

ELECTRICITY INDUSTRY PARTICIPATION CODE  
RECONCILIATION PARTICIPANT AUDIT REPORT



For

SWITCH UTILITIES LIMITED  
NZBN: 9429032276213



Prepared by: Steve Woods and Rebecca Elliot

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Audit report due date: 31 May 2023

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## TABLE OF CONTENTS

Executive summary .....	6
Audit summary .....	7
Non-compliances .....	7
Recommendations .....	9
Issues	9
1. Administrative .....	10
1.1. Exemptions from Obligations to Comply with Code (Section 11) .....	10
1.2. Structure of Organisation .....	11
1.3. Persons involved in this audit .....	12
1.4. Use of Agents (Clause 15.34) .....	12
1.5. Hardware and Software .....	14
1.6. Breaches or Breach Allegations .....	16
1.7. ICP Data .....	16
1.8. Authorisation Received .....	17
1.9. Scope of Audit .....	17
1.10. Summary of previous audit .....	19
2. Operational Infrastructure .....	23
2.1. Relevant information (Clause 10.6, 11.2, 15.2) .....	23
2.2. Provision of information (Clause 15.35) .....	27
2.3. Data transmission (Clause 20 Schedule 15.2) .....	28
2.4. Audit trails (Clause 21 Schedule 15.2) .....	29
2.5. Retailer responsibility for electricity conveyed - participant obligations (Clause 10.4) .....	30
2.6. Retailer responsibility for electricity conveyed - access to metering installations (Clause 10.7(2),(4),(5) and (6)) .....	30
2.7. Physical location of metering installations (Clause 10.35(1)&(2)) .....	31
2.8. Trader contracts to permit assignment by the Authority (Clause 11.15B) .....	32
2.9. Connection of an ICP (Clause 10.32) .....	32
2.10. Temporary Electrical Connection of an ICP (Clause 10.33) .....	33
2.11. Electrical Connection of Point of Connection (Clause 10.33A) .....	34
2.12. Arrangements for line function services (Clause 11.16) .....	36
2.13. Arrangements for metering equipment provision (Clause 10.36) .....	36
2.14. Connecting ICPs then withdrawing switch (Clause 10.33A(5)) .....	37
2.15. Electrical disconnection of ICPs (Clause 10.33B) .....	37
2.16. Removal or breakage of seals (Clause 48(1C), 48 (1D), 48 (1E), 48 (1F) of Schedule 10.7) .....	38
2.17. Meter bridging (Clause 10.33C and 2A of Schedule 15.2) .....	39
2.18. Use of ICP identifiers on invoices (Clause 11.30) .....	41
2.19. Provision of information on dispute resolution scheme (Clause 11.30A) .....	41
2.20. Provision of information on electricity plan comparison site (Clause 11.30B) .....	42
3. Maintaining registry information .....	43
3.1. Obtaining ICP identifiers (Clause 11.3) .....	43
3.2. Providing registry information (Clause 11.7(2)) .....	44
3.3. Changes to registry information (Clause 10 Schedule 11.1) .....	44
3.4. Trader responsibility for an ICP (Clause 11.18) .....	48
3.5. Provision of information to the registry manager (Clause 9 Schedule 11.1) .....	49
3.6. ANZSIC codes (Clause 9 (1(k) of Schedule 11.1) .....	51

3.7.	Changes to unmetered load (Clause 9(1)(f) of Schedule 11.1)	52
3.8.	Management of “active” status (Clause 17 Schedule 11.1)	53
3.9.	Management of “inactive” status (Clause 19 Schedule 11.1)	56
3.10.	ICPs at new or ready status for 24 months (Clause 15 Schedule 11.1)	58
4.	Performing customer and embedded generator switching	60
4.1.	Inform registry of switch request for ICPs - standard switch (Clause 2 Schedule 11.3)	60
4.2.	Losing trader response to switch request and event dates - standard switch (Clauses 3 and 4 Schedule 11.3)	61
4.3.	Losing trader must provide final information - standard switch (Clause 5 Schedule 11.3)	63
4.4.	Retailers must use same reading - standard switch (Clause 6(1) and 6A Schedule 11.3)	66
4.5.	Non-half hour switch event meter reading - standard switch (Clause 6(2) and (3) Schedule 11.3)	68
4.6.	Disputes - standard switch (Clause 7 Schedule 11.3)	68
4.7.	Gaining trader informs registry of switch request - switch move (Clause 9 Schedule 11.3)	69
4.8.	Losing trader provides information - switch move (Clause 10(1) Schedule 11.3)	70
4.9.	Losing trader determines a different date - switch move (Clause 10(2) Schedule 11.3)	72
4.10.	Losing trader must provide final information - switch move (Clause 11 Schedule 11.3)	72
4.11.	Gaining trader changes to switch meter reading - switch move (Clause 12 Schedule 11.3)	75
4.12.	Gaining trader informs registry of switch request - gaining trader switch (Clause 14 Schedule 11.3)	77
4.13.	Losing trader provision of information - gaining trader switch (Clause 15 Schedule 11.3)	78
4.14.	Gaining trader to advise the registry manager - gaining trader switch (Clause 16 Schedule 11.3)	79
4.15.	Withdrawal of switch requests (Clauses 17 and 18 Schedule 11.3)	80
4.16.	Metering information (Clause 21 Schedule 11.3)	83
4.17.	Switch protection (Clause 11.15AA to 11.15AB)	84
5.	Maintenance of unmetered load	85
5.1.	Maintaining shared unmetered load (Clause 11.14)	85
5.2.	Unmetered threshold (Clause 10.14 (2)(b))	86
5.3.	Unmetered threshold exceeded (Clause 10.14 (5))	86
5.4.	Distributed unmetered load (Clause 11 Schedule 15.3, Clause 15.37B)	87
6.	Gathering raw meter data	88
6.1.	Electricity conveyed & notification by embedded generators (Clause 10.13, Clause 10.24 and 15.13)	88
6.2.	Responsibility for metering at GIP (Clause 10.26 (6), (7) and (8))	89
6.3.	Certification of control devices (Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3)	90
6.4.	Reporting of defective metering installations (Clause 10.43(2) and (3))	90
6.5.	Collection of information by certified reconciliation participant (Clause 2 Schedule 15.2)	91
6.6.	Derivation of meter readings (Clauses 3(1), 3(2) and 5 Schedule 15.2)	92
6.7.	NHH meter reading application (Clause 6 Schedule 15.2)	93
6.8.	Interrogate meters once (Clause 7(1) and (2) Schedule 15.2)	94
6.9.	NHH meters interrogated annually (Clause 8(1) and (2) Schedule 15.2)	97
6.10.	NHH meters 90% read rate (Clause 9(1) and (2) Schedule 15.2)	98
6.11.	NHH meter interrogation log (Clause 10 Schedule 15.2)	99
6.12.	HHR data collection (Clause 11(1) Schedule 15.2)	99
6.13.	HHR interrogation data requirement (Clause 11(2) Schedule 15.2)	99
6.14.	HHR interrogation log requirements (Clause 11(3) Schedule 15.2)	100
7.	Storing raw meter data	102

7.1.	Trading period duration (Clause 13 Schedule 15.2)	102
7.2.	Archiving and storage of raw meter data (Clause 18 Schedule 15.2)	102
7.3.	Non metering information collected / archived (Clause 21(5) Schedule 15.2)	103
8.	Creating and managing (including validating, estimating, storing, correcting and archiving) volume information	104
8.1.	Correction of NHH meter readings (Clause 19(1) Schedule 15.2)	104
8.2.	Correction of HHR metering information (Clause 19(2) Schedule 15.2)	105
8.3.	Error and loss compensation arrangements (Clause 19(3) Schedule 15.2)	106
8.4.	Correction of HHR and NHH raw meter data (Clause 19(4) and (5) Schedule 15.2)	106
9.	Estimating and validating volume information	108
9.1.	Identification of readings (Clause 3(3) Schedule 15.2)	108
9.2.	Derivation of volume information (Clause 3(4) Schedule 15.2)	108
9.3.	Meter data used to derive volume information (Clause 3(5) Schedule 15.2)	109
9.4.	Half hour estimates (Clause 15 Schedule 15.2)	109
9.5.	NHH metering information data validation (Clause 16 Schedule 15.2)	110
9.6.	Electronic meter readings and estimated readings (Clause 17 Schedule 15.2)	112
10.	Provision of metering information to the GRID OWNER in accordance with subpart 4 of Part 13 (clause 15.38(1)(f))	115
10.1.	Generators to provide HHR metering information (Clause 13.136)	115
10.2.	Unoffered & intermittent generation provision of metering information (Clause 13.137)	115
10.3.	Loss adjustment of HHR metering information (Clause 13.138)	116
10.4.	Notification of the provision of HHR metering information (Clause 13.140)	116
11.	Provision of submission information for reconciliation	117
11.1.	Buying and selling notifications (Clause 15.3)	117
11.2.	Calculation of ICP days (Clause 15.6)	117
11.3.	Electricity supplied information provision to the reconciliation manager (Clause 15.7)	120
11.4.	HHR aggregates information provision to the reconciliation manager (Clause 15.8)	121
12.	Submission computation	123
12.1.	Daylight saving adjustment (Clause 15.36)	123
12.2.	Creation of submission information (Clause 15.4)	123
12.3.	Allocation of submission information (Clause 15.5)	125
12.4.	Grid owner volumes information (Clause 15.9)	127
12.5.	Provision of NSP submission information (Clause 15.10)	127
12.6.	Grid connected generation (Clause 15.11)	128
12.7.	Accuracy of submission information (Clause 15.12)	128
12.8.	Permanence of meter readings for reconciliation (Clause 4 Schedule 15.2)	131
12.9.	Reconciliation participants to prepare information (Clause 2 Schedule 15.3)	133
12.10.	Historical estimates and forward estimates (Clause 3 Schedule 15.3)	134
12.11.	Historical estimate process (Clauses 4 and 5 Schedule 15.3)	134
12.12.	Forward estimate process (Clause 6 Schedule 15.3)	137
12.13.	Compulsory meter reading after profile change (Clause 7 Schedule 15.3)	142
13.	Submission format and timing	143
13.1.	Provision of submission information to the RM (Clause 8 Schedule 15.3)	143
13.2.	Reporting resolution (Clause 9 Schedule 15.3)	144
13.3.	Historical estimate reporting to RM (Clause 10 Schedule 15.3)	145

Glossary .....148  
Conclusion .....149  
    Participant response .....150

## EXECUTIVE SUMMARY

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of **Switch Utilities Energy Limited (Switch Utilities)**, 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 V7.2.

Switch Utilities supplies NHH ICPs and a small number of HHR ICPs.

### Registry

The timeliness of registry status and trader updates has remained steady during this audit period. Small numbers of late updates and inaccuracies were identified. New connections are not completed.

### Switching

Most switching processes are operating as intended, and the number of late files is very low. Some issues from the last audit were resolved during the audit period, but this audit identified some incorrect last actual read dates and incorrect average daily consumption. Both issues are system related and will be resolved quickly.

### Reading and read validation

Validation processes have continued to improve, and all readings checked were recorded accurately and correctly classified. Read attainment remains high.

Inaccurate readings and potential meter defects appear to be consistently identified, and corrections are processed.

### Reconciliation

Reconciliation validation processes have strong controls, which were improved with the replacement of the DART system during the audit period. Only two issues were identified, as follows:

- the “best estimate of the quantity of electricity consumed” was not used to estimate consumption for the period meters were bridged, and
- the “out of market settlement” for incorrect volumes identified during the 2021 audit is yet to be conducted.

### Conclusion

17 non-compliances were identified, which is an improvement on 23 non-compliances identified in the previous audit. The breach risk rating has improved from 51 to 25. These improvements are the result of system and process changes, in conjunction with strengthening of controls. The recommended audit frequency is 12 months. I have considered this result in conjunction with Switch Utilities responses, and I recommend a next audit period of 18 months to reflect that several of the issues have been resolved and clear plans are in place for the remaining issues.

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	15.2	Some inaccurate information is recorded on the registry and in submissions.	Strong	Low	1	Identified
Electrical Connection of Point of Connection	2.11	10.33A	21 late certifications for reconnected meters.	Strong	Low	1	Identified
Meter bridging	2.17	2A of Schedule 15.2	The "best estimate of the quantity of electricity consumed" was not used to estimate consumption for the period meters were bridged for at least four ICPs.	Strong	Low	1	Cleared
Changes to registry information	3.3	10 Schedule 11.1	136 late status updates to "active". Seven late status updates to inactive. 143 late trader updates. One late ANZSIC code update.	Moderate	Low	2	Identified
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	One ICP had an incorrect ANZSIC code, which was corrected during the audit.	Strong	Low	1	Cleared
Management of "active" status	3.8	17 Schedule 11.1	Five "active" ICPs recorded as "inactive" on the registry.	Strong	Low	1	Cleared
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	458 incorrect last actual read dates recorded as earlier than the correct last actual read dates for files sent prior to the event date logic being corrected. 667 incorrect last actual read dates on the CS event date. Six of six ICPs sampled with incorrect average daily consumption. One of a sample of five CS files with average daily consumption over 200 kWh found to be incorrect.	Moderate	Low	2	Identified
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	One T2 breach.	Strong	Low	1	Cleared

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	247 incorrect last actual read dates recorded as earlier than the correct last actual read dates for files sent prior to the event date logic being corrected.  94 incorrect last actual read dates on the CS event date. 40 CS files had last actual read dates the day before the event date with estimated reads. Five were created before the last actual read date changes and had incorrect last actual read dates.	Moderate	Low	2	Identified
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	Two RR breaches.	Moderate	Low	2	Identified
Losing trader provision of information - gaining trader switch	4.13	15 Schedule 11.3	One HH AN breach.	Strong	Low	1	Cleared
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	Three ICPs had the DF (date failed) advisory code applied instead of CE (customer error). One incorrectly sent NW file. Six SR breaches. 13 NA breaches. Two AW breaches.	Moderate	Low	2	Identified
Electricity conveyed & notification by embedded generators	6.1	10.13, Clause 10.24 and 15.13	15 bridged meters were identified during the audit period. Energy was not quantified in accordance with the code during the bridged periods.	Strong	Low	1	Identified
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	The best endeavours requirements were not met for ten ICPs unread during the period of supply of a possible 16 ICPs. Nine of these were supplied for 40 days or less.	Strong	Low	1	Identified
Accuracy of submission information	12.7	15.12	The "best estimate of the quantity of electricity consumed" was not used to estimate consumption for	Strong	High	3	Identified



Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			the period meters were bridged for at least four ICPs. Some incorrect submission data identified in the previous audit is still to be resolved through out of market settlement.				
Permanence of meter readings for reconciliation	12.8	4 Schedule 15.2	Estimates not made permanent at R14 for one ICP.	Strong	Low	1	Cleared
Historic 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						25	

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

## RECOMMENDATIONS

Subject	Section	Recommendation
Unmetered load exceptions	3.3	Monitor all registry exceptions at least twice weekly to ensure updates are within the allowable five business days.
Disconnection process and location	3.9	Require Wells to provide photos of disconnection location to ensure sealing is intact and that the disconnection is secure.  Require that all disconnections occur at the pole or pillar fuse unless this is not practicable.  Ensure Wells is approved to remove and replace fuses on all relevant networks.
Inform registry of switch request for ICPs - standard switch	4.1	To reduce the risk of users selecting the wrong ICP during the application process and the number of wrong premises withdrawals required, consider: <ul style="list-style-type: none"> <li>displaying the ICP number and asking the applicant to validate it against their current invoice where possible and/or the meter if the ICP is recorded on it, and</li> <li>displaying the meter number(s) and asking the applicant to validate it against the physical meter(s).</li> </ul>

## ISSUES

Subject	Section	Description	Issue
		Nil	

## 1. ADMINISTRATIVE

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

#### Code reference

*Section 11 of Electricity Industry Act 2010.*

#### Code related audit information

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

#### Audit observation

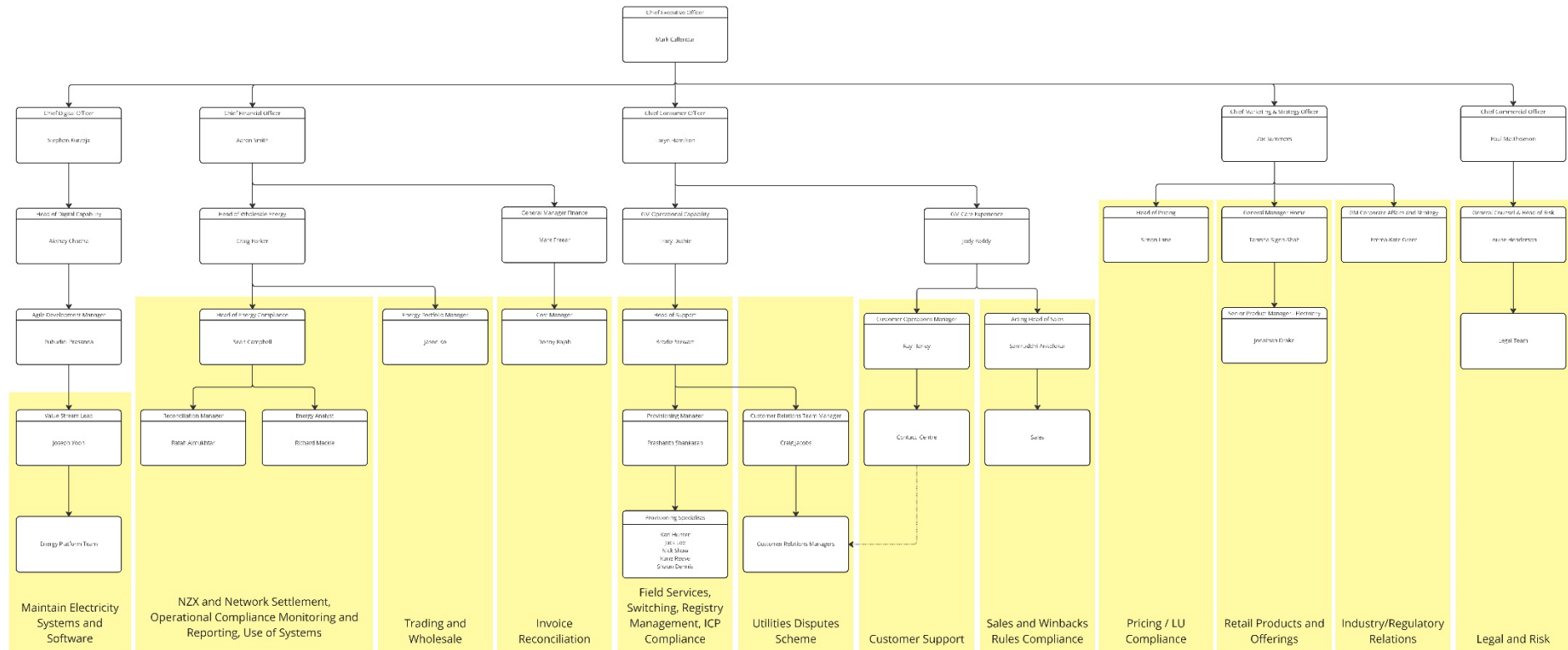
Current code exemptions were reviewed on the Electricity Authority website.

#### Audit commentary

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

## 1.2. Structure of Organisation

Switch Utilities provided a copy of their organisation structure.



### 1.3. Persons involved in this audit

Auditors:

Name	Company	Role
Steve Woods	Veritek Limited	Lead Auditor
Rebecca Elliot	Veritek Limited	Supporting Auditor

Switch Utilities personnel assisting with this audit:

Name	Title
Brodie Stewart	Head of Support
Sean Campbell	Head of Settlements and Insights
Prashanth Shankaran	Provisioning Manager
Craig Jacobs	Customer Relations Team Manager
Naz Rafiq	Energy Support Specialist
Karl Hunter	Provisioning Specialist
Shaun Dennis	Provisioning Specialist
Nick Shaw	Provisioning Specialist
Anthony Weaver	Provisioning Specialist
Lisa Wright	Provisioning Specialist

### 1.4. Use of Agents (Clause 15.34)

#### Code reference

*Clause 15.34*

#### Code related audit information

*A reconciliation participant who uses an agent*

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

#### Audit observation

Use of agents was discussed with Switch Utilities.

#### Audit commentary

Switch Utilities uses Wells to conduct NHH data collection, and AMS and EDM I to conduct HHR data collection.

AMS (for AMS and Smartco), Intellihub (for IHUB and MTRX) Arc, FCLM, BOPE and WASN provide data as MEPs and are subject to a separate audit regime.

All other functions are conducted in-house.

## 1.5. Hardware and Software

Switch Utilities currently uses the following systems:

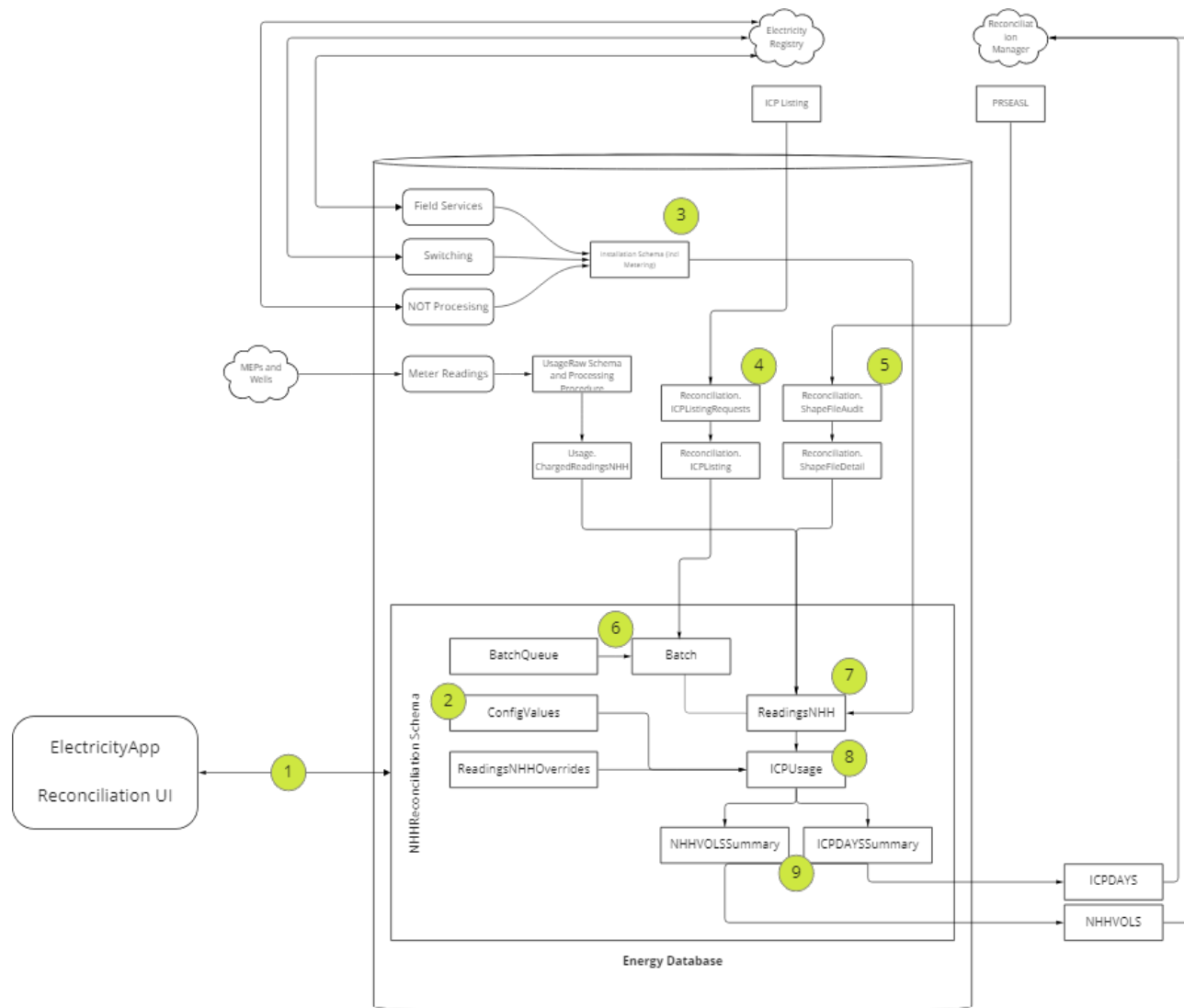
- The **Energy Database** receives NHH reads files, and also sends and receives registry and switching files. The Electricity App is used as an interface to the database, which allows users to review and validate information. The Energy Database also produces the AV120 submissions. HHR billed charges are calculated in **Accredo** (HHR Vocus Communications customers) and then transferred to the Energy Database. NHH billed charges are calculated in the Energy Database and then transferred to **BillPlus** for the physical invoices to be produced. Since October 2022 NHH reconciliation has been performed using the NHHReconciliation system which forms part of the Energy Database. A material change audit was conducted for this new system.
- **Data management system (known as DRS or MDMS)** is used for HHR reconciliation and produces AV090 and AV140 submissions. DRS/MDMS receives EIEP3 files containing HHR volume information and registry lists. DRS/MDMS performs a calculation based on the current values provided and outputs submission files.
- **Zendesk** is used as a customer relationship and communications management system and does not interact with the registry.

**DART** was used for NHH reconciliation up to September 2022, and produced AV080 and AV110 submissions. It received readings used by the reconciliation process from the Energy Database, status, and aggregation factor information from registry lists, and PR030 seasonal adjusted shape value files from the reconciliation manager.

Access to systems is restricted using logins and passwords, through each user's network login.

Switch Utilities performs a nightly backup of all production databases and systems including the Energy Database. The backups are stored on a file share, which is backed up and stored across multiple servers in at least four locations to ensure redundancy and protection.

