some were identified during the previous audit) and of the profile changes:
  - three were profile changes at the end of the month between HHR and NHH depending on the quality of data available,
  - seven were updates from meter changes where I flow metering was being installed,
  - one (ICP 0000110578UN027) was back dated past the 14-month wash up window however robotron*esales was not updated with this change in submission type so there was no impact to submission other than in the ICP Days reporting for this ICP,
- five of the above trader updates also led to late identification of MEP changes, leading to late MEP nominations

ANZSIC code population

The audit compliance report identified seven 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-Mar-22 To: 30-Sep-22	40 late updates to active status. 24 late updates to inactive status. 696 late trader updates including seven late ANZSIC code updates. 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. 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 minor, as while 98% (63 out of 64) late active updates were for either HHR submitted ICPs or for trader specific profiles and the late updates to active has impacted the Reconciliation Managers calculation of seasonal shapes for all NHH retailers, the overall number is small therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Validation reporting is in place to help identify and update the ICPs.	30/06/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will be hiring more CS 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.	30/06/2023	

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
- three listed late MEP nominations were replacement events to update other trader attributes and were not actual late MEP nominations.

All 1496 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.

Ten ICPs were decommissioned with reason code "installation dismantled" during the audit period. Final meter readings were obtained for eight ICPs but two ICP's were decommissioned without Ecotricity's knowledge and read estimates were applied for these event dates. 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%
	2022 (Sep)	**38**	**25.31**	**61.22%**

I checked twelve of the 38 late updates and found the following:

- the status for ICP 1001287659LCDC6 was backdated as it was thought that the status was incorrect since 8 April 2016 however this was not the case; the status event was then replaced shortly thereafter with no overall change to the status or any impact to submission,
- three were corrections to the active status date, aligning with the distributors initial electrical connection date (IECD) once Ecotricity had verified that this initial information provided on the metering paperwork from the MEP was incorrect,
- one ICP (0000052562HBEAD) was an update of the active status date to align with the MEP certification date which is two days after the distributors IECD; the original MEP paperwork included the correct livening date that aligned with the distributors IECD therefore this update is incorrect and is recorded as a non-compliance in **sections 2.1** and **3.8,**
- six were due to late notification from the field service providers/late paperwork, and
- one ICP (1002152169UN326) was due to the incorrect livening date being provided in the MEP paperwork for a transformer connected ICP; Ecotricity have now been able to verify the correct active status event date using HHR data and event log information provided by the MEP.

All 38 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. 17 ICPs with date discrepancies were identified:

Exception type	Quantity	Quantity incorrect	Commentary
IECD ≠ active date and MCD = active date	16	13	ICPs 1002000373TCF37, 0000080062TC4C4 and 0000080059TCDE8 had metering installed and certified while this was a customer network prior to becoming an embedded network. ICPs 1002152173UNB1A, 1002152168UNF63, 1002152166UNCF8, 1002152171UNB9F, 1002152167UN0BD, 1002152165UN038, 1002152163UN1B7, 1002152164UNC7D, 1002152170UN7DA, 1002152172UN75F, 1002152174UN6D0, and 1002152169UN326 are all transformer connections relating to the same customer. The IECD relates to the energisation of the transformers and not when the

Exception type	Quantity	Quantity incorrect	Commentary
			customers service line was connected completing the electrical connection of these ICPs. Ecotricity have verified the livening of the ICP using both the meter event logs and HHR data from the MEP and have now corrected the active status event dates. ICP (0000052562HBEAD) was an update of the active status date to align with the MEP certification date which is two days after the distributors IECD. The original MEP paperwork included the correct livening date that aligned with the distributors IECD therefore this update is incorrect. The active status date has now been corrected on the registry and aligns with the EICD date recorded by the distributor.
No IECD and MCD ≠ active date	1	1	ICP 1002152270UN4D9 had an active status date that did not align with meter installation/certification date by one day. Ecotricity have verified the correct active status event date with both the MEP and the distributor.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.5 With: Clause 9 Schedule 11.1 From: 01-Mar-22 To: 30-Sep-22	38 late status updates to active for new connections. 14 ICPs initially had incorrect active status event dates. 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 low, as while 71% (27 out of 38) late active updates were for HHR submitted ICPs and the late updates to active could have impacted the Reconciliation Managers calculation of seasonal shapes for all NHH retailers, only six updates were for more than 30 days meaning they did not influence the seasonal shape calculation, 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.	30/06/2023	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
Will be setting up the conversations with relevant MEP/s.	30/06/2023	

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, and
- two active ICPs with a residential ANZSIC code and meter category two; one of these is not residential.

I checked a sample of 57 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. 25 of the 57 required further investigation by Ecotricity to confirm the correct ANZSIC code. From Ecotricity's investigation it was found that 13 ICPs were assigned an incorrect ANZSIC code.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.6 With: Clause 9 (1)(k) of Schedule 11.1 From: 01-Mar-22 To: 30-Sep-22	At least 13 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 December 2022	Identified
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.	31/01/2024	

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 1836 ICPs with unmetered load. All of the ICPs have the unmetered flag set to yes.

The audit compliance report found:

- two ICPs (0001351650PCA57, 0005808588RN085) where the unmetered load flag is yes, but the daily unmetered kWh is incorrectly recorded as zero,
- five ICPs where the distributor has unmetered load recorded and Ecotricity does not; all five have metering records on the registry and Ecotricity were able to provide last actual reads and read dates for each of these ICPs that confirms that these ICPs are fully metered, and
- two ICPs (1000023240BP7B0, 1000023199BP7A0) where there is trader UNM details present but there is no distributor UMN record present; Ecotricity is following up with the distributor to verify if unmetered load is still present.

The audit compliance report also found 15 ICP's 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 and these are listed below.

ICP	Unmetered Load Details - Trader	Registry Daily Unmetered kWh	Unmetered Load Details - Distributor	Distributor derived Daily Unmetered kWh	Difference (kWh/Day)

0000438053MPF17	0120;11.8;Lighting	1.42	0000;11.8;unmetered lighting	0	1.42
0001790757TG20F	0300;24;Chorus cabinet	0.3	0300;24;Chorus cabinet	7.2	6.9
1099580310CN01D	230;24;Telecom Cabinet	2.76	230;24;Telecom Cabinet	5.52	2.76
1099580309CN4E1	230;24;Telecom Cabinet	3.86	230;24;Telecom Cabinet	5.52	1.66
0001080071TGC3D	250;24;Telecom Cabinet	6	0024;24;Telecom Cabinet	0.576	5.424
0005516200ML836	0230;24.0;Telecom cabinet	5.5	0625;24;PCM UNIT SH 1	15	9.5
0003330360MLC31	0230;24.0;Telecom cabinet	5.5	0125;24;UNMETERED PCM UNIT HAMMERICHS ROAD	3	2.5
0001984465TG206	250;24;Telecom Cabinet	6	0024;24;Telecom Cabinet	0.576	5.424
0001984440TG21C	250;24;Telecom Cabinet	6	0024;24;Telecom Cabinet	0.576	5.424
0001984439TG910	250;24;Telecom Cabinet	6	0024;24;Telecom Cabinet	0.576	5.424
0001984402TG03C	250;24;Telecom Cabinet	6	0024;24;Telecom Cabinet	0.576	5.424
0001984401TGCFC	250;24;Telecom Cabinet	6	0024;24;Telecom Cabinet	0.576	5.424
0000699069TP78D	250;24;Telecom Cabinet	6	0024;24;Telecom Cabinet	0.576	5.424
0000699027TP6B3	250;24;Telecom Cabinet	6	0024;24;Telecom Cabinet	0.576	5.424
1002078516UN645	368;24.0;Chorus Cabinet	8.64	0.368kW:24:368W/ 24HRS UNET	8.832	0.192

These exceptions have now been corrected from the switch gain date and one ICP is being followed up with the distributor. Ecotricity uses the daily kWh value populated on the registry as the source of its submission volumes for these unmetered loads. The annual volume impact of these incorrect daily kWh values was calculated as 24,901 kWh.

One ICP (0282046071LCEB5) identified from the previous audit, 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, where the updated daily kWh value correction has been reversed. This means there is again a difference between trader and distributor derived values. Ecotricity is liaising with the distributor and customer to confirm the correct unmetered load details.

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-Mar-22 To: 30-Sep-22	15 ICPs with incorrect daily average kWh calculated and applied where the volume impact was calculated as 24,901 kWh pa. Two ICPs (0001351650PCA57, 0005808588RN085) where the unmetered load flag is yes, but the daily unmetered kWh is incorrectly recorded as zero. 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. Potential impact: Medium Actual impact: Medium Audit history: Once Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are recorded as weak because the process to gain new unmetered loads does not include a step to validate the unmetered load details present on the registry including the Distributor UNM details field and also the Daily kWh field. The impact on settlement and participants is moderate; therefore, the audit risk rating is medium.

Actions taken to resolve the issue	Completion date	Remedial action status
Some of the daily kwh amount was corrected in the Registry and sync'd through to esales. Since the audit we have contacted the networks to get the correct amount.	End of December 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
A report has been created within eSales to monitor discrepancies of UML ICPs. We will implement a process to check and correct and errors.	31/01/2024	

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. 13 ICPs with date discrepancies were identified:

Exception type	Quantity	Commentary
IECD ≠ active date and MCD = active date	16	ICPs 1002000373TCF37, 0000080062TC4C4 and 0000080059TCDE8 had metering installed and certified while this was a customer network prior to becoming an embedded network. ICPs 1002152173UNB1A, 1002152168UNF63, 1002152166UNCF8, 1002152171UNB9F, 1002152167UN0BD, 1002152165UN038, 1002152163UN1B7, 1002152164UNC7D, 1002152170UN7DA, 1002152172UN75F, 1002152174UN6D0, and 1002152169UN326 are all transformer connections relating to the same customer. The IECD relates to the energisation of the transformers and not when the customers service line was connected completing the electrical connection of these ICPs. Ecotricity have verified the livening of the ICP using both the meter event logs and HHR data from the MEP and have now corrected the active status event dates. ICP (0000052562HBEAD) was an update of the active status date to align with the MEP certification date which is two days after the distributors IECD. The original MEP paperwork included the correct livening date that aligned with the distributors IECD therefore this update is incorrect. The active status date has now been corrected on the registry and aligns with the EICD date recorded by the distributor.

Exception type	Quantity	Commentary
No IECD and MCD ≠ active date	1	ICP 1002152270UN4D9 The meter was initially installed on a dead switchboard on 7 Jan 2022 and the meter was first livened on 4 May 2022 when the MEP first attempted to certify the meter but there was insufficient load to complete the load checks. The load and calibration checks were completed on 10 May 2022. The active status event date of 5 May 2022 is incorrect.

Reconnection information accuracy

A sample of ten reconnections were checked. Eight had the correct event date however ICP 0000814133NVF53 had an incorrect date of 28 May 2021 applied when the reconnection date was 26 May 2021 and ICP 0000184681UNC26 had an incorrect date of 28 January 2022 applied when the reconnection date was 1 February 2022.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.8 With: Clause 11.18 From: 01-Mar-22 To: 30-Sep-22	14 ICPs initially had incorrect active status event dates. Two reconnected ICPs had incorrect active status dates. Potential impact: High Actual impact: High Audit history: None Controls: Moderate Breach risk rating: 6
Audit risk rating	Rationale for audit risk rating
High	Controls are rated as moderate, because the process to update the registry is manual, increasing the likelihood of data processing errors. There are some monitoring controls in place to check that details are recorded correctly at the time the update is processed. The impact is high as seven of these ICPs are showing in the inactive consumption report with a HHR volume impact of 500,000 kWh allocated to a single NSP. This initial HHR under submission will have impacted the Reconciliation Managers calculation of seasonal shapes for all NHH retailers for the affected consumption periods.

Actions taken to resolve the issue	Completion date	Remedial action status
Since the audit we have reversed any incorrect status updates and added the correct update	End December 2022	Identified

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".	30/06/2023	

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 were 66 ICPs at "inactive - new connection in progress" status on the LIS report provided by Ecotricity, and 12 have metering details or initial electrical connection dates recorded. All 12 now have "active" status recorded on the registry. Eight ICPs have been at "inactive - new connection in progress" status for more than two years. Six have now had metering installed and for two ICPs Ecotricity have not had any updates from the customer to confirm if the ICP is still required. Ecotricity does not actively monitor the "inactive - new connection in progress" status and I recommend that Ecotricity develops a monitoring report to regularly review these ICPs to confirm if they are still required.

