

ELECTRICITY INDUSTRY PARTICIPATION CODE  
RECONCILIATION PARTICIPANT AUDIT REPORT



For

MERCURY NZ LIMITED

Prepared by: Rebecca Elliot and Steve Woods

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## TABLE OF CONTENTS

Executive summary .....	5
Audit summary .....	6
Non-compliances .....	6
Recommendations .....	13
Issues 13	
1. Administrative .....	14
1.1. Exemptions from Obligations to Comply with Code (Section 11) .....	14
1.2. Structure of Organisation .....	15
1.3. Persons involved in this audit .....	16
1.4. Use of Agents (Clause 15.34) .....	17
1.5. Hardware and Software .....	18
1.6. Breaches or Breach Allegations .....	19
1.7. ICP Data .....	19
1.8. Authorisation Received .....	20
1.9. Scope of Audit .....	21
1.10. Summary of previous audit .....	23
1.11. Material Change Audits (Clause 16A.11) .....	27
2. Operational Infrastructure .....	29
2.1. Relevant information (Clause 10.6, 11.2, 15.2) .....	29
2.2. Provision of information (Clause 15.35) .....	35
2.3. Data transmission (Clause 20 Schedule 15.2) .....	36
2.4. Audit trails (Clause 21 Schedule 15.2) .....	37
2.5. Retailer responsibility for electricity conveyed - participant obligations (Clause 10.4) ..	38
2.6. Retailer responsibility for electricity conveyed - access to metering installations (Clause 10.7(2),(4),(5) and (6)) .....	38
2.7. Physical location of metering installations (Clause 10.35(1)&(2)) .....	39
2.8. Trader contracts to permit assignment by the Authority (Clause 11.15B) .....	39
2.9. Connection of an ICP (Clause 10.32) .....	40
2.10. Temporary Electrical Connection of an ICP (Clause 10.33(1)) .....	41
2.11. Electrical Connection of Point of Connection (Clause 10.33A) .....	42
2.12. Arrangements for line function services (Clause 11.16) .....	45
2.13. Arrangements for metering equipment provision (Clause 10.36) .....	45
3. Maintaining registry information .....	46
3.1. Obtaining ICP identifiers (Clause 11.3) .....	46
3.2. Providing registry information (Clause 11.7(2)) .....	47
3.3. Changes to registry information (Clause 10 Schedule 11.1) .....	47
3.4. Trader responsibility for an ICP (Clause 11.18) .....	51
3.5. Provision of information to the registry manager (Clause 9 Schedule 11.1) .....	53
3.6. ANZSIC codes (Clause 9 (1(k) of Schedule 11.1) .....	57
3.7. Changes to unmetered load (Clause 9(1)(f) of Schedule 11.1) .....	59
3.8. Management of “active” status (Clause 17 Schedule 11.1) .....	63
3.9. Management of “inactive” status (Clause 19 Schedule 11.1) .....	66
3.10. ICPs at new or ready status for 24 months (Clause 15 Schedule 11.1) .....	68
4. Performing customer and embedded generator switching .....	69

4.1.	Inform registry of switch request for ICPs - standard switch (Clause 2 Schedule 11.3)..	69
4.2.	Losing trader response to switch request and event dates - standard switch (Clauses 3 and 4 Schedule 11.3) .....	69
4.3.	Losing trader must provide final information - standard switch (Clause 5 Schedule 11.3)	71
4.4.	Retailers must use same reading - standard switch (Clause 6(1) and 6A Schedule 11.3)	74
4.5.	Non-half hour switch event meter reading - standard switch (Clause 6(2) and (3) Schedule 11.3) .....	77
4.6.	Disputes - standard switch (Clause 7 Schedule 11.3) .....	77
4.7.	Gaining trader informs registry of switch request - switch move (Clause 9 Schedule 11.3) .....	78
4.8.	Losing trader provides information - switch move (Clause 10(1) Schedule 11.3) .....	79
4.9.	Losing trader determines a different date - switch move (Clause 10(2) Schedule 11.3)	82
4.10.	Losing trader must provide final information - switch move (Clause 11 Schedule 11.3)	82
4.11.	Gaining trader changes to switch meter reading - switch move (Clause 12 Schedule 11.3) .....	85
4.12.	Gaining trader informs registry of switch request - gaining trader switch (Clause 14 Schedule 11.3) .....	88
4.13.	Losing trader provision of information - gaining trader switch (Clause 15 Schedule 11.3)	89
4.14.	Gaining trader to advise the registry manager - gaining trader switch (Clause 16 Schedule 11.3) .....	89
4.15.	Withdrawal of switch requests (Clauses 17 and 18 Schedule 11.3) .....	91
4.16.	Metering information (Clause 21 Schedule 11.3) .....	93
4.17.	Switch saving protection (Clause 11.15AA to 11.15AC) .....	95
5.	Maintenance of unmetered load .....	96
5.1.	Maintaining shared unmetered load (Clause 11.14) .....	96
5.2.	Unmetered threshold (Clause 10.14 (2)(b)) .....	97
5.3.	Unmetered threshold exceeded (Clause 10.14 (5)) .....	98
5.4.	Distributed unmetered load (Clause 11 Schedule 15.3, Clause 15.37B) .....	100
6.	Gathering raw meter data .....	103
6.1.	Electricity conveyed & notification by embedded generators (Clause 10.13, Clause 10.24 and 15.13) .....	103
6.2.	Responsibility for metering at GIP (Clause 10.26 (6), (7) and (8)) .....	106
6.3.	Certification of control devices (Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3)	108
6.4.	Reporting of defective metering installations (Clause 10.43(2) and (3)) .....	109
6.5.	Collection of information by certified reconciliation participant (Clause 2 Schedule 15.2)	110
6.6.	Derivation of meter readings (Clause 3(1), 3(2) and 5 Schedule 15.2) .....	112
6.7.	NHH meter reading application (Clause 6 Schedule 15.2) .....	113
6.8.	Interrogate meters once (Clause 7(1) and (2) Schedule 15.2) .....	114
6.9.	NHH meters interrogated annually (Clause 8(1) and (2) Schedule 15.2) .....	116
6.10.	NHH meters 90% read rate (Clause 9(1) and (2) Schedule 15.2) .....	117
6.11.	NHH meter interrogation log (Clause 10 Schedule 15.2) .....	118
6.12.	HHR data collection (Clause 11(1) Schedule 15.2) .....	119
6.13.	HHR interrogation data requirement (Clause 11(2) Schedule 15.2) .....	119
6.14.	HHR interrogation log requirements (Clause 11(3) Schedule 15.2) .....	120
7.	Storing raw meter data .....	122
7.1.	Trading period duration (Clause 13 Schedule 15.2) .....	122
7.2.	Archiving and storage of raw meter data (Clause 18 Schedule 15.2) .....	122
7.3.	Non metering information collected / archived (Clause 21(5) Schedule 15.2) .....	123

8.	Creating and managing (including validating, estimating, storing, correcting and archiving) volume information.....	124
8.1.	Correction of NHH meter readings (Clause 19(1) Schedule 15.2).....	124
8.2.	Correction of HHR metering information (Clause 19(2) Schedule 15.2).....	124
8.3.	Error and loss compensation arrangements (Clause 19(3) Schedule 15.2) .....	125
8.4.	Correction of HHR and NHH raw meter data (Clause 22(1) and (2) Schedule 15.2).....	126
9.	Estimating and validating volume information.....	127
9.1.	Identification of readings (Clause 3(3) Schedule 15.2).....	127
9.2.	Derivation of volume information (Clause 3(4) Schedule 15.2).....	127
9.3.	Meter data used to derive volume information (Clause 3(5) Schedule 15.2).....	128
9.4.	Half hour estimates (Clause 15 Schedule 15.2).....	129
9.5.	NHH metering information data validation (Clause 16 Schedule 15.2) .....	130
9.6.	Electronic meter readings and estimated readings (Clause 17 Schedule 15.2) .....	131
10.	Provision of metering information to the pricing manager in accordance with subpart 4 of Part 13 (clause 15.38(1)(f)) .....	134
10.1.	Generators to provide HHR metering information (Clause 13.136) .....	134
10.2.	Unoffered & intermittent generation provision of metering information (Clause 13.137).....	134
10.3.	Loss adjustment of HHR metering information (Clause 13.138).....	135
10.4.	Notification of the provision of HHR metering information (Clause 13.140) .....	135
11.	Provision of submission information for reconciliation.....	136
11.1.	Buying and selling notifications (Clause 15.3).....	136
11.2.	Calculation of ICP days (Clause 15.6) .....	136
11.3.	Electricity supplied information provision to the reconciliation manager (Clause 15.7).....	139
11.4.	HHR aggregates information provision to the reconciliation manager (Clause 15.8) ..	140
12.	Submission computation .....	143
12.1.	Daylight saving adjustment (Clause 15.36) .....	143
12.2.	Creation of submission information (Clause 15.4).....	143
12.3.	Allocation of submission information (Clause 15.5) .....	146
12.4.	Grid owner volumes information (Clause 15.9) .....	147
12.5.	Provision of NSP submission information (Clause 15.10) .....	148
12.6.	Grid connected generation (Clause 15.11).....	148
12.7.	Accuracy of submission information (Clause 15.12) .....	149
12.8.	Permanence of meter readings for reconciliation (Clause 4 Schedule 15.2).....	151
12.9.	Reconciliation participants to prepare information (Clause 2 Schedule 15.3) .....	153
12.10.	Historical estimates and forward estimates (Clause 3 Schedule 15.3).....	154
12.11.	Historical estimate process (Clause 4 and 5 Schedule 15.3) .....	154
12.12.	Forward estimate process (Clause 6 Schedule 15.3) .....	157
12.13.	Compulsory meter reading after profile change (Clause 7 Schedule 15.3).....	160
13.	Submission format and timing.....	162
13.1.	Provision of submission information to the RM (Clause 8 Schedule 15.3) .....	162
13.2.	Reporting resolution (Clause 9 Schedule 15.3) .....	163
13.3.	Historical estimate reporting to RM (Clause 10 Schedule 15.3) .....	163
	Conclusion .....	166
	Participant response .....	167

## EXECUTIVE SUMMARY

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of **Mercury NZ Limited (Mercury)**, to support their application for renewal of certification in accordance with clauses 5 and 7 of schedule 15.1. The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits version 7.2.

This audit evaluated the codes MRPL for HHR activities and MEEN for both NHH and HHR activities. Findings relate to both codes unless specifically stated otherwise.

Mercury has continued to improve their level of compliance during the audit period. This is evident as 15 of the 37 non-compliances found have a strong control rating. This indicates these issues are exceptions of a robust process.

The audit found 37 non-compliance issues, four recommendations are made, and no issues are raised. This is the third year of improvement with the score reducing to 76 from 89 in the 2020 audit and 115 recorded in the 2019 audit.

The Authority made recommendations to Mercury that they focus on the following areas prior to this audit:

1. **Automation project** – The major item that needs to be addressed is errors in their automated processes, which are causing a variety of problems.
2. **Distributed unmetered loads** – Mercury has 12 DUML databases, and problems were found with seven of them. Also, there are nine Vodafone ICPs with unmetered load greater than 6,000kWh, but no DUML database. Total volume estimated at 2GWh/year, but the quality of this estimate is unknown. Mercury is working with Vodafone to document and quantify this load according to the Code, and the Authority should expect to see a DUML audit before the next Mercury RP audit.
3. **Process compliance** – Mercury have processes in place for all functions but have not followed process in all cases. In particular, distributed generation data maintenance has been neglected. Mercury has a process to check these records but have not been doing so in recent months. The auditor sampled 129 ICPs where the registry recorded DG present, but no import-export metering. 21 had no DG, eight had generation but no generation metering.

The audit found that improvements have been made in relation to all three points above. Controls have been strengthened and remedial actions have been progressed in all areas.

The main findings are as follows:

- An overall improvement in all areas audited.
- The telecommunication ICPs (including ICP 0015723581ELA43 which has a single-phase meter on a telecommunications amplifier with a multiplier of 101 to cater for an additional 100 unmetered load connections) which do not have databases to record the items of load are still in the process of being resolved. I note that Mercury has made good progress with these and an audit of these by Veritek is scheduled for 11 May 2021.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and contains a future risk rating score of 76, which results in an indicative audit frequency of three months.

I have considered this result in conjunction with Mercury's responses, the overall improvement achieved during the audit period and recommend that the next audit be in 14 months.

The matters raised are shown in the tables below:

## AUDIT SUMMARY

### NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Material change	1.11	16A.11	Material change audit not conducted for deployment of centralized AMI data repository.	Weak	Low	3	Identified
Relevant information	2.1	10.6,11.2 & 15.2	<p>Some registry discrepancies.</p> <p>2 switch event meter readings not corrected from the 2020 audit.</p> <p>Some ICPs with distributed generation not quantified.</p> <p>IntelliHUB does not provide updated actual data to replace estimates if the actual data is obtained more than 15 days after the event date.</p> <p>1 ICP with the incorrect status of 1,5.</p> <p>Arc provides interval data to one decimal place, which is not considered to be sufficiently accurate.</p>	Moderate	Medium	4	Identified
Electrical Connection of Point of Connection	2.11	10.33A	<p>84 ICPs (excludes the three erroneous active updates and ICP 0302251553LC47E) updates not certified within five business days of electrical reconnection.</p> <p>Three ICPs not recertified within five business days of un-bridging.</p>	Moderate	Low	2	Identified
Changes to registry information	3.3	10 of schedule 11.1	Registry not updated within 5 business days of the event for some status updates, MEP nominations and trader updates.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Trader responsibility for an ICP	3.4	11.18	Some invalid MEP nominations were sent.	Strong	Low	1	Cleared
Provision of information to the registry manager	3.5	9 of Schedule 11.1	Registry information not provided within 5 business days of commencement of supply.	Moderate	Low	2	Identified
ANZSIC codes	3.6	9 (1)(k) of Schedule 11.1	249 with “Don’t know” ANZSIC codes assigned. Some of these will be invalidly assigned.  31 of the 102 ICPs checked had incorrect ANZSIC codes assigned.	Moderate	Low	2	Identified
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	ICP 0007301973NVCDF with missing unmetered load details (since corrected).  ICP 0015723581ELA43 has a single-phase meter on a telecommunications amplifier with a multiplier of 101 to cater for an additional 100 unmetered load connections.	Moderate	Medium	4	Identified
Management of “active” status	3.8	17 Schedule 11.1	Ten of a sample of 20 reconnections updates were invalidly processed.  Two reconnections were made active for the incorrect active date.  One HHR reconnection with an incorrect active date.	Moderate	Low	2	Identified
Management of “inactive” status	3.9	19 Schedule 11.1	Three ICPs with incorrect inactive status.	Moderate	Low	2	Cleared
Losing trader response to switch request and event dates - standard switch	4.2	3 & 4 of schedule 11.3	Five of a sample of 14 AN files checked contained incorrect response codes of either AA or AD.	Strong	Low	1	Cleared

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Losing trader must provide final information - standard switch	4.3	5 of schedule 11.3	<p>26 CS (CS received after an AN) switch breaches.</p> <p>Four WR (switch completion after withdrawal rejection) switch breaches.</p> <p>One of the ten ICPs sampled sent with an incorrect average daily consumption of zero.</p> <p>Three of the ten files sampled sent with an incorrect last read date.</p> <p>One of the ten files sampled sent with incorrect last read labelled as an actual.</p> <p>One of the ten files sampled sent with an estimated read sent as an actual.</p>	Moderate	Low	2	Identified
Retailers must use same reading - standard switch	4.4	(1) and 6A Schedule 11.3	<p>Three late RR files and three late AC files for transfer switches.</p> <p>RR not sent for ICP 0000570766NR645 and reading from CS file was not used (from 2020 audit).</p>	Strong	Low	1	Identified
Gaining trader informs registry of switch request - switch move	4.7	9 Schedule 11.3	Incorrect switch type used to transfer Council ICPs.	Strong	Low	1	Identified
Losing trader provides information - switch move	4.8	10 of schedule 11.3	<p>137 late CS files (121 breach code T2 and 16 breach code WR).</p> <p>One incorrect switch response code of AA sent instead of AD.</p> <p>107 ANs had non-compliant proposed event dates.</p>	Moderate	Low	2	Identified



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 of schedule 11.3	<p>One of the ten ICPs sampled sent with an incorrect average daily consumption of zero.</p> <p>Three of the ten files sampled sent with an incorrect last read date.</p> <p>Three of the ten files sampled sent with a last read labelled incorrectly as an actual.</p> <p>Two of the ten files sampled sent with incorrect last reads.</p>	Moderate	Low	2	Identified
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	<p>Incorrect reading used when the Mercury RR was rejected (from 2020 audit).</p> <p>57 late RR files and 17 late AC files for switch moves.</p>	Strong	Low	1	Identified
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 of schedule 11.3	<p>Ten late CS files sent.</p> <p>One HH CS file for 1002045936LC604 (01/10/2020) was sent with METERINSTALL, METERCOMP and METERCHANNEL rows.</p>	Strong	Low	1	Identified
Withdrawal of switch requests	4.15	17 & 18 of schedule 11.3	<p>144 NA (NW delivery after switch completion) switch breaches.</p> <p>Four NW (NW delivery before switch completion) switch breaches.</p> <p>11 SR (NW after initial withdrawal rejection) switch breaches.</p> <p>21 AW (AW delivery) switch breaches.</p> <p>Three late WC (acceptance withdrawal cycle resolution) switch breaches.</p>	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Metering information	4.16	21 of schedule 11.3	One transfer move switch sent with an incorrect last read.  Two switch move switches sent with incorrect last reads.	Moderate	Low	2	Identified
Unmetered threshold	5.2	10.14 (2)(b)	Eight standard unmetered ICPs with unmetered consumption over 6,000 kWh per annum.	Moderate	Medium	4	Identified
Unmetered threshold exceeded	5.3	10.14 (5)	Eight standard unmetered ICPs with unmetered consumption over 6,000 kWh per annum were not corrected within the required timeframe.	Moderate	Medium	4	Identified
Distributed unmetered load	5.4	11 Schedule 15.3, Clause 15.37B	Errors found in nine databases. The specific findings are detailed in the DUMML database audit reports.	Moderate	High	6	Identified
Electricity conveyed & notification by embedded generators	6.1	10.13	While meters were bridged, energy was not metered and quantified according to the code for 14 ICPs.  Some ICPs with distributed generation not quantified.	Moderate	Low	2	Identified
Responsibility for metering at GIP	6.2	10.26 (6), (7) and (8)	One meter certificate expiry date is yet to be updated.  Two meter certification expiry dates were updated late.	Weak	Low	3	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Collection of information	6.5	2 Schedule 15.2	ICP 0305679023LC074 was unable to be read in the previous three months and has a maximum interrogation cycle of 90 days. ICP 0000536540NRECD was unable to be read between 13/12/19 and May 2020 and has a maximum interrogation cycle of 45 days.	Strong	Low	1	Identified
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	The best endeavours requirement was not met for 34 ICPs not read during the period of supply.	Strong	Low	1	Identified
Meter data used to derive volume information	9.3	3(5) of schedule 15.2	Raw meter data is rounded upon receipt and not when volume information is created.	None	Low	5	Identified
Calculation of ICP days	11.2	15.6	Inaccurate ICP days were reported for one ICP.	Strong	Low	1	Identified
HHR aggregates information provision to the reconciliation manager	11.4	15.8	HHR aggregates file does not contain electricity supplied information.	Strong	Low	1	Disputed
Creation of submission information	12.2	15.4	At least four ICPs have solar generation but submission is not occurring.	Moderate	Low	2	Identified
Allocation of submission information	12.3	15.5	One ICP recorded with the incorrect NSP.	Strong	Low	1	Cleared

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Accuracy of submission information	12.7	15.12	<p>Inaccurate submission as follows:</p> <ul style="list-style-type: none"> <li>• Intellihub does not provide raw meter data to replace estimates for periods greater than 15 days. The quantify of estimates remaining is unknown.</li> <li>• 3 incorrect switch meter reads used in submission.</li> <li>• ICP 0000160705CKEE2 had a 16/08/19 NSP change processed from 01/01/10. This is now resolved.</li> <li>• ICPs 0327312033LC2D6 and 0000184853CTB54, did not have settlement units correctly set up. This is resolved and these ICPs have appeared in revision files.</li> <li>• 2 switch event meter readings not corrected from the 2020 audit.</li> </ul>	Moderate	Low	2	Identified
Permanence of meter readings for reconciliation	12.8	4 Schedule 15.2	FE still present for 42.84 kWh for March 2019.	Strong	Low	1	Identified
Historic estimate process	12.11	4 and 5 Schedule 15.3	Scenario A calculating incorrectly if a reconnection reading is not available.	Strong	Low	1	Identified
Forward estimate process	12.12	6 Schedule 15.3	The accuracy threshold was not met for all months and revisions.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Historical estimate reporting to RM	13.3	10 of Schedule 15.3	Historic estimate thresholds were not met for some revisions.	Strong	Low	1	Identified
Future Risk Rating						76	

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

## RECOMMENDATIONS

Subject	Section	Recommendation
Provision of information to the registry	3.5	Utilise the audit compliance report to identify ICPs that have been electrically connected but where Mercury has not received notification.
		Review contractor performance management to ensure that service standards are being met.
Changes to unmetered load	3.7	Liaise with Distributor to confirm which unmetered load is correct.
Distributed generation	6.1	Liaise with Orion and the customer to confirm what generation is present for ICP 0007130338RNA72.