A diagram of the Energy Database is below:



1. The Electricity App's new Reconciliation UI allows the user to interface with the Reconciliation system. All operations are performed through the Electricity App.
2. Configuration values (such as the thresholds for validation errors) are held in a configuration table
3. The pre-existing switching Installation Structure continues to be used to maintain the structure of a connection (including the meter structure); however variables relating key aggregation fields (such as Network and POC) continue to come from the LIS File only.
4. The ICPListing table is populated daily by an automated import process to load a latest "All Time" ICP Listing. The ICP Listing is used as the primary source to determine what ICPs are owned and require settlement. ICPs will only be settled if in the ICP Listing: ICPs in the ICPListing but not the installation structure (such as due to timing) will be settled using default values; and Aggregation is performed based on the Registry data fields.
5. Shape file from the Reconciliation Manager is imported to the system automatically via an SFTP synchronisation process. The latest shape information for a date will be used. If no shape information is used, the shape from the same location and month from the prior year will be used; and if no such shape exists a flat shape is used.
6. Where a user queues a reconciliation batch (representing one month, for one revision) this will go into a BatchQueue table to be picked up by automated database worker.
7. Readings come from ChargedReadingsNHH, a pre-existing table which was historically used for switching and billing. This table is unchanged. Usage information is collected from ChargedReadingsNHH for each Batch, combined with the existing Reading Overrides, and a copy of the read data relevant to that batch is stored. This data is retained once a batch is finalised and held indefinitely (so that if reading changes occur in the future, the specific reading data used for the settlement is not lost; and any anomalies can be reconciled in the future)
8. The shaped calculations for every channel (or unmetered load, or dummy volume if no metering information is available for an active ICP) is held in the ICPUsage table and associated to its batch. This provides the full set of calculations used to create the Settlement Information.
9. Aggregated information for the NHHVOLS and ICPDAYS files are held in additional tables; and the relevant files are generated using this data when a batch is finalised and/or a user selects to download a file from a finalised batch.

## 1.6. Breaches or Breach Allegations

The Authority confirmed that no alleged breaches occurred during the audit period.

## 1.7. ICP Data

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

Metering Category	Jan 2023	Jul 2022	Aug 2021	Aug 2020	Dec 2019	2019	2018
1	49,329	46,037	39,076	34,054	28,472	21,390	11,635
2	144	159	183	257	267	329	287
3	7	10	11	16	22	37	45
4	-	1	2	4	4	12	12
5	-	-	-	-	-	1	1
9	2	-	1	-	-	1	1
Blank	-	-	-	-	-	-	1

All ICPs on the list file are summarised in the table below.

Status	Jan 2023	Jul 2022	Aug 2021	Aug 2020	Dec 2019	2019	2018
Active (2,0)	49,482	46,207	39,273	34,331	28,765	21,770	11,982
Inactive – new connection in progress (1,12)	1	18	1	-	6	7	6
Inactive – vacant (1,4)	224	266	431	195	168	135	3
Inactive – electrically disconnected remotely by AMI meter (1,7)	40	41	17	28	18	35	1
Inactive – electrically disconnected at pole fuse (1,8)	30	28	30	30	28	23	-
Inactive – electrically disconnected due to meter disconnected (1,9)	21	14	18	8	24	23	1
Inactive – electrically disconnected at meter box fuse (1,10)	11	5	4	5	5	8	-
Inactive – electrically disconnected at meter box switch (1,11)	13	13	9	10	5	11	-
Inactive – electrically disconnected ready for decommissioning (1,6)	11	5	7	7	5	3	-
Inactive – reconciled elsewhere (1,5)	-	-	-	-	-	-	-
Decommissioned (3)	512	477	367	274	234	187	162



## 1.8. Authorisation Received

Switch Utilities provided a letter of authorisation.

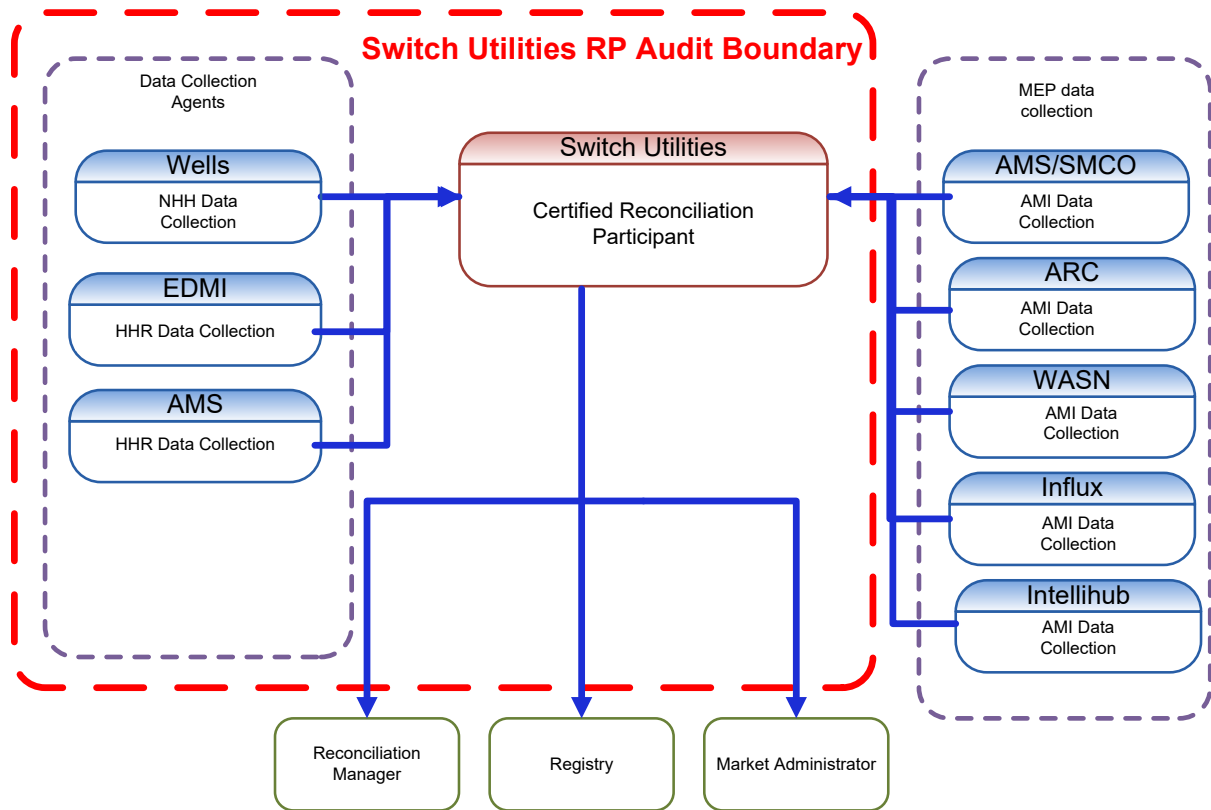
## 1.9. Scope of Audit

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of Switch Utilities, 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 V7.2 at the 2 Degrees office on April 18<sup>th</sup> and 19<sup>th</sup> 2023. 2 Degrees and Switch Utilities share the same owner.

Analysis was conducted on registry list, audit compliance and event detail reports for 1 August 2022 to 11 January 2023, and registry list snapshot and meter installation details reports as of 11 January 2023.

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



The table below shows the tasks under clause 15.38 of part 15 for which Switch Utilities requires certification. This table also lists any agents who assist with these tasks:

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

Switch Utilities uses Wells to conduct NHH data collection, and AMS and EDMI to conduct HHR data collection. The agent audits are expected to be submitted with this audit.

AMS (for AMS and Smartco), Intellihub (for IHUB and MTRX) Arc, FCLM, BOPE and WASN provide data as MEPs and are subject to a separate audit regime.

## 1.10. Summary of previous audit

Switch Utilities' previous audit was conducted in August 2022 by Tara Gannon of Veritek Limited. The summary tables below show the statuses of the non-compliances and recommendations raised in the previous audit. Further comment is made in the relevant sections of this report.

I also reviewed the NHH switching material change audit and NHH reconciliation material change audit completed in September 2022 by Tara Gannon of Veritek Limited and found no non-compliances or recommendations were raised.

### Table of Non-compliance

Subject	Section	Clause	Non-compliance	Status
Relevant information	2.1	15.2	Some inaccurate information is recorded on the registry and in submissions.	Still existing
Electrical Connection of Point of Connection	2.11	10.33A	38 late certifications for reconnected meters.	Still existing
Changes to registry information	3.3	10 Schedule 11.1	234 late status updates to active. 15 late status updates to inactive. 107 late trader updates.	Still existing
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	One ICP had an incorrect ANZSIC code, which was corrected during the audit.	Still existing
Management of "active" status	3.8	17 Schedule 11.1	0000336235WTAE5 had an incorrect reconnection date and was corrected during the audit.	Still existing
Management of "inactive" status	3.9	19 Schedule 11.1	Three ICPs had incorrect status event dates which were corrected during the audit.	Cleared
Losing trader response to switch request and event dates - standard switch	4.2	3 and 4 Schedule 11.3	One ICP with unmetered load had the AA (acknowledge and accept) response code applied instead of MU (unmetered supply). Two late AN files.	Cleared
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	One E2 breach. 37 CS breaches. Seven transfer CS files had incorrect last actual read dates. One transfer CS had an incorrect read type. One transfer CS had an incorrect average daily kWh.	Still existing
Retailers must use same reading - standard switch	4.4	6(1) and 6A Schedule 11.3	Three RR breaches. Two AC breaches.	Cleared

Subject	Section	Clause	Non-compliance	Status
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	29 T2 breaches for switch moves.  Three AN breaches for switch moves.  Six ICPs with unmetered load had the AA (acknowledge and accept) response code applied instead of MU (unmetered supply).	Still existing
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	17 switch move CS files had incorrect last actual read dates.  Three switch move CS files had an incorrect average daily kWh.	Still existing
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	20 RR breaches. Two AC breaches.	Still existing
Losing trader provision of information - gaining trader switch	4.13	15 Schedule 11.3	0140244034LC7F1 (AN-7299952 1 March 2022) had the AA response code applied but should have had AD.	Still existing
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	0006101178RN4E5 NW-1043185 and 0000111978UND8B NW-1055376 had the DF (date failed) advisory code applied instead of CE (customer error).  Eight SR breaches.  65 NA breaches.  Two AW breaches.	Still existing
Electricity conveyed & notification by embedded generators	6.1	10.13, Clause 10.24 and 15.13	26 bridged meters were identified during the audit period. Energy was not quantified in accordance with the code during the bridged periods.	Still existing
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	The best endeavours requirements were not met for four ICPs unread during the period of supply where the period of supply was 30-40 days.	Still existing
Identification of readings	9.1	3(3) Schedule 15.2	One transfer CS had an incorrect read type.	Cleared
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	Not all events in the event log are reviewed.	Cleared
Calculation of ICP days	11.2	15.6	Where default forward estimate is applied, an ICP day is not reported for the first day of supply.  One ICP was excluded from ICP days submissions because it had the pre-pay meter flag set to Y and	Cleared

Subject	Section	Clause	Non-compliance	Status
			the NHH flag, HHR flag and AMI flag were all set to N.	
Creation of submission information	12.2	15.4	At least ten ICPs had one ICP and one day of volume omitted from ICP days and NHH volumes submissions because they were supplied for one day. <ul style="list-style-type: none"> <li>ICP 1001147153CK638 was excluded from ICP days and NHH volumes submissions causing under submission of 168 kWh and 356 ICP days.</li> </ul>	Cleared
Accuracy of submission information	12.7	15.12	Some incorrect submission data was identified. Some incorrect submission data identified in the previous audit is still to be resolved through out of market settlement.	Still existing
Historical estimate process	12.11	4 and 5 Schedule 15.3	DART's historic estimate calculation does not follow the method prescribed in the code.	Cleared
Historic estimate reporting to RM	13.3	10 Schedule 15.3	Historic estimate thresholds were not met for some revisions.	Still existing

### Table of Recommendations

Subject	Section	Description	Recommendation	Status
Changes to registry information	3.3	Use the format specified in the Electricity Authority's Guidelines on Unmetered Load Management	Trader unmetered load details should be recorded in the following format: Connected Watts; running hours per day; free form text as required e.g. 110;10.5;streetlight corner Rons Rd and Beatty St.	Still existing
Trader responsibility for an ICP	3.4	Develop a MEP nomination rejection process	Develop a process to identify rejected MEP nominations so that they can be investigated and re-issued where necessary.	Adopted
Management of "active" status	3.8	Confirm the reconnection date for 0007186355RN110	ICP 0007186355RN110 is believed to have been reconnected by Orion because only the network could access the box to reconnect. The ICP switched in on 2 February 2022 on an estimated reading of 255. Wells provided readings of 411 on 12 April 2022, and 676 on 13 June 2022. Wells completed a failed reconnection attempt on 9 February 2022 and because the 12 April 2022 read showed movement from the estimated switch in read, Switch Utilities assumed that the network reconnected the day after the Wells failure. The reconnection date should be confirmed and updated (if necessary) and a reconnection read should be entered.	Adopted

Subject	Section	Description	Recommendation	Status
Inform registry of switch request for ICPs - standard switch	4.1	ICP validation for new switch ins	To reduce the risk of users selecting the wrong ICP during the application process and the number of wrong premises withdrawals required, consider: <ul style="list-style-type: none"> <li>displaying the ICP number and asking the applicant to validate it against their current invoice where possible and/or the meter if the ICP is recorded on it, and</li> <li>displaying the meter number(s) and asking the applicant to validate it against the physical meter(s).</li> </ul>	Still existing
Losing trader response to switch request and event dates - standard switch	4.2	Application of the MU (unmetered supply) AN response code	The MU (unmetered supply) AN response code should be applied in preference to AA (acknowledge and accept) where the ICP's load is partially or solely unmetered.	Adopted
Electricity conveyed & notification by embedded generators	6.1	Identification of ICPs with distributed generation	Expand the query to identify ICPs with distributed generation which may require notifications of gifting to include ICPs with installation type L and generation metering.	Adopted
Half hour estimates	9.4	Consider public holidays, weekdays and weekends when calculating estimates	Consider public holidays, weekdays and weekends when calculating estimates rather than using the same calendar day of the previous month to estimate consumption.	Adopted
Accuracy of submission information	12.7	Validate the readings for ICP 0010366420EL645	It appears that the contractor readings or meter removal readings for Meter 214282526 registers 1 and 2 may be transposed. Confirm the meter registers that the reads should be recorded against prior to updating the Energy Database.	Adopted
Accuracy of submission information	12.7	Consistently enter boundary readings for disconnections and reconnections	Develop processes to ensure that boundary readings are consistently entered, and missing boundary readings are detected.	Adopted

## 2. OPERATIONAL INFRASTRUCTURE

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

#### Code reference

Clause 10.6, 11.2, 15.2

#### Code related audit information

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

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

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

#### Audit observation

The process to find and correct incorrect information was examined. The registry validation process was examined in detail in relation to the achievement of this requirement. The registry list files and AC020 reports were examined to determine compliance.

#### Audit commentary

##### Registry synchronisation

Status and trader updates are generated from the Energy Database. Users add and modify information including event dates using the retailer updates screen in the Electricity App, which is the user interface to the Energy Database. The Energy Database creates status and trader event files which are sent to the registry.

Registry acknowledgement files are imported into the Energy Database and directed to work queues within the Electricity App if action is required by a user. Acknowledgement errors are diverted to the IT team for resolution.

Notification files are imported into the Energy Database and attributes maintained by other parties are updated from the appropriate event date. NHH reconciliation relies on the registry attributes when determining “active” days and aggregation factors.

Monthly checks are completed for:

- **status, network, NSP, installation type, price code, loss category, chargeable capacity and address details excluding GPS coordinates** - the Energy Database values are validated against the registry information and any differences are displayed as ICP mismatch exceptions within the Energy Database; differences are investigated and corrected as necessary,
- **compensation factors** - the Energy Database values are validated against the registry, and any differences are investigated and corrected as necessary,
- **meter mismatch** - the PR255 metering installation details report is compared to the Energy Database, and any differences are investigated including follow up with the MEP and corrected as necessary,
- **trader unmetered load** - a registry list of ICPs with the unmetered load flag set to Y is checked to ensure that the registry and Energy Database unmetered load details are correct and consistent; the registry information is used to calculate submissions for unmetered load, and
- **distributor unmetered load without trader unmetered load** - a registry list is reviewed to identify any ICPs where the distributor has recorded unmetered load, but the unmetered load flag is set to N.

There is a weekly review of the registry AC020 trader compliance report, event detail report and switch breach history report. Any issues for resolution are passed to the appropriate teams, and compliance trends and statistics are monitored and reported to management monthly.

### Registry and static data accuracy

The analysis of the list file and AC020 returned the following findings:

Item No.	Issue	Jan 2023	Jul 2022	Jul 2021	Aug 2020	Dec 2019	2019	Comments
1	Status or status date mismatch between registry and Switch Utilities	5	4	5	12	11	140	Five ICPs had incorrect status, and these were corrected during the audit. See <b>section 3.8</b> .
2	Active ICPs with blank MEP and no MEP nominated and UML = N	-	-	-	-	-	-	Compliant.
3	Incorrect submission flag	-	-	-	-	1	-	Compliant.
4	Active with blank ANZSIC codes	-	-	-	-	-	-	Compliant.
5	Active with ANZSIC "T999" not stated	-	-	-	-	-	-	Compliant.
6	Active with ANZSIC "T994" don't know	-	-	-	1	1	-	Compliant.
7	Incorrect ANZSIC code	1	1	15	13	16	19	The ANZSIC code was corrected during the audit. See <b>section 3.6</b> .
8	Active ICP with cat 9 and UML= N	-	-	-	-	-	1	Two were recorded on the AC020 report but both were timing differences.
9	ICPs with Distributor unmetered load populated but retail unmetered load is blank	-	2	-	-	-	-	Compliant.
10	ICPs with unmetered load flag Y but load is recorded as zero	-	-	-	1	-	5	Compliant.
11	ICPs with incorrect shared unmetered load	-	2	-	-	-	-	Compliant.
12	ICPs with Distributed Generation indicated but no DG profile and no notification of gifting provided	-	-	-	4	4	2	Compliant.
13	ICP at status "new connection in progress" (1,12) or "ready" (0,0) with an initial energisation date populated by the Distributor	1	18	-	1	-	1	See <b>section 3.5</b> .



Item No.	Issue	Jan 2023	Jul 2022	Jul 2021	Aug 2020	Dec 2019	2019	Comments
15	Active date variance with initial electrical connection date	-	-	-	-	5	10	Compliant.
16	Meter cat 3 or known commercial site with residential ANZSIC code	-	-	-	-	-	-	Compliant.

### Read and volume data accuracy

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

Defective meters	<p>Low and zero consumption is monitored monthly using the “zero consumption bridge list” which includes any ICPs which have consumed less than 3 kWh for the month. Defective meters may also be identified through meter condition and event information reported by Wells, MEPs or customers and through the read validation process which identifies material changes between readings.</p> <p>When a stopped meter is detected, it is replaced. Consumption on the new meter is monitored for two weeks and then used to calculate an estimated closing reading which captures consumption during the stopped period. The estimate is entered into the Energy Database using the “bridged meter tool” and recorded as a permanent estimate.</p> <p>I checked eight examples of stopped or faulty meters and confirmed that corrections were appropriately processed and flowed through to reconciliation.</p>
Bridged meters	<p>Consumption during bridged, stopped, or faulty periods is calculated using the electricity app, where a “daily estimate” value is present, initially based on the average daily consumption from the CS file (replaced with a minimum of 8 kWh if the figure is less than 8 kWh). The average daily kWh figure is automatically updated whenever readings are obtained. Prior to the audit, there wasn’t a validation check to ensure the average daily consumption figure was appropriate. An interim process has been established, where the average daily consumption from the new meter will be checked and a ticket will be raised if the average daily kWh figure needs to be updated. A more permanent solution will be developed and implemented.</p> <p>At least four ICPs had consumption underestimated during the bridged period. Switch Utilities intends to check all 15 examples identified during the audit and will revise as necessary to ensure the corrections are as accurate as practicable.</p> <p>The previous audits found that some bridged meter corrections were not fully processed within the 14-month window resulting in under submission of 21,200 kWh. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.</p>
Consumption while inactive	<p>The NHHReconciliation system excludes the shape values for any “inactive” days from both the numerator and divisor of the historic estimate calculation, forcing all consumption into the active days of the read-to-read period. If an entire read-to-read period is inactive, any inactive consumption between the reads will be omitted from submission, until the status is changed to “active”.</p> <p>Switch Utilities provided a list of 126 ICPs with 16,884 kWh of suspected inactive consumption recorded between August 2022 and January 2023. 29 of the ICPs had less than ten kWh of inactive consumption, and six had only one kWh of inactive consumption.</p> <p>I checked 20 ICPs with the most suspected inactive consumption (267 to 1,288 kWh) and found:</p>

	<p>11 ICPs had been corrected to “active” status for all days with volumes through Switch Utilities review process,</p> <p>Nine ICPs did not have genuine consumption on “inactive” days and no correction was required.</p> <p>I checked ICP 0000041710TEB32 which was being investigated to determine whether its suspected inactive consumption was genuine at the time of the last audit. It has been resolved by moving the ICP to “active” status for the period with consumption.</p>
Incorrect multipliers	<p>Multipliers are validated against the registry monthly, and no incorrect multipliers were identified during the audit period.</p> <p>The multiplier for the affected day is applied to the readings in the ChargedReadingsNHH table. These readings are used as an input into historic estimate calculations. Multipliers stored in the Energy Database will continue to be validated against the registry monthly.</p> <p>Where multiplier corrections or changes occur, the readings will be recalculated so that the correct value for the reading date is applied. Where a meter multiplier change is independent of a meter change, an end of day reading is entered for the last day with the old multiplier and a start of day reading is entered for the first day with the new multiplier. The NHHReconciliation system does not calculate consumption between the end of day reading and start of day reading the following day.</p> <p>Two incorrect multipliers were identified during the previous audit, both were backdated to 2018 and approx. 240,000 kWh is outside the 14-month revision window. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.</p>
Unmetered load corrections	<p>Unmetered load is not billed by Switch Utilities, and solely unmetered ICPs are not supplied.</p> <p>Unmetered load is reported based on the registry unmetered load flag, daily unmetered kWh, and status. The NHHReconciliation system inserts the registry daily unmetered kWh that applied on each active day against a dummy “unmeteredload” register as historic estimate. Unmetered load will continue to be validated against the registry monthly to identify ICPs with distributor unmetered load but no trader unmetered load and confirm that trader unmetered load information is correct and consistent.</p> <p>One ICP switched in with incorrect unmetered load details in the registry. This was identified and corrected, and submission was correct.</p>

Some submission accuracy issues were identified during the previous audit and are now resolved, as follows:

Issue	Resolved
Missing boundary reads for disconnections and/or reconnections	Yes
ICPs omitted from NHH submission for one day	Yes
Pre-pay ICP omitted from submission	Outside the 14-month reconciliation window
Incorrect agreed switch reading	Yes
Incorrect shaping where consumption fluctuates.	Yes
Historic estimate calculation method differs from the Code	Yes

**Previous audit issues to be resolved.** The previous audit identified some incorrect submission information including bridged meter corrections and incorrect compensation factors which had not been processed during the 14-month revision period. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.

**Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 10.6, 11.2, 15.2  From: 01-Aug-22 To: 11-Jan-23	Some inaccurate information is recorded on the registry and in submissions.  Potential impact: Low  Actual impact: Low  Audit history: Multiple times  Controls: Strong  Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are rated as strong as they will mitigate risk to an acceptable level.  The audit risk rating is assessed to be low due to the small number of issues identified.		
Actions taken to resolve the issue		Completion date	Remedial action status
Comments provided in Sections 2.17 and 12.7			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

**2.2. Provision of information (Clause 15.35)**

**Code reference**

Clause 15.35

**Code related audit information**

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

**Audit observation**

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

**Audit commentary**

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

**Audit outcome**

Compliant

## 2.3. Data transmission (Clause 20 Schedule 15.2)

### Code reference

Clause 20 Schedule 15.2

### Code related audit information

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

### Audit observation

#### HHR

All HHR data is collected by EDM I and AMS, and data transmission was reviewed as part of their agent audits. To confirm the data transmission process, I traced a sample of readings from the source files provided by the agents to DRS/MDMS and submission files.

#### NHH

Switch Utilities receives AMI data from AMS (for AMS and Smartco), Arc, BOPE, FCLM, Intellihub (for Intellihub and Metrix), and WASN as MEPs. All other NHH meters are read manually by Wells as an agent. All NHH and AMI reading data is provided via SFTP. The NHHReconciliation system uses specified read types (actual and permanent estimate reads) from the ChargedReadingsNHH table to produce reconciliation submissions.

HHR interval data is loaded directly into DRS/MDMS for submission.

To confirm the data transmission process, I traced a sample of readings from the source files provided by the MEPs and agents to the Energy Database. A sample of readings were also traced to DRS/MDMS and aggregates submissions for HHR settled AMI ICPs.

### Audit commentary

#### HHR

HHR data transmission was reviewed as part of AMS and EDM I's agent audits and found to be compliant. I traced data for four category 3 ICPs from the source files to DRS/MDMS and submission information and confirmed it matched.

#### NHH

Upon receipt via SFTP, NHH readings are imported into a readings table in the Energy Database. Two days after the read date, the readings are extracted to the ChargedReadingsNHH table and NHH readings tables. If no reading is received for a day, the Energy Database will estimate a value for the ChargedReadingsNHH table which will be revised if an actual reading is received later, and the reading has not been billed. Estimated readings are always replaced with actual data if it is received later in the NHH readings table. Readings received on contractor paperwork are manually loaded into the Energy Database's contractor read screen. The NHHReconciliation system uses specified read types (actual and permanent estimate reads) from the ChargedReadingsNHH table to produce reconciliation submissions.