Recommendation	Description	Audited party comment	Remedial action
Monitoring of the 1,12 - registry status	Ecotricity develops a monitoring report to regularly review ICPs with this registry status to confirm if they are still required.	Ecotricity will look to develop a report for this	Identified

Other inactive statuses

The AC020 report did identify nine ICPs with AMI-remote disconnection, where a communicating AMI meter is not currently indicated and eight were confirmed as communicating at the time of remote disconnection. One ICP (0000680226WTA92) was incorrectly recorded as being remotely disconnected however the field service paperwork confirmed the disconnection was completed at the pole fuse. This ICP has since switched away and been reconnected.

I checked a sample of three (or all) status updates for each inactive status reason code. All status reason codes were correct.

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

Inactive ICPs with consumption

At the time of the audit there were 221 ICPs to be investigated where consumption identified is greater than 1 kWh per ICP with a total volume of inactive consumption of over 551,668 kWh.

Ecotricity provided a list with 221 ICPs with inactive consumption, totalling 551,668 kWh. I reviewed the 15 ICPs and found:

- seven related to the incorrect active status dates applied to Metering installation category 2 new connections that accounts for 546,006 kWh of missing consumption volumes; Ecotricity have now corrected the active status dates and this volume will be included in the next wash up opportunity,
- one ICP was a false positive where the consumption was confirmed as being not genuine, and
- seven ICPs were confirmed as having genuine consumption and the registry was updated during the audit to reflect the correct status for the affected period.

Given the age of some of these examples it appears this report is not regularly reviewed.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.9 With: Clause 19 Schedule 11.1 From: 01-Mar-22 To: 30-Sep-22	15 ICPs with consumption recorded during inactive periods resulting in under submission of 546,006 kWh. One ICP (0000680226WTA92) with incorrect inactive status reason code. Potential impact: High Actual impact: High Audit history: Once Controls: Moderate Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
High	Controls are rated as moderate overall. Most disconnection information checked was processed accurately, but there is room for improvement. The impact on settlement and participants is high; therefore, the audit risk rating is high.

Actions taken to resolve the issue	Completion date	Remedial action status
Since the audit we have reversed any incorrect status updates and added the correct update	End of December 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We have a report that shows the inactive ICPs with consumption that we will begin checking monthly and create activities when sending a Reconnection/Disconnections to make sure none of these are missed by human error.	30/06/2023	

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 (0076942937WAC51) is at "new" status and one ICP (0000049605HR030) 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.

Seven of the ten NT files sample checked were sent within two business days of pre-conditions being cleared, and the correct switch type was selected. However, for three ICPs (1000025863BP9EF, 1000007795BPDF5 and 0005058910RN97F) the NT file was sent between two and eight days late due to an issue within Ecotricity's EVI system that meant the switch request was not initiated on time.

I checked the metering category for all 1,489 transfer switch ICPs and found none had metering categories of three or above.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.1 With: Clause 2 Schedule 11.3 From: 01-Mar-22 To: 30-Sep-22	NT files sent late after preconditions were met for three ICPs. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong as the processes to ensure preconditions are met are robust and the issues identified were due to a system issue. The impact was low due to small number of affected NT files until the system issue was resolved.

Actions taken to resolve the issue	Completion date	Remedial action status
Continue improvement and monitoring of the system.	31/01/2024	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Continue improvement and monitoring of the system.	31/01/2024	

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

AN files are generated automatically from information recorded in robotron*esales.

378 AN files were issued for transfer switches:

- 31 ANs had the AA (acknowledge and accept) response code applied; 17 should have had the AD (advanced metering) response code, and
- I checked response code accuracy for five ANs where the response code was not AA (acknowledge and accept) and the response codes were confirmed as correct

AN timeliness

The switch breach history report recorded five late AN files.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.2 With: Clauses 3 and 4 Schedule 11.3 From: 01-Mar-22 To: 30-Sep-22	17 ICPs had the AA (acknowledge and accept) response code applied but should have had AD (advanced metering). Five AN breaches for late AN files relating to standard switches. 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, the volume of late or ANs with incorrect response codes is small compared to the number of ANs issued. The audit risk rating is assessed to be low as the late files were no more than three business days late and there is very little risk that a gaining trader will incur any costs for those ICPs sent with the incorrect response code.

Actions taken to resolve the issue	Completion date	Remedial action status
Continue improvement and monitoring of the system.	31/01/2024	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Continue improvement and monitoring of the system.	31/01/2024	

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 16 CS breaches where the CS arrival date was more than five business days after the CS transfer date:

- four related to internal processing delays while invoices past the switch date were reversed manually to enable the CS file to be generated,
- ten were due to delays due to training of new switching staff in the switching process,
- one was due to human error, and
- one related to a data issue within the robotron*esales system that where the CS data failed system validation.

CS content

I checked the consistency of last actual read dates and switch event read types for all 360 transfer switch CS files:

- nine CS files had a last actual read date after the CS event date,
- seven CS files had last actual read dates on the CS event date,

- four CS files had an actual switch event reading provided however the last actual read date was not the day prior to the transfer date, and
- no CS files had missing CSMETERINSTALL, CSMETERCOMP or CSMETERCHANNEL rows,

All of the CS files containing incorrect information were manually created by users and a sample of seven were reviewed in more detail.

ICP	CS event date	Incorrect information	Switch later withdrawn
0015825484EL5B2	1 June 2022	• The last actual read date was incorrectly recorded as being 7 June 2022 which is outside the period of supply.	No
0000053830NT60F	7 June 2022	• The last actual read date was incorrectly recorded as being 11 June 2022 which is outside the period of supply	No
1000530363PCC03	10 July 2022	• The switch event reading was recorded as R1 – 11161 (A) and R2 – 14537 (A) but should have been recorded as (E) estimated reads as the AMI meter was non communicating prior to the switch event date.	No - but RR accepted by ECOT
0015867512ELA0B	16 July 2022	• The switch event reading was recorded as R1 – 8448 (A) and R2 – 4388 (A) however there is no reading for the event date meaning the read type is incorrect.	No
0005165571RN9A6	18 July 2022	• The switch event readings were recorded as 148000 (A) and R2 – 44417 (A) however there is no reading for the event date meaning the read type is incorrect.	No
0000044070NT826	1 August 2022	• The switch event readings were recorded as meter# 215565974 - 0 (A) and Meter# 216040868 R1 – 45373 (A) and R2 – 0 (A) however there is no reading for the event date for Meter# 215565974 as this AMI meter is non communicating meaning the read type is incorrect.	No
0006779468RND93	13 June 2022	• The switch event reading was recorded as for R2 as 0 (A) but should have been 11763 (A).	No - but RR accepted by ECOT

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 ten CS files were checked to determine whether the average daily consumption was correct.

One CS file (ICP 0000957903TU1CD) had an incorrect average daily kWh value of 504 kWh per day applied for a residential property. This was confirmed to be the result of human error where the transfer read was incorrectly applied to the manual daily average kWh calculator used to determine the metering installation daily average.

One CS file (ICP 0000512586CE540) had an average daily kWh that was calculated to be negative due to Ecotricity assessing the daily average consumption across both import and export registers for this ICP that is a net generator. Ecotricity applied a value of zero in the CS file due to this calculation. The

average daily kWh value should only be calculated using X flow registers connected to the metering installation. In this case the correct average daily kWh value should have been 3 kWh per day.

Four CS files had a daily average value of zero, these were confirmed as correct. Two CS files were identified with a daily average of over 200 kWh, which were confirmed as correct.

In previous audits it was 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 has not yet been adopted and I repeat this recommendation.

Recommendation	Description	Audited party comment	Remedial action
Develop process to monitor CS reads applied to manually generated CS files aligns with reads held in robotron*esales.	Recommended that Ecotricity develops a process to monitor all manually created CS files against reads in robotron*esales to identify any read differences and to determine whether RR files need to be sent or whether submission needs to be revised.	It is our preference to send CS files from within eSales, however, in exceptional circumstances, these are sent manually. Ecotricity will look to develop a process to monitor all manually created CS files against reads in eSales to identify any read differences and to determine whether RR files need to be sent or whether submission needs to be revised	Identified

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.3 With: Clause 5 Schedule 11.3 From: 01-Mar-22 To: 30-Sep-22	16 CS breaches for late delivery of a CS file. Four of a sample of seven manually created standard switch CS files had an incorrect read type. One from a sample of seven manually created standard switch CS files contained incorrect switch event reads. Two from a sample of seven manually created standard switch CS files had an incorrect last actual read date. Two CS files (ICPs 0000957903TU1CD, 0000512586CE540) had an incorrect average daily kWh value calculated. 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 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 Ecotricity 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
Continue improvement and monitoring of the system. We will also make improvements for the controls around any manually processed CS files.	31/01/2024	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Continue improvement and monitoring of the system. We will also make improvements for the controls around any manually processed CS files.	31/01/2024	

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

25 RRs were issued by Ecotricity for standard switches; 23 were accepted. Two were rejected by the losing trader and no further attempts were made to negotiate a read change. I checked the content of two rejected files. For these two rejected RR files Ecotricity has applied the actual midnight read from the AMI MEP rather than the provided CS read estimates. Both of these ICPs are flagged as HHR submission type where actual HHR interval volumes have been submitted to the reconciliation manager from the switch date. This means that Ecotricity is unable to adjust the HHR data in an attempt to ensure all volume is accounted for in the reconciliation process as this would then result in Ecotricity being non-compliant with Clause 15.2 – Requirement to provide complete and accurate information. I recommend that Ecotricity implements monitoring to ensure read requests are pursued to a successful completion for all move switches and HHR transfer switches using mechanisms available within the code.

Recommendation	Description	Audited party comment	Remedial action
Monitoring of Read requests (RR) where Ecotricity trades gained ICP as HHR	Recommend that Ecotricity implements monitoring to ensure read requests are pursued to a successful completion for all move switches and HHR transfer switches using mechanisms available within the code.	Ecotricity will look to implement monitoring to ensure read requests are pursued to a successful completion for all move switches and HHR transfer switches using mechanisms available within the code.	Identified

The switch breach history report identified one late RR file for ICP 0110138040APC01 that was 159 days overdue. The delay was due to the losing trader needing to also arrange a RR with the trader they gain the ICP from as the verified requested read change was lower than the transfer read the losing trader gained the ICP.

AC

23 AC files were issued, and the switch breach history report did not record any late AC files. All RR requests are evaluated and validated against the ICP information, and requests within validation requirements are accepted. The agreed switch readings are entered into robotron*esales by the switching team

Incoming CS files

I checked five 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. These ICPs were settled as HHR, and no read request change was submitted to the losing trader to ensure the transfer meter readings aligned with both the AMI MEP readings for the transfer date and also the HHR interval data used by Ecotricity for HHR submission.

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-Mar-22 To: 30-Sep-22	Incorrect readings used for five ICPs sampled where Ecotricity settle as HHR, the CS read was estimated, and no read request change was sent to ensure the transfer read is accurate across the change of trader and submission types. Incorrect readings used for four ICPs where the ICP is settled as HHR, and the RR was rejected by the losing trader but used by Ecotricity. One RR file sent more than four months after the CS transfer date. 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.	30/06/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
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.	30/06/2023	

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 17 RRs for transfer switches where they had recorded a HHR profile, and the RR was issued within five business days of switch completion for five of these files. 15 of these were eventually accepted by the losing trader and two were rejected and were not followed up by Ecotricity.

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.

11 RR files were issued to Ecotricity by other traders during the audit period. Ten were accepted and only one was rejected and after further negotiation with the other trader an agreed read request as processed.

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

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.

Seven of the sample of ten NT files checked were sent within two business days of pre-conditions being cleared, and the correct switch type was selected. However, for one ICP (1002000319TC256) the NT file was sent 15 days late due to a data issue within the robotron*esales system that meant the switch request was not initiated on time.

ICP 0000506294CEE0B was an initially rejected transfer switch request where the losing trader had informed Ecotricity that a MI switch type was required. Ecotricity did not then restart the switch process using the correct switch type for another 26 business days.

ICP 0000376023MPC14 was a rejected MI switch where the losing trader provided an alternative date for the MI switch. Ecotricity accepted the NW but did not reinitiate the switch with the new switch date for another 82 business days.

Description	Recommendation	Audited party comment	Remedial action
NTs following withdrawals	Provide training and update procedures to ensure that NTs are reissued where required after a withdrawal is completed. As a rule, wrong switch type withdrawals are expected to be issued promptly with the correct switch type.	Provide training and update procedures to ensure that NTs are reissued where required after a withdrawal is completed.	Identified

I checked the metering category for all 8,188 switch move ICPs and found none had metering categories of three or above at the time of the switch being initiated.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.7 With: Clause 9 Schedule 11.3 From: 01-Mar-22 To: 30-Sep-22	NT files sent late after preconditions were met for three ICPs. 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 strong because NT files are usually issued on time, the exception occurred because an NT was not reissued after a withdrawal was completed. The is a minor impact on the customer, and other trader. The switch was completed in time for revised submission information to be provided through the wash up process.