## 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

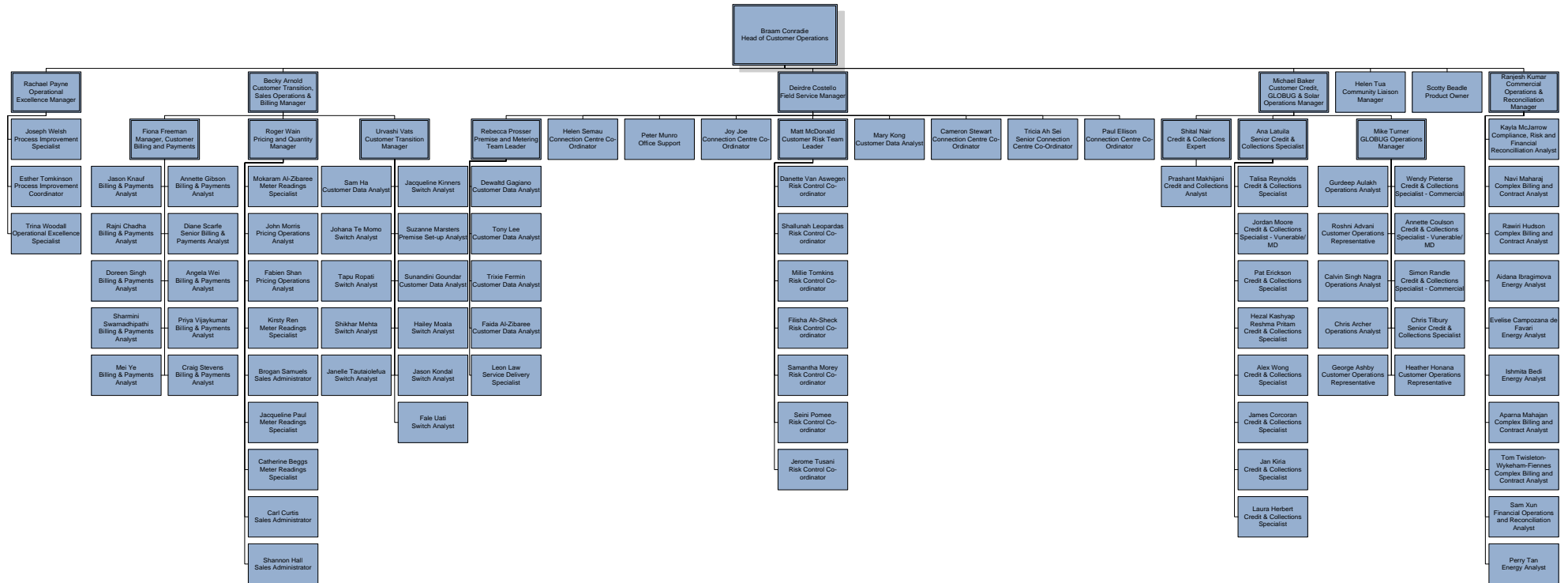
Current code exemptions were reviewed on the Electricity Authority website.

#### Audit commentary

Mercury has been granted exemption No. 233. This allows them to provide half-hour (“HHR”) submission information instead of non half-hour (“NHH”) submission information for distributed unmetered load (“DUML”). This exemption expires on 31 October 2023.

## 1.2. Structure of Organisation

Mercury provided their current organisational structure:



### 1.3. Persons involved in this audit

Auditors:

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

Mercury personnel assisting in this audit were:

Name	Title
Kayla McJarrow	Compliance, Risk and Financial Reconciliation Analyst
Filisha Ah-Sheck	Risk Control Co-ordinator
Rebecca Prossier	Premise and Metering Team Leader
Mokram Al-Zibaree	Meter Reading Specialist
Jacqueline Paul	Meter Reading Specialist
Deirdre Costello	Field Services Manager
Ishmita Beli	Energy Analyst
Evelise Favari	Energy Analyst
Ranjesh Kumar	Commercial Operations and Reconciliation Manager
Urvashi Vats	Customer Transition Manager
Tapu Ropati	Switch Analyst
Aparna Mahajan	Complex billing and contracts analyst
Trixie Fermin	Customer Data Analyst
Tricia Tautali-Ah-Sei	Senior Connections Co-ordinator
Matt McDonald	Customer Risk Team Leader
Tony Lee	Customer Data Analyst



Other personnel assisting in this audit were:

Name	Title	
Craig Simpson	Operations Manager	Wells
Hannah Kelly	Solution Support Specialist	EDMI
Julie Feasey	Senior Data Analyst	Vector Advanced Metering Services

#### 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 Mercury.

##### Audit commentary

Mercury uses some agents for functions covered by the scope of this audit. They are identified in **section 1.9**.

- AMS and EDM I provide HHR data.
- EMS provides HHR data to the pricing manager.
- Councils provide HHR and NHH DUM L data.
- Wells provide NHH data.

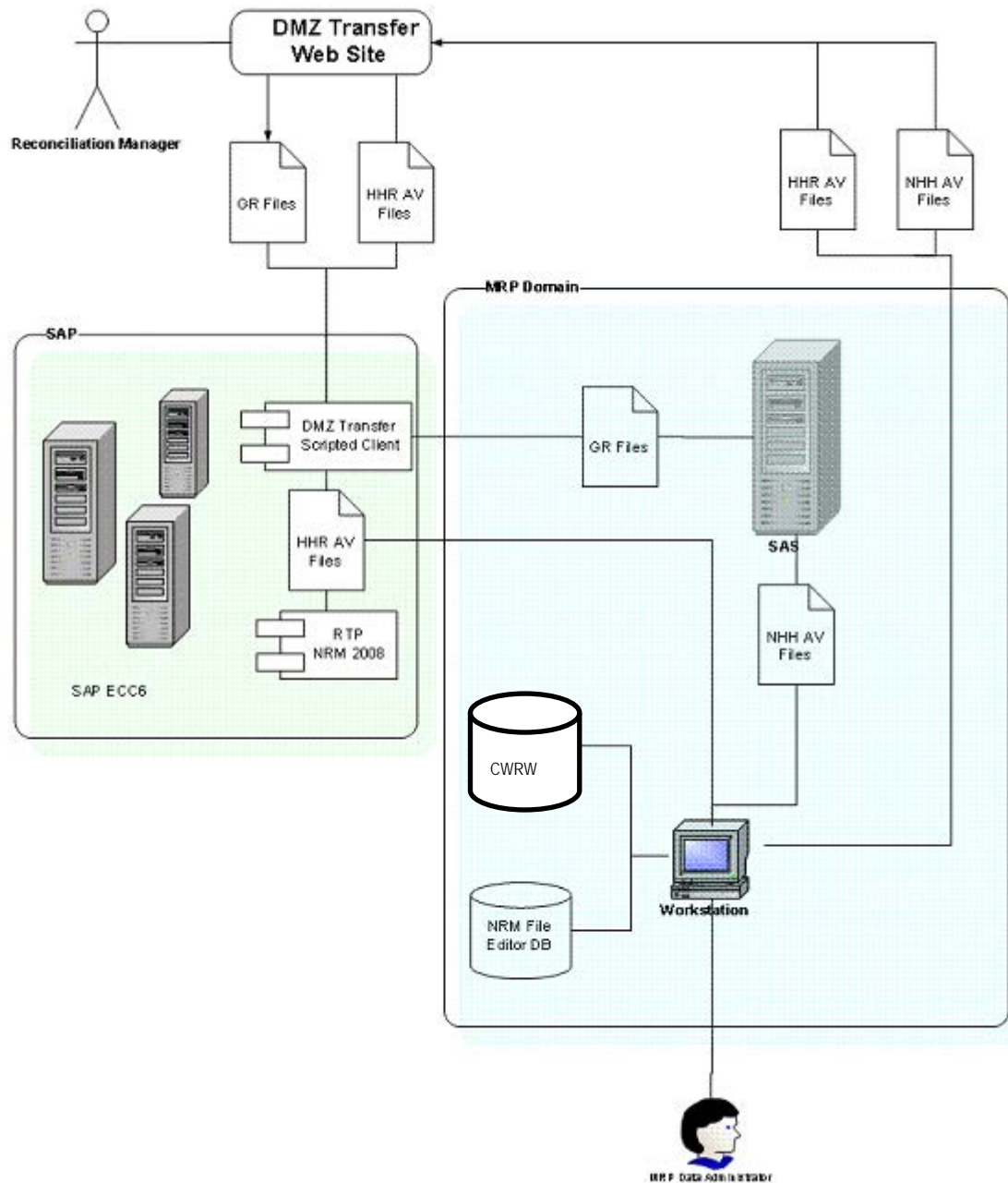
Where the agent audit report was more than seven months old on the audit due date, I confirmed with the agent that that there had been no changes to systems or processes which could affect Mercury's compliance.

AMS, IntelliHUB, and Arc provide AMI data as MEPs, and are subject to a separate audit regime.

### 1.5. Hardware and Software

A diagram of Mercury's system configuration is shown below.

Information on backup processes was provided, and these processes are in accordance standard industry procedures.



## 1.6. Breaches or Breach Allegations

The Electricity Authority confirmed that there have been no alleged breaches relevant to the scope of this audit for Mercury Energy.

## 1.7. ICP Data

All active ICPs are summarised by metering category in the table below. 1,077 active ICPs have a metering category of 9 or blank. 978 of these have unmetered load indicated, and the remaining 99 were checked.

- 36 had MEP nominations made and accepted and were awaiting meter details on the registry,
- 62 were timing differences and the metering details were updated, or the status was updated to inactive or decommissioned prior to the audit, and
- ICP 0001448727UN8E8 has metering on site but MNON was nominated in error for 12/02/11 and due to subsequent registry events Mercury are unable to nominate Metrix for the correct date; they are working to have the events reversed so that the correct MEP is nominated.

Metering Category	Nov 2020	2020	2019	2018	2017
1	314,092	326,699	348131	345,836	338,896
2	3,074	3,050	3,299	3,100	3,288
3	607	574	556	550	622
4	234	207	181	160	159
5	23	22	19	19	16
9	461	461	472	469	107
Blank	616	664	638	590	304

Status	Number of ICPs (Nov 2020)	Number of ICPs (2020)	Number of ICPs (2019)	Number of ICPs (2018)	Number of ICPs (2017)
Active (2,0)	319,107	331,677	350,724	343,392	326,093
Inactive – new connection in progress (1,12)	4	2	3	2	2
Inactive – electrically disconnected vacant property (1,4)	4,699	4,275	3,998	4,201	3,575
Inactive - reconciled elsewhere (1,5)	2	2	1	5	5
Inactive – electrically disconnected ready for decommissioning (1,6)	180	167	313	511	714
Inactive – electrically disconnected remotely by AMI meter (1,7)	28	19	24	13	5
Inactive – electrically disconnected at pole fuse (1,8)	18	15	14	10	1
Inactive – electrically disconnected due to meter disconnected (1,9)	1,695	1,662	1,373	226	25
Inactive – electrically disconnected at meter box fuse (1,10)	2	1	1	-	-
Inactive – electrically disconnected at meter box switch (1,11)	1	1	4	-	-
Decommissioned (3)	25,825	24,865	22,751	21,852	20,269

## 1.8. Authorisation Received

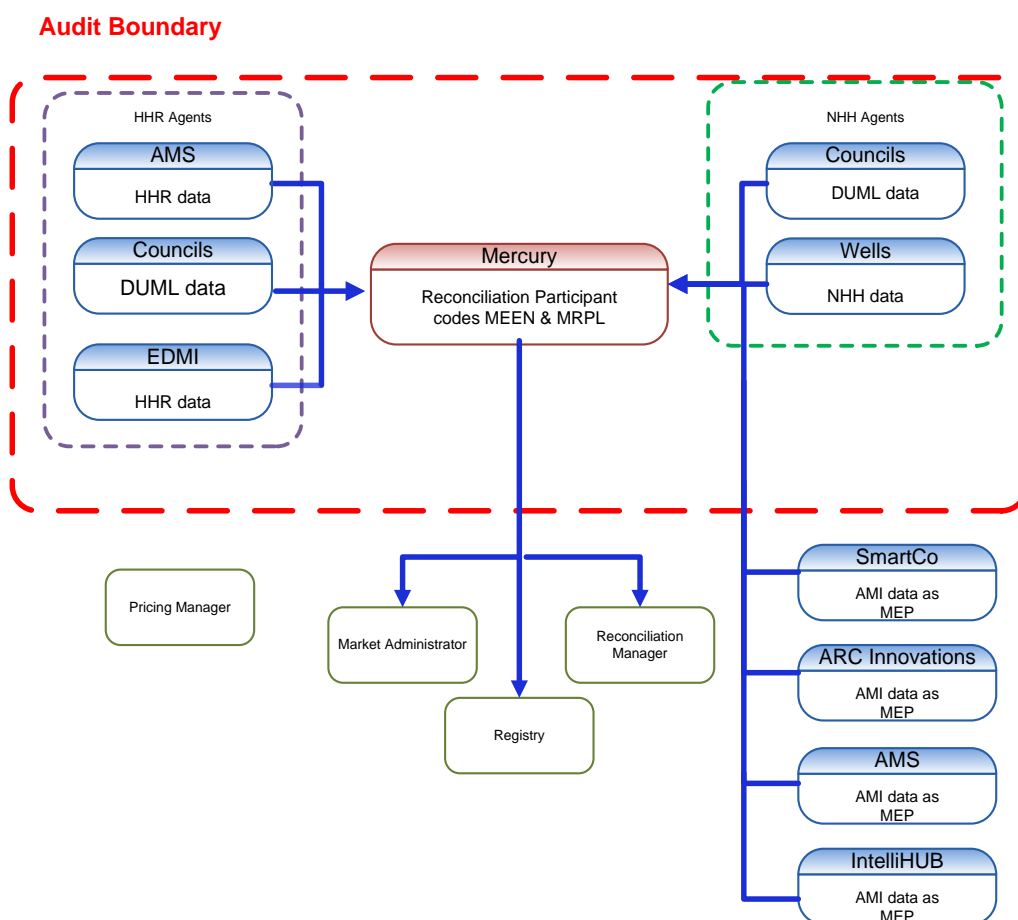
Mercury provided a letter of authorisation to collect information from other parties.

## 1.9. Scope of Audit

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of Mercury, 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.

The audit was carried out at Mercury's premises in Auckland on 9-11 February 2021.

The scope of the audit is shown in the diagram below, with the Mercury audit boundary shown for clarity. This report is for the MEEN and MRPL participant codes.



The table below shows the tasks under clause 15.38 of part 15, for which Mercury requires certification. This table also lists those agents who assist with these tasks.

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks
(a) - Maintaining registry information and performing customer and embedded generator switching	
(b) – Gathering and storing raw meter data	Wells – NHH AMS – HHR EDMI – HHR

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks
(c)(iii) - Creation and management of HHR and NHH volume information	AMS – HHR EDMI – HHR Various Councils – DUMML data IntelliHub – AMI estimates
(d) – Calculation of ICP days	
(da) - delivery of electricity supplied information under clause 15.7	
(db) - delivery of information from retailer and direct purchaser half hourly metered ICPs under clause 15.8	
(e) – Provision of submission information for reconciliation	
(f) - Provision of metering information to the Grid Owner	EMS

ARC, AMS, Smartco and IntelliHUB conduct AMI data collection as MEPs and not as agents to reconciliation participants.

Mercury receives distributed unmetered load (DUMML) data from 12 distributed unmetered load customers, who are considered agents under clause 15.34. Veritek has audited or has the next audit scheduled for these parties and the audit reports are separately submitted.

The audit reports for the remaining agents listed above will be submitted with this audit. This report only contains details of those areas where issues were identified or where additional analysis was conducted specifically for Mercury. The agents' reports contain all the remaining detail. Where the report was more than seven months old on the audit due date, I confirmed with the agent that there had been no changes to systems or processes which could affect Mercury's compliance.

### 1.10. Summary of previous audit

The previous audit report conducted in April 2020 by Steve Woods (lead auditor) of Veritek Limited was reviewed. The summary tables below show that some of the issues have been resolved and some are still existing. Further comment is made in the relevant sections of this report.

#### **Table of Non-compliance**

Subject	Section	Clause	Non-compliance	Status
Relevant information	2.1	10.6,11.2 & 15.2	Some registry discrepancies.  Between 9 and 91 ICPs with distributed generation not quantified or submitted.  31 ICPs submitted against the incorrect NSP or Network.  1 ICP missing from submission.	Still existing
Electrical Connection of Point of Connection	2.11	10.33A	At least six ICPs not certified within five business days of electrical connection.  106 ICPs not certified within five business days of electrical reconnection.	Still existing
Changes to registry information	3.3	10 of schedule 11.1	Registry not updated within 5 business days of the event for some status updates, MEP nominations and trader updates.	Still existing
Trader responsibility for an ICP	3.4	11.18	Some invalid MEP nominations were sent.	Still existing
Provision of information to the registry manager	3.5	9 of Schedule 11.1	Registry information not provided within 5 business days of commencement of supply.	Still existing
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	618 with “Don’t know” ANZSIC codes assigned. Some of these will be invalidly assigned.  12 of the 84 ICPs checked had incorrect ANZSIC codes assigned.	Still existing

Subject	Section	Clause	Non-compliance	Status
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	ICP 0000500096HB752 has the unmetered flag as "N" but unmetered load is connected.  Unmetered details incorrect for two ICPs. Both were corrected back to the start of the ICPs.  ICP 0015723581ELA43 has a single-phase meter on a telecommunications amplifier with a multiplier of 101 to cater for an additional 100 unmetered load connections.	Still existing
Management of "active" status	3.8	17 Schedule 11.1	6 reconnections updates were invalidly processed.	Still existing
Management of "inactive" status	3.9	19 Schedule 11.1	18 ICPs with incorrect inactive status.	Still existing
Losing trader response to switch request and event dates - standard switch	4.2	3 & 4 of schedule 11.3	Four AN files checked contained incorrect response codes of AD.  3,585 AN files contained incorrect response codes of AA.  Two late AN files.	Still existing
Losing trader must provide final information - standard switch	4.3	5 of schedule 11.3	Two files with incorrect average daily consumption. 13 late transfer CS files.	Still existing
Retailers must use same reading - standard switch	4.4	(1) and 6A Schedule 11.3	5 late RR files and two late AC files for transfer switches. RR not sent for ICP 0000570766NR645 and reading from CS file was not used.	Still existing
Losing trader provides information - switch move	4.8	10 of schedule 11.3	211 incorrect switch response codes of AA instead of AD.  26 ANs had non-compliant proposed event dates.  2 late switch move AN files.	Still existing
Losing trader must provide final information - switch move	4.10	11 of schedule 11.3	Average daily consumption incorrect for 4 ICPs.	Still existing



Subject	Section	Clause	Non-compliance	Status
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	One RR was sent with a read type of actual when Mercury did not have an actual reading on the event date.  Incorrect reading used when the Mercury RR was rejected. 5 late RR files and 2 late AC files for switch moves.	Still existing
Losing trader provision of information - gaining trader switch	4.13	15 Schedule 11.3	Two late AN files for HH switches.	Cleared
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 of schedule 11.3	One HH CS files was sent with METERINSTALL, METERCOMP and METERCHANNEL rows.	Still existing
Withdrawal of switch requests	4.15	17 & 18 of schedule 11.3	136 late NW files and 4 late AC files.	Still existing
Unmetered threshold	5.2	10.14 (2)(b)	Nine standard unmetered ICPs with unmetered consumption over 6,000 kWh per annum.	Still existing
Unmetered threshold exceeded	5.3	10.14 (5)	Nine standard unmetered ICPs with unmetered consumption over 6,000 kWh per annum were not corrected within the required timeframe.	Still existing
Distributed unmetered load	5.4	11 Schedule 15.3, Clause 15.37B	Errors found in seven databases. The specific findings are detailed in the DUML database audit reports.	Still existing
Electricity conveyed & notification by embedded generators	6.1	10.13	While meters were bridged, energy was not metered and quantified according to the code for five ICPs.  Some ICPs with distributed generation not quantified.	Still existing
Responsibility for metering at GIP	6.2	10.26 (6), (7) and (8)	Seven meter certificate expiry dates not updated. Three meter certification expiry dates were updated late.	Still existing
Derivation of meter readings	6.6	5 of Schedule 15.2	Customer reads are not validated against two actual validated reads resulting in estimates being validated against estimates.	Cleared
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	The best endeavours requirement was not met for 106 ICPs due to the short period of supply.	Still existing

Subject	Section	Clause	Non-compliance	Status
Correction of HHR metering information	8.2	19(2) of Schedule 15.2	Interpolation using extrapolated data caused the pattern of consumption for one correction to be allocated incorrectly for one ICP.	Cleared
Meter data used to derive volume information	9.3	3(5) of schedule 15.2	Raw meter data is rounded upon receipt and not when volume information is created.	Still existing
Calculation of ICP days	11.2	15.6	Inaccurate ICP days were reported for a small number of ICPs. Corrected data will be washed up in the next available revision, and IT is fixing the bug.	Still existing
HHR aggregates information provision to the reconciliation manager	11.4	15.8	HHR aggregates file does not contain electricity supplied information.	Still existing-code issue
Allocation of submission information	12.3	15.5	Three ICPs recorded with the incorrect NSP.  Two ICPs recorded against the incorrect network.  One ICP not submitted due to be being recorded against another trader in SAP.	Still existing
Grid connected generation	12.6	15.11	Alleged breach 1910MERC1 was recorded for late provision of the NSPVOLS files for May 2019.	Cleared
Accuracy of submission information	12.7	15.12	Inaccurate submission as follows: <ul style="list-style-type: none"> <li>• DG kWh for 8 ICPs,</li> <li>• 2 ICPs submitted against the incorrect NSPs,</li> <li>• 31 ICPs submitted against the incorrect network, and</li> <li>• ICP 0068548000WR39B missing from submission from 17/07/18-31/10/18</li> </ul>	Still existing
Reconciliation participants to prepare information	12.9	2 Schedule 15.3	ICP 0068548000WR39B missing from submission from 17/07/18-31/10/18.	Cleared
Forward estimate process	12.12	6 Schedule 15.3	The accuracy threshold was not met for all months and revisions.	Still existing
Compulsory meter read after profile change	12.13	Clause 7 Schedule 15.3	No read recorded at the time of the profile change.	Cleared
Historical estimate reporting to RM	13.3	10 of Schedule 15.3	Historic estimate thresholds were not met for some revisions.	Still existing

## **Table of Recommendations**

<b>Subject</b>	<b>Section</b>	<b>Clause</b>	<b>Recommendation</b>	<b>Status</b>
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	Review reporting to include only ICPs that have not been read during the period of supply are included	Cleared

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

#### **Code reference**

*Clause 16A.11*

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

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

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

#### **Audit observation**

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

#### **Audit commentary**

Mercury have deployed a central AMI data repository. This was discussed during the 2020 audit and it was noted a material change would be required for this. This was not undertaken and is recorded as non-compliance below.