I traced readings for a diverse sample of 18 ICPs from the source files to the Energy Database for NHH settled ICPs and found the readings were correctly recorded and classified.

AMI volumes are loaded directly into DRS/MDMS. I traced the raw volumes to DRS/MDMS and the HHR aggregates submissions for a diverse sample of eight ICPs and found the data was consistent.

## Audit outcome

Compliant

## 2.4. Audit trails (Clause 21 Schedule 15.2)

### Code reference

*Clause 21 Schedule 15.2*

### Code related audit information

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

*The audit trail must include details of information:*

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

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

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

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

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

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

### Audit observation

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

### Audit commentary

#### **NHH**

Compliance was confirmed during Wells' agent audit.

The Energy Database audit logs include the activity identifier, date and time and an operator identifier.

#### **HHR**

Compliance was confirmed during AMS and EDMI's agent audits, and DRS/MDMS contains compliant audit trails.

### 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 Switch Utilities' standard terms and conditions.

### Audit commentary

Switch Utilities' standard terms and conditions with their customers includes 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 Switch Utilities' standard terms and conditions and discussed compliance with these clauses. I reviewed process documentation and correspondence with customers.

### Audit commentary

Switch Utilities' current terms and conditions with their customers includes consent to access for authorised parties for the duration of the contract.

Switch Utilities provided a process document outlining the process to obtain access to metering where it cannot be obtained because 1) access was refused, or 2) the customer is required to complete work before the job can be completed. Switch Utilities endeavours to work with the customer to arrange access or customer work completion, but if this is not successful Switch Utilities advises the customer that their ICP will be disconnected after 30 business days. If work is not completed or access is not granted within the 30 business days a final notice that the ICP will be disconnected within seven business days is issued.

There were no instances where access to metering could not be arranged on request by a MEP, ATH, auditor, or the Authority during the audit period.

#### **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 Switch Utilities' standard terms and conditions, but the existing practices in the electrical industry achieve compliance.

#### **Audit commentary**

Switch Utilities supplies seven ICPs with metering category 3 or above and is not responsible for any metering installations with loss compensation factors.

#### **Audit outcome**

Compliant

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

### Code reference

Clause 11.15B

### Code related audit information

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

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

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

### Audit observation

I reviewed Switch Utilities' standard terms and conditions.

### Audit commentary

Switch Utilities' terms and conditions contain the appropriate clauses to achieve compliance with this requirement.

### Audit outcome

Compliant

## 2.9. Connection of an ICP (Clause 10.32)

### Code reference

Clause 10.32

### Code related audit information

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

- accept responsibility for their obligations in Parts 10, 11 and 15 for the point of connection; and
- have an arrangement with an MEP to provide 1 or more metering installations for the point of connection.

### Audit observation



The new connection and the reconnection process when switching ICPs in were examined in detail.

#### Audit commentary

Switch Utilities does not intend to complete any new connections, but if they do ICPs will be claimed at the “inactive - new connection in progress” status and the MEP will be nominated at the same time.

No genuine new connections occurred during the audit period.

17 ICPs which were connected to a customer network had new ICPs created during the previous audit period and were moved to “active” status effective from 1 September 2022 when the customer network was decommissioned. The correct “active” status date was applied, and all the ICPs had valid meter certification on the “active” status date.

The AC020 report recorded two ICPs with “active” status and the unmetered flag set to no, but no metering installed. Both were timing differences and metering records were added after the report was run.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 10.33(1)*

#### Code related audit information

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

- *for a point of connection to the grid – the grid owner has approved the connection,*
- *for an NSP that is not a point of connection to the grid - the relevant distributor has approved the connection.*
- *for a point of connection that is an ICP, but is not as NSP:*
  - o *the trader is recorded in the registry as the trader responsible for the ICP or has an arrangement with the customer and initiates a switch within 2 business days of electrical connection,*
  - o *if the ICP has metered load, 1 or more certified metering installations are in place,*
  - o *if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the temporary electrical connection.*

#### Audit observation

The new connection and the reconnection process when switching ICPs in were examined in detail.

#### Audit commentary

No new connections occurred during the audit period, and no temporary electrical connections were identified. Switch Utilities does not intend to complete any new connections, but if they do ICPs will be claimed at the “inactive - new connection in progress” status and the MEP will be nominated at the same time. This practice aids compliance with clause 10.33(1).

#### 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:
  - o the trader is recorded in the registry as the trader responsible for the ICP or has an arrangement with the customer and initiates a switch within 2 business days of electrical connection,
  - o if the ICP has metered load, 1 or more certified metering installations are in place,
  - o 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 registry list file and AC020 report were examined to confirm process compliance.

### Audit commentary

#### MEP information for active ICPs

The AC020 report recorded two ICPs with “active” status and the unmetered flag set to no, but no metering installed. Both were timing differences and metering records were added after the report was run.

#### Meter certification

The Energy Database produces exceptions for sites being reconnected with expired meter certification, and sites owned with expired meter certification. Switch Utilities checks the exceptions for ICPs which are being reconnected with expired certification every two days and requests certification as part of the reconnection process.

Active ICPs are required to have full metering certification recorded within five business days of the date they become active.

- 17 ICPs which were connected to a customer network had new ICPs created during the previous audit period and were moved to “active” status effective from 1 September 2022 when the customer network was decommissioned. All the ICPs had valid meter certification on the “active” status date.
- 21 ICPs meters were not fully certified within five business days of reconnection. I checked five ICPs with expired interim certification and the five with the earliest full meter certification expiry dates. I found that two ICPs were reconnected by other traders, one did not have a job issued for recertification because an MEP switch was in progress and seven ICPs had jobs booked for recertification. Successful recertification within five business days is unlikely to occur because the industry is largely at the point where every installation that can be certified easily has been certified.
- 15 ICPs meters were indicated to be bridged during the audit period, and were replaced and certified, or existing meters were recertified on un-bridging.

## Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.11 With: Clause 10.33A  From: 03-Aug-22 To: 12-Dec-22	21 late certifications for reconnected meters. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are rated as strong, because meter certification is an MEP responsibility and Switch Utilities sometimes cannot achieve compliance.  The impact is assessed to be low because a small number and proportion of meters were not certified within the timeframes. Uncertified metering installations are likely to be less accurate than certified metering installations, so there could be a minor impact on settlement.		
Actions taken to resolve the issue		Completion date	Remedial action status
We have a control report that identifies sites which are gained with expired certification. Our process is to request recertification as soon as possible if we have submitted a reconnection.		May 2023	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We will continue to monitor performance in this space, but achieving compliance largely depends on the availability of MEP contractors to be able to perform out of cycle recertification work.  We have been in communication with MEPs and are supporting the MEPs in performing their mass deployment and certification programs which we believe will reduce the frequency of this issue over the course of time.		Jan 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.

### Audit commentary

Previous audits confirmed that Switch Utilities has use of system agreements or arrangements in place with all the networks they trade on. There were no new networks added during the audit period.

As part of the online customer sign up process, the customer's ICP information is checked against the registry to confirm its attributes, and then cross checked against approved values. If an ICP does not meet the requirements to be supplied by Switch Utilities (including being connected to a network where an arrangement is in place) the application is put on hold and the customer receives a message that their ICP cannot currently be supplied. The application is directed to a user for review through the Electricity App.

### Audit outcome

Compliant

## 2.13. Arrangements for metering equipment provision (Clause 10.36)

### Code reference

Clause 10.36

### Code related audit information

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

### Audit observation

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

### Audit commentary

Previous audits confirmed that Switch Utilities has arrangements in place with all relevant MEPs. No new MEPs were added during the audit period.

As part of the online customer sign up process, the customer's ICP information is checked against the registry to confirm its attributes, and then cross checked against approved values. If an ICP does not meet the requirements to be supplied by Switch Utilities (including having an MEP where an arrangement is in place) the application is put on hold and the customer receives a message that their ICP cannot currently be supplied. The application is directed to a user for review through the Electricity App.

### 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. Traders are only able to update ICP status for event dates where they are responsible for the ICP on the registry.

### Audit commentary

If an ICP was reconnected as part of the switching process and the switch was later withdrawn, Switch Utilities would restore the disconnection and reimburse the losing trader for any direct costs incurred if requested. I did not identify any examples during the 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.

### Audit commentary

Switch Utilities have a robust disconnection process that is described in **section 3.9** and will only disconnect ICPs where they are recorded as the trader. If a disconnection job is raised with an MEP for remote disconnection the job is rejected if Switch Utilities is not the trader. Scheduled disconnection jobs are removed from the schedule automatically if Switch Utilities is no longer the trader. Manual checks are conducted at the time disconnection requests are sent to MEPs or contractors.

### 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 time 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 personnel 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 events where seals may have been removed or broken were reviewed.

### Audit commentary

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

Switch Utilities receives work completion paperwork from the ATHs, the MEP, or subcontractors to the MEP and uses this information to confirm the correct ICP attributes including status and profile; and updates their system and the registry. These parties are required to ensure that only qualified personnel perform work and manage and trace seals. The MEPs do not usually provide details of seals in their job completion paperwork.

If Switch Utilities becomes aware of a meter with missing or broken seals, they will advise the MEP and request that the meter is checked and re-sealed.

In many cases, work requiring breakage or removal of seals is completed by the MEP, and they will be aware of any seal changes. Where Wells completes a manual disconnection or reconnection, the MEP may not be advised where seals have been removed or broken except by receiving a status update through the registry.

Three examples of broken seals were examined, and in all cases, resealing was conducted by the ATH.

Disconnection and reconnection will often occur at the meter or the main switch. I recommend in **section 3.9** that Switch Utilities requires photos of these disconnections and reconnections to confirm if sealing has been compromised.

### 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

I checked all 15 meters which were indicated to be bridged during the audit period and found that they had been un-bridged, and the meters were recertified or replaced and certified on un-bridging.

Bridging occurred because the customer urgently required electricity and a remote reconnection was unable to be completed. In all cases the MEP was notified.

Consumption during bridged, stopped, or faulty periods is calculated using the electricity app, where a “daily estimate” value is present, initially based on the average daily consumption from the CS file (replaced with a minimum of 8 kWh if the figure is less than 8 kWh). The average daily kWh figure is automatically updated whenever readings are obtained. Prior to the audit, there wasn’t a validation check to ensure the average daily consumption figure was appropriate. An interim process has been established, where the average daily consumption from the new meter will be checked and a ticket will be raised if the average daily kWh figure needs to be updated. A more permanent solution will be developed and implemented.

At least four ICPs had consumption underestimated during the bridged period. Switch Utilities intends to check all 15 examples identified during the audit and will revise as necessary to ensure the corrections are as accurate as practicable.

The previous audits found that some bridged meter corrections were not fully processed within the 14-month window resulting in under submission of 21,200 kWh. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.

**Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 2.17 With: Clause 2A of Schedule 15.2  From: 01-Aug-22 To: 11-Jan-23	The “best estimate of the quantity of electricity consumed” was not used to estimate consumption for the period meters were bridged for at least four ICPs. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are recorded as strong at the time of the audit, because they were strengthened as soon as the estimation issue was identified.  The impact on settlement and participants is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
We have significantly improved overall with detection and management of bridge meters. The issue identified relates to the methodology used to generate estimates.  With respect to those ICPs the auditor identifies should have had a different estimate value, we have retrospectively amended our permanent estimates this month and will wash these up within the 14 month cycle.  With the new permanent estimations now loaded, we expect all affected months to have had a washup within 12 months (by May 2024), resolving the matter completely.		May 2024	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
We have implemented an interim process for estimation values to be determined by the Wholesale Energy analyst team using available data and a methodology which aligns with auditor expectations.  We have created a further system development task to modify the system methodology to meet the auditors recommended methodology for calculation of estimates		<b>Interim Process:</b> May 2023  <b>System modifications completed:</b> Nov 2023	



## 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

Sample invoices were 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, chat app, and other correspondence 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:

- in the terms and conditions,
- on invoices,
- in correspondence,
- in communications via the chat app,
- on the websites, and
- as part of the interactive voice recording when customers make inbound calls regarding electricity.

### 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 other correspondence were reviewed to determine whether clear and prominent information on Powerswitch is provided.

### Audit commentary

Clear and prominent information on Powerswitch is provided:

- on invoices for brands supplying customers with residential ANZSIC codes,
- in correspondence, including price plan correspondence,
- in communications via the chat app, and
- on the websites.

The requirement to provide annual information on Powerswitch is met through its inclusion on invoices.

### Audit outcome

Compliant

### 3. MAINTAINING REGISTRY INFORMATION

#### 3.1. Obtaining ICP identifiers (Clause 11.3)

##### Code reference

Clause 11.3

##### Code related audit information

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

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

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

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

##### Audit observation

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

##### Audit commentary

This requirement is well understood and managed by Switch Utilities. No new ICPs were created for Switch Utilities during the audit period.

##### Audit outcome

Compliant

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

#### Code reference

*Clause 11.7(2)*

#### Code related audit information

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

#### Audit observation

The new connection process was examined in detail. The registry list file and AC020 report were examined to confirm process compliance.

#### Audit commentary

17 ICPs which were connected to a customer network had new ICPs created during the previous audit period and were moved to “active” status effective from 1 September 2022 when the customer network was decommissioned. Information was provided 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 5 business days after the change.*

#### Audit observation

The process to manage status changes is discussed in detail in **sections 3.8** and **3.9** below. The process to manage trader updates, including MEP nominations was reviewed. The registry list and AC020 report were examined, and a sample of late updates were checked.

#### Audit commentary

##### Status updates

The status, status reason code and event date are entered into the Electricity App once confirmation of the disconnection or reconnection is received. This updates a staging table in the Energy Database and produces a registry notification. Once an acknowledgement file is received from the registry the Energy Database is updated to the correct status. Acknowledgement failures are directed to the IT team for resolution, and the status recorded in the Energy Database is validated against the registry as described in **section 2.1**.

Service requests are managed using Zendesk or Outlook and tracked by brand in a spreadsheet, which records the date the job was issued and who to, the date the job was completed, and when paperwork was received. The spreadsheet is reviewed daily and jobs which do not have receipt of paperwork recorded ten business days after the issue date are checked and followed up with the contractor if necessary.

## Reconnections

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

Period ended	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
2018	66	73.5%	8.5
2019	201	79%	10.4
Dec 2019	296	64.25%	19.81
Aug 2020	303	52.13%	9.93
Jul 2021	366	67.67%	13.5
Jul 2022	234	80.19%	7.96
<b>Jan 2023</b>	<b>136</b>	<b>77.85%</b>	<b>8.59</b>

73 of the late updates were more than 10 business days after the event date, 32 were more than 30 business days after the event date, and seven were more than 100 business days after the event date. The latest update was 259 business days after the event date.

I checked a sample of the ten latest updates (83 to 259 business days after the event date), and five late updates between ten and 30 business days after the event date. The late updates were caused by:

- three being gained with an incorrect “inactive” status in the registry,
- one was a delay in receiving reconnection paperwork,
- one was a delay in processing paperwork once it was received,
- three were reconnected by traders prior to switching, where the switch was subsequently withdrawn; in all cases, these traders should have disconnected again,
- four were reconnected by customers without authorisation by Switch Utilities, and
- three were processing issues, where the job was marked as complete, but the status was not correctly updated.

The previous audit identified that the reconnection date for ICP 007186355RN110 was unclear and it was unclear who conducted reconnection. Switch Utilities has investigated the events surrounding the reconnection with the contractor and distributor and they were unable to obtain any further information. Therefore, the reconnection date in the registry of 10 February 2022 is deemed to be the most appropriate.

## Disconnections

The timeliness of status updates to “inactive” is set out on the table below.

Period ended	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
2018	43	4.4%	23.93
2019	42	96.5%	2.10
Dec 2019	138	91.20%	3.27

Period ended	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Aug 2020	44	96.07%	2.27
Jul 2021	93	96.25%	2.17
Jul 2022	15	98.91%	0.85
<b>Jan 2023</b>	<b>7</b>	<b>96.48%</b>	<b>4.40</b>

Six of the late updates were more than 10 business days after the event date, four were more than 30 business days after the event date and three were more than 100 business days after the event date. The latest update was 391 business days after the event date.

I checked all late updates and found:

- three were event date corrections identified in the previous audit,
- two were late notifications from the distributor that ICPs had been decommissioned, and
- two were late due to internal resourcing issues.

### Trader updates

Trader updates (including MEP nominations) are processed in the Energy Database and transferred to the registry. The trader event attributes, and event date are entered into the Electricity App once the correct values are confirmed. MEP nominations are processed at the time a service order for meter installation is raised, except where the change is a result of a bulk meter rollout, and the MEP nomination is raised on advice from the MEP.

The timeliness of trader updates is set out on the table below.

Year	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Dec 2019	17	79.27%	11.93
Aug 2020	20	88.76%	3.52
Jul 2021	44	85.57%	4.95
Jul 2022	107	89.32%	1.64
<b>Jan 2023</b>	<b>143</b>	<b>83.20%</b>	<b>3.00</b>

142 of the late updates were MEP nominations, and 103 of those were changes from ARCS to NGCM. The latest update was made 38 business days after the event date. 138 updates were made within 30 business days of the event date and 105 were made within ten business days of the event date. I checked the 20 latest MEP nominations (including all over 15 business days after the event date) and found:

- nine were due to the previous MEP populating metering events on or after the start date for the new MEP, meaning these events had to be reversed,
- switch withdrawals had to occur for three ICPs where the meters were changed prior to the switch out, but the notification was after the switch out,
- four ICPs had the field notification sent to the previous retailer, who had issued the work order,
- one ICP had late paperwork by the MEP, and
- three were late due to resourcing issues.

The other late update was an addition of unmetered load for ICP 0005700531RNF1C. The unmetered load details appeared in the Electricity app but not in the registry. This was recorded as an exception but was not actioned within five business days. I recommend these exceptions are checked more regularly.

Recommendation	Description	Audited party comment	Remedial action
Unmetered load exceptions	Monitor all registry exceptions at least twice weekly to ensure updates are within the allowable five business days.	We agree with the auditor recommendation, and have assigned this task to a staff member.	Identified

The previous audit recommended that unmetered load details should be populated in the Authority’s recommended format, and I saw evidence that the recommended format is now being used.

The late updates contained the correct attributes and event dates.

The AC020 report identified one late update to an ANZSIC code for an ICP switching in, which was caused by a backdated CS file received from the other trader. The trader update was processed automatically by the registry when the switch completed.

**Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 3.3 With: Clause 10 Schedule 11.1 From: 01-Aug-22 To: 11-Jan-23	136 late status updates to active. Seven late status updates to inactive. 143 late trader updates. One late ANZSIC code update. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are rated as moderate because they are adequate to ensure that the registry is updated on time most of the time, but there is room for improvement. The risk is low as most updates were completed on time or soon after they were due unless they were backdated corrections.		
Actions taken to resolve the issue		Completion date	Remedial action status
During the period since the last audit we implemented a new event monitoring control to allow us to assess overall timeliness. We also added a modification to our status update screen so that where an update is performed later than the		Implemented – May 2023	Identified

<p>allowed number of days, the agent is required to input a comment explaining the reason for the late update.</p> <p>This monitoring is now being reported to the relevant team management so that they can understand that the root cause for late updated and take the appropriate remedial action as issues arise.</p> <p>We have also hired an additional specialist electricity staff member with 13 years of market experience into the team in May, and they will be working with that team to monitor overall activity and timeliness.</p>		
<p><b>Preventative actions taken to ensure no further issues will occur</b></p>	<p><b>Completion date</b></p>	
<p>As part of our planned program of work for the development of our electricity platform, our new staff member will be scoping and implementing enhancements to our platform which systemize the manual elements of the field services process and automate updates to the extent practical.</p>	<p>May 2024</p>	

### 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)):*
  - o *arrange for a final interrogation to take place prior to or upon meter removal (clause 11.18(3)(a)); and*
  - o *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. MEP nominations and decommissioned ICPs were examined.



## Audit commentary

### Retailers Responsibility to Nominate and Record MEP in the Registry

The AC020 report recorded two ICPs with “active” status and the unmetered flag set to no, but no metering installed. Both were timing differences and metering records were added after the report was run.

17 ICPs which were connected to a customer network had new ICPs created during the previous audit period and were moved to “active” status effective from 1 September 2022 when the customer network was decommissioned. The correct “active” status date was applied, and all the ICPs had valid meter certification on the “active” status date.

MEP nominations are processed at the time a service order for meter installation is raised, except where the change is a result of a bulk meter rollout, and the MEP nomination is raised on advice from the MEP.

All 819 MEP nominations issued were accepted. The previous audit report recorded that there was no process to identify rejected MEP nominations. These rejections now appear on the event exceptions page along with other rejections where they are actioned appropriately.

### ICP Decommissioning

Switch Utilities continue with their obligations under this clause. ICPs that are vacant and “active”, or “inactive” are still maintained in the Energy Database.

As part of the decommissioning process, a field services job is raised for the MEP to remove their meter which serves as notification of decommissioning. Switch Utilities attempts to obtain a meter removal or disconnection reading to ensure that all consumption up to the point of decommissioning is captured and reported. 28 of 35 ICPs checked had actual readings and seven had permanent estimates.

## Audit outcome

Compliant

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

### Code reference

Clause 9 Schedule 11.1

### Code related audit information

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

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

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

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

**Audit observation**

The new connection process was discussed, and the registry list and audit compliance reports were examined to determine compliance.

**Audit commentary**

**New connection information timeliness**

17 ICPs which were connected to a customer network had new ICPs created during the previous audit period and were moved to “active” status effective from 1 September 2022 when the customer network was decommissioned.

The historic timeliness of status updates to “active” (for new connections) is set out on the table below.

Year	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
2018	5	72%	11.2
2019	1	75%	4.25
Dec 2019	7	0%	49.57
Aug 2020	-	-	-
Jul 2021	-	-	-
Jul 2022	-	-	-
<b>Jan 2023</b>	-	<b>100.00%</b>	<b>0.76</b>

**New connection information accuracy**

The correct “active” status date was applied for the 17 new ICPs created because their customer network was decommissioned.

ICP 0000574776NRA68 has “inactive - new connection in progress” status with an initial electrical connection date populated. This ICP switched to Switch Utilities at the “inactive - new connection in progress” status but was then withdrawn so the original trader could complete the new connection.

**Audit outcome**

Compliant

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

#### Code reference

*Clause 9 (1(k) of Schedule 11.1*

#### Code related audit information

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

#### Audit observation

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

ANZSIC codes are checked on application, and exception reports are generated by the Energy Database and reviewed monthly including:

- ICPs with a commercial price plan or “Ltd” or “Limited” in the customer’s name with residential ANZSIC codes,
- ICPs which do not have a commercial price plan or “Ltd” or “Limited” in the customer’s name with a non-residential ANZSIC code, and
- ICPs with T99 series ANZSIC codes.

The validity of ANZSIC codes was checked using the AC020 report:

- two ICPs had T994 unknown ANZSIC codes and were corrected through Switch Utilities’ validation processes after the report was run, and
- no ICPs had meter category two or higher and a residential ANZSIC code.

To confirm the validity of the ANZSIC codes applied, I checked a diverse sample of 60 active ICPs across the ten most frequently applied ANZSIC codes against registry and google streetview information. Three ICPs had incorrect ANZSIC codes applied and were corrected during the audit. Two of the discrepancies had already been identified by Switch Utilities as part of their validation, therefore I have only recorded non-compliance for ICP 0000002980DE3EA which switched in with 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: 15-Mar-22 To: 10-Mar-23	One ICP had an incorrect ANZSIC code, which was corrected during the audit.  Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are strong because robust validation processes are in place. The ICP with an incorrect ANZSIC code switched in with an incorrect code.  There is no impact on other participants or settlement, but there is a minor impact on the Authority because this information is used for reporting. The ANZSIC code has been corrected.		
Actions taken to resolve the issue		Completion date	Remedial action status
We have corrected the ICP with an incorrect ANZSIC code identified by the auditor. The other two we had already identified through our own controls prior to the audit and corrected.		Implemented - May 2023	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
We have monitoring in place to attempt to identify variances in ANZSIC codes. We will continue to monitor this for instances of incorrect ANZSIC codes.  We also plan to implement an internal sample checking and internal audit process as part of our internal controls to further assist with ensuring the overall integrity of this information.		Dec 2023	

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

#### Code reference

*Clause 9(1)(f) of Schedule 11.1*

#### Code related audit information

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

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

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

#### Audit observation

The process to manage unmetered load was examined. The registry list and AC020 reports were examined to identify:

- any ICPs where unmetered load is recorded by the distributor but not the trader, and
- any ICPs where the trader's unmetered load is not within  $\pm 0.1$  kWh of the distributor's figure (where it is possible to calculate this if the distributor is using the recommended format).

#### Audit commentary

Unmetered load is not billed by Switch Utilities, and solely unmetered ICPs are not supplied. Registry notification files indicating changes to distributor unmetered load are imported into the Energy Database, and the daily unmetered kWh information is used to calculate unmetered submission volumes.

Unmetered load is monitored through the following processes:

- **trader unmetered load** - a registry list of ICPs with the unmetered load flag set to Y is checked monthly, to ensure that the registry and Energy Database unmetered load details are correct and consistent; in **section 3.3** I recommend exception reports are checked more frequently,
- **distributor unmetered load without trader unmetered load** - a registry list is reviewed monthly to identify any ICPs where the distributor has recorded unmetered load, but the unmetered load flag is set to N, and
- **AC020 trader compliance report** - the AC020 trader compliance report is monitored weekly, and exceptions are passed to the relevant teams for review.

26 active ICPs have unmetered load indicated by the distributor. Six have shared unmetered load and 20 have standard unmetered load. The accuracy of unmetered load was assessed:

- no ICPs have unmetered load recorded by the distributor but not Switch Utilities,
- no ICPs have unmetered load recorded by Switch Utilities but not the distributor,
- no ICPs have the unmetered flag set to Y with zero or blank daily unmetered kWh,
- the trader and distributor unmetered load values matched within  $\pm 0.1$  kWh for all ICPs where this was possible to calculate, and
- there are no active unmetered builder's temporary supply ICPs.