Actions taken to resolve the issue	Completion date	Remedial action status
Continue improvement and monitoring of the system.	31/01/2024	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Continue improvement and monitoring of the system.	31/01/2024	

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

AN responses are determined by users on receipt of a NT file. The user selects the appropriate response code and transfer date. Once the appropriate information is populated the system formats and provides the file to the registry.

432 AN files were issued for move in (MI) switches:

- 45 ANs had the AA (acknowledge and accept) response code applied; seven should have had the AD (advanced metering) response code as a communicating AMI meter was recorded on the registry for the date of receipt of the NT file,
- six ICPs (0000048626UN2AF, 0000511259CEA3E, 0001128433ML7B0, 0005353610RN524 0000514293TP6BD and 0004701944TU0EB) were disconnected at the time of receipt of the NT and did not have the response code applied of PD (premise disconnected) provided in the AN file, and
- ICP 0009904229LNF74 had a metering event indicating the AMI meter was not communicating at the time of the NT file and a response code of AD (advanced meter) was incorrectly applied.

AN and CS timeliness

Ecotricity manually monitors AN and CS timeliness using the switch beach report however changes to personnel and roles within the switching team has meant not all exceptions were able to be actioned within the required timelines.

The switch breach history report recorded:

- eight late AN files,
- three CS breaches,
- 27 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,

- eight E2 breaches where the NT proposed transfer date and actual transfer date did not match, and the CS event date was earlier than the gaining trader's proposed event date; all of the CS files were created manually, and the user entered a CS event date earlier than both the NT proposed event date and AN proposed event date,
- two WR breaches where the AN and/or CS is delivered more than two business days after AW rejection; normally the AN or CS would be issued as soon as possible after AW rejection,
- three 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:
    - 0007177381RN964 – 4-day difference,
    - 0000051334ML1B4 – 1 day difference, and
    - 0243625006LC73F – 21 days difference.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.8 With: Clause 10(1) Schedule 11.3 From: 01-Mar-22 To: 30-Sep-22	Seven ICPs with an incorrect response code of AA (acknowledge and accept) where a communicating AMI meter was present, and the AD (advanced metering) response code should have been applied. Six ICPs were disconnected at the time of receipt of the NT file and did not have the response code applied of PD (premise disconnected) provided in the AN file. ICP 0009904229LNF74 had a metering event indicating the AMI meter was not communicating at the time of the NT file and a response code of AD (advanced meter) was incorrectly applied. Eight AN breaches for late AN files relating to switch moves. Three CS breaches. 27 T2 breaches for switch moves. Eight E2 breaches where the NT proposed transfer date and actual transfer date did not match, and the CS event date was earlier than the gaining trader's proposed event date. Two WR breaches where the AN and/or CS is delivered more than two business days after AW rejection. Three ET breaches for switch moves. 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, personnel changes, and key personnel due annual leave, means the processes as are not as robust as they consistently need to be. 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 switching staff; this will lessen the overall load, prevent human errors made in haste and ensure all work is checked/completed before breaching.	30/06/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will be hiring more switching staff; this will lessen the overall load, prevent human errors made in haste and ensure all work is checked/completed before breaching.	30/06/2023	

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 340 of the 432 switch move ANs listed on the event detail report, the proposed event date matched the gaining trader's proposed event date. For 92 ICPs, Ecotricity proposed an event date different to the gaining trader's proposed date, and the switch was compliantly completed effective from this date.

Non-compliance is recorded in **section 4.8** for two ET and eight E2 switch event date breaches

Audit outcome

Compliant

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

Code reference

Clause 11 Schedule 11.3

Code related audit information

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

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

Audit observation

The 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 ten CS files were checked to determine whether the average daily consumption was correct.

Audit commentary

CS Content

I checked for discrepancies between the last actual read date and switch event reading type for switch move CS files:

- 28 CS files had a last actual read date after the CS event date, a sample of five was reviewed in more detail,
- two CS files had last actual read dates on the CS event date,
- no CS files had missing CSMETERINSTALL, CSMETERCOMP or CSMETERCHANNEL rows,
- seven CS files had an event date the day after the last actual read date with an estimated switch event reading; these CS files contained some incorrect information and were manually created by users, and
- three CS files had an actual switch event reading provided however the last actual read date was not the day prior to the transfer date and all three were reviewed in more detail.

The CS files that were reviewed as containing incorrect information were confirmed as being manually created by users.

ICP	CS event date	Incorrect information	Switch later withdrawn
1002045509LC22E	19 March 2022	• The last actual read date was incorrectly recorded as being 9 April 2022 which is outside the period of supply.	No

ICP	CS event date	Incorrect information	Switch later withdrawn
0000024489WEAF0	31 August 2022	• The last actual read date was incorrectly recorded as being 20 September 2022 which is outside the period of supply.	No
1002109803LC1CE	26 June 2022	• The switch event reading was recorded as 1279 (A) but should have been 1214 (A).	No
0000013460UN716	1 June 2022	• The last actual read date was incorrectly recorded as being 20 June 2022 which is outside the period of supply.	No
0006985564RN383	4 April 2022	• The last actual read date was incorrectly recorded as being 17 April 2022 which is outside the period of supply. • The switch event reading was recorded as R1 – 36346 (A) and R2 – 77562 (A) but should have been R1 – 26243 (A) and R2 – 77559 (A).	No - but RR accepted by ECOT.
0013561380ELF94	27 July 2022	• The switch event read type was recorded as (A) – Actual using the disconnection reading in Feb 2022, however no read was recorded for the transfer date so the read type should have been (E) Estimated.	No
0000448439UN464	1 July 2022	• The switch event reading was recorded as 66721 (A) however there is no reading for the event date meaning the read type is incorrect.	No - but RR accepted by ECOT.
0086327200WRAE1	13 January 2022	• The switch event reading was recorded as 119722 (E) but should have been 11972 (E).	No - but RR accepted by ECOT.
0243625006LC73F	14 July 2022	• Last actual read of 49321 (A) and read date of 16 July 2022 was provided but should have been 49308 (A).	No - but RR accepted by ECOT

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 ten CS files were reviewed

Four CS files (ICP 0086327200WRAE1, 0000202927DEEE7, 0000602030HB136, and 0006516084RNBD6) had incorrect average daily kWh values over 200 kWh per day applied. These were confirmed to be the result of human error where the transfer read was incorrectly applied to the manual daily average kWh calculator used to determine the metering installation daily average. The transfer read for ICP 0086327200WRAE1 was also incorrectly entered in the CS file and this also resulted in a read request change initiated by the gaining trader. This is recorded as a non-compliance in **section 4.16.**

One CS file where the daily average kWh was over 200 kWh and five where the daily average kWh was zero kWh were confirmed as correct.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.10 With: Clause 11 Schedule 11.3 From: 01-Mar-22 To: 30-Sep-22	Two of a sample of three manually created switch move CS files had an incorrect read type. Four of a sample of five manually created switch move CS files contained incorrect switch event reads. Two of a sample of five manually created switch move CS files had an incorrect last actual read date. Four of a sample of ten manually created CS files (ICP 0086327200WRAE1, 0000202927DEEE7, 0000602030HB136, and 0006516084RNBD6) had incorrect average daily kWh value calculated. 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 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 must always relate to the Ecotricity 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 switching staff; this will lessen the overall load, prevent human errors made in haste and ensure all work is checked/completed before breaching.	30/06/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will be hiring more switching staff; this will lessen the overall load, prevent human errors made in haste and ensure all work is checked/completed before breaching.	30/06/2023	

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.

46 RRs were issued by Ecotricity for switch moves; 40 were accepted and one was initially rejected but were then accepted on the resending of a revised RR file. Five were rejected by the losing trader and no further attempts were made to negotiate a read change. I checked the content of 11 files. For all six of the accepted RR files the revised read was applied in robotron*esales. For the five rejected RR files Ecotricity has applied the actual midnight read from the AMI MEP rather than the provided CS read estimates. Four of these ICPs are flagged as HHR submission type where actual HHR interval volumes have been submitted to the reconciliation manager from the switch date. This means that Ecotricity is unable to adjust the HHR data in an attempt to ensure all volume is account for in the reconciliation

process as this would then result in Ecotricity being non-compliant with Clause 15.2 – Requirement to provide complete and accurate information. This is recorded as a non-compliance in **section 4.16**.

The other ICP is submitted as NHH, and the CS read is also not being used for reconciliation.

AC

32 AC files were issued, and the switch breach history report did not record any late AC files. All RR requests are evaluated and validated against the ICP information, and requests within validation requirements are accepted. The agreed switch readings are entered into robotron*esales by the switching team.

Incoming CS files

I checked five switch move 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. These ICPs were settled as HHR, and no read request change was submitted to the losing trader to ensure the transfer meter readings aligned with both the AMI MEP readings for the transfer date and also the HHR interval data used by Ecotricity for HHR submission.

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: 4.11 With: Clause 12 Schedule 11.3 From: 01-Mar-22 To: 30-Sep-22	Incorrect readings used for five ICPs sampled where Ecotricity settle as HHR, the CS read was estimated, and no read request change was sent to ensure the transfer read is accurate across the change of trader and submission types. Incorrect readings used for four ICPs where the ICP is settled as HHR, and the RR was rejected by the losing trader but used by Ecotricity. Incorrect readings used for one ICP where the ICP is settled as NHH, and the RR was rejected by the losing trader but used by Ecotricity. 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 as the gaining trader, Ecotricity needs to ensure no volume is lost during the switch process where there is a change in trader. 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.	31/01/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Activities are now being created for all future RR's and will be closed off once the read is showing as the opening read.	31/01/2023	

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

16 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 NT files relating to standard (TR) switch and switch move (MI) 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

13 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

16 HH CS files were issued during the audit period. 15 files were sent on time and the content was accurate. One late HH CS file (ICP 0007146796RN28E) was recorded on the switch breach history report. It was identified that there was a NW request made by the losing trader as the switch was being confirmed with the losing trader's customer. This resulted in a late AN notification by the losing trader which in turn delayed the CS file from Ecotricity.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.14 With: Clause 16 Schedule 11.3 From: 01-Mar-22 To: 30-Sep-22	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 December 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 December 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

12 (7.3%) of the 164 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 one ICP the customer had signed up for the incorrect property, and
- four NW breach where the customer requested to return back to their previous retailer after their solar installation was cancelled.

AW

Seven (3.1%) of the 223 AWs issued by Ecotricity were rejections. I reviewed the rejections including one that was accepted on reissue with the same code and confirmed they were rejected based the information available at the time the response was issued.

The switch breach history report identified four late AW files and two SR breaches.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.15 With: Clauses 17 and 18 Schedule 11.3 From: 01-Mar-22 To: 30-Sep-22	Five NA breaches. Four NW breaches. Four AW breaches. Two SR breaches. 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 December 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will be hiring more switching staff; this will lessen the overall load, prevent human errors made in haste and ensure all work is checked/completed before breaching.	30/06/2023	

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

Accuracy of CS event readings

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

The following CS files contained event readings which did not reflect the actual reading or best estimate of actual consumption at the end of the last day of supply:

ICP	CS event date	Incorrect information	Switch later withdrawn	Report section
1002109803LC1CE	26 June 2022	The switch event reading was recorded as 1279 (A) but should have been 1214 (A).	No	4.10
0006985564RN383	4 April 2022	The switch event reading was recorded as R1 – 36346 (A) and R2 – 77562 (A) but should have been R1 – 26243 (A) and R2 – 77559 (A).	No - but RR accepted by ECOT.	4.10
0086327200WRAE1	13 January 2022	The switch event reading was recorded as 119722 (E) but should have been 11972 (E).	No -but RR accepted by ECOT.	4.10

The previous audit 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.

This is because the 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. There has been no change to this process during this audit period.

I again 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
Ensure CS read estimates aligns with HHR volumes up to the switch transfer date.	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.	Ecotricity to develop a process to transition the ICP to NHH submission type prior to completing the population of the CS file.	Identified

As recorded in **section 4.11**, for the five rejected RR files Ecotricity has applied the actual midnight read from the AMI MEP rather than the provided CS read estimates. Four of these ICPs are flagged as HHR submission type where actual HHR interval volumes have been submitted to the reconciliation manager from the switch date. This means that Ecotricity is unable to adjust the HHR data in an attempt to ensure all volume is account for in the reconciliation process as this would then result in Ecotricity being non-compliant with Clause 15.2 – Requirement to provide complete and accurate information.