#### **Audit outcome**

Non-compliant

<b>Non-compliance</b>	<b>Description</b>
Audit Ref: 1.11 With: Clause 16A.11  From: 01-Feb-20 To: 01-Feb-20	Material change audit not conducted for deployment of centralized AMI data repository.  Potential impact: High  Actual impact: Low  Audit history: None  Controls: Weak  Breach risk rating: 3
<b>Audit risk rating</b>	<b>Rationale for audit risk rating</b>
<b>Low</b>	The controls are recorded as weak as the material change was not undertaken as required by the code.  The impact of this had the deployment not gone as expected could have been high but no issues have been found in this audit in relation to this change and therefore the audit risk rating is low as none is not an option.

Actions taken to resolve the issue	Completion date	Remedial action status
We have recently received clarification from the EA on what types of changes require a material change audit. We have reiterated this message to all operations managers to ensure audits are conducted when necessary. We will liaise with Veritek if and when there is any uncertainty on whether an audit is required.	Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
As above.	As above	

## 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 list file as of 25 November 2020 and AC020 trader compliance report for 1 February 2020 to 8 December 2020 were examined to confirm that information was correct and not misleading. The registry validation process was examined in detail in relation to the achievement of this requirement.

#### Audit commentary

##### **Registry Synchronisation**

Trader and status information is maintained within SAP, and then transferred to the registry, but is also manually updated using the registry interface where necessary. The 2018 and 2019 audits found that some invalid registry status and trader information updates had been processed by SAP. Mercury has investigated this issue and found that the invalid updates are being caused by the switch in loader and switch out loader processes.

- Where an ICP returns to “active” status after a period of being inactive, the previous inactive time slice is sometimes automatically updated to “active” as well.
- Invalid MEP nominations are sometimes being issued.

A fix was put in place in September 2020. Examination of samples found no examples of the erroneous MEP nominations occurring. I found two active updates where it was not clear as to why these had been sent since then. Mercury has lodged a job with IT to investigate this. This is discussed further in **section 3.3**.

Changes to registry data managed by other participants, such as NSP changes, installation type changes, and distributor unmetered load details are automatically updated in SAP through the registry notification process. An error case is created if there are any issues with the update.

Because registry data is imported into SAP, SAP and the registry should normally align. Data discrepancies are identified daily through SAP’s processes, and error cases are created for investigation and resolution. The discrepancy reports focus on recent activity on the registry.

### **Registry information accuracy**

The analysis of the list file and AC020 report returned the following findings.

Issue	Dec 2020 Qty	2020 Qty	2019 Qty	2018 Qty	2017 Qty	Comments
Active with blank ANZSIC	2	2	2	2	2	See <b>section 3.6</b>
Active with ANZSIC "T999" not stated	0	0	0	0	2	Compliant
Active with ANZSIC "T994" don't know	249	618	269	388	1,662	See <b>section 3.6</b>
UML load = zero	6	0	6	3	3	Compliant, as the affected ICPs were embedded network residual load ICPs.
Incorrect UML load	0	2	-	6	2	See <b>section 3.7</b>
No MEP recorded or nominated and UML= "N"	90	55	105	2	2	See <b>section 2.11</b> , and <b>3.4</b>
UML load removed and an MEP is nominated but is still UML in SAP	0	0	0	0	2	Compliant
Shared unmetered load incorrect	0	0	0	0	0	Compliant
ICPs with different UNM load to that recorded by the Distributor	5	11	35	40	2	These are being investigated with the network and customer to confirm which unmetered load is correct. See <b>section 3.7</b> .
ICPs with Distributor unmetered load populated but retail unmetered load is blank and UML flag =N	13	15	23	13	45	See <b>section 3.7</b> .
Incorrect profile	3,828	3,478	3,010	1	1	3,828 ICPs with RPS profile recorded on the registry have distributed generation recorded.  Submission data for a sample of ten of these ICPs was checked, and I found the PV1 profile was correctly applied in the AV080 NHH submissions for NHH ICPs with

Issue	Dec 2020 Qty	2020 Qty	2019 Qty	2018 Qty	2017 Qty	Comments
						generation, but the PV1 profile was not recorded against the ICPs on the registry due to a limitation in SAP which can only record three characters for a profile. Refer to <b>section 6.1</b> .
Incorrect statuses or status event dates	15	24	26	-	-	12 of a sample of 20 reconnections checked were invalidly processed. See <b>section 3.8</b> .  Three ICPs with incorrect inactive status dates or status reason codes. See <b>section 3.9</b> .

### **Submission information accuracy**

The following submission accuracy issues were identified:

Distributed generation	<p>109 of the 3,907 ICPs with generation recorded by the distributor do not have import/export metering recorded on the registry. Population of distributed generation details on the registry is a MEP requirement and not the responsibility of the retailer, but it is the retailer's responsibility to ensure that electricity is quantified in accordance with the code. A typical sample of 50 ICPs without injection/export metering recorded on the registry were reviewed to determine whether distributed generation was present and found:</p> <ul style="list-style-type: none"> <li>• 26 are Tesla battery chargers and any generation is being gifted,</li> <li>• eight have the HHR or HHM profiles: <ul style="list-style-type: none"> <li>○ five are being investigated to confirm if solar is present or not,</li> <li>○ two have been confirmed to have no solar present (this includes ICP 0004922952WE458 discussed below),</li> <li>○ ICP 0220523875LC32A has since had an import export meter installed.</li> </ul> </li> <li>• 16 have an RPS profile: <ul style="list-style-type: none"> <li>○ eight are being investigated to confirm if solar is present or not,</li> <li>○ three are in the process of having import export metering installed,</li> <li>○ two (ICPs 0000014551HBBC0 and 0480233454LC6E3) have had import export metering installed but the profile has not been updated in the registry. This is recorded as non-compliance below,</li> </ul> </li> <li>• ICP 0007130338RNA72 is indicated by Orion to have wind generation. This was confirmed to be correct in their report. Mercury advised that there is only solar generation for the hot water connected. I recommend that Mercury liaise with Orion and the customer to confirm what is on site. <ul style="list-style-type: none"> <li>○ Mercury have confirmed that there is no longer any solar at ICP 0006687032RN23B and have notified the Distributor to remove this from the registry,</li> </ul> </li> <li>• One ICP has since switched away.</li> </ul>
HHR settled ARC Innovations meters	<p>There is an issue with ARC Innovations meters when used for HHR settlement. The on-site setup is that a meter pulses into a data storage device, which counts the pulses and "stores" them every 200 pulses which equals 0.1 kWh. There is only one decimal place, so the smallest increment of consumption is 0.1. The issue is made worse for installations with a multiplier, for example if the multiplier is 100, the smallest</p>

	increment per interval is 10 kWh, which means the accuracy per interval is poor. Unfortunately, this means the HHR data derived from ARC meters is not considered to be accurate in accordance with Clause 15.2. The total kWh per month will be accurate but if volumes are not recorded and reported against the correct trading period, but Mercury may not be charged at the wholesale rate that applied during the trading period when the electricity was consumed. 2,594 active HHR settled category 1 and 2 meters are affected.
Replacement of estimated data	IntelliHUB does not provide updated actual data to replace estimates if the actual data is obtained more than 15 days after the event date.

I followed up the submission accuracy issues identified in the previous audit to determine whether they were resolved:

- The interpolation process used for HHR estimation used extrapolated data to interpolate. Interpolation should only use actual data from another time period. Mercury has changed their process and all estimates and corrections are now based on actual data.
- NSP changes were not identified in two instances resulting in the ICP being reconciled to the incorrect NSP. This had occurred due to an issue with the HHM profile where NSP changes were not being picked up correctly in all instances. This matter is now resolved.
- Three ICPs were reconciled against the incorrect balancing area resulting in volumes being reconciled to the incorrect Distributor in two cases and incorrect network in one case. The two NSPs affected are STK0331 and HEP0331. These NSPs are both across two networks. Mercury have investigated and found that this occurred when the ICP was set up or moved to the HHM profile due to the incorrect grid selection. 31 ICPs were affected. 17 ICPs were corrected through the revision process. 14 ICPs are outside of the 14-month revision process. The matter is resolved, and no further examples were identified.
- I rechecked the previous audit issue relating to ICP 0068548000WR39B. Mercury was recorded in the registry as the trader for ICP 0068548000WR39B from 22 June 2018 but SAP has this ICP as being with Genesis from 17 July 2018 to 31 October 2018. Therefore, no submission occurred for this ICP during this period. The trader events in the registry were updated in March 2020 resulting in corrections to ICP days and submission. This appears to be a one-off issue and no further examples were identified.
- Two ICPs where the read values did not match that sent in the CS file as detailed in **sections 4.4** and **4.10**. These have not been corrected during the audit period and R14 has now been submitted.

### **NHH corrections**

Where errors are detected during validation of NHH meter readings, a check reading is performed, or AMI data for surrounding days is reviewed. If an original meter reading cannot be confirmed, an estimated reading is used. These estimates are calculated using data from a period with a quantity and profile similar to the period requiring estimation. The estimated reading is labelled as an estimate and a system note is entered which describes the reason for the change.

Defective meters	<p>Where a meter is found to be stopped or faulty it is replaced. The meter is closed on an estimated read which includes estimated consumption for the affected period, and the new meter is opened on its starting read. Mercury's process is to correct the consumption for the entire period and to then apportion it over the previous 14 months to ensure all consumption is accounted for.</p> <p>I checked ten examples of suspected stopped or faulty meters to determine whether corrections had been processed. In all cases, the correction was processed accurately, and consumption flowed through to submission files.</p>
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Incorrect multipliers	Six ICPs with incorrect multipliers were identified by Mercury during the audit period. In all cases, the errors were corrected, and consumption flowed through to revision files.
Bridged meters	<p>When AMI meters have been bridged, the consumption during the bridged period is estimated and flows through to submission files. The meter is closed on an estimated read which captures the estimated consumption during the bridged period, and then restarted on the meter read that applied when the meter was unbridged.</p> <p>Mercury provided 14 examples of bridged meters which were unbridged during the audit period. Consumption during the bridged period had been estimated and submitted correctly.</p>
Consumption while inactive	<p>Consumption that has occurred while an ICP is inactive will only be reported if the status is corrected back to active. The historic estimate process apportions consumption between reads to the days that the ICP has been active during the read period.</p> <p>Consumption while inactive is identified by the data analysts. A report is run that identifies all ICPs with an inactive status and consumption. Currently there are 84 ICPs (10,584 kWh) on this list. The number on this list has continued to decline over the last three audits. Staff check each ICP to determine whether they are connected and return them to active status and refer them to the Vacant and Disconnection teams if necessary. ICPs with inactive consumption for over three months and the highest inactive consumption are addressed as a priority.</p> <p>I reviewed an extreme case sample of the ten ICPs with the most consumption (281-1500 kWh) had been detected during a disconnected period and found that in most cases the disconnection date in the report was different to the inactive date in the registry. The registry date was correct. The findings from the ten examples were as follows:</p> <ul style="list-style-type: none"> <li>• four ICPs had 1 kWh each after the disconnection and the installations are still vacant, the disconnection reading will become the start reading for the new customer so all kWh will be accounted for, and</li> <li>• six ICPs switched out on the disconnection reading from the date of disconnection, so all kWh was accounted for.</li> </ul>
Unmetered load corrections	I checked a sample of five changes to unmetered load details and they were all conducted correctly.

ICP 0048240328PCC75 is now supplied by Powerco's "Basepower" system, which is a solar installation with batteries and a diesel backup generator. It is not connected to the network and is recorded as inactive, reconciled elsewhere. This ICP should be recorded as inactive, ready for decommissioning, as advised by Powerco on 28 September 2020.

#### Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 2.1</p> <p>With: Clause 10.6,11.2 &amp; 15.2</p> <p>From: 01-Feb-20</p> <p>To: 08-Dec-20</p>	<p>Some registry discrepancies.</p> <p>2 switch event meter readings not corrected from the 2020 audit.</p> <p>Some ICPs with distributed generation not quantified.</p> <p>IntelliHUB does not provide updated actual data to replace estimates if the actual data is obtained more than 15 days after the event date.</p> <p>1 ICP with the incorrect status of 1,5.</p> <p>Arc provides interval data to one decimal place, which is not considered to be sufficiently accurate.</p> <p>Potential impact: High</p> <p>Actual impact: Medium</p> <p>Audit history: Multiple</p> <p>Controls: Moderate</p> <p>Breach risk rating: 4</p>		
Audit risk rating	Rationale for audit risk rating		
<p><b>Medium</b></p>	<p>The controls are rated as moderate as they will mitigate risk most of the time, but there is room for errors to occur.</p> <p>The audit risk rating medium because of the impact on settlement.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status

<p><b>Registry discrepancies</b> Specific comments are included in the relevant sections of this report.</p> <p><b>2 switch reads not corrected from 2020 audit</b> This was missed as 'follow up' work from the last audit and corrections were not been made in time for R14. We will be raising this with the team to ensure all necessary corrections are made in a timely manner to allow for accurate submission. In these two cases correct RR processes were not followed and we will be reiterating with the teams involved, the importance of following these procedures.</p> <p><b>DG ICPs</b> We have reporting in place to identify ICPs where solar is present and have received no notification from the customer or network. We monitor this reporting and contact customers to arrange for import/export metering installation.</p> <p><b>Intellihub estimate replacements</b> We will be raising this with Intellihub and will investigate the options to ensure accuracy.</p> <p><b>ICP 0048240328PCC75, 1 ICP with the incorrect status</b> The status has now been corrected.</p> <p><b>ARC interval data</b> This issue is not specific to Mercury and we understand Vector Metering is working with the EA on resolution.</p>		Identified
<b>Preventative actions taken to ensure no further issues will occur</b>	<b>Completion date</b>	
<p><b>2 switch reads not corrected from 2020 audit</b> As above.</p> <p><b>DG ICPs</b> We will continue with our reporting and customer follow up processes mentioned above. We are also in the process of implementing letter notifications to notify customers of a meter change for ICPs where solar generation has been confirmed.</p> <p><b>ICP 0048240328PCC75, 1 ICP with the incorrect status</b> We have updated our process documentation to capture the requirements for these ICPs as they are a special scenario for only one Network and are infrequent.</p>	Apr 2021	

## 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.

#### **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**

NHH read data is transferred via SFTP by IntelliHUB (for IntelliHUB, MTRX and Counties Power meters), AMS (for AMS, Smartco and Arc meters) and Wells.

HHR volume data is transferred via SFTP by AMS and EDM I.

Generation data is received via SFTP, and automatically imported into SAP.

To confirm the process, I traced a sample of reads for 10 NHH ICPs, and five HHR ICPs from the source files to SAP.

#### **Audit commentary**

The data transfer method varies depending on the MEP or agent, and type of data being transferred.

#### **NHH**

For IntelliHUB (for IntelliHUB, Metrix and Counties Power meters), a read request is provided two days ahead of the scheduled read date. IntelliHUB then provides reads for the requested reads via SFTP for IntelliHUB, MTRX and Counties Power meters.

AMS provide a daily file containing AMI reads for all ICPs for AMS, Smartco and Arc meters. Reads for the scheduled read date are extracted and imported into SAP.

Wells provide a daily file for all reads obtained the previous day via FTP. Wells also provide some special (out of cycle) readings via email. These reads are typically used to validate and verify other meter readings and are entered with a read type of unbillable. I did not see any examples where these emailed readings had been treated as actual.

I traced a sample of two readings each for IntelliHUB (including Counties Power), AMS, Smartco, Arc and Wells from the source files to SAP. All readings matched.

#### **HHR**

HHR read data is transferred via SFTP for EDM I and AMS. I traced a sample of volume data for five ICPs for EDM I and AMS. All volumes matched.

## Generation

Generation station data is received via SFTP, and automatically imported into SAP. Generation station information was checked by comparing the data imported into SAP against check meter information provided. No issues were identified.

## **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, and*
- *provided and received from other reconciliation participants and their agents.*

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

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

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

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

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

### **Audit observation**

A complete audit trail was checked for all data gathering, validation and processing functions. I 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**

A complete audit trail was viewed for all data gathering, validation and processing functions. The logs of these activities for Mercury and all agents include the activity identifier, date and time and an operator identifier.

## **Audit outcome**

Compliant

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

### Code reference

Clause 10.4

### Code related audit information

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

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

### Audit observation

I reviewed Mercury's current terms and conditions.

### Audit commentary

Mercury's current 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 Mercury's current terms and conditions and discussed compliance with these clauses.

### Audit commentary

Mercury's contract with their customers includes consent to access for authorised parties for the duration of the contract. Mercury confirmed that they have been able to arrange access for other parties when requested.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 10.35(1)&(2)*

#### Code related audit information

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

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

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

#### Audit observation

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

A discussion was held regarding knowledge of any ICPs with loss compensation present. The presence of loss compensation factors was checked.

#### Audit commentary

Mercury confirmed they do not deal with any installations with loss compensation.

#### 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 Mercury's current terms and conditions.

#### **Audit commentary**

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

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 10.32*

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

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

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

#### **Audit observation**

The new connection process was examined in detail to evaluate the strength of controls. The registry list and event detail report for 1 February 2020 to 25 November 2020 and audit compliance report for 1 February 2020 to 8 December 2020 were analysed to confirm the process is compliant and controls are functioning as expected.

#### **Audit commentary**

##### **NHH New Connections**

New connections on the Vector and Powerco networks are advised by the network. For the other networks, the application is received from the customer's agent such as the electrician. Mercury then contacts the network to request the creation of an ICP.

Mercury accept responsibility for the ICP and work with the MEP and electrician to progress the connection. ICPs are claimed and moved to "active" status once confirmation of initial electrical



connection is received. The MEP is also nominated at this time. The “new connection in progress” status is not used for NHH new connections. Examination of the event detail report identified six ICPs where this status was used. I confirmed these were not new connections. These are discussed further in **section 3.9**.

#### HHR New Connections

HHR new connections are initiated by the commercial operations team and monitored using the WIP spreadsheet, and by the customer’s account manager. Improvements have been made to the WIP spreadsheet so that the tracking of activity is more granular, and the risks are better mitigated.

Mercury no longer uses the “new connection in progress” status for any HHR new connections. ICPs are claimed and moved to active status once confirmation of initial electrical connection is received. The MEP is also nominated at this time.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 10.33(1)*

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

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

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

#### **Audit observation**

The new connection process was examined in detail to evaluate the strength of controls. Temporary electrical connections were discussed.

#### **Audit commentary**

ICPs are claimed and moved to “active” status once confirmation of initial electrical connection is received. Mercury only uses the “new connection in progress” status if it is expected that a new connection will be delayed.

Mercury was not aware of any new connections which were temporarily electrically connected during the audit period.

#### **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:*

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

### Audit observation

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

The registry list for 25 November 2020 and AC020 trader compliance report for 1 February 2020 to 8 December 2020 were examined to confirm process compliance and that controls are functioning as expected.

### Audit commentary

#### Active ICPs without metering

The registry list as of 25 November 2020 showed 1,077 active ICPs have a metering category of 9 or blank. 978 of these have unmetered load indicated, and the remaining 99 were checked.

- 36 had MEP nominations made and accepted and were awaiting meter details on the registry,
- 62 were timing differences and the metering details were updated, or the status was updated to inactive or decommissioned prior to the audit,
- ICP 0001448727UN8E8 has metering on site but MNON was nominated in error for 12 February 2011 and due to subsequent registry events Mercury are unable to nominate Metrix for the correct date, they are working to have the events reversed so that the correct MEP is nominated.

The AC020 trader compliance report as of 8 December 2020 showed 90 ICPs which have a metering category of 9 or blank and no unmetered load indicated.

- 40 had MEP nominations made and accepted and were awaiting meter details on the registry,
- 37 were timing differences and the metering details were updated, or the status was updated to inactive or decommissioned prior to the audit,
- 12 had their unmetered flag set to N, but other trader and distributor unmetered load information indicated that unmetered load was present - these are DUML ICPs and Mercury confirmed that the registry could not be updated to "Y" for these because the settlement type is HHR, and
- ICP 0001448727UN8E8 is discussed in the list file analysis above.

#### New Connections

Service requests are sent directly to the MEP, and MEP nominations are processed when the ICP becomes active on the registry.

Analysis of AC020 trader compliance report found 97 new connections were not certified within five business days of electrical connection. Certification is an MEP responsibility, but their delay will cause Mercury to be non-compliant.

A sample of 20 late certifications were checked.

- six were unmetered traffic light ICPs, or unmetered builder's temporary supplies and no certification was expected,
- four were unmetered builder's temporary supplies between the active date and meter certification date, and the certification was not late,
- three were late registry updates by the MEP, and the meters were certified on the date that the ICPs became active,
- four ICPs had MEP nominations made and accepted but certification has not been entered on the registry by the MEP (I sighted the meter certification during the site audit), and
- three ICPs had late certification recorded on the registry as the earlier meter detail had not been loaded to the registry (I confirmed that all were certified within five business days of electrical connection).