The AC020 report recorded two ICPs with "active" status and the unmetered flag set to no, but no metering installed. Both were timing differences and metering records were added after the report was run.

#### Audit outcome

Compliant

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

#### Code reference

Clause 17 Schedule 11.1

#### Code related audit information

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

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

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

- *the ICP has only 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**. No new connections were completed during the audit period.

The reconnection process was examined using the AC020 and event detail reports. The timeliness of data for reconnections is assessed in **section 3.3**, and a sample of 15 updates were checked for accuracy.

### **Audit commentary**

#### **Customer assignment and quantification of load**

Switch Utilities' Energy Database will not allow more than one "active" customer per ICP for the same date range. Effective dates and expiry dates are used to record the period that a customer has responsibility for an ICP.

The AC020 report recorded two ICPs with "active" status and the unmetered flag set to no, but no metering installed. Both were timing differences and metering records were added after the report was run.

#### **New connection information accuracy**

The correct "active" status date was applied for the 17 new ICPs created because their customer network was decommissioned.

ICP 0000574776NRA68 has "inactive - new connection in progress" status with an initial electrical connection date populated. This ICP switched to Switch Utilities at the "inactive - new connection in progress" status but was then withdrawn so the original trader could complete the new connection.

#### **Reconnection information accuracy**

The status, status reason code and event date are entered into the Electricity App once confirmation of the reconnection is received. This updates a staging table in the Energy Database and produces a registry notification. Once an acknowledgement file is received from the registry the Energy Database is updated to the new status. Acknowledgement failures are directed to the IT team for resolution, and the status recorded in the Energy Database is validated against the registry as described in **section 2.1**.

Service requests are managed using Zendesk or Outlook and tracked by brand in a spreadsheet, which records the date the job was issued and who to, the date the job was completed, and when paperwork was received. The spreadsheet is reviewed daily and jobs which do not have receipt of paperwork recorded ten business days after the issue date are checked and followed up with the contractor if necessary.

A sample of 15 reconnections were checked, which confirmed that the correct status and date had been applied.

As detailed in **section 3.9**, five of the 20 ICPs checked with suspected inactive consumption recorded between August 2022 and January 2023 were corrected to "active" as a result of this audit as they had switched in and the update to "active" was missed. This is recorded as non-compliance below.

### **Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 3.8 With: Clause 18 Schedule 11.1 From: 31-Aug-22 To: 14-Mar-23	Five “active” ICPs recorded as “inactive” on the registry. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are rated as strong as they will mitigate risk to an acceptable level. The audit risk rating is low as the number of ICPs affected is small and revised submission information will be provided.		
Actions taken to resolve the issue		Completion date	Remedial action status
The impacted ICPs have already had their statuses corrected.		Implemented May 2023	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
We have controls in place to identify each month ICPs with readings suggesting consumption while the ICP is recorded inactive. To assist with our compliance, we have: <ol style="list-style-type: none"> <li>1. Begun the process of migrating Field Services activity from spreadsheets to a systemized process within our electricity platform</li> <li>2. We are adding new reporting to this system which will assist us to identify discrepancies between jobs issued, and registry updates performed</li> <li>3. Our new electricity specialist will be providing and oversight and monitoring function to ensure that the relevant exception reports are processed as soon as practicable.</li> <li>4. We have been in discussion with our major MEP, and they are providing operational reporting from their systems. We will use this reporting to supplement the monitoring our own performance and timeliness.</li> </ol>		May 2024	

### 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.

The timeliness of updates to “inactive” statuses is detailed in **section 3.3**.

#### Audit commentary

##### Inactive - new connection in progress status

The 17 new ICPs created because their customer network was decommissioned correctly had “inactive - new connection in progress” status applied until their network was connected and they were moved to “active” status.

ICP 0000574776NRA68 has “inactive - new connection in progress” status with an initial electrical connection date populated. This ICP switched to Switch Utilities at the “inactive - new connection in progress” status but was then withdrawn so the original trader could complete the new connection.

##### Other inactive statuses

Inactive status is only applied once a Switch Utilities approved contractor has confirmed that the ICP has been disconnected for situations where Switch Utilities requests the disconnection.

The status, status reason code and event date are entered into the Electricity App once confirmation of the disconnection is received. This updates a staging table in the Energy Database and produces a registry notification. Once an acknowledgement file is received from the registry the Energy Database is updated to the new status. Acknowledgement failures are directed to the IT team for resolution, and the status recorded in the Energy Database is validated against the registry as described in **section 2.1**.

Disconnection service requests are managed using Zendesk or Outlook and tracked by brand in a spreadsheet, which records the date the job was issued and who to, the date the job was completed, and when paperwork was received. The spreadsheet is reviewed daily and jobs which do not have receipt of paperwork recorded ten business days after the issue date are checked and followed up with the contractor if necessary.

I checked a sample of 35 disconnection updates including at least five (or all) “active” updates to each status reason code to determine whether they were processed accurately. The disconnections were processed from the correct event date with the correct status reason code applied for all ICPs.

Six ICPs had “electrically disconnected remotely by AMI meter” where AMI metering is not recorded in the registry. All were confirmed to have had the AMI flag set to Y at the time of disconnection.

Some late status updates to “inactive” status are recorded as non-compliance in **section 3.3**.

##### Inactive periods with consumption



The NHHReconciliation system excludes the shape values for any inactive days from both the numerator and divisor of the historic estimate calculation, forcing all consumption into the active days of the read-to-read period. If an entire read-to-read period is inactive, any inactive consumption between the reads will be omitted from submission.

Switch Utilities monitors inactive ICPs with potential consumption using the “disconnected ICPs with usage report” which is produced after business day 13 each month. Each ICP is checked to determine whether reconnection has occurred, and missing paperwork is followed up and processed. If self-reconnection or genuine consumption is detected during a period which is expected to be disconnected, the ICP’s status will be corrected to “active” for the affected days.

Switch Utilities provided a list of 126 ICPs with 16,884 kWh of suspected inactive consumption recorded between August 2022 and January 2023. 29 of the ICPs had less than ten kWh of inactive consumption, and six had only one kWh of inactive consumption.

I checked 20 ICPs with the most suspected inactive consumption (267 to 1,288 kWh) and found:

- 15 were switched in at an “inactive” status and all have been made “active” from the gain date/ reconnection date as part of BAU, and
- five ICPs have been corrected to “active” as a result of this audit as they had switched in and the update to “active” was missed; these were corrected during the audit, and this is recorded as non-compliance in **section 3.8**.

I checked ICP 0000041710TEB32 which was being investigated to determine whether its suspected inactive consumption was genuine at the time of the last audit. It has been resolved by moving the ICP to “active” status for the period with consumption.

Disconnection and reconnection will often occur at the meter or the main switch. I recommend that Switch Utilities requires photos of these disconnections and reconnections to confirm if sealing has been compromised, and to ensure the disconnection is sufficiently secure so that customers cannot reconnect themselves. The table below shows the breakdown of inactive reasons and it’s clear the number of disconnections occurring at the meter or meter board is higher than expected at 51%.

Disconnection reason	Quantity
Vacant	4
Remotely by AMI meter	36
Pole fuse	73
Meter disconnected	59
Meter box fuse	23
Meter box switch	35

I checked a sample of ten ICPs disconnected at the meter or meter box and eight of them had fusing at the boundary that should have been used.

I checked some photos which confirmed that sometimes a main switch is turned off and sealed with a paper sticker, which the customer can remove and then reconnect themselves. I consider this to be poor industry practice and can result in consumption on inactive ICPs.

Recommendation	Description	Audited party comment	Remedial action
Disconnection process and location	<p>Require Wells to provide photos of disconnection location to ensure sealing is intact and that the disconnection is secure.</p> <p>Require that all disconnections occur at the pole or pillar fuse unless this is not practicable.</p> <p>Ensure Wells is approved to remove and replace fuses on all relevant networks.</p>	<p>We agree with the auditors recommendation.</p> <p>In the previous period we did query Wells who confirmed in their view that they do perform disconnections and pole/pillar where possible as part of their policies.</p> <p>We will re-raise the issue of disconnection location, and provide them the auditors reporting on the high proportion of meter level disconnections.</p> <p>We will further investigate with Wells the practicality of meeting the photo requirements.</p> <p>We will discuss with Wells whether they currently have authorization to perform disconnections at the pole/pillar and understand what their plan to ensure they have authorization on all networks.</p>	Identified

#### Audit outcome

Compliant

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

#### Code reference

*Clause 15 Schedule 11.1*

#### Code related audit information

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

#### Audit observation

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 what process is in place to manage and respond to such requests.

I analysed the registry list of ICPs with "new" or "ready" status.

#### Audit commentary

When an application is made to a distributor for a new ICP, they contact Switch Utilities to accept responsibility if they are the chosen retailer. At this stage, Switch Utilities declines the application because they do not accept new connections.

ICPs 0000421978EN935 and 0000421980ENB36 have been at “ready” status since 13 December 2021. In both cases Switch Utilities rejected responsibility and the distributor advised that they would instruct the customer to choose a different retailer.

0000509903CE648 has been at “new” status since 1 October 2019 and Switch Utilities rejected responsibility and advised the distributor that they do not complete new connections.

Switch Utilities has also provided a general notification to their distributors advising that they do not complete new connections.

#### **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 Switch Utilities deem all conditions to be met. An extreme case sample of the seven most backdated NTs were checked to confirm that these were notified to the registry within two business days, and that the correct switch type was selected.

#### Audit commentary

Switch Utilities' processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent as soon as all pre-conditions are met, and a five day cool off period has passed. The withdrawal process is used if the customer changes their mind.

An online sign-up form is completed by the customer, or by one of Switch Utilities' customer service agents using information provided by the customer. The address is keyed in, and the user selects the correct address from a drop-down list of address matches from the registry which have non-pre-pay metering installed. Switch Utilities have found that customers may sometimes select the wrong address from the drop-down list (e.g., correct street address with the wrong region, or an incorrect unit number), which can lead to the incorrect ICP being requested and withdrawals being required.

The form retrieves the current registry data for the selected ICP using API and validates the network, MEP, and network price plan against a list of acceptable values to determine whether the ICP can be supplied. If there is no match to acceptable values an error will be displayed on the sign-up screen and the application will be referred to the pricing team for review. ANZSIC code, GXP, metering and unmetered load information are also retrieved and used for validation by Switch Utilities. As mentioned in the previous audit, I recommend that Switch Utilities consider displaying more registry information for the customer such as the ICP number and meter number, so that the customer can use it to confirm they have selected the correct ICP address.

Description	Recommendation	Audited party comment	Remedial action
ICP validation for new switch ins	<p>To reduce the risk of users selecting the wrong ICP during the application process and the number of wrong premises withdrawals required, consider:</p> <ul style="list-style-type: none"> <li>displaying the ICP number and asking the applicant to validate it against their current invoice where possible and/or the meter if the ICP is recorded on it, and</li> <li>displaying the meter number(s) and asking the applicant to validate it against the physical meter(s).</li> </ul>	We agree with the auditor recommendation, the recommendation is already included for some brands website development, and our intention is to look at how we can implement these requirements for all brands as part of continuous improvement programs.	Identified

The application form asks whether the customer is transferring between retailers at their existing address or moving into a new address. This information determines the correct switch type, with transfer switch applied where a customer is transferring between retailers at an address. If a customer is adding electricity as a service to an address where they already receive other services, the process automatically recognises that the switch is a transfer.

NTs are issued through the Energy Database once the application has been approved and credit checks are complete.

Review of the event detail report found 4,496 transfer switch NTs were issued which were also present on the registry list with history. None had a metering category of three or above.

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

#### Audit outcome

Compliant

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

##### Code reference

*Clauses 3 and 4 Schedule 11.3*

##### Code related audit information

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

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

- *providing a request for withdrawal of the switch in accordance with clause 17 (clause 3(c) of Schedule 11.3).*

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

#### **Audit observation**

The event detail reports were reviewed to:

- identify AN files issued by Switch Utilities during the audit period,
- assess compliance with the requirement to meet the setting of event dates requirement, and
- a diverse sample ANs were checked to determine whether the codes had been correctly applied.

The switch breach history reports were examined for the audit period.

#### **Audit commentary**

##### **AN content**

ANs are generated automatically on receipt of the NT by the Energy Database. AN codes applied are based on customer and ICP information recorded in the Energy Database. The previous audit recommendation to use the MU (unmetered supply) AN response code in preference to AA (acknowledge and accept) where the ICP's load is partially or solely unmetered has been implemented.

I checked AN response codes for the 2,984 transfer switch ANs against the registry list with history, and for the 2,931 ANs where information to confirm the code was available on the registry list with history, I found that the correct codes were applied.

Event dates set by losing trader must be no more than 10 business days after receipt of an NT file. Over a 12-month period 50% of event dates must be within five business days. Transfer switch proposed event dates are selected by the Energy Database as the date the NT is received in the Energy Database – two days. The event detail report was reviewed for all 2,984 transfer ANs to assess compliance with the setting of event dates requirements. 2,959 ANs (99.2%) had proposed event dates within five business days of the NT receipt date, and all ANs had proposed event dates within ten business days of the NT receipt date.

##### **AN timeliness**

ANs are generated automatically on receipt of the NT by the Energy Database. If an error or data inconsistency prevents the file from being generated, the Energy Database creates an exception, and the file will be checked and released by the IT Team. The switch breach history report is automatically downloaded and imported into the Energy Database and used to create exceptions which are checked daily. The switch breach history report did not record any AN breaches.

#### **Audit outcome**

Compliant

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

#### Code reference

Clause 5 Schedule 11.3

#### Code related audit information

*If the losing trader provides information to the registry manager in accordance with clause 3(a) of Schedule 11.3 with the required information, no later than 5 business days after the event date, the losing trader must complete the switch by:*

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

#### Audit observation

The event detail reports were reviewed to identify CS files issued by Switch Utilities during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of records per trader code. The content checked included:

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

CS files with average daily kWh that was negative, zero, or over 200 kWh were identified.

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 reports for the audit period were reviewed to identify late CS files.

#### Audit commentary

##### CS timeliness

CS files are automatically generated within five business days of the event date, unless an exception is identified and directed to a user via the Electricity App for resolution. Exceptions vary and include waiting for readings to be received or estimates to be generated, and metering data discrepancies. CS generation exceptions must be resolved by the IT team.

CS timeliness is managed using the Energy Database and its interface the Electricity App. The switch breach history report is automatically downloaded and imported into the Energy Database and used to create exceptions which are checked daily.

The switch breach history report did not record any CS breaches for transfer switches.

##### CS content

CS files are generated by the Energy Database, using its stored meter, reading, and consumption information.

In September 2022 Switch Utilities made a material change to the switching process which enabled the correct last actual read date to be correctly applied. Previously the process applied the latest actual reading date where the reading date is less than or equal to the proposed transfer date, instead of the last actual read date during the period of supply.

The Registry Functional Specification states that average daily consumption within the CS file should be the average kWh per day for the last read period. The Energy Database calculates average daily consumption between the last two actual readings. Where no actual reads have been obtained the average daily kWh from the incoming CS file applies unless it is less than 8 kWh or more than 70 kWh, in these cases the closest value in the range 8-70 kWh is applied.

Analysis of estimated daily kWh provided in CS files on the event detail report identified:

- 23 transfer CS files with daily average kWh over 200 of which the five largest were checked:
  - four were correct,
  - ICP 0170296601LC3CC had the average daily consumption from a prior period rather than the most recent readings; this issue was also present when a random sample of six CS files were checked, as recorded below,
- 15 transfer CS files with daily average kWh of zero; five were checked and confirmed to be correct, and
- no transfer CS files with negative average daily kWh.

I checked for consistency between the last actual read date, switch event date, and switch event read type for all 2,870 transfer CS files and found the following exceptions:

- 458 CS files had CS event dates more than one day after the last actual read date with actual reads and all were created prior to the event date logic being corrected in October 2022; I checked five and found the last actual read dates were incorrectly recorded but all other information was correct, and
- 667 CS files had last actual read dates on the CS event date and all were created prior to the event date logic being corrected in October 2022, and the errors occurred because the old process allowed read dates after the period of supply to be used.

I checked the accuracy of a further six CS files selected at random and found that all six had the incorrect average daily consumption recorded. The average daily consumption should be the consumption between the two most recent actual readings, but the calculation was for the difference between the two readings prior to the most recent reading. ICP 0000119338UN824 below illustrates the issue, where 19 kWh should be the average daily consumption, but 15 (14.79 rounded up) was provided in the CS file.

**Usage**

ICP: 0000119338UN824 FROM DATE: 2022/05/31 TO DATE (OPTIONAL): To Date GO

Read Date	Meter Serial	Channel Number	Current Reading (kWh)	Usage (kWh)	Read Type	Date Billed	Rate	Charge	Discount Amount	Discount Percentage
2022-12-19	219791518	1	21,600	19.07	Final Read	2023-01-04	0.219	4.185		
2022-12-18	219791518	1	21,580.93	14.79	Contractor Actual Rea...	2023-01-04	0.219	3.246		
2022-12-17	219791518	1	21,566.14	16.83	Contractor Actual Rea...	2023-01-04	0.219	3.694		
2022-12-16	219791518	1	21,549.31	14.06	Contractor Actual Rea...	2023-01-04	0.219	3.086		
2022-12-15	219791518	1	21,535.25	16.58	Contractor Actual Rea...	2023-01-04	0.219	3.639		
2022-12-14	219791518	1	21,518.67	11.41	Contractor Actual Rea...	2023-01-04	0.219	2.504		
2022-12-13	219791518	1	21,507.26	15.33	Contractor Actual Rea...	2023-01-04	0.219	3.365		

This issue is not present with move switches, as illustrated by ICP 1002093909LC7B3 below. The average daily consumption was correctly recorded as 2 (1.88 rounded up).



All other CS content was correct.

### Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 4.3 With: Clause 5 of Schedule 11.3</p> <p>From: 01-Aug-22 To: 10-Feb-23</p>	<p>458 incorrect last actual read dates recorded as earlier than the correct last actual read dates for files sent prior to the event date logic being corrected.</p> <p>667 incorrect last actual read dates on the CS event date.</p> <p>Six of six ICPs sampled with incorrect average daily consumption.</p> <p>One of a sample of five CS files (of a potential 23) with average daily consumption over 200 kWh found to be incorrect.</p> <p>Potential impact: Medium Actual impact: Low</p> <p>Audit history: Multiple times Controls: Moderate Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<p><b>Low</b></p>	<p>The controls are recorded as moderate because most CS content was correct, including all critical fields used for customer billing and settlement.</p> <ul style="list-style-type: none"> <li>• The last actual read date field is used for determining how accurate estimates may be, by allowing the gaining trader to determine the period since a reading was last received.</li> <li>• The average daily kWh is used to give an indication of average daily consumption, and may be used as an input into calculating forward estimate by the gaining trader where readings are not received post switch in.</li> <li>• All switch event readings are treated as permanent by the reconciliation process, regardless of whether they are classified as actual or estimated.</li> </ul> <p>The audit risk rating is low, based on the fields affected and the potential impact that they have on customers, participants, and settlement.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status

<p>As per Section 4.10 - The majority of relevant issues identified within this audit window (the 458 last actual reading dates, and the 667 last actual reading dates) were resolved as part of our previous material change audit, and related to defective code which has already been corrected and is now fully complaint. These occurred prior to the material change audit code being released.</p> <p>We are investigating a residual issue with respect to average daily consumption in the TR scenario, where the system provides the usage of the previous read to read and not the current read to read, where the switch loss reading is a final reading. This will be corrected shortly.</p>	<p>Aug 2023</p>	<p>Identified</p>
<p><b>Preventative actions taken to ensure no further issues will occur</b></p>	<p><b>Completion date</b></p>	
<p>As per Section 4.10 - We have reviewed with the auditor and agreed that the following actions should be taken:</p> <ol style="list-style-type: none"> <li>1. We will use the Registry Event Detail Reporting data to construct a validation system on submitted CS Files, to self-check our switching system, to identify any further issues in relation to Last Actual Read Date, or Daily Average Consumption values.</li> <li>2. We will combine the previous analysis with our planned internal audit program, and perform periodic self-assessment with file sampling, replicating the auditor check process, which we believe that we can prevent recurrence of issues of this nature.</li> </ol>	<p>Dec 2023</p>	

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

##### Code reference

*Clause 6(1) and 6A Schedule 11.3*

##### Code related audit information

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

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

*If the gaining trader disputes a switch meter reading because the switch event meter reading provided by the losing trader differs by 200 kWh or more, the gaining trader must, within 4 calendar months of the registry manager giving the gaining trader written notice of having received information about the switch completion, provide to the losing trader a changed switch event meter reading supported by 2 validated meter readings.*

- *the losing trader can choose not to accept the reading, however, must advise the gaining trader no later than 5 business days after receiving the switch event meter reading from the gaining trader (clause 6A(a)); or*
- *if the losing trader notifies its acceptance or does not provide any response, the losing trader must use the switch event meter reading supplied by the gaining trader (clause 6A(b)).*

### Audit observation

The 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 RR and AC files issued for transfer switches were checked to confirm that the content was correct, and that Switch Utilities' systems 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 Switch Utilities' systems.

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

### Audit commentary

Switch event readings are stored in the NHHReconciliation system's ChargedReadingsNHH table which forms part of the Energy Database. Switch in readings are automatically marked as start of day readings, and switch out readings are marked as end of day readings. This ensures that the NHHReconciliation system correctly calculates historic and forward estimate to include all days of supply.

### RR

When a high or low read is identified through the read validation process for a new switch in, the ICP is investigated to determine whether a read change is required. Switch Utilities will issue an RR file once they have obtained readings which confirm that the difference between the event reading and expected reading on the event date is more than  $\pm 200$  kWh. Users enter the proposed replacement reading and read type into the "create replacement read" screen in the Energy App, to produce an RR file. When an AC file is returned, the Energy Database will automatically update the switch event readings if the RR is accepted.

Switch Utilities issued 26 RR files for transfer switches. Seven were rejected and 19 were accepted. A sample of ten RRs were checked, including five rejected files. In all cases there was a genuine reason for Switch Utilities' RR, the file content was accurate, the files were supported by two validated actual reads, and the reads recorded in Switch Utilities' systems reflected the outcome of the RR process.

No RR breaches were listed on the switch breach history report.

### AC

RR files received from other traders are displayed in the Electricity App work queue. The user selects accept or reject in the "replacement read requests" screen of the Electricity App to produce an AC file. If the RR is accepted the process will also automatically update the readings to match the request.

Timeliness is managed using the Energy Database and its interface the Electricity App. The switch breach history report is automatically downloaded and imported into the Energy Database and used to create exceptions which are checked daily.

Switch Utilities issued 27 AC files for transfer switches. 25 were accepted and two were rejected. I checked both rejections and five accepted files. In all cases the agreed switch readings were recorded in Switch Utilities' systems and the rejections were for valid reasons.

No AC breaches were recorded on the switch breach history report.

### Incoming CS files with estimated reads and no RR

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

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 6(2) and (3) Schedule 11.3*

#### **Code related audit information**

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

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

#### **Audit observation**

The event detail report was reviewed to identify all read change requests and acknowledgements where clause 6(2) and (3) of schedule 11.3 applied.

#### **Audit commentary**

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

Review of the event detail report found no RR files were issued to Switch Utilities within five business days of switch completion by traders using a half hour profile.

#### **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**

Disputes were discussed with Switch Utilities.

#### **Audit commentary**

Switch Utilities 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 Switch Utilities deem all conditions to be met. An extreme case sample of the seven most backdated NTs were checked to confirm that these were notified to the registry within two business days, and that the correct switch type was selected.

##### Audit commentary

Switch Utilities' processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent as soon as all pre-conditions are met, and a five day cool off period has passed. The withdrawal process is used if the customer changes their mind.

An online sign-up form is completed by the customer, or by one of Switch Utilities' customer service agents using information provided by the customer following the process documented in **section 4.1**. NTs are issued through the Energy Database once the application has been approved and credit checks are complete, and the switch type is determined from the application responses on whether the customer is transferring between retailers at their existing address or moving in.

Review of the event detail report found 5,003 transfer switch NTs were issued which were also present on the registry list with history. None had a metering category of three or above.

The seven NT files checked had the correct switch type selected. All seven NT files were sent within two business days of the pre-conditions being met.

##### Audit outcome

Compliant

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

##### Code reference

Clause 10(1) Schedule 11.3

##### Code related audit information

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

- 10(1)(a) If the losing trader accepts the event date proposed by the gaining trader, the losing trader must complete the switch by providing to the registry manager:
  - o confirmation of the switch event date; and
  - o a valid switch response code; and
  - o 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—
  - o is not earlier than the gaining trader's proposed event date, and
  - o 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 reports were reviewed to:

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

The switch breach history reports were examined for the audit period, and reports used in the switching process were reviewed.

##### Audit commentary

###### AN content

AN files are generated by the Energy Database, and a hierarchy is used to determine the correct AN response code. The codes applied are based on customer and ICP information recorded in the Energy Database.

I checked AN response codes for the 4,111 switch move ANs against the registry list with history, and for the 4,002 ANs where information to confirm the code was available on the registry list with history, I found that the correct codes were applied.

The Energy Database applies the NT proposed event date as the AN proposed event date for switch moves. The event detail report was reviewed for all 4,111 switch move ANs to assess compliance with the setting of event dates requirements. All proposed AN dates matched the gaining trader's requested date and were within ten business days of NT receipt.

###### AN and CS timeliness

AN and CS files are generated automatically by the Energy Database. If an error or data inconsistency prevents the file from being generated the Energy Database creates an exception and the file will be checked and released by the IT Team.

The switch breach history report is automatically downloaded and imported into the Energy Database and used to create exceptions which are checked daily. The switch breach history report did not record any AN breaches.