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

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.16 With: Clause 21 of Schedule 11.3 From: 01-Mar-22 To: 30-Sep-22	Three CS files contained event readings which did not reflect the actual reading or best estimate of actual consumption at the end of the last day of supply. 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. Ecotricity did not use the provided CS read for five ICPs where the RR file was rejected by the losing trader. 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 rated as moderate overall as most switch event readings reflected the actual reading or best estimate for the last day of supply. The audit risk rating is assessed to be low as the incorrect information in the CS files will have a minor effect on reconciliation, where the switches were not withdrawn or where a read request change is not undertaken.

Actions taken to resolve the issue	Completion date	Remedial action status
We are in the process of improving our system which should remove the human error found in the manually created CS files.	31/01/2024	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We are in the process of improving our system which should remove the human error found in the manually created CS files.	31/01/2024	

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 ten 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
- two ICPs (0001351650PCA57, 0005808588RN085) 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; in both instances the trader daily kWh value had been incorrectly set to zero.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.1 With: Clause 11.14 From: 01-Mar-22 To: 30-Sep-22	Two ICPs (0001351650PCA57, 0005808588RN085) where the daily unmetered kWh value is incorrectly recorded as zero. 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 the process to gain new unmetered loads does not include a step to validate the unmetered load details present on the registry including the Distributor UNM details field and the Daily kWh field. The impact on settlement and participants is low; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Since the audit we have gone through and updated the daily unmetered kWh.	31/01/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
A report has been created within eSales to monitor discrepancies of UML ICPs. We will implement a process to check and correct and errors.	31/01/2024	

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 34 ICPs with unmetered load between 3,000 and 6,000kWh per annum. These unmetered loads relate to telecommunications cabinets 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 12 ICPs with unmetered load over 6,000 kWh per annum. These unmetered loads relate to telecommunications cabinets which is a type approved by the authority. These telecommunications cabinets primarily supply the copper cable landline network which is being slowly decommissioned by Chorus and Ecotricity has an exemption in place (exemption 326) to enable them to submit this volume as unmetered load until this network is fully decommissioned or the load has been reduced to meet the thresholds described within the code.

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 two audits 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.	Ecotricity to conduct regular checks of reporting to identify DG discrepancies	Identified

The registry list recorded 7,943 active ICPs with generation recorded by the distributor.

- 7,792 ICPs have I flow meter registers with the settlement indicator set to yes. 7,720 have HHR submission, or a NHH profile indicating generation.
- 72 NHH ICPs did not have a PV1 or EG1 profile and the RM has not been notified of gifting. A sample of 20 were reviewed and 19 were identified as being late updates to the

robotron*esales profile group to now include the I flow volumes, resulting in both submission volumes not being included for the I flow consumption volumes and also the profile code on the registry not being updated. All 19 ICPs have now had backdated corrections applied and revised consumption volumes will be submitted through the wash up process. One ICP is still awaiting metering event updates by the MEP to enable Ecotricity to complete their metering change in robotron*esales.

- 137 ICPs did not have I-flow meter registers recorded on the registry. A sample of 13 ICPs were reviewed and 10 of these now have import/export metering installed and are correctly reflecting the PV1 profile code on the registry. One registry update was late due to Ecotricity needing to wait for the MEP to update their metering event and once this update was completed it was missed by Ecotricity resulting in both robotron*esales not being updated with the appropriate meter set-ups and the registry updated with the correct profile code. Two ICPs do not have an active meter change request in progress and Ecotricity is following up this the customer to confirm if distribution generation installation is going ahead.
- 114 active ICPs with generation recorded by the distributor did not have an I flow volume recorded in the September 2022 AV-140 (HHRAGGS) 3-month wash up file. The metering records were reviewed and identified that 23 HHR ICPs where an I flow meter register was recorded with a settlement indicator set to Y All 23 were reviewed and 21 were identified as being missing due to late system set ups of the I flow register which have now been resolved. Ecotricity is still investigating two ICPs with the MEP to confirm the correct meter set up.

I checked for consistency between the profiles applied and distributor fuel types.

- All ICPs with PV1 profile had solar indicated by the distributor except for six ICPs:
    - four ICPs have import/export metering installed and Ecotricity are following up with the distributor to update the installation type, and
    - two ICPs were incorrectly assigned the PV1 profile code as while the ICP has I-flow meter registers, the settlement indicator is set to 'N' (No); these have now been corrected on the registry.
- 61 ICPs with profile EG1 had solar indicated by the distributor, but EG1 is correct because batteries are installed. Ecotricity have now updated the profile code for ICPs with both Solar plus battery to now reflect the profile code of PV1 which is consistent with the Authority's view of this distributed generation load.

Bridged meters

The process from monitoring bridged meters is unchanged – one bridged meter (ICP 0005380049ALD95) was 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-Mar-22 To: 30-Sep-22	Submission had not occurred for 21 HHR ICPs and 72 NHH ICPs with distributed generation and the RM was not notified of gifting. For one ICP (0005380049ALD95) the meter was bridged during the audit period meaning volumes were not quantified in accordance with the code. 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
Reporting is in place to support identifying and resolving issues with distributed generation not being submitted. A process needs to be created for this.	30/06/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Reporting is in place to support identifying and resolving issues with distributed generation not being submitted. A process needs to be created for this.	30/06/2023	

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 two examples of a defective meter, one was a faulty meter and one related to a bridged meter. In both cases a field services job was raised to replace or un-bridge the meter, and the MEP was advised.

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 events were reviewed as part of MEP audits and agent audits, and compliance is confirmed.

Fulfilment of the interrogation systems requirements was examined as part of the MEP audits and found to be compliant. Only the MEPs can interrogate the meters where Ecotricity is the trader.

The MEPs provide clock synchronisation information via SFTP, and I viewed examples of these.

Clock synchronisation event emails are reviewed on receipt, to determine whether the issue has been resolved or a field services job is required.

Ecotricity does not actively review the time difference reports published by the AMI MEPs as they rely on these AMI MEPs to alert them of any clock synchronisation events requiring attention.

I reviewed ten reports for time difference published by two separate AMI MEPs. Most clock adjustments reviewed were small, however I identified the following:

- for NGCM AMI meters there were 22 meters where the time difference exceeded 3,600 seconds in the April 2022 report,
- for Arc AMI meters there were 23 meters in October 2022 where the time correction exceeded 1,770 seconds for a given day and then this correction was reverted back during the proceeding days' time correction (the affected dates where this occurs were 7 &8 October).

As these reports are not reviewed by Ecotricity no assessment on the impacts these large time corrections to the interval data has been conducted.

I reviewed three NGCM ICPs where the time corrections were applied and for all three ICPs I identified that the meter had undergone a meter reprogram resulting in the meter register reading being reset to zero. The time correction post this reprogram was recorded as being approximately 3,600 seconds and a review of this interval data for these ICPs across the time correction post the meter reprogram confirmed there was no impact.

For the Arc ICPs where the time corrections were applied and reverted one day apart and for two of the ICPs the impact of a time correction of almost an entire trading period is that volume for the initial time change results in an almost zero volume of consumption being recorded and when the subsequent time correction is applied a day later the affected trading period records a volume of almost twice the consumption of the surrounding intervals. Where these ICPs are submitted as HHR then there is an impact to the calculation of seasonal shapes that are then used to determine HNN submitted volumes.

Ecotricity does not have a process to estimate data where a clock synchronisation event affects more than one trading period and I repeat the previous audits recommendation that a process is developed.

Description	Recommendation	Audited party comment	Remedial action
Clock synchronisation events	Where a clock synchronisation over 1700 seconds occurs, and data for multiple trading periods is pushed into the period of adjustment, develop a process to spread the total consumption for the adjustment period across the periods it actually occurred within.	Ecotricity to review and develop a process for clock synchronization events over 1700 seconds	Identified

I checked whether all data was collected within the maximum interrogation cycle. There were 23 ICPs where data was not collected within the maximum interrogation cycle and the ICP have not been

arranged to be read or interrogated between the interrogation cycle limit and one year. The process to either add these ICPs onto a manual NHH meter reading schedule or resolve the access or comms issue has not been consistently followed.

The ICPs and the number of days since the AMI flag was updated to N on the registry by the MEP are listed below.

ICP	MEP	Registry List report date	AMI = N Date	Days since AMI flag updated (last interrogation)	Max interrogation cycle
0002012710CN9C5	COUP	29/09/2022	13/02/2022	228	90
0002033230CN9F8	COUP	29/09/2022	13/02/2022	228	90
0002766020CN80D	COUP	29/09/2022	28/06/2022	93	90
0005104800CNC0A	COUP	29/09/2022	30/01/2022	242	236
0005223830CNAEB	COUP	29/09/2022	19/01/2022	253	236
0005522262CNCC7	COUP	29/09/2022	15/11/2021	318	236
0007558560CNACB	COUP	29/09/2022	6/06/2022	115	90
0009953380CN116	COUP	29/09/2022	20/06/2022	101	90
0077455389WE3C5	FCLM	29/09/2022	19/02/2018	1683	90
0099551759CN156	COUP	29/09/2022	30/05/2022	122	236
0131928627LC28F	FCLM	29/09/2022	27/07/2021	429	30
0141340037LCF64	MTRX	29/09/2022	5/05/2020	877	365
1002108847LC3C1	FCLM	29/09/2022	26/08/2021	399	30
1002150033LC9EF	FCLM	29/09/2022	20/12/2021	283	30
1099571492CNEEC	COUP	29/09/2022	4/01/2022	268	236
1099571901CN8C3	COUP	29/09/2022	27/01/2022	245	236
1099574557CNA68	COUP	29/09/2022	14/06/2022	107	90
1099574626CN073	COUP	29/09/2022	23/06/2022	98	90

ICP	MEP	Registry List report date	AMI = N Date	Days since AMI flag updated (last interrogation)	Max interrogation cycle
1099576027CN970	COUP	29/09/2022	25/01/2022	247	236
1099577260CNDB8	COUP	29/09/2022	22/03/2022	191	236
1099579619CN275	COUP	29/09/2022	25/01/2022	247	90
1099580014CN214	COUP	29/09/2022	1/03/2022	212	90
1099580660CN045	COUP	29/09/2022	25/02/2022	216	90

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.5 With: Clause 2 Schedule 15.2 From: 01-Mar-22 To: 30-Sep-22	23 ICPs not interrogated within the maximum interrogation cycle. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are moderate as while the system can perform reasonable estimations using historical consumption data as a reference, after four months the estimation accuracy declines and there is no ability to ensure the volume estimated relates to actual consumption consumed at the ICP. The audit risk rating is low as the number of affected meters is small and the affected ICPs are metering installation capacity 1 so the affected volumes are quite small.

Actions taken to resolve the issue	Completion date	Remedial action status
Ecotricity to review and develop a process to identify and investigate issues within the maximum interrogation cycle.	31/01/2024	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Ecotricity to review and develop a process to identify and investigate issues within the maximum interrogation cycle.	31/01/2024	

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 6770 active and metered ICPs with NHH submission type as of 29 September 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**.

I walked through the process for NHH to HHR and HHR to NHH meter changes, including reviewing five upgrades and five downgrades and I identified that in all cases, the profile change occurred on a meter reading applied to the correct date and time.

ICP	CS event date	Incorrect information
0006779468RND93	13 June 2022	• The switch event reading was recorded as for R2 as 0 (A) but should have been 11763 (A).
1002109803LC1CE	26 June 2022	• The switch event reading was recorded as 1279 (A) but should have been 1214 (A).
0006985564RN383	4 April 2022	• The last actual read date was incorrectly recorded as being 17 April 2022 which is outside the period of supply. • The switch event reading was recorded as R1 – 36346 (A) and R2 – 77562 (A) but should have been R1 – 26243 (A) and R2 – 77559 (A).
0086327200WRAE1	13 January 2022	• The switch event reading was recorded as 119722 (E) but should have been 11972 (E).
0243625006LC73F	14 July 2022	• Last actual read of 49321 (A) and read date of 16 July 2022 was provided but should have been 49308 (A).

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.7 With: Clause 6 Schedule 15.2 From: 01-Mar-22 To: 30-Sep-22	One standard switch ICP sent with incorrect read for the transfer date. Four switch move ICPs sent with incorrect reads for the transfer 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 rated as moderate. The errors found related to manually created CS files. The audit risk rating is assessed to be low as there were only a small number of CS files sent with the incorrect last read and this will have a minor effect on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status
Any brought to our attention during the audit have been resolved.	End of December 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We are in the process of improving our system which should remove the human error found in the manually created CS files.	31/01/2024	

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 had 28 ICPs recorded however 20 ICPs did not have a registry trader time slice for Ecotricity. These ICPs were for withdrawn switches so should not be included in this report. Of the remaining eight, two were unmetered ICPs so there is no meter to read therefore these are again false positive records. The erroneous records within this report results in time wasted by Ecotricity investigating possible meter read issues for ICPs not supplied by Ecotricity and I again recommend that Ecotricity reviews the selection criteria to ensure both the internal report at ICP level and the external report provided to the Authority is accurate and only includes ICPs that Ecotricity currently supplies.