Compliance is confirmed.

#### Reconnected ICPs

Metering installations at 88 ICPs were not certified within five business days of reconnection. Mercury runs a weekly report to identify any reconnected ICPs with expired meter certification. A request is then sent to the MEP to certify the site. A typical sample of 20 ICPs with expired meter certification were examined and found:

- Nine ICPs that weren't identified in the report. Mercury is reviewing the report parameters to ensure that all ICPs are identified.
- Five ICPs were identified but took longer than five business days from reconnection to be recertified.
- Three ICPs where the status was incorrectly returned to active when the meter was removed from the ICP. This was a known issue where SAP sent an erroneous active update to the registry without an event date when a meter was removed. When an event is sent with no effective date the registry will assume the last effective event date, hence these are backdated. A fix was deployed to correct this in September 2020. I checked an audit compliance report post September and note that the overall compliance has continued to improve to 87% compliant. I also checked an extreme sample of ten ICPs and found eight were due to revenue risk activity. Two are being investigated as the reason for the active updates for ICPs 0081062149WECA1 and 0002721021TGDBD is not clear, therefore it is not clear if the fix deployed in September has worked as expected or that there is another SAP issue. Mercury have raised a job with IT to determine and resolve this.
- Two ICPs were switched in and were reconnected but the meters were not recertified within five business days.
- ICP 0302251553LC47E was advised by the Distributor to be active. This has since been confirmed as disconnected and returned to a disconnected status.

#### Bridged meters

Mercury confirmed 14 ICPs were bridged to reconnect during the audit period and were later unbridged. 11 were certified when unbridged, and three were not re-certified. The ICPs are shown in the table below.

ICP	MEP	Bridge start	Bridge end	Certification date
0000037853WE32E	NGCM	18/05/2020	1/06/2020	18/03/2015
0006112451WM2EA	FCLM	18/06/2020	16/09/2020	17/04/2018
0030446078PCBBE	NGCM	16/11/2019	4/09/2020	12/09/2017

#### **Audit outcome**

## Non-compliant

Non-compliance	Description		
<p>Audit Ref: 2.11 With: 10.33A</p> <p>From: 01-Feb-20 To: 08-Dec-20</p>	<p>84 ICPs (excludes the three erroneous active updates and ICP 0302251553LC47E) updates not certified within five business days of electrical reconnection.</p> <p>Three ICPs not recertified within five business days of un-bridging.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are rated as moderate as reporting in place to identify reconnected ICPs with expired certification requires some improvements.</p> <p>The audit risk rating is low as volume of ICPs affected is small overall.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p><b>84 ICPs not certified within 5 BD of reconnection</b> This non-compliance is due to the non-compliance of the MEP. We will look at how our reporting can be improved and will work with the MEPs to have strong controls.</p> <p><b>3 ICPs not certified within 5 BD of un-bridging</b> We have raised this with the MEPs and have reiterated the EA requirements of recertification following an un-bridging. One MEP has confirmed that jobs have been raised to recertify the affected ICPs and we have followed up with the other MEP.</p> <p><b>ICPs 0002721021TGDBD &amp; 0081062149WECA1</b> 0002721021TGDBD – This ICP was a backdated switch processed on 07 Jan 2021. The status was corrected on 15/01/2021. 0081062149WECA1 – This issue appears to be unrelated to any of our previous system issues for which our fix was deployed. IT are investigating and corrections will be made as necessary.</p>		<p>Ongoing</p> <p>April 2021</p>	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We have raised this with the MEPs and have reiterated the code requirements for meter certification.			

## 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, and controls within SAP were checked.

### Audit commentary

Mercury have previously demonstrated the existence of either a UoSA or other trading arrangement for all networks it trades on. Mercury did not begin trading on any new networks during the audit period.

### 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, and a check of controls within SAP.

### Audit commentary

Mercury have previously demonstrated that they have arrangements in place with all MEPs that manage metering in relation to their customer base. Mercury did not begin supplying any ICPs with other MEPs during the audit period.

The new connection process also contains a step that requires the nomination of an MEP.

### Audit outcome

Compliant

### 3. MAINTAINING REGISTRY INFORMATION

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

##### Code reference

Clause 11.3

##### Code related audit information

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

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

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

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

##### Audit observation

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

##### Audit commentary

This requirement is well managed and understood by Mercury. The process is detailed in **section 2.9** above.

##### Audit outcome

Compliant

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

#### Code reference

*Clause 11.7(2)*

#### Code related audit information

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

#### Audit observation

The new connection process was examined in detail. The registry list and event detail report for 1 February 2020 to 25 November 2020 and audit compliance report for 1 February 2020 to 8 December 2020 were analysed to evaluate registry updates for new connections. This clause links directly to **section 3.5** below, which assesses the timeliness of registry updates.

#### Audit commentary

The new connection process is detailed in **sections 2.9** and **3.5**. The process in place ensures that trader information is populated as required by this clause.

I walked through the registry update process for a sample of 71 new connections including HHR and NHH. The accuracy and timeliness of registry updates is discussed in **section 3.5**.

#### Audit outcome

Compliant

### 3.3. Changes to registry information (Clause 10 Schedule 11.1)

#### Code reference

*Clause 10 Schedule 11.1*

#### Code related audit information

*If information provided by a trader to the registry manager about an ICP changes, the trader must provide written notice to the registry manager of the change no later than five business days after the change.*

#### Audit observation

The process to manage status changes is discussed in detail in **sections 3.8** and **3.9** below. The process to manage MEP nominations and trader updates was discussed.

In this section I have examined the audit compliance report for 1 February 2020 to 8 December 2020, to identify all late status updates, MEP nominations, and trader updates. To determine the reasons for the late updates, I examined:

- 20 late updates to active made over 30 business days after the event date,
- a sample of at least five (or all) late updates over 30 business days for each inactive status reason code, and
- 35 late trader updates, including MEP nominations over 30 business days.

#### Audit commentary

The AC020 trader compliance report was examined to confirm whether the registry is updated within five business days when information referred to in clause 9 of schedule 11.1 changes.

Event	Year	ICPs notified greater than 5 days	Average notification days	Percentage compliant
Status updates				
Change to active - Reconnections	2017	205	21.2	83%
	2018	758	26.3	74%
	2019	791	17.6	80.1%
	2020	923	14.52	82.74%
	<b>Dec 2020</b>	<b>624</b>	<b>7.97</b>	<b>85.93%</b>
Change to electrically disconnected	2019	588	11.34	86.49%
	2020	512	7.07	87.39%
	<b>Dec 2020</b>	<b>337</b>	<b>7.86</b>	<b>92.16%</b>
Trader updates				
Trader updates, including MEP nominations	2019	76,952	37	9.5%
	2020	39,229	13.47	32.51%
	<b>Dec 2020</b>	<b>58,841</b>	<b>13.46</b>	<b>12.45%</b>

#### Status updates - reconnections

The level of compliance for reconnections has improved during the audit period. The process for reconnections is largely automated. The closing of a service request triggers an update to SAP and then the registry. Where the automatic update fails, the registry and SAP are updated manually.

Field services jobs are closely monitored to ensure that they are completed, and paperwork is returned. Daily reminders are issued to contractors where paperwork is due. This process is automated for Wells using a B2B system. A report of open jobs for other contractors is generated, and Mercury's inboxes are checked for paperwork before issuing reminders. In addition, a weekly report is generated for all ICPs which are disconnected but have an active customer account. This report identifies ICPs which are likely to have been reconnected so that paperwork can be followed up.

624 updates were completed more than five business days after the event date. 129 of those were more than 30 business days after the event date, 46 were more than 120 business days after the event date and five were more than 1,000 business days after the event date.

Analysis of 20 updates more than 30 business days after the event date (including the ten latest updates) found:

- 12 updates were due to the known system issue where SAP sent an erroneous active update to the registry without an event date when a meter was removed - when an event is sent with no effective date the registry will assume the last effective event date, hence these are backdated. A fix was deployed to correct this in September 2020. I checked an audit compliance report post September and note that the overall compliance has continued to improve to 87% compliant. I also checked an extreme sample of ten ICPs and found eight were due to revenue risk activity.



Two are being investigated as the active updates of ICPs 0081062149WECA1 and 0002721021TGDBD is not clear, therefore it is not clear if the fix deployed in September has worked as expected or that there is another SAP issue. Mercury have raised a job with IT to determine and resolve this.

- four updates were corrections to the active date, and
- four updates were as a result of reporting to identify consumption on disconnected ICPs - the active date for two of these reconnections was not applied from the date the usage occurred and this is recorded as non-compliance in **section 3.9**.

#### Status updates – inactive

Field services jobs are closely monitored to ensure that they are completed, and paperwork is returned, using the same processes as for reconnections. Status updates for credit disconnections are updated on a weekly basis, back to the first full day with no power.

The process is automated so that the status in SAP is updated when the service request is completed. Where an ICP is disconnected and promptly reconnected, paperwork may be received out of order. This can result in the reconnection being processed before the disconnection, leaving the ICP with an incorrect status in SAP and on the registry. Processes are in place to identify and correct statuses where paperwork has been processed out of order, including monitoring of consumption on inactive ICPs. I found no evidence of these ICPs not being corrected.

624 updates were completed more than five business days after the event date. 117 were updated more than 30 business days after the event date, 52 were more than 120 business days after the event date and seven were more than 1,000 business days after the event date.

A sample of 24 late updates were checked:

- 14 late updates were caused by a combination of late paperwork confirming the disconnection and/or a delay in processing the paperwork,
- six late updates to “new connection in progress” occurred; three were because the status was changed back to “new connection in progress” so the active status event date could be corrected, and the remaining three ICPs were switched in and this status was applied in error by an operator (these have since been reversed on the registry to return the ICP to active from the switched in date), and
- four late updates were status corrections following the correct status being confirmed.

#### Trader updates

For HHR ICPs MEP nominations are managed directly on the registry. For NHH ICPs MEP nominations are normally created from SAP but may also be created manually on the registry. MEP nominations for bulk meter roll outs are uploaded to the registry via files.

58,821 updates were completed more than five business days after the event date. 2,893 late updates were more than 30 business days after the event date, 281 were more than 120 business days, and two were more than 1,000 business days.

A sample of 40 late trader updates over five business days were examined and found:

- 31 were corrections to trader information - Mercury will only update a non-communicating AMI metered site after three months of non-communication hence this causes trader events to be backdated,
- six were late notification from the MEP to be nominated,
- two were due to the switch loader issue, which is discussed below, and
- one was due to late paperwork back from the field.

The switch loader error found in the last audit has been fixed as of September 2020. This will have impacted the audit compliance achievement during the audit period. I checked an audit compliance report for the period from 1 September 2020 to 31 December 2020 and found no examples of these occurring post this date. This is also evident in the improvement in the audit compliance which has improved to 37% compliant from 12.45%.

The audit compliance report recorded 305 ICPs where the ANZSIC code was updated later than 20 business days after the Mercury commenced trading. I checked the ten latest updates and found:

- eight related to backdated switches, and
- the remaining two were due to backdated HHR new connections.

In both instances, Mercury correctly updated these as soon as the switch completed or the ICP was confirmed as active but as these were back dated, they cannot comply in these instances.

#### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.3 With: Clause 10 of schedule 11.1 From: 01-Feb-20 To: 08-Dec-20	Registry not updated within 5 business days of the event for some status updates, MEP nominations and trader updates. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating
Low	The controls are rated as moderate as there are good controls in place to identify discrepancies and the automated process issues identified in the last audit have been addressed. The audit risk rating is assessed to be low, as the volume of backdated updates is declining as processes and controls are improved.
Actions taken to resolve the issue	
Completion date	Remedial action status

<p>Many of our late updates are due to the 'switch loader' issue which we have resolved in Sep20. There are also instances where non-compliance cannot be avoided due to backdated switches, late notification from other parties etc. The reporting we have in place is working well to monitor discrepancies and we are seeing an improvement in compliance for this area.</p> <p><b>ICPs 0002721021TGDBD &amp; 0081062149WECA1</b>  0002721021TGDBD – This ICP was a backdated switch processed on 07 Jan 2021. The status was corrected on 15/01/2021.</p> <p>0081062149WECA1 – This issue appears to be unrelated to any of our previous system issues for which our fix was deployed. IT are investigating and corrections will be made as necessary.</p>	March 2021	Identified
<b>Preventative actions taken to ensure no further issues will occur</b>	<b>Completion date</b>	
Increased compliance following our Sep20 fix is already visible and we will continue to monitor any discrepancies closely. We will continue to work on improving our processes and controls in this area.	Ongoing	

### 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

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

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

#### ICP Decommissioning

The process for the decommissioning of ICPs was examined. A typical sample of ten (or all) decommissioned ICPs per code were checked using the typical case method of sampling to prove the process and confirm controls are in place.

#### **Audit commentary**

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

The new connection process is discussed in detail in **section 2.9**. Mercury nominates the MEP at the same time the ICP becomes “active”. This means that if the status update to active is late, the MEP nomination is also expected to be late. The timeliness of MEP nominations is discussed further in **section 3.3**.

The issue identified in the last audit of some invalid MEP nominations being issued in error by SAP’s switch in loader and switch out loader process has been fixed in September 2020 and I found no evidence of this occurring after this date.

Mercury have put a query in place to monitor rejected MEP nominations. This was being monitored weekly but as so few were occurring this is now monitored monthly. 90 (1.4%) of the 6,279 MEP nominations identified on the event detail report were rejected.

14 were accepted on reissue to a different MEP. These were checked and found that:

- for 9 ICPs that the incorrect MEP was nominated in the first instance due to human error, and
- for the remaining four SMCO was nominated but an NGCM meter was recorded on the returned paperwork so the MEP nomination was corrected.

76 were not reissued. 69 were rejected with advisory code “no arrangement with trader” and seven were rejected with advisory code “wrong premises”. I checked a diverse sample of 20 rejected nominations including all MEPs and reason codes and found that all related to the switch loader issue. A fix has been put in place in SAP in September. There were no occurrences of this post 25 September 2020. Mercury are monitoring any rejections, so they will be able to identify any further issues should they occur.

The AC020 trader compliance report as of 8 December 2020 showed 90 ICPs which have a metering category of 9 or blank and no unmetered load indicated.

- 40 had MEP nominations made and accepted and were awaiting meter details on the registry,
- 37 were timing differences and the metering details were updated, or the status was updated to inactive or decommissioned prior to the audit,
- 12 had their unmetered flag set to N, but other trader and distributor unmetered load information indicated that unmetered load was present; non-compliance is recorded for inaccurate registry information in **sections 2.1** and **3.7**, and
- ICP 0001448727UN8E8 has metering on site but MNON was nominated in error for 12 February 2011 and due to subsequent registry events Mercury are unable to nominate Metrix for the correct date; they are working to have the events reversed so that the correct MEP is nominated.

The AC020 report recorded 13 MEP nominations which were not accepted within 14 business days of being issued. Two were invalidly recorded on the report because the MEP nominations were accepted within 14 business days of being issued. The other 11 were nominations to MEP MNON for DUMI ICPs and no acceptance is expected.

#### ICP Decommissioning

Mercury continues with their obligations under this clause. ICPs that are vacant and active, or inactive are still maintained in SAP.

In all cases, an attempt is made to read the meter at the time of removal and if this is not possible then the last actual meter reading is used. This last actual reading is normally the one taken at the time of de-energisation. Mercury also advises the MEP responsible that a site is to be decommissioned.

A sample of ten ICPs were examined to confirm an attempt to read the meter was made at the time of removal and the MEP was notified.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.4 With: Clause 11.18  From: 01-Feb-20 To: 08-Dec-20	Some invalid MEP nominations were sent.  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 there are good controls in place to identify discrepancies and the automated process issues identified in the last audit have been addressed.  The audit risk rating is assessed to be low, as the sending of invalid MEP requests due to SAP has been fixed and the incorrect or invalid MEP nominations post September is minor.		
Actions taken to resolve the issue		Completion date	Remedial action status
We have implemented a system fix to resolve the incorrect MEP nominations caused by the switch loader. The results post Sep20 show this fix has been successful.		Sept 2020	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
We have reporting in place to capture MEP nomination rejections which will be monitored closely to ensure compliance in this area.		Dec 2020	

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

#### Code reference

Clause 9 Schedule 11.1

#### Code related audit information

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

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

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

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

#### Audit observation

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

The registry list as of 25 November 2020 and audit compliance report for 1 February 2020 to 8 December 2020 were analysed to confirm process compliance and that controls are functioning as expected.

#### Audit commentary

The table below shows the timeliness of new connection updates.

Event	Year	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
Change to active - New connections	2017	200	3.9	87%
	2018	73	4.3	79%
	2019	153	3.3	93%
	2020	488	4.71	88%
	<b>Dec 2020</b>	<b>636</b>	<b>4.75</b>	<b>84.06%</b>

The non-half hour new connections team do not use the “new connection in progress” status. The ICP is claimed and status is updated to active once confirmation is received from the field that the ICP is connected.

636 updates to active for new connections were made more than five business days after the event date. 63 updates were more than 30 business days after the event date, 24 were more than 90 business days and six were more than 120 business days. The 19 latest status updates and all late HHR updates were checked, and I found the following:

- two of the examples were C&I HHR over Category 2:
  - ICP 1099580173CN92A was late due to confusion over whether the connection was a NHH or HHR connection,

- ICP 1099579885CN887 was due to late notification from the MEP,
- ten Category 1 updates were due to late notification from the field,
- four Category 1 ICPs needed investigation to confirm the correct details were recorded before they could be made active,
- two Category 1 ICPs were corrections to the first active date identified in the last audit, both were at the “inactive - new connection in progress” status and the update to “active” hadn’t flowed through to the registry,
- two Category 1 ICPs were updated late due to human error, and
- one ICP was set up in SAP but the details did not flow through to the registry, this was fixed as soon as it was identified but it was still late.

The AC020 report identified 81 ICPs with an initial electrical connection date populated which had not been made active. 72 were timing differences, and the status was updated to active or the initial electrical connection date was removed prior to the audit. The remaining nine ICPs were examined and found:

- five ICPs no notification has been received to advise these are electrically connected,
- two ICPs (1000573226PC398 and 1000573227PCFDD) at the “inactive - new connection in progress” status have been transferred from BOSCO to Mercury during the audit period and these are being investigated to confirm what the status should be,
- ICP 1002109322UN9C4 is an unmetered new connection (the active dates for these are not always advised in a timely manner) and this has since been made active from 2 November 2020, and
- ICP 0000001000MR7FD is an SB ICP that is linked to the Atiamuri Generation station which was expected to be made active in the last audit but has yet to be updated.

Active dates for new connections were compared to the distributor’s initial electrical connection date, and MEP’s certification date using the AC020 report. The AC020 report identified 1,591 ICPs with date discrepancies and 1,573 were confirmed not to be genuine at the time of the audit:

- 1,484 ICPs had a meter certification date which matched the active status date, but the initial electrical connection date was not populated by the distributor,
- 56 ICPs were unmetered or were metered but the MEP had not updated certification details on the registry, and the initial electrical connection date and active date matched,
- 32 ICPs had a timing difference and the details causing the discrepancy were corrected prior to the audit,
- two ICPs had a matching active and initial electrical connection date, but the meter certification date was genuinely different because they were initially supplied through an unmetered builder’s temporary supply.

The 17 ICPs with genuine discrepancies were checked and found:

- 13 ICPs are incorrectly included in the report as these are not new connections,
- four were found to have the incorrect first active date, specifically:
  - two ICPs (1000583488PCB86 and 1002092100UN25B) had metering certified prior to the first active date indicating that the ICPs were electrically connected when the meter was certified,
  - ICP 0007196575RN2A2 is an unmetered new connection - a check of the notification from the Distributor found the incorrect active date was used and this has been corrected,
  - ICP 1099579885CN887 was made active prior to the metering being certified and the initial electrical connection date - this was checked and found that the first active date was incorrect, but has now been corrected, and

This year’s results are similar to the last audit. This is recorded as non-compliance in **section 3.8**. I repeat the audit’s recommendation that the audit compliance report is run at least weekly to identify ICPs where

the distributor has updated the Initial Electrical Connection date, but where Mercury has not received notification. This will at least identify some of the ICPs without notification.

Description	Recommendation	Audited party comment	Remedial action
Provision of information to the registry	Utilise the audit compliance report to identify ICPs that have been electrically connected but where Mercury has not received notification	Mercury has already begun looking at how this report can be utilised, and we plan to integrate this into our BAU work.	Investigating

I also recommend that contractor performances processes be reviewed to ensure that those contractors that are slow to return field work are managed accordingly.

Description	Recommendation	Audited party comment	Remedial action
Provision of information to the registry	Review contractor performance management to ensure that service standards are being met.	Mercury has already begun work around contractor management for metering work. This is currently in place for one Vendor and we will be monitoring results.	Identified

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.5 With: Clause 9 of schedule 11.1  From: 01-Feb-20 To: 08-Dec-20	Registry information not provided within 5 business days of commencement of supply.  Potential impact: Low  Actual impact: Low  Audit history: Multiple  Controls: Moderate  Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are rated as moderate. I have made two recommendations that will assist with moving these controls to strong.  The audit risk rating is low as the average cycle time to complete is still below 5 days.		
Actions taken to resolve the issue		Completion date	Remedial action status
We have begun work on the two auditor recommendations which will improve our controls in this area. We have also implemented process improvements when meter installation results are returned which will increase efficiency and timeliness.		April 2021	Identified



Preventative actions taken to ensure no further issues will occur	Completion date	
We will look into how we can use the audit compliance report to identify ICPs that have been electrically connected and we have not received notification.	Sept 2021	

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

#### Code reference

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

#### Code related audit information

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

#### Audit observation

The process to capture and manage ANZSIC codes was examined.