The switch breach report was reviewed and found one T2 breach, which occurred due to an IT issue.

**Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 4.8 With: Clause 10(1) Schedule 11.3  From: 30-Aug-22 To: 06-Sep-22	One T2 breach. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	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
The specific ICP impacted which caused a T2 breach had a complex issue and the IT teams were not able to complete appropriate corrections within the available days but it was resolved shortly thereafter.  We do not expect a recurrence of this issue as it was specific to the impacted ICP.		May 2023	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
Our teams monitor the registry breach report as part of their daily tasks, and where any issues are identified they are escalated to the technology team for resolution as quickly as possible.  To reduce the likelihood of recurrence, we have altered our internal policies so that the teams escalate issues sooner to ensure there is sufficient investigation and resolution time within the allowed time window.		N/A	

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

##### Code reference

Clause 10(2) Schedule 11.3

##### Code related audit information

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

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

##### Audit observation

The event detail report was reviewed to identify AN files issued by Switch Utilities during the audit period, and assess compliance with the requirement to meet the setting of event dates requirement. The switch breach history report was reviewed.

##### Audit commentary

Analysis found all switch move ANs had a valid switch response code, and a proposed event date consistent with the gaining trader's requested date. Switches were completed as required by this clause.

##### Audit outcome

Compliant

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

##### Code reference

Clause 11 Schedule 11.3

##### Code related audit information

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

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

##### Audit observation

The event detail reports were reviewed to identify CS files issued by Switch Utilities during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of records per trader code. The content checked included:

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



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

#### Audit commentary

CS files are generated by the Energy Database, using its stored meter, reading, and consumption information.

In September 2022 Switch Utilities made a material change to the switching process which enabled the correct last actual read date to be correctly applied. Previously the process applied the latest actual reading date where the reading date is less than or equal to the proposed transfer date, instead of the last actual read date during the period of supply.

The Registry Functional Specification states that average daily consumption within the CS file should be the average kWh per day for the last read period. The Energy Database calculates average daily consumption between the last two actual readings. Where no actual reads have been obtained the average daily kWh from the incoming CS file applies unless it is less than 8 kWh or more than 70 kWh, in these cases the closest value in the range 8-70 kWh is applied.

The analysis of estimated daily kWh provided in CS files on the event detail report identified:

- six switch move CS files with daily average kWh over 200; the five largest were checked and they were all correct,
- 432 switch move CS files with daily average kWh of zero; I checked a sample of five ICPs and confirmed the values were correct, and
- no switch move CS files with negative average daily kWh.

I checked for consistency between the last actual read date, switch event date, and switch event read type for all 4,067 switch move CS files and found the following exceptions:

- 247 CS files had CS event dates more than one day after the last actual read date with actual reads; I checked five and found the last actual read dates were incorrectly recorded but all other information was correct,
- 94 CS files had last actual read dates on the CS event date; all were created prior to the event date logic being corrected in October 2022, and the errors occurred because the old process allowed read dates after the period of supply to be used, and
- 40 CS files had last actual read dates the day before the event date with estimated reads:
  - five were created before the last actual read date changes and had incorrect last actual read dates, which are recorded as non-compliance below, and
  - the other 35 switched out after one day of supply, and no actual reading was received during the period of supply so the switch in read date was applied; the CS event readings all captured an estimate of consumption for the day of supply.

I checked the accuracy of a further five CS files selected at random and found that all CS content was correct.

#### Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 4.10</p> <p>With: Clause 11 of Schedule 11.3</p> <p>From: 01-Aug-22</p> <p>To: 10-Feb-23</p>	<p>247 incorrect last actual read dates recorded as earlier than the correct last actual read dates for files sent prior to the event date logic being corrected.</p> <p>94 incorrect last actual read dates on the CS event date.</p> <p>40 CS files had last actual read dates the day before the event date with estimated reads. Five were created before the last actual read date changes and had incorrect last actual read dates.</p> <p>Potential impact: Medium</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<p><b>Low</b></p>	<p>The controls are recorded as moderate because most CS content was correct, including all critical fields used for customer billing and settlement.</p> <ul style="list-style-type: none"> <li>• The last actual read date field is used for determining how accurate estimates may be, by allowing the gaining trader to determine the period since a reading was last received.</li> <li>• The average daily kWh is used to give an indication of average daily consumption, and may be used as an input into calculating forward estimate by the gaining trader where readings are not received post switch in.</li> </ul> <p>The audit risk rating is low, based on the fields affected and the potential impact that they have on customers, participants, and settlement.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>The majority of issues identified within this audit window (247 last actual read dates and 94 last actual read dates) occurred prior to and were resolved by our previous material change audit. Our system is now fully compliant per the material change audit.</p> <p>One further scenario not previously identified, which was obscured by larger previous issue dealt with in material change, was identified by the auditor in January. That scenario has also been corrected to comply, during the audit, in February.</p>		<p>May 2023</p>	<p>Identified</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>We have reviewed with the auditor and agreed that the following actions should be taken:</p> <ol style="list-style-type: none"> <li>1. We will use the Registry Event Detail Reporting data to construct a validation system on submitted CS Files, to self-</li> </ol>		<p>Dec 2023</p>	

<p>check our switching system, to identify any further issues in relation to Last Actual Read Date, or Daily Average Consumption values.</p> <p>2. We will combine the previous analysis with our planned internal audit program, and perform periodic self-assessment with file sampling, replicating the auditor check process, which we believe that we can prevent recurrence of issues of this nature.</p>		
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#### 4.11. Gaining trader changes to switch meter reading - switch move (Clause 12 Schedule 11.3)

##### Code reference

Clause 12 Schedule 11.3

##### Code related audit information

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

- *if the switch meter reading established by the gaining trader differs by less than 200 kWh from that provided by the losing trader, both traders must use the switch event meter reading provided by the gaining trader (clause 12(2)(a)); or*
- *if the switch event meter reading provided by the losing trader differs by 200 kWh or more from a value established by the gaining trader, the gaining trader may dispute the switch meter reading. In this case, the gaining trader, within 4 calendar months of the date the registry manager gives the gaining trader written notice of having received information about the switch completion, must provide to the losing trader a changed validated meter reading or a permanent estimate supported by 2 validated meter readings and the losing trader must either (clause 12(2)(b) and clause 12(3)):*
- *advise the gaining trader if it does not accept the switch event meter reading and the losing trader and the gaining trader must resolve the dispute in accordance with the dispute procedure in clause 15.29 (with all necessary amendments) (clause 12(3)(a)); or*
- *if the losing trader notifies its acceptance or does not provide any response, the losing trader must use the switch event meter reading supplied by the gaining trader (clause 12(3)(b)).*

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

- *the gaining trader will trade electricity from a meter with a half hour submission type in the registry (clause 12(2A)(b));*
- *the gaining trader no later than 5 business days after receiving final information from the registry manager, may provide the losing trader with a switch event meter reading from that meter. The losing trader must use that switch event meter reading (clause 12(2B)).*

##### Audit observation

The 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 RR and AC files issued for transfer switches were checked to confirm that the content was correct, and that Switch Utilities' systems 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 Switch Utilities' systems.

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

### **Audit commentary**

Switch event readings are stored in the NHHReconciliation system's ChargedReadingsNHH table which forms part of the Energy Database. Switch in readings are automatically marked as start of day readings, and switch out readings are marked as end of day readings. This ensures that the NHHReconciliation system correctly calculates historic and forward estimate to include all days of supply.

### **RR**

When a high or low read is identified through the read validation process for a new switch in, the ICP is investigated to determine whether a read change is required. Switch Utilities will issue an RR file once they have obtained readings which confirm that the difference between the event reading and expected reading on the event date is more than  $\pm 200$  kWh. Users enter the proposed replacement reading and read type into the "create replacement read" screen in the Energy App, to produce an RR file. When an AC file is returned, the Energy Database will automatically update the switch event readings if the RR is accepted.

Switch Utilities issued 68 RR files for switch moves. 20 were rejected and 48 were accepted. A sample of ten RRs were checked, including five rejected files. In all cases there was a genuine reason for Switch Utilities' RR, the file content was accurate, the files were supported by two validated actual reads, and the reads recorded in Switch Utilities' systems reflected the outcome of the RR process.

Two RR breaches were listed on the switch breach history report. I found one was caused by delays in obtaining actual readings to support the RR files, and the other was a change to the gain reading after an RR was accepted for the loss reading.

### **AC**

RR files received from other traders are displayed in the Electricity App work queue. The user selects accept or reject in the "replacement read requests" screen of the Electricity App to produce an AC file. If the RR is accepted the process will also automatically update the readings to match the request.

Timeliness is managed using the Energy Database and its interface the Electricity App. The switch breach history report is automatically downloaded and imported into the Energy Database and used to create exceptions which are checked daily.

Switch Utilities issued 66 AC files for transfer switches. 63 were accepted and three were rejected. I checked all rejections and five accepted files. In all cases the agreed switch readings were recorded in Switch Utilities' systems and the rejections were for valid reasons.

No AC breaches were recorded on the switch breach history report.

### **Incoming CS files with estimated reads and no RR**

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

### **Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 4.11 With: Clause 12 of Schedule 11.3  From: 06-Dec-22 To: 06-Jan-23	Two RR breaches. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are recorded as moderate because most files are issued on time, and the incorrectly applied reading was an isolated incident.  The impact on settlement and participants is minor and the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
The RR was processed as soon as possible in the circumstances applicable to both cases.		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We are continuing to improve our internal read attainment thresholds and controls, with a view to ultimately be ensuring that we are taking all reasonable endeavors to receive a reading within four months.  The quantity of sites with longer term read attainment issues has been reducing as we have continued to develop our processes in this space. We believe that the frequency of these exceptions will reduce as we progress this program of work.		May 2024	

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

**Code reference**

Clause 14 Schedule 11.3

**Code related audit information**

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

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

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

*A gaining trader must advise the registry manager of the switch and expected event date no later than 3 business days after the arrangement comes into effect.*

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

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

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

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

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

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

#### **Audit observation**

The switch gain process was examined to determine when Switch Utilities deem all conditions to be met. The event detail report was reviewed to identify any HH NTs and confirm whether any ICPs with meter categories 3 or higher were requested as TR or MI switches.

#### **Audit commentary**

NTs are created using the Energy Database. Application details including the ICP, price plan, switch type, proposed transfer date and proposed ANZSIC code are entered into the “create switch request” screen within the Energy Database and submitted by the user to create the NT request.

Switch Utilities did not issue any HH NTs during the audit period. No switch move or transfer switch NT files had a metering category of 3 or higher.

#### **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 HH AN files issued by Switch Utilities during the audit period. The switch breach history report was examined for the audit period.

**Audit commentary**

HH AN files are generated by the Energy Database, and a user triggers their release. The proposed event date, and response code are selected by the user for HH switches. The switch breach history report is monitored daily to identify HH AN files which are due.

Three HH AN files were issued during the audit period, and all had the AA (acknowledge and accept) response code correctly applied.

The switch breach history report recorded one HH AN breach, which was caused by a system issue.

**Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 4.13 With: Clause 15 Schedule 11.3 From: 15-Nov-22 To: 15-Nov-22	One HH AN breach. 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 strong, and the impact is low because one ICP was affected, and the file was one day overdue.		
Actions taken to resolve the issue		Completion date	Remedial action status
The issue was a one-off system issue specific to the individual ICP impacted. We have a very small and decreasing number of HH sites so the likelihood of further issues is extremely small.		N/A	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		N/A	

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

**Code reference**

Clause 16 Schedule 11.3

**Code related audit information**

The gaining trader must complete the switch no later than 3 business days, after receiving the valid switch response code, by advising the registry manager of the event date.

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

*16(a)- give the losing trader or MEP for the ICP an opportunity to interrogate the metering installation immediately before the ICP is electrically disconnected or the metering equipment is removed; or*

*16(b)- carry out an interrogation and, no later than 5 business days after the metering installation is electrically disconnected or removed, advise the losing trader of the results and metering component numbers for each data channel in the metering installation.*

#### **Audit observation**

The event detail report was reviewed to identify CS files issued by Switch Utilities during the audit period. The switch breach history report was examined for the audit period.

#### **Audit commentary**

HH AN files are generated by the Energy Database, and a user triggers their release. There were no HH CS files sent during the audit period.

The switch breach history report is monitored daily to identify HH CS files which are due. The switch breach history report did not identify any HH CS breaches.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clauses 17 and 18 Schedule 11.3*

#### **Code related audit information**

*A losing trader or gaining trader may request that a switch request be withdrawn at any time until the expiry of 2 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)):*
  - o *the participant identifier of the trader making the withdrawal request (clause 18(c)(i)); and*
  - o *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 2 business days after receiving notice from the registry manager in accordance with clause 22(b), the losing trader must comply with clauses 3,5,10 and 11 (whichever is appropriate) and the gaining trader must comply with clause 16 (clause 18(f)).*



## Audit observation

The event detail reports were reviewed to:

- identify all switch withdrawal requests issued by Switch Utilities and check a sample, and
- identify all switch withdrawal acknowledgements issued by Switch Utilities and check a sample.

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

## Audit commentary

### NW

NW files are issued from the Energy Database, and users provide the information necessary to complete the process using the Electricity App. Workflows are managed within the Energy Database and Electricity App. Correspondence with other traders regarding withdrawals is managed using Zendesk.

82 (12.2%) of the 1,584 NWs issued were rejected. I checked a sample of at least three NWs issued with each advisory code. The NW codes were correctly applied apart from three “date failed” examples where “CE” should have been used. An NW was sent incorrectly for ICP 0006842674RNE91, due to an “open vacancy” not being closed, resulting in the system sending the NW.

The switch breach history report recorded six SR breaches (a decrease from eight last audit period) and 13 NA breaches (a decrease from 65 last audit).

I checked all six SR breaches for withdrawal processes not resolved within ten business days. The breaches were caused by multiple withdrawals, delays in resolving disagreements with other traders for “wrong premises” withdrawals, and delays in receiving AW rejections from other traders before a new NW could be issued. Three of the NWs were sent in error.

I checked all NA files and found 11 of the 13 late withdrawals occurred where Switch Utilities had requested the wrong property initially, usually because the customer had selected the wrong ICP during the application process (e.g., selecting the correct street address but wrong town, or an incorrect unit number where there are multiple units). A recommendation is made in **section 4.1** to reduce the risk of customers selecting the wrong ICP during the application process, therefore reducing the number of wrong premises withdrawals required. One was late due to internal processing, and one was gained for the incorrect date and the customer request was late in arriving.

### AW

AW files are issued from the Energy Database, and users provide the information necessary to complete the process using the Electricity App. Workflows are managed within the Energy Database and Electricity App. Correspondence with other traders regarding withdrawals is managed using Zendesk.

Timeliness is managed using the Energy Database and its interface the Electricity App. The switch breach history report is automatically downloaded and imported into the Energy Database and used to create exceptions which are checked daily.

49 (3.6%) of the 1,375 AWs issued by Switch Utilities were rejections. I reviewed a sample of 17 rejections by Switch Utilities including three for each withdrawal reason code, and confirmed they were rejected based the information available at the time the response was issued.

The switch breach report recorded two AW breaches, where the files were one and three days overdue. One was sent late because the breach report record was missed, and the other was because the report record did not appear in the user interface.

## Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 4.15 With: Clauses 17 and 18 of Schedule 11.3</p> <p>From: 30-Aug-22 To: 02-Nov-22</p>	<p>Three ICPs had the DF (date failed) advisory code applied instead of CE (customer error).</p> <p>One incorrectly sent NW file.</p> <p>Six SR breaches.</p> <p>13 NA breaches.</p> <p>Two AW breaches.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<p><b>Low</b></p>	<p>The controls are recorded as moderate because they ensure that correct advisory codes are applied most of the time, and most withdrawals and responses are issued on time.</p> <p>The audit risk rating is low because the impact on settlement and participants is minor. Withdrawals are issued as soon as possible once Switch Utilities confirms that a withdrawal is required and has agreement from the other trader.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>With respect to the use of the DF advisory code, a reminder has been provided to the team on the correct use of codes for relevant scenarios.</p> <p>The instance of an incorrectly submitted NW was a one off exception due to user error.</p> <p>Our view is that the SR exceptions are predominantly caused by complex circumstances and extended discussions with the other retailers involved.</p> <p>We agree with the auditors assessment of the cause of NA breaches, and address our approach below.</p> <p>The late AW files were caused by specific exceptions relating to individual ICPs.</p>		<p>N/A</p>	<p>Identified</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>SR breaches – as part of our process development and training program, we will review the exceptions identified by the auditor and assess whether different approaches and controls could assist us in ensuring a more timely resolution of withdrawals.</p>		<p>Jan 2024</p>	

<p>With respect to the NA breaches, we agree with the recommendations that the auditor has made and as we develop our sign-up improvements we believe the frequency of this issue will reduce. This website development is tied to new proposition work.</p> <p>To assist with avoiding recurrence of late AW responses, are continuing to improve our breach report related controls, and as previously mentioned teams are escalating exceptions caused by system issues sooner as part of internal policy changes.</p>		
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#### 4.16. Metering information (Clause 21 Schedule 11.3)

##### Code reference

Clause 21 Schedule 11.3

##### Code related audit information

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

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

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

##### Audit observation

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

##### Audit commentary

The reads applied in switching files were examined in **section 4.3** for standard switches, **section 4.10** for switch moves, and **sections 4.4** and **4.11** for read changes. The meter readings used in the switching process are predominantly validated meter readings or permanent estimates, and no incorrect read values were identified in the files checked.

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

##### Audit outcome

Compliant

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

### Code reference

Clause 11.15AA to 11.15AC

### Code related audit information

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

*The losing retailer may contact the customer for certain administrative reasons and may make a counteroffer only if the customer initiated contact 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

Win-back processes were discussed. The event detail report was analysed to identify all withdrawn switches with a CX code applied within 180 days of switch completion. A sample were checked to determine compliance.

### Audit commentary

Switch Utilities has a customer retention team who contact the customer to verify that they wish to switch out when a switch request is received and advise of contract termination fees (if any). They do not complete win-backs, and do not offer any enticements to electricity customers who are switching out.

Alerts are added to the accounts of ICP losses warning against attempting to win back the customer until a specified date which is 180 days after switch completion.

Ten NWs with the CX (customer cancellation) withdrawal reason code were issued within 180 days of switch completion during the audit period. Two were rejected by the other trader. I checked all ten NWs and found that win-backs were not initiated by Switch Utilities.

### 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 identify and monitor shared unmetered load were discussed. The registry list and AC020 report were reviewed to identify any ICPs with shared unmetered load.

#### Audit commentary

The process to monitor existing ICPs for addition of unmetered load is discussed in **section 3.7**.

Switch Utilities supplies six active ICPs with shared unmetered load. The accuracy of unmetered load was assessed:

- no ICPs have unmetered load recorded by the distributor but not Switch Utilities,
- no ICPs have unmetered load recorded by Switch Utilities but not the distributor,
- no ICPs have the unmetered flag set to Y with zero or blank daily unmetered kWh, and
- the trader and distributor unmetered load values matched within  $\pm 0.1$  kWh for all ICPs where this was possible to calculate.

## Audit outcome

Compliant

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

#### Code reference

*Clause 10.14 (2)(b)*

#### Code related audit information

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

#### Audit observation

The AC020 trader compliance report was examined to identify all unmetered load over 3,000 kWh per annum.

#### Audit commentary

No ICPs with unmetered load over 3,000 kWh per annum are supplied.

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

#### Audit observation

The AC020 trader compliance report was examined to identify all unmetered load over 3,000 kWh per annum.

#### Audit commentary

No ICPs with unmetered load over 3,000 kWh per annum are supplied.

#### 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 registry list was examined to identify any ICPs with distributed unmetered load.

##### **Audit commentary**

There are no distributed unmetered load ICPs.

##### **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 report were examined to determine compliance.

#### Audit commentary

##### **Metering installations installed**

All active, metered ICPs have an MEP, and at least one meter channel. No new connections were completed during the audit period, and no ICPs have submission information determined by subtraction.

##### **Distributed generation**

Switch Utilities supplies 16 “active” ICPs with distributed generation recorded by the distributor.

Currently, Switch Utilities declines applications for distributed generation and usually requires customers who wish to install generation to switch to another retailer. Generation metering will only be installed where the distributor requires it, otherwise any generated energy is gifted.

Submission occurs for all registers with generation. A report is run during each reconciliation cycle to identify any examples of ICPs that potentially have generation installed where Switch Utilities has not been notified.

The accuracy of distributed generation information was checked using the AC020 and registry list reports:

- where PV1 or EG1 profiles were applied, they were consistent with the distributor’s fuel type,
- all ICPs which had generation indicated by the distributor and I flow metering had a generation compatible profile recorded,
- eight ICPs had generation recorded by the distributor without I flow metering, or a generation compatible profile recorded; notification of gifting had been provided for all eight ICPs, and



- five ICPs have generation profiles and I flow metering have no generation recorded by the distributor; all five were confirmed to be generating, and Switch Utilities has applied the correct profile.

### Bridged meters

I checked all 15 meters which were indicated to be bridged during the audit period and found that they had been un-bridged, and the meters were recertified or replaced and certified on un-bridging. Energy was not quantified in accordance with the code during the bridged periods.

### Audit outcome

Non-compliant

Non-compliance	Description	
Audit Ref: 6.1 With: Clause 10.13, Clause 10.24 and 15.13  From: 03-Oct-22 To: 18-Jan-23	15 bridged meters were identified during the audit period. Energy was not quantified in accordance with the code during the bridged periods.  Potential impact: Medium  Actual impact: Low  Audit history: Multiple times  Controls: Strong  Breach risk rating: 1	
Audit risk rating	Rationale for audit risk rating	
<b>Low</b>	The controls are recorded as strong because exceptional circumstances were present leading to bridging occurring.  The impact on settlement and participants is estimated to be low because of the small number of ICPs.	
Actions taken to resolve the issue		Completion date
Comments provided in Section 2.17		
Preventative actions taken to ensure no further issues will occur		Completion date
		Identified

## 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.

#### **Audit commentary**

Review of the NSP table confirmed that Switch Utilities is 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 reports were reviewed to determine compliance.

#### **Audit commentary**

Switch Utilities has only used the HHR, PV1, and RPS profiles. Control devices are not used for reconciliation purposes.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 10.43(2) and (3)*

#### **Code related audit information**

*If a participant becomes aware of an event or circumstance that 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, and examples of defective meters were reviewed.

#### Audit commentary

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

Eight examples of potentially defective meters and 15 examples of bridged meters were provided and reviewed. In all cases the MEP was notified of the fault by Switch Utilities.

No defective HHR meters were identified during the audit period.

#### 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 it 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

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

All HHR data is collected by EDMI and AMS. Switch Utilities receives AMI data from meter readings from AMS (for AMS and Smartco), Arc, BOPE, FCLM, Intellihub (for Intellihub and Metrix), and WASN as MEPs, and all other meters are read manually by Wells.

#### **Audit commentary**

All information used to determine volume information is collected from the services interface or the metering installation by Switch Utilities' agents, or the MEP. Fulfilment of the interrogation systems requirements, and clock synchronisation was examined as part of the MEP and agent audits and found to be compliant.

MEPs and agents advise Switch Utilities of clock synchronisation events, usually through emails to Switch Utilities' shared field services inbox. The emails are reviewed by the team member responsible for each brand and action is taken as requested. I reviewed examples of these notifications and did not find any examples where action was required to be taken.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clauses 3(1), 3(2) and 5 Schedule 15.2*

#### **Code related audit information**

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

*All validated meter readings must be derived from meter readings.*

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

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

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

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

#### **Audit observation**

The data collection process was examined.

Processes to provide meter condition information were reviewed as part of Wells' agent audit. Switch Utilities' processes to manage meter condition information were reviewed.

Processes for customer and photo reads were reviewed.

#### **Audit commentary**

#### **Wells readings**

Compliance is recorded in the Wells audit report.

During manual interrogation, the meter register value is collected and entered into a hand-held device. This reading enters Switch Utilities' systems and is labelled as a reading, which denotes that it is a meter reading collected and validated by a meter reader.

Wells monitors meter condition as required by schedule 15.2 and provides information on meter condition along with the daily reads, and monthly summary report containing missing seal and broken seal events. This meter condition information is imported into the Energy Database and each month a query is run to return notes with key words indicating that a meter condition event has occurred.

The ICPs with notes containing the specified key words are exported to Excel where the report is reviewed to determine any action required. These are then forwarded to the appropriate team for resolution by email.

I reviewed the events and found:

- nine related to meter changes,
- six required further investigation, and
- two were faulty meters.

All were being reviewed and appropriate actions were in place to resolve these.

I checked a sample of readings provided by Wells and confirmed that they were recorded in the Energy Database and validated for use in the submission calculation process.

### **Customer and customer photo readings**

Customer readings are treated as estimates, and not used to calculate historic estimates.

Where a customer provides a read to Wells it is recorded in the notes field, and no read is provided in the reading field. Following an issue two years ago where some customer readings were recorded as ordinary readings by Wells, Switch Utilities runs a query to identify Wells readings recorded as "OR" ordinary reads where the notes indicate that that the read may have been provided by the customer using a keyword search. No customer readings were found to be recorded as ordinary readings during the audit period.

Customer readings are provided by the customer through the "my self service portal" or to one of Switch Utilities customer service agents who enter the reads into the Energy Database. The customer reads undergo the NHH read validation process. All customer readings including photos are recorded as CR (customer readings) in the Energy Database.

I checked a sample of ten customer readings to confirm the process.

### **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

The process of the application of meter readings was examined.

### Audit commentary

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

The NHHReconciliation system ensures that all readings are correctly classified as end of day readings except where it is:

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

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**, and switch event readings were found to be correctly applied.