Description	Recommendation	Audited party comment	Remedial action
Meter read frequency report accuracy.	Ecotricity to review the selection criteria of the meter read frequency reports to ensure both the internal report at ICP level and the external report at NSP level, provided to the Authority, considers all ICPs flagged as being included in Ecotricity's NHH submission, is accurate and only includes ICPs that Ecotricity currently supplies.	The meter frequency report will be reviewed to ensure it is accurate and only includes ICPs that Ecotricity supplies at the time.	Identified

The other six ICPs had been with Ecotricity for more than 12 months and did have a read during the period of supply. Analysis of the registry data (Ecotricity NT files and CS files for the audit period) identified 19 ICPs that were with Ecotricity for a period less than 12 months. In all cases the ICP switched to Ecotricity on an actual read therefore compliance is confirmed.

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.

The reports provided were the same as those provided to the Authority each month covering the proportion of NHH submitted ICPs where reads re provided by both AMI remote reads and also manual meter reading. The LIS report provided by Ecotricity has a NHH submission population of active metered

ICPs of 6,770 ICPs, however the August 2022 report covered a total population of only 934 ICPs traded by Ecotricity for more than four months. The ICPs appearing on the meter read frequency report appear to only be those assigned to manual meter reading service providers and does not include non-communicating AMI metered ICPs.

The last two audits also identified that 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. This is still the case and a recommendation is repeated in **section 6.8** regarding reviewing the selection criteria for this report.

All ICPs not read in the 12 months ending 31 August 2022 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
Dec 2021	96	9	9	97.96%
Jan 2022	97	11	11	97.55%
Feb 2022	103	11	13	97.18%
Mar 2022	99	12	21	95.83%
Apr 2022	105	12	20	95.96%
May 2022	124	16	24	95.67%
Jun 2022	129	10	19	96.93%
Jul 2022	147	16	24	96.53%
Aug 2022	145	8	12	98.28%

As discussed in **section 6.8**, reporting is in place to identify unread meters, however the previous audit had also identified that this report had not been routinely actioned during the prior audit periods.

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 by the reconciliation team and escalate affected ICPs to the metering team. The reports accuracy means it is not possible to assess the process effectiveness.

All ICPs not read in the 12 months ending 31 August 2022 were reviewed to determine whether exceptional circumstances existed and if Ecotricity had used their best endeavours to obtain readings. For

four of the ten ICPs, Ecotricity were not the retailer as switches had previously been withdrawn for these. For three ICPs the customer has provided reads as requested by Ecotricity and these are recorded as estimate reads within robotron*esales. Ecotricity is trying to arrange access with these customers for special reads via the manual meter reader. Three ICPs are unconfirmed decommissioned ICPs reported by the manual meter readers and where Ecotricity has been unable to get confirmation from the customer as to the status of these ICPs.

Copies of the meter reading frequency reports to the Electricity Authority for January to August 2022 were provided. The content did not meet the requirements of the Code as:

- ICPs which Ecotricity were not responsible are included in the calculation of the statistics of this report, and
- not all NHH submitted ICPs are included in the selection criteria for 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-Mar-22 To: 30-Sep-22	Best endeavours not met for six ICPs not read in the 12-month period ending 31 August 2022. 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 this does not cover the full NHH submission population and it is also not being actioned consistently, therefore the controls are weak. The impact on settlement and participants is minor based on the incomplete reporting currently available to assess the impact; 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 December 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
With new staff onboard, we will begin more frequent checks and more intensive follow up with customers to organise readings	30/06/2023	

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 eight ICPs not read in the four months ending August 2022 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
Dec 2021	107	7	8	98.54%
Jan 2022	124	8	9	98.23%
Feb 2022	102	8	12	
Mar 2022	136	11	11	96.94%
Apr 2022	152	11	23	96.96%
May 2022	149	10	23	96.99%
Jun 2022	150	12	24	96.98%
Jul 2022	155	16	37	95.85%
Aug 2022	157	5	8	97.00%

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

I also reviewed the process Ecotricity uses to identify where AMI interval data is not received for an extended period in **section 6.7**. The process to identify these ICPs and notify the respective AMI MEP is robust and once the AMI communicating flag is updated by the AMI to now reflect the meter is no longer

communicating, then Ecotricity will transition the ICP back to NHH submission methodology from the last recorded actual meter reading.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.10 With: Clause 9(1) and (2) Schedule 15.2 From: 01-Mar-22 To: 30-Sep-22	Eight ICPs not read in the 4-month period up to August 2022. 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 this does not cover the full NHH submission population and it is also not being actioned consistently, therefore the controls are weak. The impact on settlement and participants is minor based on the incomplete reporting currently available to assess the impact; 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 December 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
With new staff onboard, we will begin more frequent checks and more intensive follow up with customers to organise readings	30/06/2023	

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

Audit commentary

Ecotricity has conducted NHH meter reading corrections and demonstrated that the corrections do not overwrite the original reading. Where a reading requires replacement, the original reading status is updated to ensure that it is not longer considered for submission purposes and the new reading is then applied.

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).

A sample of nine corrections relating to AMI meter changes where the ICP was settled as HHR were reviewed. In all nine cases the removed meter was end dated in robotron*esales as of midnight (2400) the day prior to the meter change using the last received midnight read from the AMI MEP and the new meter was installed as of 0000 hours of the meter change date. The system estimation performed inserted zero values for the missing intervals up to the actual meter change time as when the system performs its scaling task using the available midnight reads, no additional volume is detected by the system. Four of the sample were reviewed in more detail to determine the size of the underestimated volumes. The volume impact was between 6 and 14 kWh equating to a 0.9 to 2% volume inaccuracy at the ICP level as shown in the table below.

ICP	Meter serial number	AMI MEP	HHRAGGS volume (kWh)	NHH volume from reads (kWh)	Difference (kWh)	% diff
0007191084RNF95	219393213	NGCS	644.657	650.63	5.973	0.9%
0007191084RNF95	251111828	FCLM				
0007192223RN2A7	219962256	NGCS	741.896	751.06	9.164	1.2%
0007192223RN2A7	251111277	FCLM				
0007193879RN394	250176491	NGCS	679.805	693.54	13.735	2.0%
0007193879RN394	251111327	FCLM				
0007194389RN4ED	219962257	NGCS	683.277	692.13	8.853	1.3%
0007194389RN4ED	251111338	FCLM				

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 which confirmed compliance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 8.2 With: Clause 19(2) Schedule 15.2 From: 01-Mar-22 To: 30-Sep-22	Estimation quality flag reporting is not monitored, which can lead to inaccurate corrections. Corrections for all nine sampled meter changes did not ensure all consumption recorded by the removed meter was included in the volume correction. 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 deal with most scenarios accurately. The impact on settlement and also the calculation of seasonal shapes by the reconciliation manager 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		31/01/2024	Investigating
Preventative actions taken to ensure no further issues will occur		**Completion date**	
We will discuss with Robotron to implement a way to monitor these		31/01/2024	

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

Estimated and actual readings are clearly identified as required by this clause. I checked approximately 13 examples to confirm compliance.

As discussed in **section 4.3,** four standard switch CS files had the transfer read incorrectly labelled as (A) Actual when there was no read present for the transfer date.

ICP	CS event date	Incorrect information
1000530363PCC03	10 July 2022	• The switch event reading was recorded as R1 – 11161 (A) and R2 – 14537 (A) but should have been recorded as (E) estimated reads as the AMI meter was non communicating prior to the switch event date.
0015867512ELA0B	16 July 2022	• The switch event reading was recorded as R1 – 8448 (A) and R2 – 4388 (A) however there is no reading for the event date meaning the read type is incorrect.
0005165571RN9A6	18 July 2022	• The switch event readings were recorded as 148000 (A) and R2 – 44417 (A) however there is no reading for the event date meaning the read type is incorrect.
0000044070NT826	1 August 2022	• The switch event readings were recorded as meter# 215565974 - 0 (A) and Meter# 216040868 R1 – 45373 (A) and R2 – 0 (A) however there is no reading for the event date for Meter# 215565974 as this AMI meter is non communicating meaning the read type is incorrect.

As discussed in **section 4.10**, two switch move CS files had the transfer read incorrectly labelled as (A) Actual when there was no read present for the transfer date.

ICP	CS event date	Incorrect information
0013561380ELF94	27 July 2022	• The switch event read type was recorded as (A) – Actual using the disconnection reading in Feb 2022, however no read was recorded for the transfer date so the read type should have been (E) Estimated.
0000448439UN464	1 July 2022	• The switch event reading was recorded as 66721 (A) however there is no reading for the event date meaning the read type is incorrect.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.1 With: Clause 3(3) Schedule 15.2 From: 01-Mar-22 To: 30-Sep-22	Six estimated switch event reads were incorrectly classified as actual reads. 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 overall as a small number of switch event readings were incorrectly labelled for manually created CS files. The impact on settlement and participants is low. Applying the read type "A" does not impact on other traders' ability to issue read renegotiation requests under clause 6(2) and (3) Schedule 11.3.

Actions taken to resolve the issue	Completion date	Remedial action status
We will be hiring more switching staff; this will lessen the overall load, prevent human errors made in haste.	30/06/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will be hiring more switching staff; this will lessen the overall load, prevent human errors made in haste.	30/06/2023	

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.

Previous AMS and EDMI agent audits recorded that the EIEP3 file format rounds trading period data to two decimal places. Both EDMI and AMS now supply EIEP3 files to three decimal places and compliance is confirmed.

Audit outcome

Compliant

9.4. Half hour estimates (Clause 15 Schedule 15.2)

Code reference

Clause 15 Schedule 15.2

Code related audit information

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

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

Audit observation

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 22 examples of estimates and found that:

- nine 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,
- six examples related to AMI meter changes where MTRX continued to provide estimates for the removed meter; Ecotricity were required to replace these incorrect estimates with zero values,
- three examples related to missing interval data from the AMI meter install date for a period of up to 18 days when the first receipt of interval data was received from the AMI MEP; while the outstanding data was eventually provided by the AMI MEP via email, Ecotricity did not have a mechanism to load this data outside of the automated daily file load mechanism so the gap was estimated by robotron*esales and scaled to match he volume calculated by midnight reads either side of the data gap - Ecotricity now has the functionality to load adhoc data into robotron*esales, and
- four examples related to interval data that had been flagged by the AMI MEP as having failed sum check validation; robotron*esales replaced the received interval data with estimates that aligned with the volume calculated between the respective midnight reads, however Ecotricity did not investigate whether the sum check validation failure was due to corrupt interval data or midnight reads.

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 used by Ecotricity as an initial estimate of missing interval data. However if part of this missing period is subsequently provided by Intellihub, the remaining missing period is not re estimated to ensure that the estimated volume aligns with the sum of consumption volumes between midnight reads recorded each side of the interval data gap.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.4 With: Clause 15 Schedule 15.2 From: 01-Mar-22 To: 30-Sep-22	HHR estimates across meter changes for nine ICPs not including volume from removed meter between last midnight read and removal read. Initial estimates of interval data not revised when the missing period is partially replaced by actual data from the AMI MEP. Actual interval data where the AMI MEP has indicated the data has failed a sum check validation is replaced with estimated interval data without investigation to verify if the failed validation is due to corrupt interval data or midnight reads. 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 while estimates are created, they are not always the correct treatment for addressing interval data gaps or ongoing 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
We will discuss the estimation process with Robotron to understand the changes that will need to be made here.	31/01/2024	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will discuss the estimation process with Robotron to understand the changes that will need to be made here.	31/01/2024	

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

Meter reader validation

For meters read by Wells, a localised validation occurs at the hand-held device to ensure the reading is within expected high/low parameters. Readings which fail this validation are required to be re-entered, and if the two readings are the same the second reading will be accepted. If the second reading is different, (potentially indicating the first reading was incorrect) then the second reading is required to be re-entered. Wells also provide meter condition information, as discussed in **section 6.6.**

Read import validation

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 (previous read to current read).

Meter readings will not load if there is not an ICP, meter and register match and date match.

The previous audit recommended an additional check is implemented for consecutive zeros, where an ICP had consumption then the consumption was zero for a pre-determined period and I repeat this recommendation.

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.	Ecotricity to add additional NHH validation for changes from consumption to zero consumption for consecutive periods.	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.

The high value interval and daily thresholds are global thresholds for all HHR ICPs. As such there are a number of false positives identified for the larger capacity sites and also a number of genuine data discrepancies are not identified for smaller capacity ICPs. I recommend that Ecotricity investigates enhancing this validation to consider either capacity, metering installation category, customer type or tariff.