The registry list file as of 25 November 2020 and AC020 report for 1 February 2020 to 8 December 2020 were examined to check ANZSIC codes, including active ICPs with T99 series or blank ANZSIC codes.

To confirm the validity of the ANZSIC codes, I checked a diverse sample of 80 active ICPs across ten different ANZSIC codes which made up more than 0.2% of the total ICPs. I also checked a sample of ten ICPs with unknown ANZSIC codes, and ten ICPs with residential ANZSIC codes and metering category two.

#### Audit commentary

ANZSIC codes are confirmed as part of the customer application process. SAS queries to identify missing and unknown ANZSIC codes are run weekly. The query results are reviewed to identify ICPs which require ANZSIC code updates. The volume of ICPs with an unknown ANZSIC code has continued to decrease and an unknown code can be valid in some instances.

#### Missing ANZSIC codes

No missing or blank ANZSIC codes were identified on the AC020 report.

Analysis of active ICPs in the list file found two ICPs with no ANZSIC code, as recorded in the 2018 audit. The registry will not allow an update to the trader details until an MEP is registered for a HHR site even though these are DUMML ICPs.

ICP	SAP ANZSIC	Registry ANZSIC
0001264718UN3E4	O753	Blank
0001264719UNFA1	O753	Blank

#### Unknown ANZSIC codes

There were 249 ICPs with ANZSIC code T994 "Don't know", a decrease from 618 last audit. A sample of ten ICPs were checked and found all have since been updated with an appropriate ANZSIC code.

#### Accuracy of ANZSIC codes

The AC020 trader compliance report recorded 124 category 2 ICPs with residential ANZSIC codes, and no ICPs with meter category three or higher with residential ANZSIC codes. I checked a sample of ten ICPs and found four were correct. The remaining six ICPs were updated during the audit.

I checked a sample of 80 active ICPs against google streetview. 54 were consistent with the streetview information and/or registry property description. The other 26 ICPs were checked and found:

- 21 ICPs had the incorrect code assigned and have since been corrected,
- three were in the process of being confirmed as the customer has been unable to be contacted to confirm,
- one was confirmed to be correct, and
- one has since switched away.

I rechecked the 12 exceptions identified during the previous audit and found four were still incorrect. These were updated during the audit and all are correct now.

ICP	Previous audit ANZSIC	Industry from streetview	Comment
0000000009DE2B8	T994	Residential	Since updated to residential
0000000335TED1C	K641	Shed	Since updated to A016 (Agricultural)
0000000415NTB8D	R911	Residential	Site has since switched away
0000000783TE220	S955	Cruising club	Since updated to R913 (Recreational)
0000000125TEDB6	I530	Agriculture	Cleared, updated as expected
0000000526DE536	L672	Residential	Cleared, updated as expected
0000000527DE973	L672	Residential	Cleared, updated as expected
0000000535TEB1A	S953	Agriculture	Cleared, updated as expected
0000000574NT13C	A016	Residential	Cleared, updated as expected
0000000884TE0E5	M696	Restaurant	Cleared, updated as expected
0000000889DE7FF	L672	Residential	Cleared, updated as expected
0000001026UH3A0	A016	Residential	Cleared, updated as expected

## Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.6 With: 9 (1)(k) of Schedule 11.1  From: 01-Feb-20 To: 08-Dec-20	249 with “Don’t know” ANZSIC codes assigned. Some of these will be invalidly assigned. 31 of the 102 ICPs checked had incorrect ANZSIC codes assigned. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are rated as moderate. There is a reliance on the front line to confirm and assign the correct code and this is not always happening. The controls in place mitigate this as best it can. This has no direct impact on reconciliation therefore the audit risk rating is low. There is an impact on reporting by the Electricity Authority.		
Actions taken to resolve the issue		Completion date	Remedial action status
Weekly reporting is in place to capture missing & “don’t know” ANZSIC codes and these are updated as necessary. This process is working well and is shown by the decrease in number compared with previous audits.		Completed	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As there is reliance on our frontline staff to capture the correct code, we will attend team meetings or training sessions to reinforce the importance of capturing correct information.		Sept 2021	

### 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 as of 25 November 2020 and AC020 trader compliance report for 1 February 2020 to 8 December 2020 were examined to identify any ICPs where:

- unmetered load is identified by the distributor, but none is recorded by Mercury,
- the ICP is active and unmetered, but no unmetered load is recorded, and
- Mercury's unmetered load figure does not match with the Distributor's figure (where it was possible to calculate this if the Distributor is using the recommended format) and the variance is greater than  $\pm 0.1$  kWh per day -  $\pm 0.1$  kWh per day was chosen as a sample only; this does not indicate compliance is achieved if an error is found that is less than  $\pm 0.1$  kWh per day.

## Audit commentary

### Management of unmetered load information

All unmetered load new connections or capacity changes require an application to Mercury, which then follows the new connections process.

Unmetered daily kWhs are recorded in two locations in SAP; the retailer time slice table (which reflects the SAP value) and the installation facts (which reflects the registry value). Every two months reports are run in SAS to identify discrepancies between the registry and retailer time slice table, and the registry and installation facts. I saw evidence that any differences are investigated and corrected.

Registry discrepancy reporting is in place to identify unmetered load discrepancies. This is run against all ICPs with UML flag "Y" and against any ICPs with UML indicated by the Distributor where the UML flag is "N". The comparison is run only against those records that detail wattage and not kilowatt figures.

### ICPs with unmetered load recorded by the Distributor but not by Mercury

14 active ICPs with unmetered load recorded by the distributor do not have unmetered load recorded by Mercury. 12 were confirmed to have DUML databases so the load should be reconciled under the HHR profile, so the daily unmetered load figure is blank. The remaining two ICPs were examined:

- ICP 0007301973NVCDF was checked and the unmetered load has been confirmed and the unmetered load added, and
- ICP 0012483896ELB50 was checked and no unmetered load is present - the network has since removed these details from the registry.

The previous audit exception relating to ICP 0000500096HB752 having an incorrect unmetered load flag has been cleared.

### Active ICPs with no metering or unmetered load recorded by Mercury

As recorded in **section 2.11**, The registry list as of 25 November 2020 showed 1,077 active ICPs have a metering category of 9 or blank. 978 of these have unmetered load indicated, and the remaining 99 were checked.

- 36 had MEP nominations made and accepted and were awaiting meter details on the registry,
- 62 were timing differences and the metering details were updated, or the status was updated to inactive or decommissioned prior to the audit,
- ICP 0001448727UN8E8 has metering on site but MNON was nominated in error for 12 February 2011 and due to subsequent registry events Mercury are unable to nominate Metrix for the correct date; they are working to have the events reversed so that the correct MEP is nominated.

The AC020 trader compliance report as of 8 December 2020 showed 90 ICPs which have a metering category of 9 or blank and no unmetered load indicated.

- 38 had MEP nominations made and accepted and were awaiting meter details on the registry,
- 37 were timing differences and the metering details were updated, or the status was updated to inactive or decommissioned prior to the audit,

- 12 had their unmetered flag set to N, but other trader and distributor unmetered load information indicated that unmetered load was present, so non-compliance is recorded for inaccurate registry information in **sections 2.11** and **3.7**, and
- ICP 0001448727UN8E8 is discussed in the list file analysis above.

The AC020 report recorded 16 ICPs with the unmetered flag set to “Y” and daily unmetered kWh of “ENG” or 0. Six were SB (residual load) ICPs and the remainder were DUML ICPs and the daily unmetered kWh was correctly recorded.

The AC020 report recorded 12 DUML ICPs with unmetered load recorded as “N”. Mercury confirmed that the registry could not be updated to “Y” for these because the settlement type is HHR.

#### Accuracy of trader unmetered daily kWh

There are six ICPs with zero populated in the daily UML kWh field. All are residual load SB ICPs and are compliant.

The AC020 report recorded 64 ICPs which had a difference between the trader daily unmetered daily kWh and a recalculation based on the distributor’s values of more than  $\pm 0.1$  kWh per day. All the discrepancies were checked:

- four related to DUML ICPs and were compliant,
- 39 matched within  $\pm 0.00$  kWh on manual recalculation, and had appeared on the AC020 report as a false positive because the distributor’s value was in kW rather than W, or the ICP had shared unmetered load which needed to be split between several ICPs,
- 16 found that Mercury’s details were correct - the unmetered details have been stripped out for seven ICPs due to a trader update (these have been reversed and the unmetered details restored),
- ICP 0000540450TE6E7 below is being investigated to determine the correct load as the load descriptions match as the operator copied the Distributor’s description but the daily kWh figure is different, and
- I recommend that the load for the four ICPs detailed below are checked with the Distributor as these were confirmed to be compliant in the Distributor’s audit based on the application they had, but Mercury has a different figure:

ICP	Trader load description	Distributor load description	Daily kWh calculated load difference
0000540450TE6E7	0030;24;CCTVCAMERA	0040;24;CCTV Camera	0.24
0000038391HR0C1	0030;24;CCTVCAMERA	0040;24;CCTV Camera	0.24
0000038389HR878	0030;24;CCTVCAMERA	0040;24;CCTV Camera	0.24
0000038388HR43D	0030;24;CCTVCAMERA	0040;24;CCTV Camera	0.24
0000038390HRC84	0030;24;CCTVCAMERA	0040;24;CCTV Camera	0.24

Description	Recommendation	Audited party comment	Remedial action
Changes to unmetered load	Liaise with Distributor to confirm which unmetered load is correct.	We have queried this with the distributors and will make the necessary changes/corrections when details have been confirmed.	Identified

ICP 0015723581ELA43 has a single-phase meter on a telecommunications amplifier in the Kapiti Coast region. The issue is that there are 101 such amplifiers and the ICP has a multiplier of 101. The other amplifiers are unmetered at locations in the Kapiti area, but the load is being incorrectly reconciled against this ICP. Mercury have been working with their customer to resolve this. A database has been created to account for this load. A 100% field audit was undertaken by the customer to create this. The results of this are in the process of being verified and then Mercury will engage Veritek to audit this. This matter is also recorded in **section 5.4**. As this has yet to be completed this is recorded as non-compliance below.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.7 With: Clause 9(1)(f) of Schedule 11.1  From: 01-Feb-20 To: 08-Dec-20	ICP 0007301973NVCDF with missing unmetered load details (since corrected). ICP 0015723581ELA43 has a single-phase meter on a telecommunications amplifier with a multiplier of 101 to cater for an additional 100 unmetered load connections. Potential impact: Medium Actual impact: Medium Audit history: Multiple Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
<b>Medium</b>	I have rated the controls as moderate as the registry discrepancy process will identify most errors.  The audit risk rating is medium due to the unknown impact the Kapiti coast ICP has as it may have incorrect volumes being reconciled against the incorrect GXP and balancing area. This is close to being resolved but wasn't complete at the time of the audit.		
Actions taken to resolve the issue		Completion date	Remedial action status
<b>0007301973NVCDF</b> was corrected on 28.01.2021  <b>0015723581ELA43</b> we are currently working with our customer and the distributor to resolve this. Our customer is in the process of auditing this ICP/unmetered equipment. Following the results of this audit, we will make the necessary changes/corrections.		Jan 2021  May 2021	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
We believe we have strong controls in place and will continue to monitor and correct unmetered load as necessary.	Ongoing	

### 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 managed by the relevant trader and indicates that:

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

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

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

#### Audit observation

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

The registry list as of 25 November 2020 and AC020 trader compliance report for 1 February 2020 to 8 December 2020 were reviewed to determine compliance.

- The timeliness and accuracy of data for new connections is assessed in **section 3.5**.
- The timeliness of data for reconnections is assessed in **section 3.3**, and a sample of 20 updates were checked for accuracy.

#### Audit commentary

The status of an ICP is only changed to “active” once confirmation has been received from a contractor. Submission information is provided for all “active” ICPs. SAP will not allow more than one party per ICP nor will it allow an ICP to be set up without either a meter, or if it is unmetered, the daily kWh.

#### New connections

The AC020 report identified 81 ICPs with an initial electrical connection date populated which had not been made active. 72 were timing differences, and the status was updated to active or the initial electrical connection date was removed prior to the audit. The remaining nine ICPs were examined and found:

- five ICPs have had no notification received to advise these are electrically connected,’
- two ICPs (1000573226PC398 and 1000573227PCFDD) at the “inactive-new connection in progress” status have been transferred from BOSCO to Mercury during the audit period - these are being investigated to confirm what the status should be,
- ICP 1002109322UN9C4 is an unmetered new connection and the active dates for these are not always advised in a timely manner - this has since been made active from 2 November 2020, and
- ICP 0000001000MR7FD is an SB ICP that is linked to the Atiamuri Generation station - this was expected to be made active in the last audit but has yet to be updated.

Active dates for new connections were compared to the distributor's initial electrical connection date, and MEP's certification date using the AC020 report. The AC020 report identified 1,591 ICPs with date discrepancies and 1,573 were confirmed not to be genuine at the time of the audit:

- 1,484 ICPs had a meter certification date which matched the active status date, but the initial electrical connection date was not populated by the distributor,
- 56 ICPs were unmetered, or were metered but the MEP had not updated certification details on the registry, and the initial electrical connection date and active date matched,
- 32 ICP had a timing difference and the details causing the discrepancy were corrected prior to the audit, and
- two ICPs had a matching active and initial electrical connection date, but the meter certification date was genuinely different because they were initially supplied through an unmetered builder's temporary supply.

The 17 ICPs with genuine discrepancies were checked and found:

- 13 ICPs are incorrectly included in the report as these are not new connections,
- Four were found to have the incorrect first active date, specifically:
  - two ICPs (1000583488PCB86 and 1002092100UN25B) had metering certified prior to the first active date indicating that the ICPs were electrically connected when the meter was certified,
  - ICP 0007196575RN2A2 is an unmetered new connection – a check of the notification from the Distributor found the incorrect active date was used and this has been corrected, and
  - ICP 1099579885CN887 was made active prior to the metering being certified and the initial electrical connection date - this was checked and found that the first active date was incorrect, but has now been corrected.

This year's results are similar to the last audit. I repeat the audit's recommendation that the audit compliance report is run at least weekly to identify ICPs where the distributor has updated the Initial Electrical Connection date, but where Mercury has not received notification in **section 3.5**.

### Reconnections

A sample of 20 reconnections were checked, and I confirmed that:

- the status and date had been applied correctly for eight ICPs.
- ten ICPs were incorrectly updated to active due to the known system issue where SAP was sending erroneous active updates to the registry as detailed in **section 3.3**. These were corrected. A fix was deployed in SAP in September 2020. I checked a further sample of ten late reconnections from post September and found eight were due to revenue risk activity. Two are being investigated as the reason for the active updates for ICPs 0081062149WECA1 and 0002721021TGDBD is not clear, therefore it is not clear if the fix deployed in September has worked as expected or that there is another SAP issue. Mercury have raised a job with IT to determine and resolve this.
- the remaining two ICPs (0000121392TR45E and 0031670147PC011) were found as a result of revenue risk activity. SAP applied the active date from the date following the disconnection date rather than from the date consumption occurred. Mercury is raising a job with IT to investigate this.

As detailed in **section 12.11**, ICP 0000235467UNE09 was a reconnection on 16 March 2020 but the registry shows it becoming "active" on 18 March 2020. HHR AMI data confirms the date of the 16<sup>th</sup>.

### **Audit outcome**

Non-compliant



Non-compliance	Description		
<p>Audit Ref: 3.8</p> <p>With: Clause 17</p> <p>Schedule 11.1</p> <p>From: 01-Feb-20</p> <p>To: 08-Dec-20</p>	<p>Ten of a sample of 20 reconnections updates were invalidly processed.</p> <p>Two reconnections were made active for the incorrect active date.</p> <p>One HHR reconnection with an incorrect active date.</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		
Low	<p>The controls are recorded as moderate as they have been strengthened during the audit period.</p> <p>The impact on settlement and participants is minor; therefore, the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p><b>Ten invalid reconnection updates</b></p> <p>We have implemented a fix to resolve the system issue causing some incorrect status updates. The results post fix show the fix has been successful.</p> <p>0002721021TGDBD – This ICP was a backdated switch processed on 07 Jan 2021. The status was corrected on 15/01/2021.</p> <p>0081062149WECA1 – This issue appears to be unrelated to any of our previous system issues for which our fix was deployed. IT are investigating and corrections will be made as necessary.</p>		Sep20	Identified
<p><b>Two reconnections made active for the incorrect date</b></p> <p><b>0000121392TR45E</b></p> <p>This ICP was identified in our risk reporting in August. The reads between June to August were estimated and the decision was made to backdate the “active” date to the date after disconnection.</p> <p><b>0031670147PC011</b></p> <p>This ICP was picked up on our vacant disconnected with usage report. The incorrect active date was selected due to human error. This has since been fixed.</p>		Mar 21	
<p><b>One HHR ICP 0000235467UNE09 (HHM ICP)</b></p> <p>We are currently looking into the cause of this and will make the necessary corrections.</p>		Apr21	
<b>Preventative actions taken to ensure no further issues will occur</b>		<b>Completion date</b>	
As above.		As above.	

### 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 registry list for 25 November 2020, event detail report for 1 February 2020 to 25 November 2020, and AC020 trader compliance report for 1 February 2020 to 8 December 2020 were reviewed to determine compliance.

The inactive status of “new connection in progress” is only used for HHR new connections if they are expected to be delayed. All updates to “new connection in progress” status on the event detail report were checked.

The application of other status reason codes was examined, and a diverse sample of 30 updates including all reason codes were checked.

Findings on the timeliness of inactive status updates are recorded in **section 3.3**.

#### Audit commentary

The status of “Inactive” is only used once a Mercury approved contractor has confirmed that the ICP has been disconnected.

##### Inactive - new connection in progress

Two ICPs (1000573226PC398 and 1000573227PCFDD) have been at “new connection in progress” for more than two years. These have been transferred from BOSCO to Mercury during the audit period. These are being investigated to confirm what the status should be.

There were six updates to “new connection in progress” status during the event detail report period. These were examined and found:

- three were because the status was changed back to “new connection in progress” so the active status event date could be corrected, and
- the remaining three ICPs were switched in and this status was applied in error by an operator; these have since been reversed on the registry to return the ICP to active from the switched in date and this is recorded as non-compliance below.

##### Other inactive statuses

ICP 0048240328PCC75 is now supplied by Powerco’s “Basepower” system, which is a solar installation with batteries and a diesel backup generator. It is not connected to the network and is recorded as inactive, reconciled elsewhere. This ICP should be recorded as inactive, ready for decommissioning, as advised by Powerco on 28 September 2020.

A sample of 30 updates to inactive statuses other than “new connection in progress” were checked and found all had the correct status and event date applied.

I found no evidence of the issue found in the last audit where ICPs were recorded as inactive, where consumption was present.

The AC020 report did not record any ICPs with the “Electrically disconnected remotely by AMI meter” status reason code applied where AMI metering was not recorded in the registry.

#### Consumption while inactive

Consumption while inactive is identified by the data analysts. A report is run that identifies all ICPs with an inactive status and consumption. Currently there are 84 ICPs (10,584 kWh) on this list. The number on this list has continued to decline over the last three audits. Staff check each ICP to determine whether they are connected and return them to active status and refer them to the Vacant and Disconnection teams if necessary. ICPs with inactive consumption for over three months and the highest inactive consumption are addressed as a priority.

I reviewed an extreme case sample of the ten ICPs with the most consumption detected during a disconnected period (281-1500 kWh) and found that in most cases the disconnection date in the report was different to the inactive date in the registry. The registry date was correct. The findings from the ten examples were as follows:

- four ICPs had 1 kWh each after the disconnection and the installations are still vacant, the disconnection reading will become the start reading for the new customer so all kWh will be accounted for, and
- six ICPs switched out on the disconnection reading from the date of disconnection, so all kWh was accounted for.

#### **Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 3.9 With: Clause 19 Schedule 11.1  From: 01-Feb-20 To: 08-Dec-20	Three ICPs with incorrect inactive status. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are rated as moderate because the disconnection process is normally automated, but a small number of updates were incorrect. The audit risk rating is low because a small number of ICPs were affected.		
Actions taken to resolve the issue		Completion date	Remedial action status
The status for these ICPs have now been corrected.		Mar 2021	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
We be looking at using the AC020Trader02 report to identify ICPs with status 1,12 to identify errors and allow for timely corrections.		June 2021	

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

#### Code reference

Clause 15 Schedule 11.1

#### Code related audit information

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

#### Audit observation

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

I analysed a registry list of ICPs with "new" or "ready" status and Mercury as the proposed trader, and reviewed processes to monitor new connections.

#### Audit commentary

Mercury has received requests for information on NHH ICPs at "new" or "ready" status for more than 24 months from some networks during the audit period. The ICPs on the requests are investigated to determine whether they are still required, and responses are provided back to the network.

No requests for information on HHR ICPs at "new" or "ready" have been received.

NHH new connections are tracked through field service order monitoring processes, and HHR review connections are monitored using the WIP sheet and account managers also track new connection progress.

Analysis of the registry list found three ICPs at "new" status for two years or more and 63 ICPs at "ready" status for two years or more. Mercury demonstrated they have a process in place to manage ICPs at "new" and "ready" for more than 24 months.

#### Audit outcome

Compliant

## 4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

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

#### Code reference

*Clause 2 Schedule 11.3*

#### Code related audit information

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

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

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

#### Audit observation

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

#### Audit commentary

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

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

Review of the event detail report found 9,305 transfer switch NTs. I matched the NTs to the meter category recorded on the registry list for and found none had a metering category of three or above.

The five NT files checked were sent within two business days of pre-conditions being cleared.