I walked through the process for NHH to HHR and HHR to NHH meter changes. The industry has adopted a process that achieves accuracy in relation to submission information and ICP days, but compliance with this clause is not achieved for NHH to HHR changes.

- For upgrades, the process is to “remove” the NHH meter from the registry and Energy Database on the day before the meter change, and then the ICP becomes HHR all day on the day of the meter change, with the trading periods up until the meter change being populated with zeros.
- The reverse applies for downgrades, with the ICP treated as HHR all day on the date of the removal, with zeros populated until the end of the day and the NHH meter installed the following day.

Both a NHH and HHR meter cannot be “present” on the same day in the registry.

One downgrade and no upgrades occurred during the audit period. The HHR data on the day of the meter change was “padded” with zeros until the end of the day, and the NHH start read was made effective at the end of the day. This process is compliant, because the NHH reading was correctly made effective at the end of the day.

### Audit outcome

Compliant

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

### Code reference

*Clause 7(1) and (2) Schedule 15.2*

### Code related audit information

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

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

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

#### **Audit observation**

The process to manage missed reads was reviewed. Reporting on ICPs not read during the period of supply was examined.

#### **Audit commentary**

A validated meter reading must be obtained in respect of every meter register for every NHH metered ICP for which the participant is responsible, at least once during the period of supply to the ICP by the reconciliation participant, unless exceptional circumstances prevent this from occurring. This may be a validated meter reading at the time the ICP is switched to, or from, the reconciliation participant.

The NHH meter reading frequency guidelines published by the Electricity Authority define “exceptional circumstances” as meaning “circumstances in which access to the relevant meter is not achieved despite the reconciliation participant’s best endeavours”. “Best endeavours” is defined as:

“Where a reconciliation participant failed to interrogate an ICP as a result of access issues, the reconciliation participant had made a minimum of three attempts to contact the customer, by using at least two methods of communication”.

46,593 (94.2%) of Switch Utilities’ 49,460 “active” NHH settled ICPs have AMI or HHR metering installed. Most meters receive regular readings and read attainment levels are high.

The process for missed reads was examined.

- Unread AMI ICPs are automatically moved to a Wells meter reading route after 40 days without an actual reading. If AMI readings are received while the ICP is on a Wells route, they will continue to be imported and stored.
- If a manual ICP is unable to be read, the meter reader will leave a card. The exception to this where the meter reader is unable to locate the property.
- A no reads report is worked on daily, by a dedicated full time staff member. Wells no read reasons are recorded on the report along with any findings and a follow-up date. Generally, Switch Utilities will contact the customer to try to resolve the issues preventing readings and arrange for Wells to complete a special read. Persistent issues are escalated to the tier two customer team or complaints team for resolution.
- A report of unread ICPs is generated after business day 13 each month. The Billing Analyst also monitors compliance with the meter read attainment requirements and raises tickets via Zendesk for the provisioning team for any ICPs which are close to breaching the 12-month threshold and require urgent action.
- The “Loss switches with no actual reads” exception report in the Energy Database is now in place. This report enables staff to attempt to obtain an actual reading before the switch. If an actual reading is not received until after the switch is complete, the reading is compared to the switch event reading once it is received to determine whether an RR is required.

Switch Utilities provided a report of 16 ICPs not read within the period of supply, where the period of supply ended between 1 August 2022 and 31 December 2022. 13 of the ICPs were supplied for less than 30 days and two were supplied for less than 100 days. I checked the ten ICPs with the longest periods of supply including all supplied for five or more days and found best endeavours were not met due to:

- nine ICPs did not meet the best endeavours requirements, reads were attempted, and cards were left but no other attempts to contact the customer or resolve the issues as the period of supply was too short as the ICPs were supplied for 40 days or less, and
- ICP 0000402494TECBB was supplied for 185 days but due to a backlog of work in this area, no attempts beyond the meter reading leaving cards were made.

## Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 6.8 With: Clause 7(1) and (2) of Schedule 15.2</p> <p>From: 01-Aug-22 To: 11-Jan-23</p>	<p>The best endeavours requirements were not met for ten ICPs unread during the period of supply of a possible 16 ICPs. Nine of these were supplied for 40 days or less.</p> <p>Potential impact: Low Actual impact: Low Audit history: Multiple times</p> <p>Controls: Strong Breach risk rating: 1</p>		
Audit risk rating	Rationale for audit risk rating		
<p><b>Low</b></p>	<p>The controls are recorded as strong, as the controls are robust with a dedicated staff member working to resolve read attainment issues every day.</p> <p>The impact is assessed to be low because only 16 ICPs were affected and nine of those had a short period of supply.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>We have controls in place to attempt to identify sites in the progress of switching without reading. 9 out of 10 exceptions related to very short periods of supply.</p> <p>We have noted the feedback from the auditor in relation to the one other exception. Overall, we have put significant effort into read attainment overall reflected by our compliance on read attainment generally; and increase reading attainment generally.</p> <p>We will continue to work through to further improve this, for legacy metered sites. However, there are limited options for sites held for less than one month.</p>		<p>N/A</p>	<p>Identified</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>As above</p>		<p>N/A</p>	



## 6.9. NHH meters interrogated annually (Clause 8(1) and (2) Schedule 15.2)

### Code reference

Clause 8(1) and (2) Schedule 15.2

### Code related audit information

*At least once every 12 months, each reconciliation participant must obtain a validated meter reading for every meter register for non-half hour metered ICPs, at which the reconciliation participant trades continuously for each 12-month period.*

*If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 8(1).*

### Audit observation

The meter reading process was examined. Monthly reports for June 2022 to November 2022 were provided and reviewed to determine whether they met the requirements of clauses 8 and 9 of schedule 15.2. All ICPs unread in the 12 months ending November 2022 were reviewed to determine whether exceptional circumstances existed.

### 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
Jun 2022	201	11	15	99.97%
Jul 2022	203	12	14	99.97%
Aug 2022	203	11	14	99.97%
Sep 2022	203	10	11	99.98%
Oct 2022	205	12	13	99.97%
Nov 2022	206	12	12	99.98%

As discussed in **section 6.8**, there are processes in place to monitor read attainment, and attempt to resolve issues preventing read attainment.

I checked all 12 ICPs unread in the 12 months ending November 2022 and found that in all cases the best endeavours requirements were met, or the ICP was vacant and there was no customer for Switch Utilities to contact.

I reviewed meter reading reports for June 2022 to November 2022 and confirmed that they met the meter reading frequency report requirements and were submitted on time.

### Audit outcome

Compliant

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

### Code reference

Clause 9(1) and (2) Schedule 15.2

### Code related audit information

*In relation to each NSP, each reconciliation participant must ensure that for each NHH ICP at which the reconciliation participant trades continuously for each 4 months, for which consumption information is required to be reported into the reconciliation process. A validated meter reading is obtained at least once every four months for 90% of the non-half hour metered ICPs.*

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

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

### Audit observation

The meter reading process was examined. Monthly reports for June 2022 to November 2022 were reviewed.

All unread ICPs on NSPs where less than 90% read attainment was achieved in the previous four months on the November 2022 report were reviewed to determine whether exceptional circumstances existed.

### Audit commentary

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	Total ICPs unread for 4 months	Overall percentage read
Jun 2022	201	3	159	99.65%
Jul 2022	203	3	125	99.73%
Aug 2022	203	3	175	99.62%
Sep 2022	203	1	185	99.61%
Oct 2022	205	1	214	99.55%
Nov 2022	206	2	242	99.50%

As discussed in **section 6.8**, there are processes in place to monitor read attainment, and attempt to resolve issues preventing read attainment.

All unread ICPs on the NSPs where less than 90% read attainment was achieved in the previous four months on the November 2022 report were reviewed and I found that the best endeavours requirements were met, or the ICP was vacant and there was no customer for Switch Utilities to contact.

### Audit outcome

Compliant

## 6.11. NHH meter interrogation log (Clause 10 Schedule 15.2)

### Code reference

Clause 10 Schedule 15.2

### Code related audit information

*The following information must be logged as the result of each interrogation of the NHH metering:*

*10(a) - the means to establish the identity of the individual meter reader,*

*10(b) - the ICP identifier of the ICP, and the meter and register identification,*

*10(c) - the method being used for the interrogation and the device ID of equipment being used for interrogation of the meter,*

*10(d) - the date and time of the meter interrogation.*

### Audit observation

NHH data is collected by MEPs and Wells. The data interrogation log requirements were reviewed as part of their agent and MEP audits.

### Audit commentary

Compliance with this clause has been demonstrated by Switch Utilities' agents and MEPs as part of their own audits.

### 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

All HHR data is collected by AMS and EDMI. The data collection requirements were reviewed as part of their agent audits.

### Audit commentary

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent 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**

All HHR data is collected by AMS and EDMI. The interrogation data requirements were reviewed as part of their agent audits.

#### **Audit commentary**

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits.

#### **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**

All HHR data is collected by AMS and EDMI. The interrogation log requirements were reviewed as part of their agent audits.

#### **Audit commentary**

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits.

#### **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  $\pm 0.1\%$  ( $\pm 2$  seconds).*

#### Audit observation

All HHR data is collected by AMS and EDMI. Trading period duration was reviewed as part of their agent audits.

#### Audit commentary

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits.

#### Audit outcome

Compliant

### 7.2. Archiving and storage of raw meter data (Clause 18 Schedule 15.2)

#### Code reference

Clause 18 Schedule 15.2

#### Code related audit information

*A reconciliation participant who is responsible for interrogating a metering installation must archive all raw meter data and any changes to the raw meter data for at least 48 months, in accordance with clause 8(6) of Schedule 10.6.*

*Procedures must be in place to ensure that raw meter data cannot be accessed by unauthorised personnel.*

*Meter readings cannot be modified without an audit trail being created.*

#### Audit observation

Processes to archive and store raw meter data were reviewed, and a sample of raw meter data was viewed, to confirm it is retained. Audit trails were reviewed in **section 2.4**.

#### Audit commentary

##### HHR

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits.

##### NHH

Compliance with this clause has been demonstrated by Wells as part of their agent audit.

Raw reading data is retained indefinitely, and raw data from 2017 was viewed during the audit. Review of audit trails in **section 2.4** confirmed that reads cannot be modified without an audit trail being created. Access to modify readings is restricted through log on privileges.

#### 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**

Switch Utilities does not deal with any non-metering information.

#### **Audit commentary**

Switch Utilities does not deal with any non-metering information.

#### **Audit outcome**

Compliant

## 8. CREATING AND MANAGING (INCLUDING VALIDATING, ESTIMATING, STORING, CORRECTING AND ARCHIVING) VOLUME INFORMATION

### 8.1. Correction of NHH meter readings (Clause 19(1) Schedule 15.2)

#### Code reference

Clause 19(1) Schedule 15.2

#### Code related audit information

If a reconciliation participant detects errors while validating non-half hour meter readings, the reconciliation participant must:

*19(1)(a) - confirm the original meter reading by carrying out another meter reading,*

*19(1)(b) – replace the original meter reading the second meter reading (even if the second meter reading is at a different date)*

*19(1A) if a reconciliation participant detects errors while validating non half hour meter readings, but the reconciliation participant cannot confirm the original meter reading or replace it with a meter reading from another interrogation, the reconciliation participant must:*

- *substitute the original meter reading with an estimated reading that is marked as an estimate;*
- and*
- *subsequently replace the estimated reading in accordance with clause 4(2)*

#### Audit observation

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

#### Audit commentary

NHH read errors are identified through read validation processes described in **section 9.5**. Where a reading fails validation because it is negative, there is a material change compared to previous read-to-read or average consumption, or an expired meter channel does not have final reading recorded an exception will be generated on the ValidationErrors tab. Users review the validation errors including checking the reading and reconciliation history for the ICP down to channel level. Depending on the outcome of the investigation the user will either:

- create an override to mark the reading as “excluded” which will prevent the reading from being used for historic estimate calculation for any month then the user may then enter a new actual reading for the read date (for instance where the meter readings were confirmed to be transposed, or it is confirmed a read from field services paperwork was mis-keyed) or a new permanent estimate reading using the read management interface; if no actual or permanent estimate reading is entered, historic estimate consumption will be calculated using the surrounding validated readings, or if surrounding readings are unavailable forward estimate will be calculated,
- “force validate” the reading so it will be used for historic estimate calculation and will not appear as a failed validation again,
- override the value and/or read type where a reading is to be applied for reconciliation but not for billing then the read management interface imports readings to the ChargedReadingsNHH table which is also used for billing; if a historic error must be corrected for settlement but not billed to the customer, the override process will allow a corrected reading to be entered for reconciliation use only (this process is expected to be used rarely, and Switch Utilities will enter



readings and apply credits to the customer's account as a preference. All overrides can be accessed and viewed), or

- remove a previous override if it has caused the failed validation and should be removed.

Following this, the error will automatically be marked as acknowledged or resolved in the ValidationErrors tab and any action taken will be recorded in the audit log. If the error is marked as resolved, it will not appear again. If it is acknowledged a new validation error will be generated for subsequent submissions relying on the read.

If no action is taken for a validation error, the unvalidated reading will be excluded from the historic estimate calculation and historic or forward estimate will be calculated based on validated readings available.

If a transposed meter is identified, a correction is processed to move the readings to the correct meter register. Two recent examples of transposed meters were reviewed and were corrected compliantly.

#### Audit outcome

Compliant

## 8.2. Correction of HHR metering information (Clause 19(2) Schedule 15.2)

#### Code reference

*Clause 19(2) Schedule 15.2*

#### Code related audit information

*If a reconciliation participant detects errors while validating half hour meter readings, the reconciliation participant must correct the meter readings as follows:*

*19(2)(a) - if the relevant metering installation has a check meter or data storage device, substitute the original meter reading with data from the check meter or data storage device; or*

*19(2)(b) - if the relevant metering installation does not have a check meter or data storage device, substitute the original meter reading with data from another period provided:*

- (i) The total of all substituted intervals matches the total consumption recorded on a meter, if available; and*
- (ii) The reconciliation participant considers the pattern of consumption to be materially similar to the period in error.*

#### Audit observation

Processes for the correction of HHR meter readings were reviewed.

#### Audit commentary

Processes for correction of HHR meter readings were reviewed. The correction process is compliant, and estimates are created according to the process described in **section 9.4**.

One correction was identified during the audit period, for ICP 0000015941HBCC1, which was changed from HHR to NHH, meaning that the HHR file for the day of the meter change was "padded" with zeros for the period from the time of the meter change until the end of the day, when the NHH meter reading was correctly applied.

#### Audit outcome

Compliant

### 8.3. Error and loss compensation arrangements (Clause 19(3) Schedule 15.2)

#### Code reference

Clause 19(3) Schedule 15.2

#### Code related audit information

*A reconciliation participant may use error compensation and loss compensation as part of the process of determining accurate data. Whichever methodology is used, the reconciliation participant must document the compensation process and comply with audit trail requirements set out in the Code.*

#### Audit observation

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

#### Audit commentary

Switch Utilities supplies seven ICPs with metering category 3 or above and is not responsible for any metering installations with loss compensation factors.

#### Audit outcome

Compliant

### 8.4. Correction of HHR and NHH raw meter data (Clause 19(4) and (5) Schedule 15.2)

#### Code reference

Clause 19(4) and (5) Schedule 15.2

#### Code related audit information

*In correcting a meter reading in accordance with clause 19, the raw meter data must not be overwritten. If the raw meter data and the meter readings are the same, an automatic secure backup of the affected data must be made and archived by the processing or data correction application.*

*If data is corrected or altered, a journal must be generated and archived with the raw meter data file.*

*The journal must contain the following:*

*19(5)(a)- the date of the correction or alteration,*

*19(5)(b)- the time of the correction or alteration,*

*19(5)(c)- the operator identifier for the person within the reconciliation participant who made the correction or alteration,*

*19(5)(d)- the half-hour metering data or the non-half hour metering data corrected or altered, and the total difference in volume of such corrected or altered data,*

*19(5)(e)- the technique used to arrive at the corrected data,*

*19(5)(f)- the reason for the correction or alteration.*

#### Audit observation

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

Raw meter data retention for MEPs and agents was reviewed as part of their own audits.

#### Audit commentary

Raw meter data is held by the MEPs and agents. Compliance was confirmed as part of their agent and MEP audits.

Switch Utilities only corrects working data and keeps an appropriate audit trail. Audit trails within the Energy Database are compliant. Where readings are overridden, it is mandatory to record text explaining the reason for the override.

**Audit outcome**

Compliant

## 9. ESTIMATING AND VALIDATING VOLUME INFORMATION

### 9.1. Identification of readings (Clause 3(3) Schedule 15.2)

#### Code reference

*Clause 3(3) Schedule 15.2*

#### Code related audit information

*All estimated readings and permanent estimates must be clearly identified as an estimate at source and in any exchange of metering data or volume information between participants.*

#### Audit observation

A sample of reads and volumes were traced from the source files to Switch Utilities' systems in **section 2.3**.

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

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

#### Audit commentary

All estimated readings are clearly identified as required by this clause, including HHR estimates, which are flagged with an "E" at trading period level. Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits.

Photo and customer readings are recorded as "CR" customer readings and are not used to calculate historic estimate.

I checked the classification of a sample of readings by tracing readings from the source files provided by agents and MEPs to systems, checking readings in a sample of CS and RR files, and checking readings applied during disconnection and reconnection processes. All readings were correctly identified.

All readings checked in other sections were correctly identified.

#### Audit outcome

Compliant

### 9.2. Derivation of volume information (Clause 3(4) Schedule 15.2)

#### Code reference

*Clause 3(4) Schedule 15.2*

#### Code related audit information

*Volume information must be directly derived, in accordance with Schedule 15.2, from:*

*3(4)(a) - validated meter readings*

*3(4)(b) - estimated readings*

*3(4)(c) - permanent estimates.*

#### Audit observation

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

#### Audit commentary

Review of submission data confirmed that it is based on readings as required by this clause.

## Audit outcome

Compliant

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

#### Code reference

*Clause 3(5) Schedule 15.2*

#### Code related audit information

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

#### Audit observation

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

#### Audit commentary

The MEP or agent retains raw, unrounded data. Compliance was demonstrated by Switch Utilities' MEPs and agents during their own audits.

To confirm that meter reading data is not rounded before the point of submission, I traced:

- readings for a diverse sample of 18 ICPs from the source files to the Energy Database, and
- volumes to DRS/MDMS and the HHR aggregates submissions for a diverse sample of three ICPs.

All of the readings checked were correctly recorded, classified, and not rounded until the point of submission.

## 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

Processes for the estimation of HHR meter readings were reviewed.

#### Audit commentary

Missing data is identified by DRS/MDMS. Missing trading period data is identified by running the HHR aggregates report. If any trading period data is missing the report will produce an extra line for the ICP with a NULL kWh value. The Billing Analyst views the data in the system to determine which trading periods are missing to follow up with the MEP or agent.

If actual data is not provided prior to the submission deadline, estimates are created using the best available information and uploaded into DRS/MDMS. Readings surrounding the missing trading periods are typically not available, and consumption is estimated based on a similar trading period (usually the same calendar day and trading period for the previous month). The process now takes into account public holidays, weekdays, and weekends. If prior month data is not available, estimates will be based on earlier data (with seasonal shaping applied at the Billing Analysts discretion) or an equivalent ICP.

If actual data for the estimated period is received at a later date, it is imported into the Energy Database and replaces the estimated data.

Estimates provided by Metrix are not used, and AMS and EDM I did not provide any estimated HHR data.

There were no examples of HHR estimates during the audit period.

### Audit outcome

Compliant

## 9.5. NHH metering information data validation (Clause 16 Schedule 15.2)

### Code reference

Clause 16 Schedule 15.2

### Code related audit information

*Each validity check of non-half hour meter readings and estimated readings must include the following:*

*16(2)(a) - confirmation that the meter reading or estimated reading relates to the correct ICP, meter, and register,*

*16(2)(b) - checks for invalid dates and times,*

*16(2)(c) - confirmation that the meter reading or estimated reading lies within an acceptable range compared with the expected pattern, previous pattern, or trend,*

*16(2)(d) - confirmation that there is no obvious corruption of the data, including unexpected 0 values.*

### Audit observation

I reviewed and observed the NHH data validation process, including checking a sample of data validations and validation parameters within the Energy Database.

### Audit commentary

NHH data is validated by several processes.

#### **Meter reader validation**

Compliance is recorded in Wells' audit report. 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**.

#### **Switch Utilities validation**

Reads received from MEPs and Wells are imported into the Energy Database's usage raw schema. Two days after the read date, the readings are extracted to the ChargedReadingsNHH table. If no reading is received for a day, the Energy Database will estimate a daily value for the ChargedReadingsNHH table.

Estimated readings in the ChargedReadingsNHH table are superseded by actual readings if they are received later.

The Energy Database read import validations include:

- confirmation that the meter reading relates to the correct ICP, meter and register,
- checks for invalid dates, times, and unexpected read file content,
- confirmation that the meter reading lies within an acceptable range compared to the expected pattern, previous pattern, or trend,
- confirmation that there is no obvious corruption of data, and
- review of AMI meter events and non-AMI meter condition issues that could affect accuracy.

The missing meter readings process identifies any ICPs that do not have a switch event reading as their first reading. Switch Utilities no longer completes new connections, and all initial readings for an ICP are expected to be switch in readings.

Permanent estimate and actual readings used to produce historic estimates are validated within the NHHReconciliation system during reconciliation batch creation, except where an override has been applied to the reading to either permanently validate it, or permanently invalidate it and exclude it from reconciliation submissions. If a reading fails one of the following validations a validation error is created and reported on the ValidationErrors tab, and the affected reading(s) will be omitted from the historic estimate calculations:

- read-to-read negative consumption exceeding -1 kWh, or a material change between the current read-to-read volume and volume for the previous read-to-read volume; where the difference is between a switch in read and subsequent read a Zendesk ticket is raised and the provisioning team reviews the readings to determine whether an RR is required,
- a material difference between the billing expected consumption per day, and reconciliation expected consumption per day, and
- an expired (removed) meter channel which does not have a final reading recorded.

A user will review the items on the ValidationErrors tab, and as part of this review they can view the reading and reconciliation history for the ICP down to channel level. Depending on the outcome of the investigation the user will either:

- create an override to mark the reading as “excluded” which will prevent the reading from being used for historic estimate calculation for any month then the user may then enter a new actual reading for the read date (for instance where the meter readings were confirmed to be transposed, or it is confirmed a read from field services paperwork was mis-keyed) or a new permanent estimate reading using the read management interface; if no actual or permanent estimate reading is entered, historic estimate consumption will be calculated using the surrounding validated readings, or if surrounding readings are unavailable forward estimate will be calculated,
- “force validate” the reading so it will be used for historic estimate calculation and will not appear as a failed validation again,
- override the value and/or read type where a reading is to be applied for reconciliation but not for billing then the read management interface imports readings to the ChargedReadingsNHH table which is also used for billing; if a historic error must be corrected for settlement but not billed to the customer, the override process will allow a corrected reading to be entered for reconciliation use only (this process is expected to be used rarely, and Switch Utilities will enter readings and apply credits to the customer’s account as a preference. All overrides can be accessed and viewed), or
- remove a previous override if it has caused the failed validation and should be removed.

Following this, the error will automatically be marked as acknowledged or resolved in the ValidationErrors tab and any action taken will be recorded in the audit log. If the error is resolved, it will not appear again. If it is acknowledged a new validation error will be generated for subsequent submissions relying on the read.

If no action is taken for a validation error, the unvalidated reading will be excluded from the historic estimate calculation and historic or forward estimate will be calculated based on validated readings available.

#### Stopped and faulty meters

ICPs with less than 3 kWh of consumption are extracted from the ICP level submission information and checked against a list of vacant ICPs to determine whether they are vacant, and zero consumption is expected. ICPs which are not vacant are checked, focussing on ICPs which have been “active” for the most ICP days in the reconciliation period.

#### Vacant and disconnected ICPs

Vacant ICPs are recorded in the Energy Database under the “vacant” brand, and the normal validation process applies. When an ICP becomes vacant, Switch Utilities tries to contact the occupant to arrange for them to sign up with Switch Utilities or switch to an alternative retailer.

A report of “inactive” ICPs with consumption is reviewed daily via the user interface. Consumption is investigated to determine whether it is genuine. This is now reviewed at a channel level and is prioritised by ICP meter register. If genuine the ICP will be moved to “active” status for the consumption period, and another disconnection will be arranged if necessary. Acknowledging the exception removes it from the exception list.

#### Controlled load greater than uncontrolled load

A report showing ICPs with controlled load greater than uncontrolled load is available and reviewed periodically by the provisioning team. ICPs are reviewed to determine whether the consumption is valid, including contacting the customer where necessary. Switch Utilities has found that many of the ICPs which appear on the report do not have consumption issues and is investigating updating the report to look at consumption over a longer period of time.

#### Pre submission checks

NHH submissions are validated by comparing them to the previous month for initial submissions and comparison to previous submissions for the same month for revisions, and the process is discussed in detail in **section 12.3**.

#### **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.*

*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 and AMI data validation processes, including meter event logs and validation checks.

#### **Audit commentary**

Electronic data used to determine volume information is provided by MEPs, and AMS and EDM I as agents. This function was examined as part of the MEP and agent audits and found to be compliant.

#### **HHR**

HHR data is imported into DRS/MDMS. As part of the process the data is mapped to the correct ICP meter and register number. If there is no match, the data is not imported into DRS/MDMS.

Missing data is identified by DRS/MDMS. Missing trading period data is identified by running the HHR aggregates report. If any trading period data is missing the report will produce an extra line for the ICP with a NULL kWh value. The Billing Analyst will view the data in the system to determine which trading periods are missing and follow up with the MEP or agent. If actual data is not provided prior to the submission deadline, estimates are created using the best available information as described in **section 9.4** and uploaded into DRS/MDMS.