Recommendation	Description	Audited party comment	Remedial action
High value validation thresholds	Ecotricity investigates enhancing this validation to consider either capacity, metering installation category, customer type or tariff.	Ecotricity to investigate enhancing this validation to consider either capacity, metering installation category, customer type or tariff.	Investigating

There is also a system check of the AMI providers validation flag so that any data received that has been tagged as either 'R' (rejected) or 'F' (failed) are automatically estimated to align the consumption with the received midnight reads. No investigation is conducted by Ecotricity to determine if the data corruption relates to the interval data or the midnight reads used for the validation.

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 reviewed and there is no process to ensure these are received or downloaded for review. 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 July 2022 submission was performed. Ecotricity performed estimations for 140,000 intervals out of a total number of intervals submitted of 31.6 million intervals (0.44% of all intervals estimated). These estimates amounted to 10% 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. I repeat the recommendation from the previous audit for Ecotricity to escalate missing data to the respective MEP and attempt to retrieve this data before seasonal shape values become final.

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.	Ecotricity to create a regular report of missing/ estimated interval data used in submission and escalate these instances to the relevant AMI MEP for resolution.	Identified

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.6 With: Clause 17 Schedule 15.2 From: 01-Mar-22 To: 30-Sep-22	Event logs not routinely reviewed 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
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.	31/01/2024	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.	31/01/2024	

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 and Ecotricity did not begin using the HHA profile at any NSPs during the audit period.

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	R14
Jan 2021	-0.02%	-0.01%	-0.02%	0.00%	-
Feb 2021	-0.03%	-0.02%	-0.01%	0.00%	0.00%
Mar 2021	-0.02%	-0.02%	-0.02%	0.00%	0.00%
Apr 2021	-0.01%	-0.02%	-0.01%	-0.01%	-0.01%
May 2021	-0.01%	0.06%	-0.02%	0.00%	-0.01%
Jun 2021	0.02%	-0.01%	0.00%	-6.21%	-0.08%
Jul 2021	-0.02%	0.00%	-0.01%	0.00%	-
Aug 2021	-0.02%	0.00%	-0.02%	-0.01%	-
Sep 2021	0.00%	0.00%	0.00%	0.00%	-
Oct 2021	0.00%	0.02%	-0.01%	-0.01%	-
Nov 2021	0.00%	0.00%	0.02%	-0.01%	-
Dec 2021	0.01%	-0.01%	-0.01%	-0.01%	-
Jan 2022	0.01%	0.00%	0.00%	0.00%	-
Feb 2022	0.01%	-0.03%	-0.01%	-	-
Mar 2022	0.00%	-0.02%	0.00%	-	-
Apr 2022	0.02%	-0.04%	0.01%	-	-
May 2022	-0.02%	-0.01%	-0.02%	0.00%	-

While there are validations performed between robotron*esales and the registry data in the lead up to submission, these validations do not detect the incorrect reporting group or incomplete metering set-ups.

Prior to August 2022, HHR and NHH ICP days were provided as separate reports. The process steps for the calculation of ICP days and 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 to identify any exceptions between the two datasets. Updates were then applied to this file to match what is reported on the registry as there was not sufficient time for the exceptions to be corrected within robotron*esales and the submission files rerun and revalidated.

Ecotricity attempts to remedy these incorrect reporting group and incomplete metering set-ups within robotron*esales by applying manual corrections to the aggregated (AV-080, AV-090 and AV-140) submission files however because these adjustments are being applied to the aggregated files, the respective ICP Days reporting remains incorrect. The purpose of these manual ICP Day adjustments is to reflect these manual volume corrections to the submission volume files and to provide a complete trader ICPDAYS file and avoid ICPDAYS scaling, and any possible default consumption applied by the reconciliation manager for incomplete submissions. However due to the manual nature of Ecotricity's system data population the count of incomplete or incorrect set-ups remains relatively high for Ecotricity's size but is reflective of the increased level of switching activity from the growth of Ecotricity's customer base and the resourcing challenges that accompanies this level of growth.

In July 2022 this manual update process resulted in incorrect values being manually applied to the June 2022 R1 and May 2021 R14 ICPDAYS files. The reconciliation manager alerted Ecotricity of the issue and Ecotricity provided amended files. The reconciliation manager also alleged a breach against Ecotricity relating to Clause 15.2(1)(a) - Requirement to provide complete and accurate information.

Breach ref	Clause breached	Status	Comment
2207ECOT1	Part 15 clause 15.2 (1) (a)	Early closure	ECOT failed to deliver accurate information to the Reconciliation Manager in their AV-110 (ICP days submission file) for 202206 R1 and 202105 R14.

From August 2022 Ecotricity have amended their process of producing their ICP days report to now compile the data for this file solely from a Registry LIS file for the respective consumption period. This simplified process eliminates the possibility of incorrectly updating the robotron*esales sourced ICPDAYS file which occurred in July 2022.

The changes to Ecotricity's process to produce its ICP days report from the respective Registry LIS file means Ecotricity does not source data from its own reconciliation systems or submission file inputs the ICP days report provided by Ecotricity to the reconciliation manager and has further reduced the controls for this process which remain weak.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.2 With: Clause 15.6 From: 01-Mar-22 To: 30-Sep-22	ICP Days file is not sourced from Ecotricity's reconciliation data. Alleged breach 2207ECOT1 for late provision of AV110 submissions for June 2022 r1 and May 2021 r14. Potential impact: Medium Actual impact: Medium Audit history: Once Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are recorded as weak because the data is not sourced from Ecotricity's own data, however efforts are made to validate and update Ecotricity's set-ups with registry data each month and manual corrections are applied to the aggregated submission information files to attempt to submit complete consumption volumes. The main impact is on the scaling function, which cannot be correctly applied by the reconciliation manager as Ecotricity attempts to replicate the registry values and avoid any potential scaling from any missing/late or incorrect ICPs/meter set-ups; therefore, the audit risk rating is medium.

Actions taken to resolve the issue	Completion date	Remedial action status
Ecotricity will transition to submitting the ICP Days file from eSales. This will be a slow transition as we investigate and understand the discrepancies we are seeing between the produced file and the registry.	31/01/2024	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Ecotricity will transition to submitting the ICP Days file from eSales. This will be a slow transition as we investigate and understand the discrepancies we are seeing between the produced file and the registry.	31/01/2024	

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.

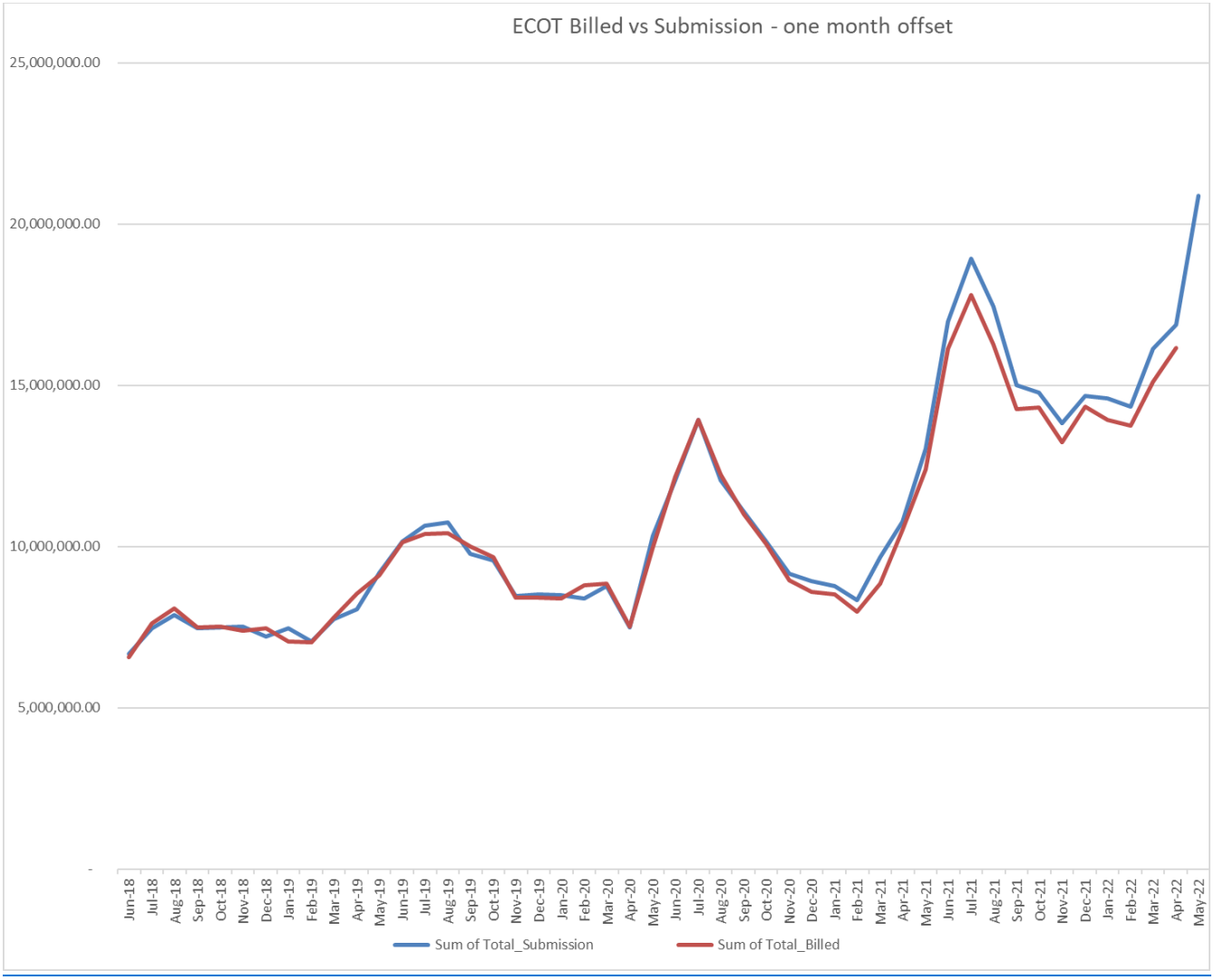
GR130 reports for June 2018 to April 2021 were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

Audit commentary

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

I checked the difference between submission and electricity supplied information for June 2018 to May 2022, and the results are shown below. The difference between billed and submitted data for the 12 months ending May 2022 (billed one month offset) is 5.0% (8.9 GWh submitted higher than billed) and the two years ended September 2021 is 3.7% (11.3 GWh submitted higher than billed). Similar variances were identified in the previous audit where the 12 months difference was 4.8% (6.7 GWh submitted higher than billed). The 12-month variance continues to be outside the +/-2% scorecard threshold set by the Authority under clause 18(1)(b) of Schedule 15.4. I repeat the recommendation from the previous audit for Ecotricity to 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.	Ecotricity tracks the monthly submissions and will further investigate the differences.	Investigating



The graph above has aligned the billed and submitted data to account for the one month offset between billed and submission data, and a divergence of volumes begun around July 2021 and as yet has not resolved itself.

Audit outcome

Compliant

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

Code reference

Clause 15.8

Code related audit information

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

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

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

Audit observation

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 February 2021 to June 2022 were examined. A sample of the ten 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 21 months and revisions; the table below shows the variances and reasons for the variances.

Month	Revision	HHRVOLS	HHRAGGS	Diff
Apr-21	Ri	10,375,691	10,375,561	129
Apr-21	R1	10,772,325	10,375,561	92
Apr-21	R3	10,800,305	10,792,220	8,085
Apr-21	R7	10,831,519	10,832,033	-514
Apr-21	R14	10,799,805	10,800,117	-312
Sep-21	Ri	14,991,900	14,992,010	-110
Sep-21	R1	15,013,937	15,016,448	-2,510
Sep-21	R3	15,048,323	15,102,771	-54,447
Sep-21	R7	15,007,830	15,008,021	-191
Dec-21	Ri	14,717,227	14,726,742	-9,516
Dec-21	R1	14,904,702	14,896,999	7,703
Dec-21	R3	14,889,064	14,888,454	610
Dec-21	R7	14,948,300	14,948,568	-268
Jan-22	Ri	15,019,357	15,099,892	-80,535
Jan-22	R1	15,184,110	15,109,456	74,654
Jan-22	R3	15,179,609	15,179,819	-210
Jan-22	R7	15,246,382	15,246,613	-231
Feb-22	Ri	14,398,140	14,394,754	3,386

Month	Revision	HHRVOLS	HHRAGGS	Diff
Feb-22	R1	14,423,847	14,422,998	849
Feb-22	R3	14,446,352	14,446,578	-226
Feb-22	R7	14,498,857	14,499,055	-198

When compiling HHRVOLs and HHRAGGS files, Ecotricity compares the HHR submitted ICP population to a registry LIS file and where a discrepancy is identified these aggregated files are amended in an attempt to align the HHR ICP population to the registry LIS file and avoid HHR ICP days scaling. These manual corrections are not being applied consistently between both files where an ICP is partially set-up between the AV-090 and AV-140 reporting groups in robotron*esales.