#### Audit outcome

Compliant

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

#### Code reference

*Clauses 3 and 4 Schedule 11.3*

#### Code related audit information

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

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

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

### Audit observation

An event detail report for 1 February 2020 to 25 November 2020 was reviewed to identify AN files issued by Mercury during the audit period, and a sample of three (or all) ANs per response code were reviewed to determine whether the codes had been correctly applied.

The switch breach report was examined for the audit period to confirm the timeliness of AN responses and the setting proposed event dates.

### Audit commentary

#### AN timeliness

Generation of AN files is automated in SAP. The automatic generation of the AN will fail if another retailer requests a vacant ICP as transfer switch. In these instances, Mercury sends an email to make sure the other trader is aware that the ICP is vacant before proceeding with the switch.

Users can normally clear the validation error in SAP which will allow the AN file to be released, but occasionally SAP will not allow the file to be released and it must be processed manually on the registry. These late files appear on the daily switch breach report. Mercury intends to investigate why this issue occurs.

The switch breach report recorded three AN (AN delivery) breaches for transfer switches. These were examined and found they were withdrawn but not until the sixth business day. This is recorded as non-compliance in **section 4.15**.

#### AN content

I reviewed the AN codes applied for 14 transfer AN files, and found incorrect codes were applied for five ICPs. Three of these had the AA code and should have had the AD code. Two had the AD code and should have had the AA code. This was a known issue with SAP. The logic was corrected on 21 January 2021 so this is not expected to be happening post this date.

The switch breach report confirmed that all AN file event dates were compliant.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.2 With: Clauses 3 & 4 of schedule 11.3  From: 01-Feb-20 To: 08-Dec-20	Five of a sample of 14 AN files checked contained incorrect response codes of either AA or AD. Potential impact: None Actual impact: None Audit history: Multiple times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	I have rated the controls as strong as a system fix has been deployed which has fixed the core logic. I have recorded the audit risk rating as low as this information is already available in the ICP registry details.		
Actions taken to resolve the issue		Completion date	Remedial action status
We have implemented a system fix to resolve this as it was a known issue. This was completed in Jan 21.		Jan 21	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.			

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

##### Code reference

Clause 5 Schedule 11.3

##### Code related audit information

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

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

##### Audit observation

An event detail report for 1 February 2020 to 25 November 2020 was reviewed to identify CS files issued by Mercury during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of ten files. The content checked included:

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

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

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

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

### Audit commentary

#### CS timeliness

Switch timeliness is managed using the switch breach report, which is monitored daily. The registry switch breach report has been corrected but this has caused the Mercury's internal breach report to not report correctly in all instances. Mercury was unaware that the registry report had been fixed. They are working to align their internal reporting with the new switch breach reporting. There are still some instances where triggered CS files are not sent to the registry by SAP. They now check ICPs which they are expecting to switch on the registry each afternoon. If SAP has not sent the CS file, they manually process the switch on the registry. For some days with heavy switching workloads, it is not possible to manually check every ICP, and this can lead to further delays.

The switch breach history report recorded:

- 26 CS (CS received after an AN) breaches, where the CS was issued more than five business days after the transfer date. The files were between one and 16 business days late. I reviewed all 11 updates which were more than two business days late and found all were backdated TR switches which has caused these to be in breach. Three should have been withdrawn as a wrong switch type as these were switch moves and not transfer switches.
- Three T2 (CS received after an NT) breaches, where the CS was issued more than three business days after the NT. None of the breaches were genuine because an NW was issued between the NT and CS.
- Four WR (switch completion after withdrawal rejection) breaches, because the CS was issued more than two business days after receipt of an AW rejection. These were not reported on Mercury's internal reporting hence they were missed, and the gaining trader emailed Mercury requesting that the switch be completed.

#### CS content

Mercury revised the calculation of the estimated daily kWh figure to align with the registry functional specification requirements that this be based on the average daily consumption for the last read to read period. The methodology was changed in January 2020.

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

Count of transfer CS files	Estimated daily kWh
Negative	-
Zero	100
More than 200 kWh	3

A sample of ten of these ICPs were checked (seven with zero and all three with more than 200 kWh). I found that all were correct with the exception of ICP 0348118554LC0BD. This was sent with an average daily consumption figure of zero consumption but should have been sent with 12.9 kWh. This is being investigated by IT to resolve.



I reviewed a sample of ten transfer switch CS files. Eight were created by SAP and two were manually created. The fields checked were correct when compared to SAP for six ICPs. The discrepancies found in the remaining four were:

- Three had an incorrect last read date. Two of these were manually created. ICP 0000154721CK511 was created by SAP which had incorrectly used a last read date post the period of supply. An IT fix is needed to correct this.
- ICP 0348118554LC0BD was created manually and was sent with the incorrect last read value labelled as an actual and is included as one of the three above with an incorrect last read date.
- ICP 0000137448UN376 was incorrectly sent with an estimated read labelled as an actual. This was a known issue identified in the last audit. A fix has been deployed to address this in February 2020, but the above instance occurred after this. Mercury are investigating this.

I checked the exception found in the last audit for ICP 0000570766NR645. This was where the CS file contained an estimate of 00130 but Mercury had used 00049 which was obtained from a meter change record. 00049 appears to be correct but no RR was sent. This has not been corrected during the audit period and is recorded as non-compliance in **section 4.4**.

The switch breach report found 155 E2 (CS event date) breaches for transfer switches, because the NT proposed transfer date and CS actual transfer date do not match and CS actual transfer date is earlier than the NT proposed transfer date, or more than 10 business days after receipt of the NT. I checked all 15 CS files over 70 days and a sample of five CS files between 20 and 69 days and found none were genuine breaches. In all cases the NT file was backdated, and the CS was issued with a compliant event date. From this analysis, I have concluded that the other breaches are unlikely to be genuine.

#### Audit outcome

##### Non-compliant

Non-compliance	Description
<p>Audit Ref: 4.3</p> <p>With: Clause 5 of schedule 11.3</p> <p>From: 01-Feb-20</p> <p>To: 08-Dec-20</p>	<p>26 CS (CS received after an AN) switch breaches.</p> <p>Four WR (switch completion after withdrawal rejection) switch breaches.</p> <p>One of the ten ICPs sampled sent with an incorrect average daily consumption of zero.</p> <p>Three of the ten files sampled sent with an incorrect last read date.</p> <p>One of the ten files sampled sent with incorrect last read labelled as an actual.</p> <p>One of the ten files sampled sent with an estimated read sent as an actual.</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>I have rated the controls as moderate but there is some investigation required to ensure that SAP logic is correct - this was more evident in the switch move CS files detailed in <b>section 4.10</b>. Mercury's internal switch breach reporting is not identifying all possible switch breaches since the registry report was corrected. They are working to align these.</p> <p>The audit risk rating is assessed to be low, as overall timeliness of files is good and automation is working as expected in most instances.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<b>26 CS (CS received after an AN) switch breaches.</b> <b>Four WR (switch completion after withdrawal rejection) switch breaches.</b> We were not made aware of a change to the registry switch breach reporting which affected our internal reporting and meant many breaches were not identified and actioned accordingly. Our reporting has since been corrected.		N/A	Identified
<b>One of the ten ICPs sampled sent with an incorrect average daily consumption of zero.</b> We will raise this issue with ICT and make the necessary changes to our calculation logic.		Sep 2021	
<b>Files sent with incorrect read values, dates and types</b> A fix was implemented in Feb20 to address these issues. As there appear to be errors still occurring, we will raise this with our IT team to review the logic and implement the necessary changes.		Sep 2021	
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		As above.	

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

##### Code reference

Clause 6(1) and 6A Schedule 11.3

##### Code related audit information

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

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

*If the gaining trader disputes a switch meter reading because the switch event meter reading provided by the losing trader differs by 200 kWh or more, the gaining trader must, within four calendar months of*

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

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

#### **Audit observation**

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

The event detail report for 1 February 2020 to 25 November 2020 was analysed to identify all read change requests and acknowledgements during the audit period. Ten RR files issued by Mercury, and all AC files issued by Mercury were checked.

I also checked a sample of five estimated CS files provided by other traders where no RR was issued to determine whether the correct readings were recorded in SAP.

The switch breach report was reviewed to identify late RR and AC files.

#### **Audit commentary**

##### Timeliness of RR and AC files

RR and AC files are triggered in SAP by the switching team. As for AN and CS files, sometimes files which have been triggered fail to be sent to the registry. The switching team endeavours to check the expected RR and AC files on the registry each afternoon to make sure they have been received, and if not, they are processed manually. For some days with heavy switching workloads, it is not possible to manually check every ICP, and this can lead to further delays. Late ACs will be identified the following morning using Mercury's internal switch breach report.

The switch breach report recorded three RR (RR delivery breaches for RR files issued more than four calendar months after the CS). One was late as it was missed by the validation team and was initiated by the switching team. One was initiated by the other trader late and Mercury as the gaining trader initiated the RR process. The last was sent as part of a chain of RR requests to correct readings for an ICP that had passed through multiple traders. This was discovered outside of the 4-month period. Whilst technically non-compliant for being late, the more important clause to comply with is that of accuracy which Mercury has done in all three instances.

The switch breach report recorded three AC (AC delivery breaches) for AC files which were issued more than five business days after receipt of the RR. All of the files were issued one business day late. These were all due to further information being required before the RR could be accepted.

##### Content and handling of RR and AC files

RR requests are generally initiated via email between the two parties and only once an agreement has been reached is an RR file sent to complete. All RR requests are evaluated and validated against the ICP information. If the request is within validation requirements it is accepted.

SAP records any negative reading as implausible, and the read will be locked and not used for billing or reconciliation. Where a switch in read is too high the first read received by Mercury may be lower than the switch read. If the difference is over 250 kWh, Mercury will request a read renegotiation. If the difference is less than 250 kWh Mercury will estimate zero consumption while they wait for actual reads to catch up to and exceed the switch in read. Where they believe it will take an extended period for the actual reads to exceed the switch in reads Mercury will provide a refund to the customer and change the switch read to match the actual read. No examples of this were found during the audit.



Preventative actions taken to ensure no further issues will occur	Completion date	
As above.		

#### 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 for 1 February 2020 to 25 November 2020 was reviewed to identify all read change requests and acknowledgements where clause 6(2) and (3) of schedule 11.3 applied.

##### Audit commentary

These RR requests are processed in the same way as those received for greater than 200 kWh. Each request is evaluated and validated against the ICP information. If the request is within validation requirements these are accepted.

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

Mercury rejected two RR files where clause 6(2) and (3) of schedule 11.3 applied. This was because the switches were withdrawn in both instances. Compliance is confirmed.

##### Audit outcome

Compliant

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

##### Code reference

Clause 7 Schedule 11.3

##### Code related audit information

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

##### Audit observation

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

##### Audit commentary

Mercury confirms 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 Mercury deem all conditions to be met. A typical sample of ten ICPs were checked to confirm that these were notified to the registry within two business days, and all NTs were checked to confirm that the correct switch type was selected.

##### Audit commentary

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

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

Review of the event detail report found 22,997 switch move NTs. I matched the NTs to the meter category recorded on the registry list for and found none had a metering category of three or above.

The ten NT files checked were sent within two business days of pre-conditions being cleared.

I note that the Invercargill City Council ICPs transferred to Mercury during the audit period. As these are contracted customers Mercury requested these as a switch move so they could request them for the contract start date. This is technically non-compliant but is required to meet the commercial arrangements with their customers.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.7  With: Clause 9 of schedule 11.3  From: 01-Mar-20  To: 01-Mar-20	Incorrect switch type used to transfer Council ICPs.  Potential impact: None  Actual impact: None  Audit history: None  Controls: Strong  Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as strong as this the only way Mercury could gain the DUML ICPs for the correct start date.  The audit risk rating is assessed to be none but low is the lowest impact option available.		
Actions taken to resolve the issue		Completion date	Remedial action status
There is no impact for this one-off non-compliance, and we have very strong controls in place.		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We will review our process for switching in HHR Cat9 sites and update our documentation accordingly to ensure correct switch types are used.		Mar21	

#### 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 report for 1 February 2020 to 25 November 2020 was reviewed to identify AN files issued by Mercury during the audit period, and:

- a sample of three (or all) ANs per response code were reviewed to determine whether the codes had been correctly applied, and
- assess compliance with the requirement to meet the setting of event dates requirement.

The switch breach report was examined for the audit period to identify late AN and CS files for switch moves.

### **Audit commentary**

#### AN and CS timeliness

Generation of AN files is automated in SAP. The automatic generation of the AN will fail if another retailer requests a vacant ICP as transfer switch. In these instances, Mercury sends an email to make sure the other trader is aware that the ICP is vacant before proceeding with the switch.

Users can normally clear the validation error in SAP which will allow the AN file to be released, but occasionally SAP will not allow the file to be released and it must be processed manually on the registry. These late files appear on the daily switch breach report. Mercury intends to investigate why this issue occurs.

The switch breach report recorded two AN (AN delivery) breaches for switch moves. Neither were genuine, because the ANs were sent within five business days of NT receipt.

As recorded in **section 4.3**, the registry switch breach report has been corrected but this has caused Mercury's internal breach report to not report correctly in all instances. Mercury was unaware that the registry report had been fixed. They are working to align their internal reporting with the new switch breach reporting. There are still some instances where CS files are not sent to the registry by SAP. They now check ICPs which they are expecting to switch on the registry each afternoon. If SAP has not sent the CS file, they manually process the switch on the registry. For some days with heavy switching workloads, it is not possible to manually check every ICP, and this can lead to further delays.

The switch breach history report recorded:

- four CS (CS received after an AN) breaches - none were genuine, because an NW was processed between the NT and CS, delaying the CS file,
- 121 T2 (CS received after an NT) breaches, because the CS was issued more than five business days after the NT - I checked all 21 breaches over 13 business days and found that these were not reported on Mercury's internal reporting hence they were missed, and the gaining trader emailed Mercury requesting that the switch be completed,
- 16 WR (switch completion after withdrawal rejection) breaches, because the CS was issued more than two business days after receipt of an AW rejection - I checked the latest ten and found that these too were affected by the breach report changes, and
- 1,465 E2 (CS event date is either earlier than the gaining traders requested event date or more than ten business days after the NT receipt date) - a sample of 20 ICPs were checked and found that none were genuine as it appears the report is incorrectly recording these counting the days from the event date rather than the NT receipt date (the Electricity Authority is aware of this and are working with Jade to correct this report).

#### AN file content

I reviewed the AN codes applied for nine switch move AN files, and found one incorrect code was applied. It was sent with the AA code and should have had the AD code. As detailed in **section 4.2**, this was a known issue with SAP. The logic was corrected on 21 January 2021, so this is not expected to be happening post this date.



The switch breach report recorded 702 ET (AN expected transfer date) breaches for switch move CS files. A breach occurs where the AN expected transfer date is more than ten business days after the NT arrival date, or before the losing traders requested date. 595 breaches were not valid breaches due to the count point being applied in the report i.e., the NT requested event date being the count point to measure the AN event date from. This causes it to be reported as a breach or if the losing trader proposes a later event date a breach is recorded if the event date is more than five days from the NT receipt date, but the code allows the proposed event date to be up to ten days from the NT receipt. The remaining 107 genuine breaches occurred due to the proposed event date being earlier than the gaining traders requested date. A typical sample of ten were examined and found that as reported in the last audit, invalid proposed event dates are being generated automatically by SAP. It appears the logic to select the proposed event dates is not consistently operating as expected. Mercury are working to fix the SAP logic.

#### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.8 With: Clause 10 of schedule 11.3  From: 01-Feb-20 To: 08-Dec-20	137 late CS files (121 breach code T2 and 16 breach code WR). One incorrect switch response code of AA sent instead of AD. 107 ANs had non-compliant proposed event dates. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating
Low	I have rated the controls as moderate as because the proposed event dates assigned automatically by SAP are incorrect in some instances and the logic needs review.  I have recorded the audit risk rating as low as there is no direct effect on settlement outcomes. All of the switches with non-compliant proposed event dates were switched out on the event date requested by the gaining trader or were withdrawn before the switch was completed.
Actions taken to resolve the issue	
Completion date	Remedial action status

<p>This has been raised as initiative to review the logic and correct it.</p> <p><b>137 late CS files</b> We were not made aware of a change to the registry switch breach reporting which affected our internal reporting and meant many breaches were not identified and actioned accordingly. Our reporting has since been corrected.</p> <p><b>1 incorrect switch response code</b> We have implemented a system fix to resolve this as it was a known issue. This was completed in Jan 21.</p> <p><b>107 non-compliant proposed event dates.</b> We are currently working with IT to have this issue resolved.</p>	Nov 2021	Identified
<b>Preventative actions taken to ensure no further issues will occur</b>	<b>Completion date</b>	
As above.	As above.	

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

##### Code reference

Clause 10(2) Schedule 11.3

##### Code related audit information

*If the losing trader determines a different date, the losing trader must also complete the switch by providing to the registry manager as described in 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 for 1 February 2020 to 25 November 2020 was reviewed to identify AN files issued by Mercury during the audit period, and assess compliance with the requirement to provide the CS file within 10 business days.

##### Audit commentary

No CS files with different event dates than the dates proposed were sent later than 10 business days.

##### Audit outcome

Compliant

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

##### Code reference

Clause 11 Schedule 11.3

##### Code related audit information

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

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

#### Audit observation

The event detail report for 1 February 2020 to 25 November 2020 was reviewed to identify CS files issued by Mercury during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of ten files. The content checked included:

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

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

#### Audit commentary

Mercury revised the calculation of the estimated daily kWh figure to align with the registry functional specification requirements that this be based on the average daily consumption for the last read to read period. The methodology was changed in January 2020.

Analysis estimated daily kWh on the event detail report identified:

Count of switch move CS files	Estimated daily kWh
Negative	-
Zero	114
More than 200 kWh	-

A sample of ten of these ICPs were checked. I found that all were correct with the exception of ICP 0000903607TUA3C. This was sent with an average daily consumption figure of zero consumption but should have been sent with 42 kWh. As detailed in **section 4.3**, this is being investigated by IT to resolve.

I reviewed a sample of ten switch move CS files. Eight were created by SAP and two were manually created. The fields checked were correct compared to SAP for four ICPs. The discrepancies found in the remaining six were:

- three had an incorrect last read date - one was manually created, and SAP incorrectly used a last read date post the period of supply for two ICPs (an IT fix is needed to correct this),
- three reads were incorrectly sent as actuals, but these were the last actual billed read for a date earlier than the event date and should have been labelled as estimates,
- two were sent with the incorrect last read - one was manually created and sent with an incorrect read and last read date recorded, and the CS file for ICP 0136558038LC0AD was created by SAP (this is an AMI site and was sent with a read on the event date rather than the midnight read from the night before and this needs investigation).

The switch breach report found 1,465 E2 (CS event date) breaches for switch moves, because the CS Actual Transfer Date is more than 10 business days after receipt of the NT. I checked the 20 CS files with the largest number of days overdue, including all over one business day. None of the breaches were genuine, in all cases either 1) the switch event date matched the NT receipt date, or 2) the switch event

date was earlier than the NT receipt date. From this analysis, I have concluded that the other breaches are unlikely to be genuine.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.10 With: Clause 11 of schedule 11.3  From: 01-Feb-20 To: 08-Dec-20	One of the ten ICPs sampled sent with an incorrect average daily consumption of zero. Three of the ten files sampled sent with an incorrect last read date. Three of the ten files sampled sent with a last read labelled incorrectly as an actual. Two of the ten files sampled sent with incorrect last reads. 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>	I have rated the controls as moderate but there is some investigation required to ensure that SAP logic is correct. The audit risk rating is assessed to be low, as overall timeliness of files is good and automation is working as expected in most instances.		
Actions taken to resolve the issue		Completion date	Remedial action status
<b>1 ICP sent with incorrect ADC.</b> We will raise this issue with ICT and make the necessary changes to our calculation logic.		Sep 2021	Identified
<b>Files sent with incorrect read values, dates and types</b> A fix was implemented in Feb20 to address these issues. As there appear to be errors still occurring, we will raise this with our IT team to review the logic and implement the necessary changes.		Sep 2021	
<b>Preventative actions taken to ensure no further issues will occur</b>		<b>Completion date</b>	
As above.		As above.	

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

##### Code reference

Clause 12 Schedule 11.3

##### Code related audit information

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

- *if the switch meter reading established by the gaining trader differs by less than 200 kWh from that provided by the losing trader, both traders must use the switch event meter reading provided by the gaining trader (clause 12(2)(a)); or*
- *if the switch event meter reading provided by the losing trader differs by 200 kWh or more from a value established by the gaining trader, the gaining trader may dispute the switch meter reading. In this case, the gaining trader, within four calendar months of the actual event date, must provide to the losing trader a changed validated meter reading or a permanent estimate supported by two validated meter readings and the losing trader must either (clause 12(2)(b) and clause 12(3)):*
- *advise the gaining trader if it does not accept the switch event meter reading and the losing trader and the gaining trader must resolve the dispute in accordance with the 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 five business days after receiving final information from the registry manager, may provide the losing trader with a switch event meter reading from that meter. The losing trader must use that switch event meter reading (clause 12(2B)).*

##### Audit observation

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

The event detail report for 1 February 2020 to 25 November 2020 was analysed to identify all read change requests and acknowledgements during the audit period. Ten RR files issued by Mercury, and all AC files issued by Mercury were checked.

I also checked a sample of five estimated CS files provided by other traders where no RR was issued to determine whether the correct readings were recorded in SAP.

The switch breach report was reviewed to identify late RR and AC files.

##### Audit commentary

###### Timeliness of RR and AC files

RR and AC files are triggered in SAP by the switching team. As for other switching files, sometimes files which have been triggered fail to be sent to the registry. The switching team endeavours to check the expected RR and AC files on the registry each afternoon to make sure they have been received, and if not, they are processed manually. For some days with heavy switching workloads, it is not possible to

manually check every ICP, and this can lead to further delays. Late ACs will be identified the following morning using the switch breach report.