The HHR aggregates files are checked at ICP-NSP-flow direction level against the previous month's submission for initial submission and the previous revisions for revision submissions. Highs, lows, zeros and large kWh and percentage differences are investigated. This check identifies unexpected patterns and periods with zero consumption.

AMS and EDM I provide information on HHR meter events, and none were identified during the audit period. Only seven ICPs with metering category three or higher are supplied.

#### **NHH**

Switch Utilities receives AMI data from meter readings from AMS (for AMS and Smartco), Arc, BOPE, FCLM, Intellihub (for Intellihub and Metrix), and WASN as MEPs, and all other meters are read manually. NHH data is validated as described in **section 9.5**.

AMI event information is provided by MEPs. Where action is required, the MEP usually emails the Switch Utilities' shared field services inbox. The emails are reviewed by the team member responsible for each brand and action is taken as requested.

From November 2022, Switch Utilities has asked all MEPs to provide meter event reports. These are then reviewed:

- Intellihub meter event report is the same data that was already being emailed,
- FLCM appears to be sending raw meter event data and have never emailed to advise of a faulty meter; they were recorded as the MEP for 1,049 ICPs (either “active” or disconnected but not pending decommissioning),
- AMS appear to be sending raw event data; Switch Utilities have requested further information so that the report can be analysed but no further information has been forthcoming, and
- WASN also appears to be sending raw meter event data.

Despite this Switch Utilities has created their own reporting that identifies any events that could affect the integrity of the metering data. This has identified some meters with reverse rotation occurring and these have been sent for investigation and identified some distributed generation that was unknown to either the network and Switch Utilities, but all other events have proven to be false positives or have already been notified to via an email from the MEP.

#### **Audit outcome**

Compliant

## 10. PROVISION OF METERING INFORMATION TO THE GRID OWNER IN ACCORDANCE WITH SUBPART 4 OF PART 13 (CLAUSE 15.38(1)(F))

### 10.1. Generators to provide HHR metering information (Clause 13.136)

#### Code reference

Clause 13.136

#### Code related audit information

*The generator (and/or embedded generator) must provide to the grid owner connected to the local network in which the embedded generator is located, half hour metering information in accordance with clause 13.138 in relation to generating plant that is subject to a dispatch instruction:*

- *that injects electricity directly into a local network; or*
- *if the meter configuration is such that the electricity flows into a local network without first passing through a grid injection point or grid exit point metering installation.*

#### Audit observation

The NSP table on the registry was reviewed.

#### Audit commentary

Switch Utilities 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 relevant grid owner half-hour metering information for:*

- *any unoffered generation from a generating station with a point of connection to the grid 13.137(1)(a)*
- *any electricity supplied from an intermittent generating station with a point of connection to the grid. 13.137(1)(b).*

*The generator must provide the relevant grid owner with the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of that generator's volume information (clause 13.137(2)).*

*If such half-hour metering information is not available, the generator must provide the pricing manager and the relevant grid owner a reasonable estimate of such data (clause 13.137(3)).*

#### Audit observation

The NSP table on the registry was reviewed.

#### Audit commentary

Switch Utilities 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**

Switch Utilities 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 a grid owner under clauses 13.136 to 13.138, or 13.138A, it must also, by 0500 hours of that day, advise the relevant grid owner.*

#### **Audit observation**

The NSP table on the registry was reviewed.

#### **Audit commentary**

Switch Utilities 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

The registry list was reviewed. I checked whether any breach allegations had been made in relation to buying and selling notifications.

#### Audit commentary

No trading notifications were required during the audit period. Switch Utilities has only used the HHR, PV1, and RPS profiles, and trading notifications are not required.

#### Audit outcome

Compliant

### 11.2. Calculation of ICP days (Clause 15.6)

#### Code reference

Clause 15.6

#### Code related audit information

*Each retailer and direct purchaser (excluding direct consumers) must deliver a report to the reconciliation manager detailing the number of ICP days for each NSP for each submission file of submission information in respect of:*

*15.6(1)(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*

*15.6(1)(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

*The ICP days information must be calculated using the data contained in the retailer or direct purchaser's reconciliation system when it aggregates volume information for ICPs into submission information.*

#### Audit observation

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 the GR100 reports.

Alleged breaches were reviewed to determine whether any submissions were made late.

**Audit commentary**

NHH and HHR ICP days are included in the same report.

HHR ICP days are calculated in DRS/MDMS. The status and ICP information on the registry list imported into DRS/MDMS are used to determine the correct aggregation factors and the active ICP days which volume and ICP days submissions are to be provided for.

NHH ICP days are calculated in the NHHReconciliation system based on the active registry ICP days at the NSP for each ICP, consistent with the NHH volumes submission data.

Zero lines must be inserted where an aggregation factor combination appeared in a previous submission for the reconciliation period but not the current revision. If a zero line is not inserted, the previous value reported for the aggregation factor combination remains in the reconciliation manager’s database. The most recent submission information for each reconciliation period from DART is loaded into the NHHReconciliation system. For the first 14 months of submissions, Switch Utilities will compare the current submission information to the DART pre-submission checks for the same period to identify rows which require zeroing. After 14 months full history will be recorded in the NHHReconciliation system.

I checked unresolved ICP days submission issues identified during the previous audit:

<p>ICPs supplied for one day omitted from submission</p>	<p>When Switch Utilities used DART for reconciliation, if ICPs were supplied for only one day, forward estimate was calculated but the process did not count the first day of supply. This resulted in one day of consumption and one ICP day being omitted from submissions. If supply continued, the issue will be resolved once an actual reading is received, and historic estimate is calculated.</p> <p>I reviewed a sample of six ICPs supplied for one business day during October 2022, and confirmed that the ICP days submitted on the AV110 were consistent with the registry list with history for the affected NSPs in the October 2022 revision 1 submission.</p> <p>I re-checked all of the previous audit exceptions where ICPs were supplied for one day, where revision 14 had not passed by the time the previous audit was completed and found ICP days were correctly reported by revision 3.</p>
<p>ICPs with only an opening reading omitted from submission</p>	<p>When Switch Utilities used DART for reconciliation, if ICPs only had an opening reading recorded, forward estimate was calculated but the process does not count the first day of supply. This resulted in one day of consumption and one ICP day being omitted from submissions. If supply continued, the issue will be resolved once an actual reading is received, and historic estimate is calculated.</p> <p>I re-checked all of the previous audit exceptions where ICPs had only an opening reading, and revision 14 had not passed by the time the previous audit was completed. I found that ICP days were correctly reported by revision 3.</p>
<p>Pre-pay ICP omitted from submission</p>	<p>No pre-pay ICPs are currently supplied, but I confirmed during the material change audit that pre-pay ICPs will be included in submission data if present in future.</p> <p>Pre-pay ICP 1001147153CK638 was excluded from ICP days and NHH volumes submissions causing under submission of 168 kWh and 356 ICP days (29 February 2020 to 19 February 2021). This is now outside the revision period.</p>

The process for the calculation of ICP days was examined by checking all 13 NSPs with HHR ICPs and 50 NSPs with a small number of NHH ICPs on the November 2022 revision one submission. I confirmed that the correct number of ICP days were reported for each NSP checked.

The following table shows the ICP days difference between Switch Utilities’ database and the RM return file (GR100) for 16 months. The differences were small and decreased to zero for later revisions.

Month	Ri	R1	R3	R7	R14
Jul 2021	0.01%	0.00%	0.00%	0.00%	0.00%
Aug 2021	-0.01%	-0.01%	0.00%	0.01%	0.00%
Sep 2021	0.01%	0.01%	0.00%	0.00%	0.00%
Dec 2021	0.02%	0.01%	0.00%	0.00%	-
Jan 2022	0.03%	-0.03%	0.00%	0.00%	-
Feb 2022	0.00%	0.01%	0.00%	0.00%	-
Mar 2022	0.00%	0.02%	0.01%	0.00%	-
Apr 2022	0.00%	0.00%	0.00%	0.00%	-
May 2022	0.04%	0.02%	0.00%	0.00%	-
Jun 2022	0.00%	0.01%	0.00%	-	-
Jul 2022	-0.02%	0.00%	0.01%	-	-
Aug 2022	-0.01%	0.00%	0.00%	-	-
Sep 2022	0.01%	0.01%	0.00%	-	-
Oct 2022	0.01%	0.00%	-	-	-
Nov 2022	0.00%	0.00%	-	-	-
Dec 2022	0.01%	-	-	-	-

There were no HHR ICP days differences. I reviewed all four NHH ICP days differences which remained for revision 7 and five differences that remained at r3 and found they were caused by:

- backdated switching, or
- backdated status updates.

Breach information provided by the Electricity Authority did not identify any late ICP days submissions.

#### Audit outcome

Compliant

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

#### Code reference

Clause 15.7

#### Code related audit information

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

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

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

#### Audit observation

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

GR130 reports for November 2019 to October 2022 were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

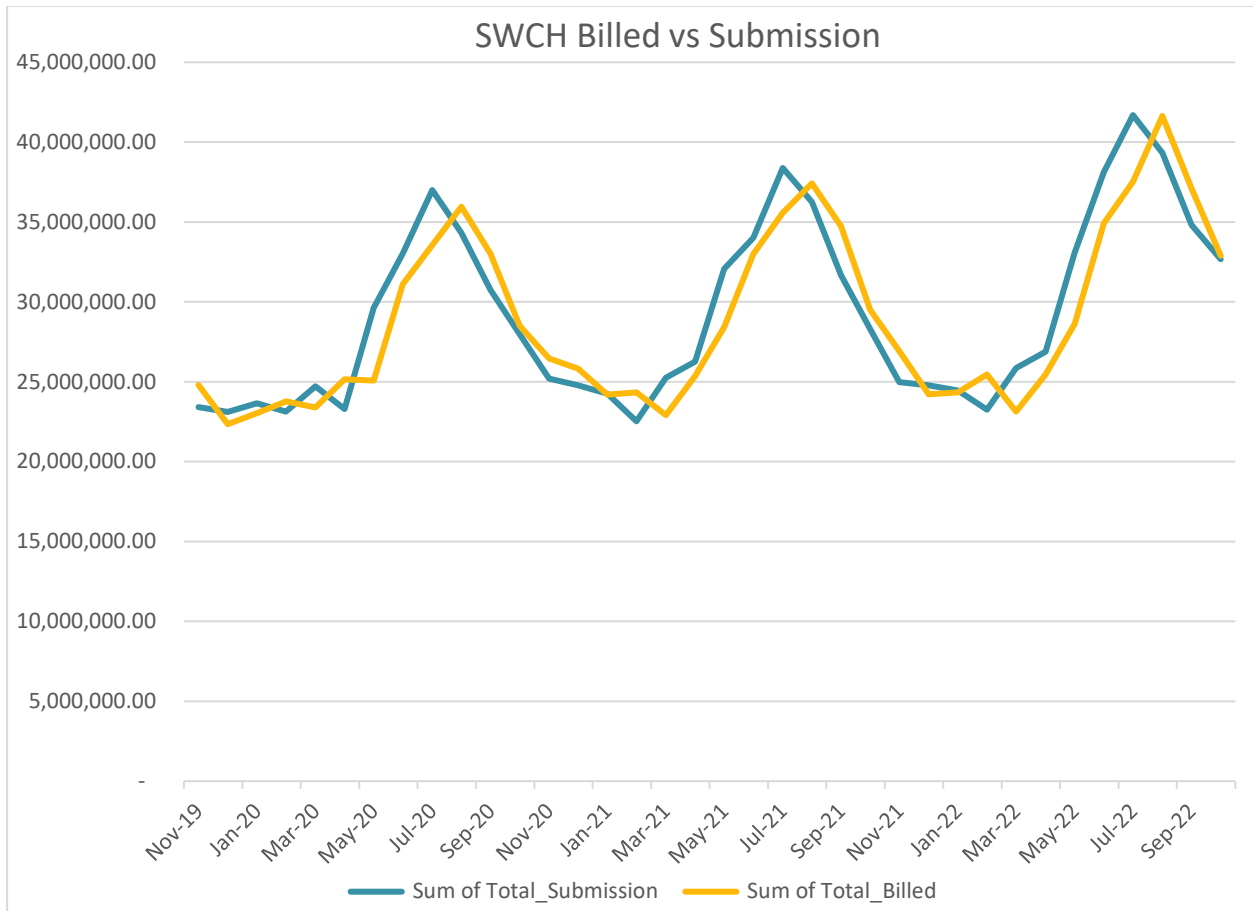
#### Audit commentary

Volume calculations occur within the Energy Database and the data is transferred to Accredo to bill complex customers, HHR billing, and embedded networks, and BillPlus (Vocal) to bill other customers. The completed invoice data is transferred back to the Energy Database which produces the AV120 submissions based on the volumes physically invoiced during the calendar month.

The process for the calculation of “as billed” volumes was examined by checking five NSPs with a small number of ICPs against Switch Utilities’ invoice information for January 2023 and was confirmed to be accurate.

I also checked the difference between submission and electricity supplied information for November 2019 to October 2022 and the results are shown in the chart below. The chart shows a reasonably close relationship between submitted and billed quantities. Billed data was 2.1% lower than submitted data for the year ended October 2022, and 1.2% lower than submitted data for the two years ended October 2022. The differences are caused by the same issues that were recorded during the previous audit, which were timing, because the billing generally occurs the month after consumption and because vacant consumption is not billed to customers. There has been an increase in the number of vacant connected ICPs during the audit period because vacant disconnections are on hold while Switch Utilities reviews its disconnection processes to ensure compliance with its customer care obligations.





**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**

Using relevant volume information, each retailer or direct purchaser (excluding direct consumers) must deliver to the reconciliation manager its total monthly quantity of electricity consumed 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 that the process for the calculation and aggregation of HHR data is correct, by matching HHR aggregates information with the HHR volumes data for nine submissions and tracing a sample of ICPs from the raw data provided by the MEP or agent to submission.

The GR090 ICP Missing files were examined for August 2021 to December 2022. All 33 ICPs missing were checked.

#### Audit commentary

DRS/MDMS produces HHR submissions. I confirmed the process for aggregation of HHR data is correct by:

- matching HHR aggregates information to the volumes for nine submissions; the volumes and aggregates data matched within two decimal places, and
- tracing data for three category 3 ICPs from the source files to DRS/MDMS and submission information, and confirmed it matched.

Switch Utilities does not routinely review the GR090 ICP missing reports and relies on their other validation checks to ensure that the correct ICPs are included, and correct aggregation factors applied.

The GR090 ICP Missing files were examined for August 2021 to December 2022. All 13 ICPs missing were checked and found to be caused by backdated switches, withdrawals, and updates to “decommissioned” status. Late switching files and updates to the registry are discussed in **sections 3 and 4**.

#### Audit outcome

Compliant

## 12. SUBMISSION COMPUTATION

### 12.1. Daylight saving adjustment (Clause 15.36)

#### Code reference

Clause 15.36

#### Code related audit information

*The reconciliation participant must provide submission information to the reconciliation manager that is adjusted for NZDT using 1 of the techniques set out in clause 15.36(3) specified by the Authority.*

#### Audit observation

All HHR data is collected by AMS and EDMI, and daylight savings adjustments were reviewed as part of their agent audit.

#### Audit commentary

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits. Review of submission information for the change to and from daylight savings time confirmed that the correct number of trading periods was recorded.

No clock synchronisation events outside allowable thresholds occurred during the audit period.

#### 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

Switch Utilities prepares NHH submissions using the NHHReconciliation system and HHR submissions using DRS/MDMS. Processes to ensure that submissions are accurate were reviewed.

Alleged breaches during the audit period were reviewed to determine whether any reconciliation submissions were late.

#### Audit commentary

##### Timeliness of submission information

No alleged breaches were recorded for late provision of submission information.

## NHH submission creation

The NHHReconciliation system produces NHH volumes and ICP days submissions using:

- ICP aggregation factor information from a registry list,
- automatically imported seasonal adjusted shape values from the reconciliation manager portal, and
- readings from the ChargedReadingsNHH table (which contains all readings received and used for billing, and the validated actual and permanent estimate readings from this table will be used to calculate reconciliation consumption); the validated readings used to produce each reconciliation submission batch will be copied to the ReadingsNHH table and will be permanently retained, along with the ICPUsage, and once submissions are generated and finalised, they cannot ever be deleted.

I checked unresolved ICP days submission issues identified during the previous audit:

ICPs supplied for one day omitted from submission	<p>When Switch Utilities used DART for reconciliation, if ICPs were supplied for only one day, forward estimate is calculated but the process does not count the first day of supply. This resulted in one day of consumption and one ICP day being omitted from submissions. If supply continued, the issue will be resolved once an actual reading is received, and historic estimate is calculated.</p> <p>I reviewed a sample of six ICPs supplied for one business day during October 2022, and confirmed that the volumes submitted on the AV080 were consistent with the expected volumes.</p>
ICPs with only an opening reading omitted from submission	<p>When Switch Utilities used DART for reconciliation, if ICPs only had an opening reading recorded, forward estimate was calculated but the process does not count the first day of supply. This resulted in one day of consumption and one ICP day being omitted from submissions. If supply continued, the issue will be resolved once an actual reading is received, and historic estimate is calculated.</p> <p>I re-checked all of the previous audit exceptions where ICPs had only an opening reading, and revision 14 had not passed by the time the previous audit was completed. Reconciliation information was confirmed as accurate.</p>
Pre-pay ICP omitted from submission	<p>No pre-pay ICPs are currently supplied, but I confirmed during the material change audit that pre-pay ICPs will be included in submission data if present in future.</p> <p>Pre-pay ICP 1001147153CK638 was excluded from ICP days and NHH volumes submissions causing under submission of 168 kWh and 356 ICP days (29 February 2020 to 19 February 2021). This is now outside the revision period.</p>

A sample of NHH ICPs were checked to make sure they are handled correctly, including vacant, disconnected, unmetered, and distributed generation ICPs.

Vacant consumption	<p>Vacant ICPs are recorded in the Energy Database under the “vacant” brand, and the normal reading, validation, and submission process applies. Five ICPs with vacant consumption were checked, and consumption was correctly submitted.</p>
Inactive consumption	<p>The NHHReconciliation system excludes the shape values for any inactive days from both the numerator and divisor of the historic estimate calculation, forcing all consumption into the active days of the read-to-read period. If an entire read-to-read period is inactive, any inactive consumption between the reads will be omitted from submission, until the status is changed to “active”.</p> <p>Switch Utilities provided a list of 126 ICPs with 16,884 kWh of suspected inactive consumption recorded between August 2022 and January 2023. 29 of the ICPs had less</p>

	<p>than ten kWh of inactive consumption, and six had only one kWh of inactive consumption.</p> <p>I checked 20 ICPs with the most suspected inactive consumption (267 to 1,288 kWh) and found:</p> <ul style="list-style-type: none"> <li>• 11 ICPs had been corrected to “active” status for all days with volumes through Switch Utilities review process, and</li> <li>• nine ICPs did not have genuine consumption on inactive days and no correction was required.</li> </ul> <p>I checked ICP 0000041710TEB32 which was being investigated to determine whether its suspected inactive consumption was genuine at the time of the last audit. It has been resolved by moving the ICP to “active” status for the period with consumption.</p>
Unmetered consumption	<p>Unmetered load submissions are calculated based on the registry unmetered daily kWh and “active” ICP days.</p> <p>Submission information for six ICPs with unmetered volumes was reviewed including standard and shared unmetered load, and correct consumption was submitted.</p>
Distributed generation	<p>Submission information for five ICPs with distributed generation was reviewed, and correct consumption was submitted.</p>

#### HHR submission creation

Switch Utilities prepares reconciliation submissions using reconciliation consumption generated by DRS/MDMS. Accuracy of HHR submission information was confirmed in **section 11.4**. The submission validation process identifies missing data, which is estimated, and validates the submission against previous consumption at ICP level.

#### Audit outcome

Compliant

### 12.3. Allocation of submission information (Clause 15.5)

#### Code reference

Clause 15.5

#### Code related audit information

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

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

#### Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**. The process to ensure that AV080 submissions are accurate was discussed, and reports used in the process were viewed.

The GR170 to AV080 files for nine revision submissions were compared, to confirm zeroing occurs.

## Audit commentary

Submission aggregation is based on the registry list aggregation factors. These are validated against the registry data according to Switch Utilities' existing validation processes.

Zero lines must be inserted where an aggregation factor combination appeared in a previous submission for the reconciliation period but not the current revision. If a zero line is not inserted, the previous value reported for the aggregation factor combination remains in the reconciliation manager's database. The most recent submission information for each reconciliation period from DART is loaded into the NHHReconciliation system. For the first 14 months of submissions, Switch Utilities will compare the current submission information to the DART pre-submission checks for the same period to identify rows which require zeroing. After 14 months full history will be recorded in the NHHReconciliation system.

Submissions are validated by comparing them to the previous month for initial submissions and comparison to previous submissions for the same month for revisions. The comparison is graphed and shown as a table and can be sorted or filtered for efficient analysis. Users can view the comparison at total level and NSP level within the NHHReconciliation system. Further validation is completed as needed by exporting the submission information to Excel for comparison to Excel files for earlier revisions not created in the NHHReconciliation system.

For submissions produced in the NHHReconciliation system data is viewed and compared at total submission level, and the user can drill down to NSP, ICP, and meter channel level which shows the inputs into the reconciliation calculations including reading history. From the meter channel level validation, the user can exclude, force validate or replace readings with permanent estimates if required.

The view shape screen provides a read-only view of seasonal adjusted profile shapes, including a graphical representation which allows users to determine whether submission differences may be related to fluctuations in seasonal adjusted shape values. The shape values cannot be modified by users within the system, shapes are loaded automatically but a one-off import can be completed by the IT team if necessary.

I checked the aggregation of the AV080 report for January 2023 revision 1 by comparing detailed ICP level submission information against the AV080 submission for five NSPs and confirmed compliance.

Switch Utilities has a process for zeroing for both NHH and HHR submissions. GR170 and AV080 files for eight revision submissions were compared, and found to contain the same NSPs, confirming that zeroing is occurring as required.

Submissions are validated prior to being provided to the reconciliation manager. The validation process includes:

- review of any ICPs with high, zero, or low consumption,
- review of variances between revisions, and variances to previous months for initial submissions at NSP and ICP level,
- material changes to consumption over  $\pm 800$  kWh and  $\pm 50\%$  compared to the last read period are identified by the Billing Analyst using queries as part of the reconciliation submission checks and a list of cases for investigation is provided to the billing team for review, and
- checking the file using the reconciliation manager portal's file checker.

Other consumption validation checks are discussed in **sections 9.5 and 9.6**.

## Audit outcome

Compliant

## 12.4. Grid owner volumes information (Clause 15.9)

### Code reference

Clause 15.9

### Code related audit information

*The participant (if a grid owner) must deliver to the reconciliation manager for each point of connection for all of its GXPs, the following:*

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.9(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period (clause 15.9(b)).*

### Audit observation

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

### Audit commentary

Switch Utilities is not a grid owner.

### Audit outcome

Not applicable

## 12.5. Provision of NSP submission information (Clause 15.10)

### Code reference

Clause 15.10

### Code related audit information

*The participant (if a local or embedded network owner) must provide to the reconciliation manager for each NSP for which the participant has given a notification under clause 25(1) Schedule 11.1 (which relates to the creation, decommissioning, and transfer of NSPs) the following:*

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.10(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period (clause 15.10(b)).*

### Audit observation

The registry list and NSP table were reviewed.

### Audit commentary

Switch Utilities does not own any local or embedded networks and 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

Switch Utilities is not a grid connected generator.

### 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

Alleged breaches during the audit period were reviewed to determine whether any reconciliation submissions were late. Corrections were reviewed in **sections 2.1, 8.1 and 8.2**.

### Audit commentary

#### **Timeliness of submission information**

No alleged breaches were recorded for the late provision of submission information.

#### **NHH submission accuracy**

##### Bridged meters

Consumption during bridged, stopped, or faulty periods is calculated using the electricity app, where a “daily estimate” value is present, initially based on the average daily consumption from the CS file (replaced with a minimum of 8 kWh if the figure is less than 8 kWh). The average daily kWh figure is automatically updated whenever readings are obtained. Prior to the audit, there wasn’t a validation check to ensure the average daily consumption figure was appropriate. An interim process has been established, where the average daily consumption from the new meter will be checked and a ticket will



be raised if the average daily kWh figure needs to be updated. A more permanent solution will be developed and implemented.

At least four ICPs had consumption underestimated during the bridged period. Switch Utilities intends to check all 15 examples identified during the audit and will revise as necessary to ensure the corrections are as accurate as practicable.

I checked unresolved submission issues identified during the previous audit.