Ecotricity have previously 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 due to resourcing constraints.

The GR090 ICP missing files for February 2021 to June 2022 were examined. I checked the ten ICPs still present at the 7- and 14-month revision and found they were due to backdated switches and switch withdrawals.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.4 With: Clause 15.8 From: 01-Mar-22 To: 30-Sep-22	Errors in both HHRVOLS and HHRAGGS file between July and September 2021 with differences ranging between 129 and 80,535 kWh. 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 as while the kWh differences are large initially, they reduce to minor differences in subsequent revisions.

Actions taken to resolve the issue	Completion date	Remedial action status
Continue improvement and monitoring the accuracy of the submission files.	31/01/2024	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Continue improvement and monitoring the accuracy of the submission files.	31/01/2024	

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.

Month	Revision	HHRVOLS X Flow	HHRAGGS X Flow	Diff
Apr-21	Ri	10,375,691	10,375,561	129
Apr-21	R1	10,772,325	10,375,561	92
Apr-21	R3	10,800,305	10,792,220	8,085
Apr-21	R7	10,831,519	10,832,033	-514
Apr-21	R14	10,799,805	10,800,117	-312
Sep-21	Ri	14,991,900	14,992,010	-110
Sep-21	R1	15,013,937	15,016,448	-2,510
Sep-21	R3	15,048,323	15,102,771	-54,447
Sep-21	R7	15,007,830	15,008,021	-191
Dec-21	Ri	14,717,227	14,726,742	-9,516
Dec-21	R1	14,904,702	14,896,999	7,703
Dec-21	R3	14,889,064	14,888,454	610
Dec-21	R7	14,948,300	14,948,568	-268
Jan-22	Ri	15,019,357	15,099,892	-80,535
Jan-22	R1	15,184,110	15,109,456	74,654
Jan-22	R3	15,179,609	15,179,819	-210
Jan-22	R7	15,246,382	15,246,613	-231
Feb-22	Ri	14,398,140	14,394,754	3,386
Feb-22	R1	14,423,847	14,422,998	849
Feb-22	R3	14,446,352	14,446,578	-226
Feb-22	R7	14,498,857	14,499,055	-198

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 where an ICP is partially set-up between the AV-090 and AV-140 reporting groups in robotron*esales and this results in some consumption volumes missing from the reconciliation process.

Ecotricity have previously 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 due to resourcing constraints.

NHH

Vacant consumption

I checked 11 NHH ICPs with vacant consumption. Vacant ICP 0001442650UN73B was not included in submission due to missing vacant account set-up (volume missing from submission of 2137.84 kWh) and this has now been corrected. The other ten ICPs sampled had volumes correctly included in submission.

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 7,943 active ICPs with generation recorded by the distributor.

- 7,792 ICPs have I flow meter registers with the settlement indicator set to yes. 7,720 have HHR submission, or a NHH profile indicating generation.
- 72 NHH ICPs did not have a PV1 or EG1 profile. A sample of 20 were reviewed and 19 were identified and being late updates to the robotron*esales profile group to now include the I flow volumes resulting in both submission volumes not being included for the I flow consumption volumes and also the profile code on the registry not being updated. All 19 ICPs have now had backdated corrections applied. One ICP is still awaiting metering event updates by the MEP to enable Ecotricity to complete their metering change in robotron*esales.
- 137 ICPs did not have I-flow meter registers recorded on the registry. A sample of 13 ICPs were reviewed and 10 of these now have import/export metering installed and are correctly reflecting the PV1 profile code on the registry. One registry update was late due to Ecotricity needing to wait for the MEP to update their metering event and once this update was completed it was missed by Ecotricity resulting in both robotron*esales not being updated with the appropriate meter set-ups and the registry updated with the correct profile code. Two ICPs do not have an active meter change request in progress and Ecotricity is following up this the customer to confirm if distribution generation installation is going ahead.
- 114 active ICPs with generation recorded by the distributor did not have an I flow volume recorded in the September 2022 AV-140 (HHRAGGS) 3-month wash up file. The metering records were reviewed and identified 23 HHR ICPs where an I flow meter register was recorded with a settlement indicator set to Y. All 23 were reviewed and 21 were identified as being missing due to late system set ups of the I flow register which have now been resolved. Ecotricity is still investigating two ICPs with the MEP to confirm the correct meter set up.

Unmetered Load

As reported in **section 2.1**, Ecotricity's robotron*esales system uses the registry daily kWh value as the source of information to calculate unmetered load. Where this value is incorrect on the registry then incorrect unmetered load consumption is calculated.

I reviewed daily kWh values for all Ecotricity ICPs with unmetered details and identified the following:

- two ICPs (0001351650PCA57, 0005808588RN085) where the unmetered load flag is yes, but the daily unmetered kWh is incorrectly recorded as zero, and
- 15 ICPs with incorrect calculation of daily kWh values.

Inactive ICPs with consumption

As reported in **section 2.1,** Ecotricity provided a list with 221 ICPs with inactive consumption, totalling 551,668 kWh. I reviewed 15 ICPs and found:

- seven related to the incorrect active status dates applied to Metering installation category 2 ICPs which accounts for 546,006 kWh of missing consumption volumes; Ecotricity have now corrected the active status dates and this volume will be included in the next wash up opportunity,
- one ICP was a false positive where the consumption was confirmed as being not genuine, and
- seven ICPs were confirmed as having genuine consumption and the registry was updated during the audit to reflect the correct status for the affected period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.2 With: Clause 15.4 From: 01-Mar-22 To: 30-Sep-22	Errors in both HHRVOLS and HHRAGGS file between April 2021 and February 2022 with differences ranging between 129 and 80,535 kWh. Submission of 548,228 kWh yet to occur for 14 inactive ICPs with consumption. 17 incorrect UML daily kWh values used in submission. Under submission of 2,137.84 kWh due to vacant ICP 0001442650UN73B not included in submission due to missing vacant account set-up. NHH generation kWh not submitted at the earliest opportunity for at least 20 ICPs. HHR generation kWh not submitted at the earliest opportunity for 21 ICPs. Potential impact: High Actual impact: High Audit history: Multiple Controls: Weak Breach risk rating: 9
Audit risk rating	**Rationale for audit risk rating**
High	Controls are rated as weak at the time of the audit because the validation reporting is in place 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 high because the kWh volumes missing from submissions are large.

Actions taken to resolve the issue	Completion date	Remedial action status
Continue improvement and monitoring the accuracy of the submission files.	31/01/2024	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
Continue improvement and monitoring the accuracy of the submission files.	31/01/2024	

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 that the ICP population is correct based on the registry submission type flag population and that the 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

Accuracy of submission data

There were some submission inaccuracies identified.

- As recorded in **section 2.1**,
  - 15 ICPs with standard UML had an incorrect calculation of daily kWh values with an annual impact of 24,938 kWh.
  - Submission of 548,228 kWh yet to occur for 14 inactive ICPs with consumption.
- As detailed in **section 4.4,**
  - Incorrect readings used for five ICPs sampled where Ecotricity settle as HHR, the CS read was estimated, and no read request change was sent to ensure the transfer read is accurate across the change of trader and submission types.
  - Ecotricity did not use the provided CS read for five ICPs where the RR file was rejected by the losing trader.
- As recorded in **section 5.1**, Two shared UML ICPs (0001351650PCA57, 0005808588RN085) where the unmetered load flag is yes, but the daily unmetered kWh is incorrectly recorded as zero.
- As recorded in **sections 6.1** and **12.2**, Submission had not occurred for 21 HHR ICPs and 72 NHH ICPs with distributed generation and the RM was not notified of gifting.
- As recorded in **section 8.2**, HHR corrections for AMI meter changes did not ensure all consumption recorded by the removed meter was included in the volume correction.
- As reported in **section 11.2**, Ecotricity have amended their process of producing their ICP days report to now compile the data for this file solely from a Registry LIS file for the respective consumption period.
- As recorded in **sections 11.4** and **12.2,** Errors in both HHRVOLS and HHRAGGS file between July and September 2021 with differences ranging between 129 and 80,535 kWh.
- As recorded in **section 12.2**, Under submission of 2,137.84 kWh due to vacant ICP 0001442650UN73B was not included in submission due to missing vacant account set-up.

- As recorded in **section 12.12**, on three occasions the NHH submission accuracy was outside the ± 15% accuracy due to misreads being released resulting in over submission of volume.

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 135 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.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.7 With: Clause 15.12 From: 01-Mar-22 To: 30-Sep-22	15 ICPs with standard UML had an incorrect calculation of daily kWh values with an annual impact of 24,938 kWh. Submission of 548,228 kWh yet to occur for 14 inactive ICPs with consumption. Incorrect readings used for five ICPs sampled where Ecotricity settle as HHR, the CS read was estimated, and no read request change was sent to ensure the transfer read is accurate across the change of trader and submission types. Ecotricity did not use the provided CS read for five ICPs where the RR file was rejected by the losing trader. Two shared UML ICPs (0001351650PCA57, 0005808588RN085) where the unmetered load flag is yes, but the daily unmetered kWh is incorrectly recorded as zero. Submission had not occurred for 21 HHR ICPs and 72 NHH ICPs with distributed generation and the RM was not notified of gifting. HHR corrections for AMI meter changes did not ensure all consumption recorded by the removed meter was included in the volume correction. ICP Days file is not sourced from Ecotricity's reconciliation data. Errors in both HHRVOLS and HHRAGGS file between July and September 2021 with differences ranging between 129 and 80,535 kWh. Under submission of 2,137.84 kWh due to vacant ICP 0001442650UN73B was not included in submission due to missing vacant account set-up. On three occasions the NHH submission accuracy was outside the ± 15% accuracy due to misreads being released resulting in over submission of volume. Potential impact: High Actual impact: High Audit history: Multiple Controls: Weak Breach risk rating: 9
Audit risk rating	**Rationale for audit risk rating**
High	Controls are rated as weak at the time of the audit, because the validation reporting is in place 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 high because the kWh volumes missing from submissions are large.

Actions taken to resolve the issue	Completion date	Remedial action status
Many of the other non-compliance points address these issues. As we work to address all issues raised in this audit, they will result in also addressing this point.	31/01/2024	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
Many of the other non-compliance points address these issues. As we work to address all issues raised in this audit, they will result in also addressing this point.	31/01/2024	

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.

An assessment of the count of AMI HHR intervals estimated for use in the AV-090 HHRVOLS submission for the July 2022 submission was performed. Ecotricity performed estimations for 140,000 intervals out of a total number of intervals submitted of 31.6 million intervals (0.44% of all intervals estimated). These estimates amounted to 10% of AV-090 aggregation records as having estimated data included.

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
Apr-21	13,984.84
May-21	6,432.77
Jun-21	10,564.82
Grand Total	30,982.43

A sample of ten AV080 aggregation lines from the June 2021 14 month wash up submission with forward estimate volumes remaining were reviewed. Forward estimates remained for the following reasons:

- seven NSPs had ICPs with missing start (CS) reads meaning HE calculations could not be performed; the missing start reads were due to the migration of meter reads from the previous system (Agility) to robotron*esales and this issue was also identified in the previous audit however the missing start reads have not been manually inserted into robotron*esales to enable accurate volume reporting to be undertaken,
- one ICP (0000376821TUEDD) switched in and also out on estimate reads and robotron*esales does not recognise either switch estimate read as being valid for the HE calculation,
- one ICP (0000018001NT9CA) switched to Ecotricity on 1 April 2021 and no actual read has been obtained and no permanent estimate read has been applied, 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 repeat the recommendation from the previous audit for additional reporting to be 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.	Ecotricity will create a report to help with resolving FE related issues.	Identified

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.8 With: Clause 4 Schedule 15.2 From: 01-Mar-22 To: 30-Sep-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**
Ecotricity will create a report to help with resolving FE related issues.		31/01/2024	Identified
Preventative actions taken to ensure no further issues will occur		**Completion date**	
Ecotricity will create a report to help with resolving FE related issues.		31/01/2024	

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 sampled 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 not compliant as manual adjustments are made to the aggregated files that result in the files no longer being aligned. This is discussed further in **section 11.4**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.9 With: Clause 2 Schedule 15.3 From: 01-Mar-22 To: 30-Sep-22	Five of nine sampled ICPs with unmetered load had inaccurate submission volumes due to incorrect daily kWh calculations. Aggregation of the AV090 and AV140 reports is not compliant as manual adjustments are made to the aggregated files that result in the files no longer being aligned. Potential impact: Medium Actual impact: Medium Audit history: Twice Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	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 from the swings in HHR volumes due to the manual file adjustments is moderate therefore the audit risk rating is medium.