The switch breach report recorded 57 RR (RR delivery breaches for RR files issued more than four calendar months after the CS). At least 26 were issued following rejection of a previous RR, and one was delayed by a withdrawal process. I checked the ten latest genuine breaches and found that all were delayed due to the time to gain two actual reads.

The switch breach report recorded 17 AC (AC delivery breaches) for AC files which were issued more than five business days after receipt of the RR. All of the files were issued between one and five business days late. I checked a sample of ten late files and found:

- eight were due to confirming details before the AC response could be sent, and
- two were due to the AC file not flowing to the registry causing it to be one day late.

#### Content and handling of RR and AC files

RR requests are generally initiated via email between the two parties and only once an agreement has been reached an RR file is sent to complete. All RR requests are evaluated and validated against the ICP information. If the request is within validation requirements these are accepted.

SAP records any negative reading as implausible, and the read will be locked and not used for billing or reconciliation. Where a switch in read is too high, the first read received by Mercury may be lower than the switch read. If the difference is over 250 kWh, Mercury will request a read renegotiation. If the difference is less than 250 kWh Mercury will estimate zero consumption while they wait for actual reads to catch up to and exceed the switch in read. Where they believe it will take an extended period for the actual reads to exceed the switch in reads, Mercury will provide a refund to the customer and change the switch read to match the actual read. No examples of this were found during the audit.

Mercury issued 377 RR files for switch moves. 263 were accepted and 114 were rejected. For the sample checked there was a genuine reason for Mercury's RRs, the requests were supported by two validated readings, and the reads recorded in Mercury's system reflected the outcome of the RR process.

I checked the issue raised in the last audit with ICP 0000159559UN602. This was where the RR request was rejected by the other trader and Mercury should have changed their readings back to those provided in the CS file but for register 2 they used 35,465 and not 36,201. This has not been corrected and the R14 revision has now been submitted. This is recorded as non-compliance below and in **sections 2.1 and 12.7**.

Mercury issued 11 AC files for switch moves. Five were accepted and six were rejected, and all switches were later withdrawn. All rejections were checked, and all were accepted on a subsequent RR request.

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		
<p>Audit Ref: 4.11</p> <p>With: Clause 12 Schedule 11.3</p> <p>From: 01-Feb-20 To: 08-Dec-20</p>	<p>Incorrect reading used when the Mercury RR was rejected (from 2020 audit).</p> <p>57 late RR files and 17 late AC files for switch moves.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>Controls are recorded as moderate because they appear to minimise risk to an acceptable level.</p> <p>The impact on settlement and participants is minor; therefore, the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p><b>Incorrect reading used when the Mercury RR was rejected (from 2020 audit).</b></p> <p>This was missed as 'follow up' work from the last audit and corrections were not been made in time for R14. We will be raising this with the team to ensure all necessary corrections are made in a timely manner to allow for accurate submission.</p> <p><b>57 late RR files and 17 late AC files for switch moves.</b></p> <p>We have strong controls in place which in normal circumstances minimise risk. Some late files are caused by genuine delays to ensure accuracy.</p>		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p><b>Incorrect reading used when the Mercury RR was rejected (from 2020 audit)</b></p> <p>This was missed as 'follow up' work from the last audit and corrections were not been made in time for R14. We will be raising this with the team to ensure all necessary corrections are made in a timely manner to allow for accurate submission.</p> <p><b>57 late RR files and 17 late AC files for switch moves.</b></p> <p>We will continue with our strong controls in this area.</p>		Completed.	

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

##### Code reference

Clause 13 Schedule 11.3

##### Code related audit information

*The gaining trader switch process applies when a trader has an arrangement with a customer or embedded generator to trade electricity through or assume responsibility for:*

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

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

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

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

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

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

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

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

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

##### Audit observation

The event detail report for 1 February 2020 to 25 November 2020 was reviewed to identify all HH NTs issued during the period. A typical sample of ten ICPs were checked to confirm that these were notified to the registry within three business days. All HH NT files were checked to confirm that the correct switch type was selected.

The switch breach history report was reviewed.

##### Audit commentary

The Half Hour team are advised as soon as the contract pre-conditions have been satisfied. All switch requests are actioned the same day as they are received.

80 HH NTs were issued by Mercury during the period reviewed. I matched the NTs to the meter category recorded on the registry list, and found all had meter category 3, 4 or 5. No ICPs with metering categories 3 or above had transfer or switch move NTs issued.



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

The switch breach history report recorded three PT breaches for invalid proposed event dates for HH switches. None of the alleged breaches were genuine, because they did not meet all the criteria to be recorded as PT breaches because:

1. none of the NT proposed event dates were more than 90 days before arrival of the NT, and
2. none of the NT proposed event dates were different to the expected AN transfer date.

#### **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 for 1 February 2020 to 25 November 2020 was reviewed to identify HH ANs issued during the period.

The switch breach report was examined for the audit period.

#### **Audit commentary**

The switching console manages HHR switch losses. The NT receipt starts the process. The HHR team pass this through to sales team to review and once cleared an AN or NW is sent as appropriate.

No HH NTs were received from other traders and no HH ANs were issued during the period reviewed.

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

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 16 Schedule 11.3*

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

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

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

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

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

#### Audit observation

The event detail report for 1 February 2020 to 25 November 2020 was reviewed to identify all HH CS files issued during the period.

The switch breach report was examined for the audit period.

#### Audit commentary

The switching console manages HHR switch gains. The NT generation starts the process.

76 HH CS files were recorded on the event detail report. CS content was as expected apart from ICP 1002045936LC604 (01/10/2020) which was sent with METERINSTALL, METERCOMP and METERCHANNEL rows. This was a processing error with no impact.

The switch breach reported 15 late CS files. These were examined and found ten were genuine breaches where the CS file was not sent within three business days of the AN file being received. A typical sample of five of these were examined and found these were all on one day and was due to a new staff member who missed processing these on the correct date.

Switch breach report recorded one WR (switch completion after withdrawal rejection) breach for a HH switch. The breach was not genuine, Mercury's CS was issued on the same day the losing trader provided their AN file.

#### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.14  With: Clause 16 of schedule 11.3   From: 09-Mar-20 To: 01-Oct-20	Ten late CS files sent.  One HH CS file for 1002045936LC604 (01/10/2020) was sent with METERINSTALL, METERCOMP and METERCHANNEL rows.  Potential impact: None Actual impact: None Audit history: Twice Controls: Strong Breach risk rating: 1
Audit risk rating	Rationale for audit risk rating
Low	I have rated the controls as strong because they mitigate risk to an acceptable level. I have recorded the audit risk rating as low because the issue noted has no impact.
Actions taken to resolve the issue	
Completion date	Remedial action status

<b>Ten late CS files sent.</b> The non-compliance here has no impact and was a one-off processing error due to human error.  <b>One HH CS file</b> The non-compliance here has no impact and was a one-off processing error due to human error.	N/A	Identified
<b>Preventative actions taken to ensure no further issues will occur</b>	<b>Completion date</b>	
<b>Ten late CS files sent.</b> We will continue with our strong controls in this area.  <b>One HH CS file</b> This processing error was due to human error by a new staff member. We have provided further training and have updated training documents to ensure correct processes are followed in all instances which will avoid these breaches in the future.	Completed	

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

##### Code reference

*Clauses 17 and 18 Schedule 11.3*

##### Code related audit information

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

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

- *for each ICP, the trader withdrawing the switch request must provide the registry manager with (clause 18(c)):*
  - 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 two business days after receiving notice from the registry manager in accordance with clause 22(b), the losing trader must comply with clauses 3,5,10 and 11 (whichever is appropriate) and the gaining trader must comply with clause 16 (clause 18(f)).*

##### Audit observation

An event detail report for 1 February 2020 to 25 November 2020 was reviewed to:

- identify all switch withdrawal requests issued by Mercury, the content of a sample of at least three ICPs from the event detail report for each withdrawal code, including 16 withdrawal requests rejected by other traders,
- identify all switch withdrawal acknowledgements issued by Mercury, a sample of ten rejections were checked, and
- confirm timeliness of switch requests, as this is not currently being identified in the switch breach report.

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

### Audit commentary

#### NW timeliness

The switch breach report recorded:

- 144 NA (NW delivery after switch completion) breaches - I checked the 13 latest files and found:
  - ten of these were due to communication between the customer and the other trader to resolve before the subsequent NW could be sent, and
  - the remaining three were due to the wrong premise being switched in and this took more than two months to be identified,
- four NW (NW delivery before switch completion) breaches - three were genuine and related to the withdrawal not being sent within five business days of the NT receipt, the other was not a genuine breach because no NW was issued, and
- 11 SR (NW after initial withdrawal rejection) breaches, where the subsequent NW was issued more than ten business days after the initial NW - these were examined and found to be due to communication between the customer and the other trader to resolve before the subsequent NW could be sent.

#### AW timeliness

Like the other switching files, NW and AW files are triggered in SAP by the switching team. I found no evidence of the issue identified in the last audit of SAP files failing to be sent to the registry.

The switch breach report recorded:

- 21 AW (AW delivery) breaches, all of which were one business day late - I checked a sample of ten and found:
  - five were due to the normal check being missed causing these to be sent late,
  - two were due to being part of a double withdrawal,
  - two were due to these not coming through to SAP, and
  - one was delayed whilst liaising with the customer to confirm the withdrawal should proceed,
- three late WC (acceptance withdrawal cycle resolution) breaches, which were two to seven business days overdue - two of these were delayed due to information required back from the field before they could be sent and the remaining ICP was missed due to human error causing it to be late.

#### Content and handling of NW and AW

Each switch withdrawal request is assessed and actioned based on the staff member's findings. Analysis of the switch withdrawal codes confirmed 14 of 15 were correctly recorded. One reason was CE (Customer error) but should have been sent as a WP (Wong premise).

127 (5.3%) of the 2,364 AWs issued by Mercury were rejections. 41 of these were accepted on reissue. I reviewed a sample of ten rejections by Mercury, and confirmed they were rejected based the

information available at the time the response was issued. One NW was rejected once in error before being accepted due to human error.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.15 With: Clauses 17 & 18 of schedule 11.3  From: 10-Feb-20 To: 14-Nov-20	144 NA (NW delivery after switch completion) switch breaches. Four NW (NW delivery before switch completion) switch breaches. 11 SR (NW after initial withdrawal rejection) switch breaches. 21 AW (AW delivery) switch breaches. Three late WC (acceptance withdrawal cycle resolution) switch breaches. One incorrect NW code Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	I have rated the controls as strong as Mercury controls are robust but due to the complexity these types of withdrawals there will always be some late switch withdrawals and acceptances.  The audit risk rating is low as the volume of backdated switch withdrawals is low in relation to the overall volume of switches processed and the processing of these increases the submission accuracy.		
Actions taken to resolve the issue		Completion date	Remedial action status
We will continue with our strong controls in this area. Late AW and NW files are often unavoidable but necessary meaning 100% compliance in this area is not attainable.		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		N/A	

#### 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. Three switches were sent with an incorrect last read (one transfer switch detailed in **section 4.3** and two switch moves detailed in **section 4.10**).

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

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.16 With: Clause 21 of schedule 11.3  From: 01-Feb-20 To: 08-Dec-20	One transfer move switch sent with an incorrect last read. Two switch move switches sent with incorrect last reads. 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>	I have rated the controls as moderate as two of three of these examples were due to human error. One incorrect switch read sent by SAP requires investigation to determine why this was sent.  The audit risk rating is assessed to be low, as the effect on reconciliation will be minor.		
Actions taken to resolve the issue		Completion date	Remedial action status
<b>Files sent with incorrect read values</b> A fix was implemented in Feb20 to address these issues. As there appear to be errors still occurring, we will raise this with our IT team to review the logic and implement the necessary changes.		Sep 2021	Identified
<b>Preventative actions taken to ensure no further issues will occur</b>		Completion date	

As above.	As above.	
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#### 4.17. Switch saving protection (Clause 11.15AA to 11.15AC)

##### Code reference

*Clause 11.15AA to 11.15AC*

##### Code related audit information

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

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

The Electricity Registry switch save protected retailer list was examined for the period up until 30 March 2020.

Win-back processes were discussed. The event detail report for 1 February 2020 to 25 November 2020 was analysed to identify all withdrawn switches with a CX code applied prior to the switch event date for any switch save protected retailer up to 30 March 2020, or within 180 days of switch completion post 30 March 2020.

##### Audit commentary

Mercury's retention process commences once the 180-day period has passed.

Review of the event detail report identified no NWs issued with a CX withdrawal reason code prior to completion of the switch before 30 March 2020.

Review of the event detail report identified 466 NWs with a CX withdrawal reason code issued on or after 30 March 2020. I matched this information to CS files issued during the audit period and found at least 355 CX NWs issued within 180 days of CS completion where Mercury was the losing trader. I reviewed a sample of ten phone calls of these and found that the customer had initiated contact and requested to come back to Mercury due to a variety of reasons.

##### 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 process to identify and monitor unmetered load was discussed. The registry list file as of 25 November 2020 and AC020 report for 1 February 2020 to 8 December 2020 were examined to identify any ICPs with shared unmetered load.

#### Audit commentary

Mercury supplies 88 ICPs with shared unmetered load. All have the unmetered flag set to Y and daily unmetered kWh recorded.

For all 88 ICPs, the distributor had populated the unmetered load details in a format that allowed recalculation of the unmetered load based on their data. I found my recalculation was within  $\pm 0.1$  kWh of Mercury's estimated daily consumption in all cases.

#### 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 report for 1 February 2020 to 8 December 2020 was examined to identify all unmetered load over 3,000 kWh per annum. Any ICPs with unmetered load greater than 3,000 kWh per annum were examined.

### Audit commentary

38 ICPs had a load between 3,000 and 6,000 kWh and all were of an approved load type or are managed as DUML.

24 ICPs have a load greater than 6,000 kWh. 16 of these are of an approved load type and are managed as distributed unmetered loads as detailed in **section 5.4**. The remaining eight ICPs were found to be held by one customer. Mercury have been working with their customer to achieve compliance. A database has been created and a 100% field audit was undertaken by the customer to account for this load. The results of this are in the process of being verified. This includes creating three additional ICPs to correctly allocate the loads to correct GXPs. Mercury will engage Veritek to audit this. As this is has yet to be completed this is recorded as non-compliance below.

ICP	Switch in date	Annual kWh
1001146090UN1CE	12/06/2017	1,619,870.00
0000190118TR62B	9/06/2017	200,666.05
0001393839UN86B	12/06/2017	66,065.00
0007106261RN1C3	9/06/2017	30,660.00
0001409085UN545	12/06/2017	28,908.00
0001261460UN08E	9/06/2017	23,652.00
0007146145RN50A	14/06/2017	10,074.00
0007145198RN5F3	14/06/2017	10,074.00
<b>Total</b>		<b>1,989,969.05</b>

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 5.2 With: Clause 10.14 (2)(b)  From: 09-Jun-17 To: 01-Feb-21	Eight standard unmetered ICPs with unmetered consumption over 6,000 kWh per annum.  Potential impact: Medium  Actual impact: Medium  Audit history: Twice previously  Controls: Moderate  Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are rated as moderate as Mercury is actively working to resolve this and is making steady progress.  The audit risk rating is medium as the combined volume could, if incorrect, have a material impact on reconciliation.		
Actions taken to resolve the issue		Completion date	Remedial action status
All ICPs relate to one customer. We have been working closely with the customer and distributor to prepare and establish a DUMML database for these connections. A DUMML audit has been booked for May 2021.		May 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
These ICPs all relate to one customer and are very complex in nature. For any new ICP switch ins we will work with the customer to arrange metering as required.		Ongoing	

### 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, and*
  - o *the details of the corrective measures that the MEP proposes to take or is taking to reduce the unmetered load.*

#### Audit observation

The process for the management of unmetered load thresholds is discussed in **section 5.2** above. The AC020 report for 1 February 2020 to 8 December 2020 was examined to identify any ICPs that exceed the 6,000 kWh per annum threshold. All were examined to determine compliance.

#### Audit commentary

38 ICPs had a load between 3,000 and 6,000 kWh and all were of an approved load type or are managed as DUML.

24 ICPs had a load greater than 6,000 kWh. 16 of these are of an approved load type and are managed as distributed unmetered loads as detailed in **section 5.4**.

As discussed in **section 5.2**, the remaining eight ICPs were found to be held by one customer. Mercury have been working with their customer to achieve compliance. A database has been created and a 100% field audit was undertaken by the customer to account for this load. The results of this are in the process of being verified. This includes creating three additional ICPs to correctly allocate the loads to correct GXP. Mercury will engage Veritek to audit this. As this has yet to be completed this is recorded as non-compliance below.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 5.3 With: Clause 10.14 (5)  From: 09-Jun-17 To: 01-Feb-21	Eight standard unmetered ICPs with unmetered consumption over 6,000 kWh per annum were not corrected within the required timeframe.  Potential impact: Medium  Actual impact: Medium  Audit history: Twice  Controls: Moderate  Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
<b>Medium</b>	The controls are rated as moderate as Mercury is actively working to resolve this and is making steady progress.  The audit risk rating is medium as the combined volume could, if incorrect, have a material impact on reconciliation.		
Actions taken to resolve the issue		Completion date	Remedial action status
All ICPs relate to one customer. We have been working closely with the customer and distributor to prepare and establish a DUML database for these connections. A DUML audit has been booked for May 2021.		May 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
These ICPs all relate to one customer and are very complex in nature. For any new ICP switch ins we will work with the customer to arrange metering as required.		Ongoing	

#### 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

Mercury has 12 distributed unmetered load databases.

##### Audit commentary

Mercury has been granted exemption No. 233. This allows them to provide half-hour ("HHR") submission information instead of non half-hour ("NHH") submission information for distributed unmetered load ("DUML"). This exemption expires on 31 October 2023.

**Section 5.2** identified eight standard unmetered ICPs with unmetered consumption over 6,000 kWh per annum. Mercury have been working with their customer to achieve compliance. A database has been created and a 100% field audit was undertaken by the customer to account for this load. The results of this are in the process of being verified. This includes creating three additional ICPs to correctly allocate the loads to correct GXP.

ICP	Switch in date	Annual kWh
1001146090UN1CE	12/06/2017	1,619,870.00
0000190118TR62B	9/06/2017	200,666.05
0001393839UN86B	12/06/2017	66,065.00
0007106261RN1C3	9/06/2017	30,660.00
0001409085UN545	12/06/2017	28,908.00
0001261460UN08E	9/06/2017	23,652.00
0007146145RN50A	14/06/2017	10,074.00
0007145198RN5F3	14/06/2017	10,074.00
<b>Total</b>		<b>1,989,969.05</b>

The table below indicates all of the DUML databases held by Mercury and the current level of compliance.

Compliance Achieved (Yes/No)											
Database	DUML Audit completed 16A.26 and 17.295F	Next audit due	Deriving submission information 11(1) of schedule 15.3	ICP identifier 11(2)(a) of schedule 15.3	Location of items of load 11(2)(b) of schedule 15.3	Description of load 11(2)(c)&(d) of schedule 15.3	All load recorded in database 11(2A) of schedule 15.3	Tracking of load changes 11(3) of schedule 15.3	Audit trail 11(4) of schedule 15.3	Database accuracy 15.2 and 15.37B(b)	Volume information accuracy 15.2 and 15.37B(c)
Palmerston North Airport-	17/1/20	17/05/21	No	Yes	Yes	No	No	Yes	Yes	No	No
Rotorua Lakes DC	21/02/20	20/02/22	No	Yes	No	Yes	No	Yes	Yes	Yes	No
Avondale Business Association	24/05/19	5/04/21	No	Yes	Yes	Yes	No	Yes	Yes	No	No
Ardmore Airport	23/05/19	25/5/21	No	Yes	No	Yes	No	Yes	Yes	No	No
NuLite	01/12/20	Under review	No	Yes	No	No	No	Yes	Yes	No	No
Acacia Cove	01/06/20	01/06/22	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
IntelliHUB Gatekeeper ICPs	15/05/18	31/05/21	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Masterton DC	26/05/20	01/03/22	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Carterton DC	14/05/20	01/12/22	No	No	Yes	No	Yes	Yes	No	No	No
South Wairarapa DC	14/05/20	01/06/21	No	Yes	No	Yes	Yes	Yes	Yes	No	No
Selwyn DC	31/12/20	Under review	No	Yes	Yes	Yes	No	Yes	Yes	No	No
Invercargill CC	24/01/20	11/08/21	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Vodafone	A database has been created for this load and the audit is scheduled for 11 May 2021.										

## Audit outcome

### Non-compliant

Non-compliance	Description		
Audit Ref: 5.4 With: Clauses 11(1) of schedule 15.3, 10.14 & 15.13 From: 01-Feb-20 To: 01-Feb-21	Errors found in nine databases. The specific findings are detailed in the DUMML database audit reports. Potential impact: High Actual impact: High Audit history: Multiple Controls: Moderate Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
High	The controls are rated as moderate as Mercury are working with the customers to improve the level of accuracy. The impact is assessed to be high, based on the kWh differences found in the DUMML audits.		
Actions taken to resolve the issue		Completion date	Remedial action status
We are working with our customers to ensure databases are updated accurately and efficiently. We have made improvements on a number of these databases and are continuously working to improve these. Specific comments can be found in the individual DUMML reports.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We will continue to work closely with customers to improve accuracy in each of our DUMML databases.		Ongoing	

## 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

The registry list as of 25 November 2020, AC020 trader compliance report for 1 February 2020 to 8 December 2020, and meter event details reports were reviewed to determine compliance.

Processes for quantification of energy and distributed generation were reviewed.