<p>Missing boundary reads for disconnections and/or reconnections</p>	<p>The new NHHReconciliation system excludes the shape values for any inactive days from both the numerator and divisor of the historic estimate calculation, forcing all consumption into the active days of the read-to-read period. This will ensure that inactive consumption is reported if part of a read-to-read period is inactive. If there is an entirely inactive read-to-read period, any consumption that falls within it will be excluded from submission but is expected to be identified and corrected through the inactive consumption monitoring processes.</p> <p>A revised process to enter boundary readings is in place.</p> <p>I re-checked the nine missing boundary readings identified during the previous audit and they all now have readings entered.</p>
<p>ICPs supplied for one day omitted from submission</p>	<p>When Switch Utilities used DART for reconciliation, if ICPs were supplied for only one day, forward estimate is calculated but the process does not count the first day of supply. This resulted in one day of consumption and one ICP day being omitted from submissions. If supply continued, the issue will be resolved once an actual reading is received, and historic estimate is calculated.</p> <p>I reviewed a sample of six ICPs supplied for one business day during October 2022, and confirmed that the volumes submitted on the AV080 were consistent with the expected volumes.</p>
<p>ICPs with only an opening reading omitted from submission</p>	<p>When Switch Utilities used DART for reconciliation, if ICPs only had an opening reading recorded, forward estimate was calculated but the process does not count the first day of supply. This resulted in one day of consumption and one ICP day being omitted from submissions. If supply continued, the issue will be resolved once an actual reading is received, and historic estimate is calculated.</p> <p>I re-checked all of the previous audit exceptions where ICPs had only an opening reading, and revision 14 had not passed by the time the previous audit was completed. Submission information was found to be correct.</p>
<p>Pre-pay ICP omitted from submission</p>	<p>No pre-pay ICPs are currently supplied, but I confirmed during the material change audit that pre-pay ICPs will be included in submission data if present in future.</p> <p>Pre-pay ICP 1001147153CK638 was excluded from ICP days and NHH volumes submissions causing under submission of 168 kWh and 356 ICP days (29 February 2020 to 19 February 2021). This is now outside the revision period.</p>
<p>Incorrect shaping where consumption fluctuates</p>	<p>Where there was fluctuation between zero and large volumes in NHH reconciliation calculations, DART would sometimes invalidate the shapes and apply zeros instead resulting in over submission for some months and under submission for others.</p> <p>Switch Utilities has agreed with the Authority that the historic differences caused by this issue will be settled out of market and is currently preparing settlement calculations.</p> <p>The new NHHReconciliation system does not invalidate shape values.</p>
<p>Historic estimate calculation method</p>	<p>I reviewed historic estimate calculations in <b>section 12.11</b> and confirmed that the NHHReconciliation system calculation is in line with the Code.</p>

differs from the Code	
Previous audit issues to be resolved	The previous two audits identified some incorrect submission information including bridged meter corrections and incorrect compensation factors which had not been processed during the 14-month revision period. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.

Two recommendations made during the previous audit were adopted, as follows:

Recommendation	Description	Comment
Validate the readings for ICP 0010366420EL645	It appears that the contractor readings or meter removal readings for Meter 214282526 registers 1 and 2 may be transposed. Confirm the meter registers that the reads should be recorded against prior to updating the Energy Database.	Recommendation was adopted
Consistently enter boundary readings for disconnections and reconnections	Develop processes to ensure that boundary readings are consistently entered, and missing boundary readings are detected.	Recommendation was adopted

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.7 With: Clause 15.12  From: 01-Aug-22 To: 11-Jan-23	<p>The “best estimate of the quantity of electricity consumed” was not used to estimate consumption for the period meters were bridged for at least four ICPs.</p> <p>Some incorrect submission data identified in the previous audit is still to be resolved through out of market settlement.</p> <p>Potential impact: High</p> <p>Actual impact: High</p> <p>Audit history: Multiple times</p> <p>Controls: Strong</p> <p>Breach risk rating: 3</p>		
Audit risk rating	Rationale for audit risk rating		
High	<p>The controls are rated as strong at the time of the audit, because they have been strengthened during the audit period.</p> <p>The audit risk rating is high based on the kWh differences to be resolved. A plan is in place to resolve the issues, including processing out of market settlement for the largest differences.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
We have invested substantially in systems, processes and controls over the previous two years, including the complete		May 2024	Identified

<p>replacement of our previous settlement platform with a new platform in August.</p> <p>This investment is reflected in the significant overall improvement to our future risk rating score, and the overall resolution of the non-compliances from the previous reports relating to settlement.</p> <p>Since the new system has been implemented, we have been progressively washing up in the in-period variances caused by the legacy system and are confident this new system is now performing all functions as expected.</p> <p>With in-period amounts now appropriately settled, we will move to re-reconcile and settle historic matters to fully close out those issues within the next audit period; with an expectation these matters will be closed by the time of our next audit.</p> <p>We believe the significant improvement in the rating of our controls and overall risk rating reflects our commitment to compliance.</p>		
<b>Preventative actions taken to ensure no further issues will occur</b>	<b>Completion date</b>	
As above		

## 12.8. Permanence of meter readings for reconciliation (Clause 4 Schedule 15.2)

### Code reference

Clause 4 Schedule 15.2

### Code related audit information

*Only volume information created using validated meter readings, or if such values are unavailable, permanent estimates, has permanence within the reconciliation processes (unless subsequently found to be in error).*

*The relevant reconciliation participant must, at the earliest opportunity, and no later than the month 14 revision cycle, replace volume information created using estimated readings with volume information created using validated meter readings.*

*If, despite having used reasonable endeavours for at least 12 months, a reconciliation participant has been unable to obtain a validated meter reading, the reconciliation participant must replace volume information created using an estimated reading with volume information created using a permanent estimate in place of a validated meter reading.*

### Audit observation

NHH volumes 14-month revisions were reviewed for August to October 2021 to identify any forward estimate still existing.

### Audit commentary

Permanent Estimate (PE) readings are automatically created when revision 14 is generated for any sites which have forward estimate remaining.

Review of the 14-month revisions for August to October 2021 identified 1,240 kWh of forward estimate for October 2021. This was caused by an MEP sending incorrectly labelled data, where one of the channels was recorded as “EG” when it was actually load. A correction was processed, where the EG channel was removed, but the consumption was not loaded to a “load” channel, resulting in a forward default estimate being created. This ICP has now switched away.

**Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 12.8 With: Clause 4 Schedule 15.2  From: 01-Oct-21 To: 31-Oct-21	Estimates not made permanent at R14 for one ICP.  Potential impact: Low  Actual impact: Low  Audit history: None  Controls: Strong  Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	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
The error was caused by a once-off incidence where an analyst did not identify a specific anomalous metering issue, due to a gap with the methodology for validating HE attainment in the new system.  After the issue was identified, an additional control was added within the new system to identify such scenarios.		N/A	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
After the issue was identified, an additional control was added within the new system to identify such scenarios.		May 2023	

## 12.9. Reconciliation participants to prepare information (Clause 2 Schedule 15.3)

### Code reference

Clause 2 Schedule 15.3

### Code related audit information

If a reconciliation participant prepares submission information for each NSP for the relevant consumption periods in accordance with the Code, such submission information for each ICP must comprise the following:

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

### Audit observation

Aggregation and content of reconciliation submissions was reviewed.

### Audit commentary

Compliance with this clause was assessed:

- all ICPs with metering category 3 or above are submitted as HHR,
- unmetered load submissions were checked in **section 12.2** and found to be correct,
- no profiles requiring a certified control device are used,
- no loss or compensation arrangements are required, and
- aggregation of the AV080, AV090 and AV140 reports is compliant.

Accuracy is recorded in this section because the processes to produce the submission information are compliant. Instances where incorrect inputs into some of those processes resulted in inaccurate submission information are recorded as non-compliance in **section 12.7**.

### Audit outcome

Compliant

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

### Code reference

Clause 3 Schedule 15.3

### Code related audit information

*For each ICP that has a non-half hour metering installation, volume information derived from validated meter readings, estimated readings, or permanent estimates must be allocated to consumption periods using the techniques described in clauses 4 to 7 to create historical estimates and forward estimates.*

*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

I reviewed nine AV080 submissions for revisions 3 to 14, 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 nine AV080 submissions for a diverse sample of months and revisions and confirmed that forward and historic estimates are included and identified as such.

### 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 historical estimates of volume information for each ICP when the relevant seasonal adjustment shape is available, and the reconciliation participant is not using an approved profile in accordance with clause 4A.*

*If the Authority has approved a profile for the purpose of apportioning volume information (in kWh) to part or full consumption periods, a reconciliation participant may use the profile despite the relevant seasonal adjustment shape being available; and if it uses the profile, must otherwise prepare the historical estimate in accordance with the methodology in clause 4.*

*If a seasonal adjustment shape is not available, and the **reconciliation participant** is not using an approved **profile** under clause 4A, 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<sub>px</sub> 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<sub>px</sub>.*

### Audit observation

To assist with determining compliance of the Historical Estimate (HE) processes, Switch Utilities were supplied with a list of scenarios, and for some individual ICPs a manual HE calculation was conducted and compared to the result from the NHHReconciliation system.

**Audit commentary**

Historic estimates are calculated by the NHHReconciliation system using readings from the ChargedReadingsNHH table, registry status and aggregation factor information, and seasonal adjusted shape values from the reconciliation manager portal which are automatically loaded into the NHHReconciliation system.

The NHHReconciliation system calculates historic estimate for each “active” day individually, and then adds the daily values together to determine the total historic estimate for the reconciliation period. This is technically different from the method set out in clause 4 of schedule 15.3 of the Code which calculates historic estimate in read-to-read blocks. Because the read-to-read consumption is sourced from the ChargedReadingsNHH table and includes the compensation factor, the result is the same for both calculation methods.

The NHHReconciliation system uses:

$$HE = ((kWh_{Px} \times A_1 / B) + (kWh_{Px} \times A_2 / B) + \dots + (kWh_{Px} \times A_L / B))$$

Where:

- kWh<sub>Px</sub>** is read-to-read volume including the compensation factor,
- A<sub>1</sub>** is the seasonal adjusted shape values for the first active day in the reconciliation period,
- A<sub>2</sub>** is the seasonal adjusted shape values for the second active day in the reconciliation period,
- A<sub>L</sub>** is the seasonal adjusted shape values for the last active day in the reconciliation period,
- B** is the sum of seasonal adjusted shape values for the active days in the read-to-read period.

The Code uses:

$$HE = kWh_{Px} \times A / B$$

Where:

- kWh<sub>Px</sub>** is read-to-read volume including the compensation factor,
- A** is the sum of seasonal adjusted shape values for the days in the reconciliation period that fall within the read-to-read period,
- B** is the sum of seasonal adjusted shape values for the read-to-read period

The NHHReconciliation system excludes the shape values for any inactive days from both the numerator and divisor of the calculation, forcing all consumption into the active days of the read-to-read period. If there is an entirely inactive read-to-read period, any consumption that falls within it will be excluded from submission. There are existing validation processes which detect consumption during an inactive period, so that a status correction can be completed.

The table below shows that all HE scenarios are calculating as expected and correct SASV (seasonal adjusted shape values) 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.	Compliant
b	ICP becomes “inactive” part way through a month.	Consumption is only calculated for the “active” portion of the month.	Compliant

Test	Scenario	Test Expectation	Result
c	ICP become “inactive” then “active” again within a month.	Consumption is only calculated for the “active” portion of the month.	Compliant
d	ICP switches in part way through a month on an estimated switch reading	Consumption is calculated to include the 1st day of responsibility.	Compliant
e	ICP switches out part way through a month on an estimated switch reading	Consumption is calculated to include the last day of responsibility.	Compliant
f	ICP switches out then back in within a month	Consumption is calculated for each day of responsibility.	Compliant
g	Continuous ICP with a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
h	Continuous ICP without a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
i	Rollover Reads	Consumption is calculated correctly in the instance of meter rollovers.	Compliant
j	Unmetered load for a full month	Consumption is calculating based on daily unmetered kWh for full month.	Compliant
k	Unmetered load for a part month	Consumption is calculating based on daily unmetered kWh for “active” days of the month.	Compliant
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.	Compliant
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.	Compliant – customer readings are not treated as validated readings
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.	Compliant – customer photo readings are not treated as validated readings
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Compliant

### 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 variances over the audit period.

### Audit commentary

Forward estimate is calculated by the NHHReconciliation system for any meter channel which is “active” on a day where historic estimate cannot be calculated.

- If the meter channel has at least two actual reads, the NHHReconciliation system will calculate the average daily consumption for the last read-to-read period and apply that as the daily forward estimate.
- If the meter channel does not have at least two actual reads, but there is an average daily value populated in the Energy Database’s ICPMeteringChannelEstimate table this value will be applied as the daily forward estimate. The ICPMeteringChannelEstimate is initially populated with the incoming CS file’s average daily consumption which is spread across all the active channels using a weighting. Each month the ICPMeteringChannelEstimate is recalculated based on readings received and will remain the same if there are no readings. If a user finds that the ICPMeteringChannelEstimate is inaccurate they can override it using the update daily estimate screen. If the user sets this estimate to be permanent, the Energy Database will not automatically recalculate each month and the user will be prompted to re-check the estimate after three months if set to zero, or six months if set to any other value.

If the meter channel does not have at least two actual reads and there is no value in the ICPMeteringChannelEstimate table, a default estimate of 40 kWh per day will be applied for commercial ICPs and 20 kWh per day for residential ICPs.

The accuracy of the initial submission, in comparison to each subsequent revision is required to be within  $\pm 15\%$ . The target was met for most balancing areas and revisions reviewed.

**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	
Jan 2021	2	3	7	7	-	-	1	1	125
Feb 2021	3	3	7	7	-	-	-	-	125
Mar 2021	1	4	7	7	-	-	-	-	123
Apr 2021	8	8	9	9	-	-	-	-	120
May 2021	5	8	11	10	-	-	-	-	119
Jun 2021	4	7	8	8	-	-	-	-	120
Jul 2021	-	4	3	4	-	-	-	-	117
Aug 2021	2	12	11	11	-	-	-	1	116
Sep 2021	4	9	9	10	-	-	-	-	115
Oct 2021	5	9	9	10	-	-	-	-	115
Nov 2021	2	6	8		-	-	1		115
Dec 2021	2	8	10		-	-	-		114

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	
Jan 2022	5	6	9		-	-	1		115
Feb 2022	4	5	7		-	-	-		115
Mar 2022	2	5	7		-	-	-		115
Apr 2022	2	3	6		-	-	-		114
May 2022	2	1	4		-	-	-		114
Jun 2022	2	3			-	-			114
Jul 2022	1	5			-	-			115
Aug 2022	1	4			-	1			115
Sep 2022	-				-				117
Oct 2022	-				-				117

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Jan 2021	0.20%	0.76%	1.37%	1.28%

Month	Revision 1	Revision 3	Revision 7	Revision 14
Feb 2021	-0.01%	0.01%	0.28%	0.26%
Mar 2021	-0.20%	0.03%	0.04%	0.22%
Apr 2021	-0.24%	0.08%	-0.04%	-0.02%
May 2021	-0.27%	-0.78%	-0.59%	-0.37%
Jun 2021	-0.02%	0.15%	0.12%	0.23%
Jul 2021	-0.28%	-0.03%	0.10%	0.23%
Aug 2021	0.22%	0.64%	0.73%	1.10%
Sep 2021	0.83%	0.84%	1.19%	1.56%
Oct 2021	2.31%	2.63%	3.22%	3.28%
Nov 2021	-0.03%	0.46%	1.34%	
Dec 2021	0.15%	0.80%	1.27%	
Jan 2022	-0.05%	0.30%	0.53%	
Feb 2022	0.61%	0.86%	0.95%	
Mar 2022	-0.18%	0.10%	0.46%	

Month	Revision 1	Revision 3	Revision 7	Revision 14
Apr 2022	0.09%	0.17%	0.53%	
May 2022	-0.23%	-0.65%	-0.13%	
Jun 2022	-0.40%	-0.80%		
Jul 2022	-0.07%	0.07%		
Aug 2022	0.25%	0.75%		
Sep 2022	0.04%			
Oct 2022	0.22%			

I checked all balancing area differences over 15% and 100,000 kWh to determine the reasons for the differences, and found they were caused by an issue with shaping for irrigation ICPs. Where there was fluctuation between zero and large volumes, DART would sometimes invalidate the shapes and apply zeros instead resulting in over submission for some months and under submission for others. This issue has been resolved with the implementation of the new NHHReconciliation system. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.

Compliance is recorded in this section because the differences are not caused by inaccurate forward estimate.

#### **Audit outcome**

Compliant

### 12.13. Compulsory meter reading after profile change (Clause 7 Schedule 15.3)

#### **Code reference**

*Clause 7 Schedule 15.3*

#### **Code related audit information**

*If the reconciliation participant changes the profile associated with a meter, it must, when determining the volume information for that meter and its respective ICP, use a validated meter reading or permanent estimate on the day on which the profile change is to take effect.*

*The reconciliation participant must use the volume information from that validated meter reading or permanent estimate in calculating the relevant historical estimates of each profile for that meter.*

#### **Audit observation**

The registry list and event detail reports were reviewed to identify any ICPs which have had profile changes.

#### **Audit commentary**

The only profile change identified on the event detail report was a downgrade for ICP 0000015941HBCC1 and actual readings were used.

#### **Audit outcome**

Compliant

## 13. SUBMISSION FORMAT AND TIMING

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

#### Code reference

*Clause 8 Schedule 15.3*

#### Code related audit information

*For each category 3 of higher metering installation, a reconciliation participant must provide half hour submission information to the reconciliation manager.*

*For each category 1 or category 2 metering installation, a reconciliation participant must provide to the reconciliation manager:*

- Half hour submission information; or*
- Non half hour submission information; or*
- A combination of half hour submission information and non-half hour submission information*

*However, a reconciliation participant may instead use a profile if:*

- The reconciliation participant is using a profile approved in accordance with clause Schedule 15.5; and*
- The approved profile allows the reconciliation participant to provide half hour submission information from a non-half hour metering installation; and*
- The reconciliation participant provides submission information that complies with the requirements set out in the approved profile.*

*Half hour submission information provided to the reconciliation manager must be aggregated to the following levels:*

- NSP code*
- reconciliation type*
- profile*
- loss category code*
- flow direction*
- dedicated NSP*
- trading period*

*The non half hour submission information that a reconciliation participant submits must be aggregated to the following levels:*

- NSP code*
- reconciliation type*
- profile*
- loss category code*
- flow direction*
- dedicated NSP*
- consumption period or day*

#### Audit observation

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

Aggregation of NHH volumes is discussed in **section 12.3**, and 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
- trading period for half hour metered ICPs and consumption period or day for all other ICPs.

NHH volumes and HHR volumes aggregation was confirmed to be compliant. The submitted data was also compared to billed data in **section 11.3** and appeared reasonable.

### 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

Review of nine AV080 reports confirmed that submission information is appropriately rounded to two decimal places.

Review of nine AV140 and nine AV090 reports confirmed that submission information is appropriately rounded to 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 nine months of AV080 reports to determine whether historic estimate requirements were met.

#### Audit commentary

There is a process to enter permanent estimates where actual readings are not obtained by revision 14, which will ensure that 100% historic estimate is achieved for revision 14. Where prescribed read attainment levels are not achieved for revision 3 and 7, it is usually because actual readings have not been obtained.

The quantity of historical estimates is contained in the submission file and is not a separate report. The proportion of historic estimate in the revision files was checked for nine separate months, and the table below shows that compliance has not been achieved in all instances.

#### Quantity of NSPs where revision targets were met:

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Aug 2021			200	200
Sep 2021			199	199
Oct 2021			198	199
Mar 2022		198		199
Apr 2022		196		197
May 2022		196		197
Jul 2022	196			198

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Aug 2022	194			197
Sep 2022	196			199

I checked all NSPs where forward estimate thresholds were not met and found the cause was estimates created because readings were not obtained.

The table below shows that the percentage HE at a summary level for all NSPs is at or above the required targets for all revisions except the October 2021 revision 14. This was caused by one ICP where a correction was not processed according to the expected process and FDE was calculated at R14.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Aug 2021	-	-	100.000%
Sep 2021	-	-	100.000%
Oct 2021	-	-	99.995%
Mar 2022	-	99.906%	-
Apr 2022	-	99.862%	-
May 2022	-	99.902%	-
Jul 2022	99.571%	-	-
Aug 2022	99.472%	-	-
Sep 2022	99.442%	-	-

### Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 13.3</p> <p>With: Clause 10 of Schedule 15.3</p> <p>From: Aug 21 to Oct 21 r14, Mar 22 to May 22 r7 and Oct 21 r14</p>	<p>Historic estimate thresholds were not met for some revisions.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>

Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>The controls are recorded as moderate overall, based on my assessment of the read attainment processes (<b>sections 6.8 to 6.10</b>) and permanent estimate process (<b>section 12.8</b>).</p> <p>The impact is low due to the high percentage of HE.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>HE scenarios not met relate to specific GXPs with extremely small numbers of ICPs, and usually where a single ICP does not have a reading.</p> <p>We have improved overall read attainment processes significantly, but in some instances a single ICP on a very low population GXP can have a disproportionate impact of the overall percentage of that individual GXP.</p>		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>As our read attainment is very high overall, we believe the issue can be mitigated by additional reporting at the R1 revision to identify ICPs without readings at R1 on very low population GXPs, and prioritization of those ICPs for special early action.</p>		Dec 2023	

## GLOSSARY

<b>AC breach</b>	AC arrival date is more than five business days after receipt of replace switch reading (RR) where the switch re-read is rejected.
<b>AN breach</b>	AN arrival date is more than three business days after receipt of the NT, where the AN arrives immediately after the NT.
<b>AW breach</b>	AW arrival date is more than five business days after receipt of the NW.
<b>CS breach for switch move</b>	CS arrival date is more than five business days after receipt of the NT AND, before delivery of the CS and No NW notice has been provided, AND no AN notice has been provided OR an notice is provided, and the NT Proposed Transfer Date matches the AN Expected Transfer Date).
<b>CS breach for transfer switch</b>	CS arrival date is more than three business days after receipt of the NT where the CS arrives immediately after the NT.
<b>E2 breach for switch move</b>	NT Proposed Transfer Date and CS Actual Transfer date do not match; AND CS Actual Transfer Date is a) earlier than the NT Proposed Transfer Date; OR b) more than ten business days after receipt of the NT.
<b>E2 breach for transfer switch</b>	CS Actual Transfer Date is more than 10 business days after receipt of the NT.

## CONCLUSION

### Registry

The timeliness of registry status and trader updates has remained steady during this audit period. Small numbers of late updates and inaccuracies were identified. New connections are not completed.

### Switching

Most switching processes are operating as intended, and the number of late files is very low. Some issues from the last audit were resolved during the audit period, but this audit identified some incorrect last actual read dates and incorrect average daily consumption. Both issues are system related and will be resolved quickly.

### Reading and read validation

Validation processes have continued to improve, and all readings checked were recorded accurately and correctly classified. Read attainment remains high.

Inaccurate readings and potential meter defects appear to be consistently identified, and corrections are processed.

### Reconciliation

Reconciliation validation processes have strong controls, which were improved with the replacement of the DART system during the audit period. Only two issues were identified, as follows:

- the “best estimate of the quantity of electricity consumed” was not used to estimate consumption for the period meters were bridged, and
- the “out of market settlement” for incorrect volumes identified during the previous audit is yet to be conducted.

### Conclusion

17 non-compliances were identified, which is an improvement on 23 non-compliances identified in the previous audit. The breach risk rating has improved from 51 to 25. These improvements are the result of system and process changes, in conjunction with strengthening of controls. The recommended audit frequency is 12 months. I have considered this result in conjunction with Switch Utilities responses, and I recommend a next audit period of 18 months to reflect that several of the issues have been resolved and clear plans are in place for the remaining issues.

## Participant response

Over the last three years, we have made substantial investments in people, systems and process which we consider is reflected in the significant improvements to our level of compliance. Our substantial investment in the replacement of the legacy non-half hourly submission platform has significantly improved our controls since 2020.

We would like to note that:

1. We have hired new experienced key staff to the business, within the Wholesale and Settlements space in 2021, and this year within the operational and service delivery teams, to ensure those teams have the skills and training required to deliver continuous improvement.
2. In 2021 we established a dedicated technology Energy Platform Team, and through the energy platform enhancement project we have over the course of the last two years:
  - a. Implemented new robust controls and processes in relation to identifying and resolving bridged meters, faulty meters, read attainment issues and other operational matters which impact compliance.
  - b. Developed and implemented (under the Material Change last year) a new non-half hourly settlement platform which fully complies with the methodology requirements of the code, resolving issues pertaining to shapes, ICP days calculations, more robust validation processes, improved interfaces which identify submission movements with respect to both prior months and as compared to previous revisions.
  - c. Further monitoring and improvements to our settlement related controls since then, including automation of previously manual reporting of RM return ICP Days comparison reporting, systemisation of the read attainment monitoring reporting including the monthly EA Market Operations read attainment report, introduction of validation error follow up functionality to schedule and monitor follow up actions required post-submission
  - d. Completed a development and material change audit to rectify most issues relating to the switching system, along with various scenario-specific bug-fixes which reduce the frequency of interventions for matters causing automation blockages.
  - e. Implemented new controls in existing processes, such as requirements for staff to provide comments when providing late updates which allows team managers to clearly understand reasons for delays which occur and allow us to proactively respond to new circumstances and apply resourcing as required
  - f. More robust monitoring of meter event reporting including an internal desktop review of MEP audit reports to understand their current level of compliance for event monitoring, automation of the import and processing of core event data supplied by MEPs, and a comprehensive initial analysis of raw data from our largest MEP to understand the level of robustness within their flagging and assessing the ruleset we should apply to event data. We are now moving to fully automate this process to integrate the results of our assessment into our own controls.
  - g. Undertaken a program of training and upskilling of operational staff
  - h. Implemented recommendations from auditors to ensure our processes align with industry best practices and standards

We believe the significant improvement to our overall risk rating reflects the substantial progress we have made and reinforces our serious commitment to meeting all of our regulatory obligations and have delivered improvement even in light of substantial organisation change from the recent merger of two large organisations. Most particularly, that our audit risk rating reflected in this audit has reduced to 25, from the previous 75 at the start of this programme of work.

We are committed to continue continuous improvement and have noted further planned development over the next year to continue our progress including further development of our core platforms, most particularly:

- The planned delivery of systemisation and automation of field services platforms with integration with our contractors and suppliers. This will allow us to improve performance in those remaining areas predominantly related to management of connections and registry information.
- Further planned enhancement to compliance monitoring, including the implementation of internal monitoring using available registry event data and audit compliance reporting to self-check system performance
- The planned introduction of an internal audit program so that we assess our on-going adherence to our obligations, and proactive management of new circumstances as they occur.

When assessing this report to determine next audit period, we would ask consideration to be given to our demonstrated progress, improvement and the significant reduction in audit risk rating which has resulted from our efforts; along with the assessed improvement to controls with no controls now being rated as weak.

As some of our planned development is expected to take approximately 12 months, we would like to have an opportunity for these developments to be put in practice for a few months prior to our next audit.