Actions taken to resolve the issue	Completion date	Remedial action status
A report has been created within eSales to monitor discrepancies of UML ICPs. We will implement a process to check and correct and errors. We will begin to transition away from manually adjusting submission files.	31/01/2024	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
A report has been created within eSales to monitor discrepancies of UML ICPs. We will implement a process to check and correct and errors. We will begin to transition away from manually adjusting submission files.	31/01/2024	

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 seven scenarios provided (out of 15 testing scenarios), all were found to be compliant.

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.	Unable to identify any NHH settled ICPs where this scenario has occurred.
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.	Unable to identify any NHH settled ICPs where this scenario has 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.	Unable to identify any NHH settled ICPs where this scenario has occurred.
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.	Unable to identify any NHH settled ICPs where this scenario has occurred.
j	Unmetered load for a full month	Consumption is calculating based on daily unmetered kWh for full month.	Pass

Test	Scenario	Test Expectation	Result
k	Unmetered load for a part month	Consumption is calculating based on daily unmetered kWh for active days of the month.	Unable to identify any NHH settled ICPs where this scenario has 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.	Unable to identify any NHH settled ICPs where this scenario has occurred.
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.	Unable to identify any NHH settled ICPs where this scenario has occurred.
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.	Unable to identify any NHH settled ICPs where this scenario has occurred.
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Pass

Audit outcome

Compliant

12.12. Forward estimate process (Clause 6 Schedule 15.3)

Code reference

Clause 6 Schedule 15.3

Code related audit information

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

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

Audit observation

The process to create forward estimates was reviewed.

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

Audit commentary

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 ICPs, using the previous retailer’s average daily consumption from the CS file.

Manual adjustments are also applied to the aggregated AV-080 NHHVOLS files where the comparison between the NHH ICP population in robotron*esales and a respective Registry LIS file identifies that an ICP is missing from Ecotricity's submission primarily due to the large number of switches that have occurred during the audit period. These manual adjustments are applied as forward estimates and while attempts are made to ensure these adjustments are an accurate representation of the expected consumption for the ICP, some adjustments are applied with a zero value where no available information is available to calculate an appropriate volume. As the application of these manual adjustments follows a standard set of prescribed steps this process forms part of Ecotricity's forward estimate methodology.

The accuracy of the initial submission, in comparison to each subsequent revision is required to be within 15%. The table below shows the target was not met for all balancing areas and revisions checked. The financial impact to Ecotricity of these inaccurate initial submissions relates to large wash up corrections occurring 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. Similar impacts are experienced by other traders who also experience larger than expected wash ups due to Ecotricity's subsequent volume corrections where these other trader's initial submission volumes were considered accurate.

The previous audit recommended that Ecotricity reviews its estimation algorithm effectiveness to ensure submission (and billing) accuracy is maintained within the ± 15% accuracy. I repeat this recommendation.

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.	Ecotricity will review the estimation algorithm used to ensure submission accuracy.	Identified

I reviewed five examples where the difference to the initial submission exceeded 15% where revisios were performed during the audit period and I identified the following:

- in three cases the cause of the inaccuracy was due to misreads being released resulting in over submission of volume, which is recorded as a non-compliance in **section 12.7**,
- one case where no volume was included in the initial submission of an ICP (0007702565MLE40) that had been with Ecotricity for 12 months prior, and
- one case where Ecotricity is still investigating the cause of the submission inaccuracy.

Quantity of balancing areas with differences over 15%

Month	Over ±15%				Over ±15% and ±100,000 kWh				Total Balancing Areas
	Revision 1	Revision 3	Revision 7	Revision 14	Revision 1	Revision 3	Revision 7	Revision 14	
Jul-20	12	38	37	38	-	-	-	-	55
Aug-20	21	28	32	29	-	-	-	-	55
Sep-20	8	27	24	24	-	-	-	-	55
Oct-20	12	14	17	18	-	-	-	-	64
Nov-20	9	16	21	26	-	-	-	-	65
Dec-20	2	20	25	30	-	-	-	-	67
Jan-21	2	24	27	27	-	-	-	-	68
Feb-21	9	13	25	27	-	-	-	-	69
Mar-21	10	14	29	28	-	-	-	-	70
Apr-21	6	11	26	28	-	-	-	-	70
May-21	10	16	26	25	-	-	-	-	71

Month	Over ±15%				Over ±15% and ±100,000 kWh				Total Balancing Areas
	Revision 1	Revision 3	Revision 7	Revision 14	Revision 1	Revision 3	Revision 7	Revision 14	
Jun-21	12	20	31	31	-	-	-	-	71
Jul-21	11	28	32		-	-	-		72
Aug-21	10	24	27		-	-	-		73
Sep-21	13	24	22		-	-	-		73
Oct-21	26	35	37		-	-	-		84
Nov-21	23	29	34		-	-	-		88
Dec-21	13	32	40		-	-	-		89
Jan-22	31	36	42		-	-	-		100
Feb-22	12	25			-	-			101
Mar-22	19	26			1	-			101
Apr-22	16	31			-	-			101
May-22	14	36			2	2			102

Month	Over ±15%				Over ±15% and ±100,000 kWh				Total Balancing Areas
	Revision 1	Revision 3	Revision 7	Revision 14	Revision 1	Revision 3	Revision 7	Revision 14	
Jun-22	11				-				102
Jul-22	12				3				116

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

Month	Over ±15%				Volume impact Over ±15%			
	Revision 1	Revision 3	Revision 7	Revision 14	Revision 1	Revision 3	Revision 7	Revision 14
Jul-20	7.91%	-21.15%	-21.95%	-22.90%		131,351.93	137,703.00	145,476.01
Aug-20	3.54%	-6.65%	-7.45%	-7.65%				
Sep-20	-1.36%	-6.71%	-6.58%	-7.75%				
Oct-20	7.78%	5.81%	8.96%	3.44%				
Nov-20	-8.52%	-3.50%	-4.74%	-3.26%				
Dec-20	-0.76%	8.29%	7.93%	5.93%				
Jan-21	-2.77%	8.66%	7.78%	5.65%				

Month	Over ±15%				Volume impact Over ±15%			
	Revision 1	Revision 3	Revision 7	Revision 14	Revision 1	Revision 3	Revision 7	Revision 14
Feb-21	6.47%	10.10%	6.86%	6.32%				
Mar-21	-10.57%	-6.11%	-9.33%	-9.08%				
Apr-21	-3.32%	2.56%	-6.50%	-5.10%				
May-21	-6.40%	-2.10%	-6.21%	-7.84%				
Jun-21	-5.08%	-10.12%	-16.56%	-15.18%			110,576.55	99,749.20
Jul-21	-10.94%	-16.51%	-18.89%			118,717.56	139,840.05	
Aug-21	-8.02%	-5.85%	-6.82%					
Sep-21	1.07%	-2.25%	-0.04%					
Oct-21	-7.61%	-8.34%	-1.01%					
Nov-21	23.20%	26.56%	31.15%		-231,921.05	-258,431.47	-292,559.20	
Dec-21	2.85%	10.25%	17.49%				-160,722.21	
Jan-22	-8.25%	-5.38%	-8.39%					

Month	Over ±15%				Volume impact Over ±15%			
	Revision 1	Revision 3	Revision 7	Revision 14	Revision 1	Revision 3	Revision 7	Revision 14
Feb-22	5.09%	1.10%						
Mar-22	-6.56%	8.76%						
Apr-22	-4.82%	-2.11%						
May-22	72.31%	65.46%			-902,008.09	-850,351.78		
Jun-22	-6.48%							
Jul-22	-3.38%							

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.12 With: Clause 6 Schedule 15.3 From: 01-Mar-22 To: 30-Sep-22	Some balancing area differences between revisions were over the ± 15% threshold because of inaccurate forward estimates. Five occurrences where the submission accuracy at AV-080 file level was outside +/- 15% between June 2021 and July 2022 at file level. 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 due to the volume of manual adjustments applied to the aggregated AV-080 file as forward estimate volumes means it is not possible to track whether the submission inaccuracy is related to estimation algorithm accuracy or due to human error when applying these manual adjustments. The impact on settlement and participants is minor as the wash ups do correct the initial submission inaccuracy therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Ecotricity will review the estimation algorithm used to ensure submission accuracy.	31/01/2024	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Ecotricity will review the estimation algorithm used to ensure submission accuracy.	31/01/2024	

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 12 profile changes and found that all profile changes occurred where an actual validated read was present and all profile changes were applied within the 14-month wash up window.

Audit outcome

Compliant

13. SUBMISSION FORMAT AND TIMING

13.1. Provision of submission information to the RM (Clause 8 Schedule 15.3)

Code reference

Clause 8 Schedule 15.3

Code related audit information

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 3-, 7- 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
Jun-21	-	-	127	142
May-21	-	-	131	141
Apr-21	-	-	126	141

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Jan-22	-	151	-	178
Dec-21	-	146	-	165
Nov-21	-	140	-	164
May-22	135	-	-	179
Apr-22	139	-	-	179
Mar-22	140	-	-	178

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
Apr 2021	-	-	97.20%
May 2021	-	-	98.91%
Jun 2021	-	-	98.43%
Nov 2021	-	91.86%	-
Dec 2021	-	93.49%	-
Jan 2022	-	93.57%	-
Mar 2022	83.81%	-	-
Apr 2022	83.43%	-	-
May 2022	75.20%	-	-

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 13.3 With: Clause 10 Schedule 15.3 From: 01-Mar-22 To: 30-Sep-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
We will review HE processes to investigate and resolve HE issues to meet required thresholds.	31/01/2024	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will review HE processes to investigate and resolve HE issues to meet required thresholds.	31/01/2024	

CONCLUSION

Ecotricity has grown from 11,373 active ICPs at the previous audit to 22,391 active ICPs at the time of this audit. The rapid growth of ICPs has seen the respective switching, metering and reconciliation teams trying to keep up with the increased volume of transactions while onboarding additional resources to keep pace with this growth. Each of these teams has also experienced loss of key personnel/SMEs which has impacted the timeliness and accuracy of some tasks as other members of these teams are subsequently upskilled. The team was very helpful during the audit and showed willingness to learn from the audit process and make improvements.

The key areas which require improvement are:

Switch losses	Not all switch breach types were being monitored using the switch breach history report, which caused some late files. CS content for files which are manually generated files was sometimes inaccurate.
Readings	Some readings were incorrectly classified as actual or estimated in switching files. Read attainment is monitored and escalated as and when resources are available to investigate these issues.
Registry information	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. While changes to submission type are applied directly into the registry by a user, a manual update the reporting groups in robotron*esales is also required to be applied to reflect the change in submission methodology. The initial active status dates applied by Ecotricity based on field work paperwork for new connections are not being verified against AMI data, resulting in some HHR consumption not being reported where the field work information is incorrect. Robotron*esales will only report HHR volumes in the AV-090 (HHRVOLS) file for ICPs recorded as being active on the registry therefore the incorrect active dates is causing some volume to be missed from the reconciliation process. A high proportion of ICPs with non-residential ANZSIC codes had incorrect codes applied A high proportion of ICPs with non-residential ANZSIC codes had incorrect codes applied.
Submission	AV-080 (NHHVOLS), AV090 (HHRVOLS) and AV140 (HHRAGGS) files are modified outside of the file creation process where the set-up of an ICP is not yet completed for a newly gained ICP or where the reporting group set-up in robotron*esales is incomplete or incorrect. Where consumption for a newly gained ICP is unknown for a new ICP a zero value is applied as a placeholder in the respective files. In some cases, volumes are deducted from the AV-080 file and then added to the AV-090 file using a flat profile and vice versa to attempt to align the submission data with the registry information.

	These file adjustments are made due to a late identification of these issues during the submission file creation process and the limited time then available to investigate and undertake a correction within the respective system. Some of these corrections result in volume mismatches between these files. AV120 electricity supplied volume is trending 5% lower than submitted volumes over the previous 12-month period. AV110 ICP days data is directly sourced from a registry LIS data file and not from Ecotricity's reconciliation information. NHH submission accuracy (+/- 15%) was not met on five occasions between June 2021 and July 2022 at file level. One was due to misreads being released in error, one was due to late set-up of an ICP and for three the cause was not determined. The largest submission inaccuracy was for May 2022 resulting in an inaccuracy of 72% (902,008 kWh).
Read validation	Further validation of AMI meter events and clock synchronisation events is needed to identify potentially inaccurate data.

This audit found 38 non-compliances and an audit risk rating of 118. This is an increase from the previous audit which found 34 non-compliances and an audit risk rating of 78. 12 of the non-compliances listed below have weak controls recorded.

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 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 9 months to enable Ecotricity to increase the resourcing levels in the teams involved in compliance functions.

PARTICIPANT RESPONSE