#### Audit commentary

##### Metering installations installed

Mercury's new connection process includes a check that metering is installed before electrical connection occurs, and that any unmetered load is quantified. No ICPs have submission information determined by subtraction.

As recorded in **section 2.11**, 1,077 active ICPs have a metering category of 9 or blank. 978 of these have unmetered load indicated, and the remaining 99 were checked.

- 36 had MEP nominations made and accepted and were awaiting meter details on the registry,
- 62 were timing differences and the metering details were updated, or the status was updated to inactive or decommissioned prior to the audit,
- ICP 0001448727UN8E8 has metering on site, but MNON was nominated in error for 12 February 2011 and due to subsequent registry events Mercury are unable to nominate Metrix for the correct date, they are working to have the events reversed so that the correct MEP is nominated.

The AC020 trader compliance report as of 8 December 2020 showed 90 ICPs which have a metering category of 9 or blank and no unmetered load indicated.

- 40 had MEP nominations made and accepted and were awaiting meter details on the registry,
- 37 were timing differences and the metering details were updated, or the status was updated to inactive or decommissioned prior to the audit,
- 12 had their unmetered flag set to N, but other trader and distributor unmetered load information indicated that unmetered load was present - these are DUML ICPs and Mercury

confirmed that the registry could not be updated to “Y” for these because the settlement type is HHR, and

- ICP 0001448727UN8E8 is discussed in the list file analysis above.

#### Distributed generation

A report is run monthly to compare the distributor’s generation fields against Mercury’s records. Any found where the Distributor has distributed generation indicated and Mercury do not have details are investigated. A part of this process includes determining with the customer if they wish to gift the generation. All customers who wish to gift are managed in an excel spreadsheet. This is used by the Energy Services team to notify the Reconciliation Manager.

The list file contained 3,907 active ICPs with distributed generation capacity recorded by the Distributor.

3,828 ICPs with RPS profile recorded on the registry have distributed generation recorded and import/export metering. Submission data for a sample of ten of these ICPs was checked, and I found the PV1 profile was correctly applied in the AV080 NHH submissions for NHH ICPs with generation, but the PV1 profile was not recorded against the ICPs on the registry due to a limitation in SAP which can only record three characters for a profile. The incorrect profiles on the registry are recorded as non-compliance in **section 2.1**.

109 of the 3,907 ICPs with generation recorded by the distributor do not have import/export metering recorded on the registry. Population of distributed generation details on the registry is a MEP requirement and not the responsibility of the retailer, but it is the retailer’s responsibility to ensure that electricity is quantified in accordance with the code. A typical sample of 50 ICPs without injection/export metering recorded on the registry were reviewed to determine whether distributed generation was present and found:

- 26 are Tesla battery chargers and any generation is being gifted,
- eight have the HHR or HHM profiles:
  - five are being investigated to confirm if solar is present or not,
  - two have been confirmed to have no solar present (this includes ICP 0004922952WE458 discussed below), and
  - ICP 0220523875LC32A has since had an import export meter installed,
- 16 have an RPS profile:
  - eight are being investigated to confirm if solar is present or not,
  - three are in the process of having import export metering installed,
  - two (ICPs 0000014551HBBC0 and 0480233454LC6E3) have had import export metering installed but the profile has not been updated in the registry, which is recorded as non-compliance below,
  - ICP 0007130338RNA72 is indicated by Orion to have wind generation, which was confirmed to be correct in their report, however Mercury advised that there is only solar generation for the hot water connected so I recommend that Mercury liaise with Orion and the customer to confirm what is on site.

Description	Recommendation	Audited party comment	Remedial action
Distributed Generation	Liaise with Orion and the customer to confirm what generation is present for ICP 0007130338RNA72.	We are liaising with the network to resolve this. All attempts to contact the customer have been unsuccessful and there are access issues to the property.	Investigating

- Mercury have confirmed that there is no longer any solar at ICP 0006687032RN23B and have notified the Distributor to remove this from the registry, and
- one ICP has since switched away.



I rechecked ICP 0004922952WE458 identified in the last audit as potentially exporting to the grid. Mercury have confirmed that this is not exporting to the grid and therefore the Distributor should remove these details from the registry.

#### Bridged meters

Mercury confirmed 14 ICPs were bridged to reconnect during the audit period and were later unbridged. Consumption was not quantified by the meter during this period.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.1 With: Clause 10.13  From: 01-Feb-20 To: 08-Dec-20	While meters were bridged, energy was not metered and quantified according to the code for 14 ICPs. Some ICPs with distributed generation not quantified. 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>	Controls are rated as moderate as they are sufficient to reduce the risk most of the time. The audit risk rating is low: <ul style="list-style-type: none"> <li>bridging only occurs where a soft reconnection cannot be performed after hours and the customer urgently requires their energy supply for health and safety reasons - for all 21 examples reviewed, corrections for consumption during the bridged period had been processed, and</li> <li>correct profiles are applied for reconciliation submissions.</li> </ul>		
Actions taken to resolve the issue		Completion date	Remedial action status
<b>Bridged meters</b> Mercury will continue to bridge meters on an as need basis in the best interest of our customers. In some cases, bridging is unavoidable which means compliance is unattainable. We have strong processes in place to ensure all consumption is quantified and reported in a timely manner. <b>DG ICPs</b> We have reporting in place to identify ICPs where solar is present and have received no notification from the customer or network. We monitor this reporting and contact customers to arrange for import/export metering installation.		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

<p><b>Bridged meters</b></p> <p>Agents have been provided training and simpler processes have been implemented to identify a remotely disconnected meter to prevent unnecessary after-hours manual reconnections being raised which may reduce the number of meters bridged.</p> <p>Where possible, supply will be restored without bridging meters, however the health and safety of our customers must come first.</p> <p><b>DG ICPs</b></p> <p>We will continue with our reporting and customer follow up processes mentioned above. We are also in the process of implementing letter notifications to notify customers of a meter change for ICPs where solar generation has been confirmed.</p>	<p>N/A</p> <p>June 2021</p>	
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## 6.2. Responsibility for metering at GIP (Clause 10.26 (6), (7) and (8))

### Code reference

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

### Code related audit information

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

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

*The participant responsible for the metering installation must:*

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

### Audit observation

The NSP table was reviewed to confirm the GIPs which Mercury is responsible for, and the certification expiry date for those GIPs.

Changes to the NSP table were reviewed to determine whether they had been processed accurately.

### Audit commentary

Mercury is responsible for the GIPs shown in the table below.

Responsible party	POC	Description	NSP	MEP	Certification expiry date (NSP table)	Recon Type
MRPL	ARA2201	ARATIATIA	ARA2201MRPLGG	MRPL	12/10/21	GG

Responsible party	POC	Description	NSP	MEP	Certification expiry date (NSP table)	Recon Type
MRPL	ARI1101	ARAPUNI	ARI1101MRPLGG	MRPL	16/12/22	GG
MRPL	ARI1102	ARAPUNI	ARI1102MRPLGG	MRPL	16/12/22	GG
MRPL	ATI0111	ATIAMURI	ATI0111LINENP	MRPL	7/02/21	NP
MRPL	ATI0111	ATIAMURI	ATI0111MRPDNP	MRPL	7/02/21	NP
MRPL	ATI0112	ATIAMURI	ATI0112HAWKNP	MRPL	26/07/23	NP
MRPL	ATI0112	ATIAMURI	ATI0112MRPDNP	MRPL	26/07/23	NP
MRPL	ATI2201	ATIAMURI	ATI2201MRPLGN	MRPL	8/02/21	GN
MRPL	KAW1101	KAWERAU GEOTHERMAL	KAW1101KRGLGG	MRPL	23/08/22	GG
MRPL	KPO1101	KARAPIRO	KPO1101MRPLGG	MRPL	25/01/21	GG
MRPL	MTI2201	MARAETAI	MTI2201MRPLGG	MRPL	23/02/21	GG
MRPL	NAP2202	NGATAMARIKI	NAP2202MRPLGG	MRPL	26/03/21	GG
MRPL	OHK2201	OHAKURI	OHK2201MRPLGG	MRPL	08/02/21	GG
MRPL	SWN2201	SOUTHDOWN	SWN2201MRPLGG	MRPL	26/07/21	GG
MRPL	WKM2201	WHAKAMARU	WKM2201MRPLGG	MRPL	27/10/20	GG
MRPL	WKM2201	WHAKAMARU	WKM2201TUARGN	MRPL	15/05/22	GN
MRPL	WPA2201	WAIPAPA	WPA2201MRPLGG	MRPL	23/02/21	GG

The process to make changes to the NSP table was stepped through, and changes to the NSP table in the past year were reviewed. The Mercury Senior Electrical Engineer is expected to advise the Mercury Energy Services team of any changes to the NSP table required via email. The Energy Services team then create an AV180 report detailing the NSP changes and submit it to the Reconciliation Manager.

All points of connection have current certification.

Three points of connection had meter recertifications during the audit period. Two were notified more than 10 business days after re-certification, and one is yet to be notified. The table below contains the details.

NSP	Certification date	Certification expiry date	Date updated	Days between cert and update
SWN2201MRPLGG	13/10/2020	26/07/2021	13/11/2020	31
WKM2201MRPLGG	14/08/2020	14/08/2023	18/09/2020	35

OHK2201MRPLGG	1/12/2020	1/12/2023	Not updated, NSP table has 08/02/21 as the expiry	N/A
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The three late updates are recorded as non-compliance below.

No new points of connection were created during the audit period.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.2 With: Clause 10.26 (6), (7) and (8)  From: 31-Aug-20 To: 28-Feb-21	One meter certificate expiry date is yet to be updated. Two meter certification expiry dates were updated late. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are assessed as weak as no updates occurred within the required timeframe. The risk is low because the meters were appropriately certified at all times.		
Actions taken to resolve the issue		Completion date	Remedial action status
<b>OHK2201MRPLGG</b> The expiry date has now been updated.		March 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We update certification expiry dates as soon as we receive the meter certificates. The normal turnaround time for our contracted Approve Test House (ATH) to provide a certificate is around 21-45 days after meter calibration or inspection. This delay is causing our non-compliance in this area. We will raise this, and request more timely updates from the ATH.		July 2021	

### 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**

A registry list with history was reviewed for 1 February 2020 to 25 November 2020 to determine the profiles assigned by Mercury, and whether they require control device certification and the audit compliance report for 1 February 2020 to 8 December 2020 was reviewed.

#### **Audit commentary**

Mercury has applied the DFP, HHR, HHM, PTM, RPS, and UML profiles during the period.

The profiles used by Mercury do not rely on use of control devices for reconciliation purposes.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 10.43(2) and (3)*

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

*If a participant becomes aware of an event or circumstance that lead it to believe a metering installation could be inaccurate, defective, or not fit for purpose they must:*

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

#### **Audit observation**

Processes relating to defective metering were examined.

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

#### **Audit commentary**

Defective meters are typically identified through the meter reading validation process, or from information provided by the meter reader, agent, the MEP, or the customer. Upon identifying a possible defective meter, a field services job is raised to investigate and resolve the defect.

I reviewed ten examples of potential defective meters, and 14 bridged meters. In all cases a field services job was raised, and the MEP advised.

Because AMS and EDM's audits were completed more than seven months ago, I checked defective meters identified since their May and July 2020 respective audits and noted that corrections had been processed where necessary. HHR corrections are discussed in **section 8.2**.

#### **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

The data collection process was examined.

- AMS and EDM I collect HHR information as agents.
- MEPs collect NHH AMI data as MEPs.
- Wells collects manual NHH data as an agent.
- AMS collects generation data and monitoring occurs by Mercury's generation engineers.

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

Mercury's processes for validation of generation data were reviewed.

### Audit commentary

All information used to determine volume information is collected from the services interface or the metering installation by Mercury, one of their agents, or the MEP.

Compliance with this clause has been demonstrated by Mercury's agents and MEPs as part of their agent audits, apart from EDM I. Non-compliance is recorded in EDM I's agent audit report because ICP 0305679023LC074 was unable to be read in the previous three months, and FCLM was working with the

customer to arrange a site visit. I note the last collected interval was 11 March 2020, immediately prior to COVID-19 lockdown. Estimations were performed between April and August 2020 and actual data was obtained on 25 August 2020. The estimations for the period April to August 2020 became permanent because actual data was not available.

Non-compliance is also recorded in the AMS report because ICP 0000536540NRECD was unable to be read between 13 December 2019 and May 2020 and has a maximum interrogation cycle of 45 days. Data for the period 13/12/19 and 28/01/20 was unable to be retrieved and a permanent estimate was conducted.

Because AMS and EDMI's audits were completed more than seven months ago, I confirmed that there were no issues with HHR data collection processes or clock synchronisation since their audits.

Clock synchronisation event information is provided to Mercury by its agents and MEPs. I reviewed some recent examples of clock synchronisation events sent by AMS and EDMI and noted that no action by Mercury had been required.

Mercury's generation engineers monitor generation consumption and metering in real time and notify Energy Services if any issues are identified.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.5 With: Clause 2 Schedule 15.2  From: 11-Mar-20 To: 25-Aug-20	ICP 0305679023LC074 was unable to be read in the previous three months and has a maximum interrogation cycle of 90 days. ICP 0000536540NRECD was unable to be read between 13/12/19 and May 2020 and has a maximum interrogation cycle of 45 days. 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 rated as strong. Two ICPs were not read during the maximum interrogation cycle and site visits to resolve the issues has been delayed in part by the COVID-19 lockdown. The impact is assessed to be low, because only two meters are affected.		
Actions taken to resolve the issue		Completion date	Remedial action status
There are strong controls in normal circumstances however the Covid-19 lockdown caused unavoidable delays. We will continue to support agents and MEPs where required. We are now receiving actual data for both ICPs.		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		N/A	

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

### Code reference

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

### Code related audit information

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

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

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

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

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

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

### Audit observation

The data collection process was examined.

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

Processes for customer and photo reads were reviewed.

### Audit commentary

#### Wells readings

Compliance is recorded in Wells' audit report.

During manual interrogation, the meter register value is collected and entered into a hand-held device. This reading enters Mercury's 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 pulled into the readers' notes database. It is possible for staff to run queries to identify ICPs where meter condition issues such as tampering, or damage are present.

Staff work through the notes provided each day, and the database is used to provide additional information and support when investigating ICPs. Suspected tampering and faulty meters are addressed as top priority. I walked through the review process, including checking examples of missing and broken seals, tampering and damage and unsafe situations. I noted that field services jobs had been raised to resolve issues where required. No phase failure issues have been reported by Wells during the audit period, but I checked their training material and confirmed the appropriate training and instruction was supplied to meter readers.

I checked a sample of nine readings provided by Wells and confirmed that they are loaded into SAP as actual readings and are validated.



### Customer and photo readings

Customer readings are handled manually, and may be provided by telephone, in writing or by sending in a photograph of their meter. Customer reads are entered into SAP with type 01-02 (customer) after being validated against another set of validated readings. Estimated reads become permanent estimates, which are labelled as validated reads, therefore subsequent estimated reads are being validated against earlier estimates. I reviewed six examples of customer readings and found that all had been appropriately validated against actual readings from other sources.

In the rare event that customer readings are obtained by Wells, a no read is recorded, and the customer reading is inserted in the notes. On initial import they fail validation due to the read type being customer, and during the validation checks the customer read is entered manually with read type 01-02 (customer).

If unvalidated, or there are any concerns about the accuracy of a customer reading they will be loaded with a read type of unbillable.

During Covid-19 lockdown, Wells developed a process to conduct outbound calling to customers to obtain customer readings. These readings were entered into the handheld and were validated in the same way as meter reader readings. Mercury loaded these readings as “customer readings” not actual readings. Compliance is confirmed.

### **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**

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

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

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 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 a 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. Compliance is recorded for Mercury because no upgrades or downgrades occurred during the audit period apart from profile changes where AMI metering was present, and the midnight read was used at the time of the profile change for ten examples examined.

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 confirmed that all reads were correctly applied.

### 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 examined. Reporting on ICPs not read during the period of supply was examined, and all ICPs unread during the period of supply where that period was more than 90 days were examined.

### Audit commentary

The no reads process is managed by our Readings Management team. A weekly no-reads report is produced by the IT department (ICT) and deposited in a directory for consumption by the Price and Quantity team. These Reports have been refined and automated during the audit period to better identify issues and to ensure those requiring action get to the appropriate team without the need of the Risk Control team manually screening reports.

A customer engagement list is derived from the filtering process and customer communications in the form of emails, texts and letters are sent out in weekly tranches. Customer responses result in further engagement actions to resolve access and device issues. For those requiring further investigation the

process is unchanged and comments are added to the report detailing any action taken. Any previous work done to obtain a read for the site is considered during this review.

I saw evidence that vacant sites were passed on to the vacant team, and communication and metering issues were referred to the Premise and Metering team so that field services jobs can be raised. For access issues the Readings Management team works with the customer to resolve the issues or arrange for AMI metering to be installed.

Non-communicating meters are also identified by the Meter Validations team, and MEPs provide information on non-communicating meters so they can be moved to manual meter reading routes and field services jobs can be raised. Meters with intermittent communications are harder to identify and continue to cause read attainment issues.

Mercury implemented a new database during the audit period in June 2020, called “ADR”. This database contains all AMI and manual meter readings. When a reading is required an “order” is created which looks for a reading on the required date. If a reading is not available for the required date, readings from one day after or one day prior are used, and if these are not available then readings from two days after or two days prior are used. This revised process ensures many more readings are available for use.

Mercury is still working on the partial automation of the read attainment process which was discussed in previous audits. The new process will generate emails, texts, and letters to customers whose ICPs have not received reads for three months or six months. The process to change ICPs between AMI and manual meter reading routes will also become more automated. These changes are expected to further improve meter read attainment.

I observed an alert built into SAP, where a message pops up if a customer account is viewed where no actual reads have been received for the past 90 days. This prompts the staff member speaking to the customer to discuss the meter reading issues if the customer makes contact.

Mercury provided a list of 47 ICPs unread during the period of supply, where the period of supply ended between 3 February 2020 and 24 August 2020. I checked an extreme example of all 15 ICPs where the period of supply was more than 90 days and found that exceptional circumstances were proven for 13 examples checked. Due to the time needed to complete, exceptional circumstances cannot be proven for the 32 ICPs with a supply period of less than 90 days. This number is much lower than previous audits due to the improvements mentioned above.

A recommendation was made during the previous audit that Mercury review their reporting for unread ICPs to ensure it is accurate. This recommendation was adopted, and the reporting appears to be accurate now.

## Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 6.8</p> <p>With: Clause 7(1) and (2) Schedule 15.2</p> <p>From: 01-Mar-20</p> <p>To: 31-Dec-20</p>	<p>The best endeavours requirement was not met for 34 ICPs not read during the period of supply.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>
Audit risk rating	Rationale for audit risk rating

<b>Low</b>	<p>The controls are recorded as strong because they have been improved during the audit period.</p> <p>The risk is rated as low, as number of customers not read during the period of supply is small relative to the customer base.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
This is an area of strong control for Mercury with substantial improvements from previous audit assessments. Despite this level of control, it remains extremely difficult to fulfil the best endeavours requirement when the tenure of ICPs is 1 month or less. We will continue to consider what more we can do in these circumstances.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		As above.	

#### 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 March to August 2020 were provided and reviewed to determine whether they met the requirements of clauses 8 and 9 of schedule 15.2.

A sample of ten ICPs not read in the previous 12 months were reviewed to determine whether reasonable endeavours were used to attain reads, and if 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
Mar-20	336	138	914	99.40%
Apr-20	335	141	957	99.39%

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
May-20	338	139	977	99.33%
Jun-20	337	137	924	99.30%
Jul-20	337	136	914	99.31%
Aug-20	334	136	893	99.32%

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

I reviewed ten ICPs not read in the previous 12 months determine whether exceptional circumstances exist, and if Mercury had used their best endeavours to obtain readings:

- five ICPs were unread due to health and safety issues, and
- five ICPs were unread due to access issues - many attempts had been made and recorded during the unread period.

I reviewed meter reading reports for March to August 2020 and confirmed that they met the meter reading frequency report requirements and that the reports were submitted by the 20<sup>th</sup> business day of the month following the report period.

#### 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 four months, for which consumption information is required to be reported into the reconciliation process. A validated meter reading is obtained at least once every four months for 90% of the non half hour metered ICPs.*

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

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

#### Audit observation

The meter reading process was examined. Monthly reports for March to August 2020 were provided and reviewed to determine whether they met the requirements of clauses 8 and 9 of schedule 15.2.

A sample of ten ICPs not read in the previous four months at NSPs where less than 90% of ICPs were read were reviewed to determine whether exceptional circumstances existed and if Mercury had used their best endeavours to obtain readings.

#### Audit commentary

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	Total ICPs unread for 4 months	Overall percentage read
Mar-20	348	18	2962	98.35%
Apr-20	348	21	3667	97.99%
May-20	348	31	4283	97.48%
Jun-20	348	27	4008	97.44%
Jul-20	348	21	3573	97.71%
Aug-20	343	16	2761	98.18%

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

I reviewed a sample of 10 ICPs not read in the previous four months determine whether exceptional circumstances exist, and if Mercury had used their best endeavours to obtain readings.

There were four examples of health and safety issues and six examples of access issues and in all cases multiple attempts had been made to obtain readings.

#### 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 Mercury's agents and MEPs as part of their own audits.

I confirmed with Wells that there were no changes to their processes or systems since their July 2020 audit that could have a negative impact on Mercury's compliance.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 11(1) Schedule 15.2*

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

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

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

#### **Audit observation**

HHR data is collected by EDM I and AMS. HHR interrogation data requirements were reviewed as part of their agent audits.

Generation data is collected by Mercury.

#### **Audit commentary**

Compliance with this clause has been demonstrated by AMS and EDM I as part of their agent audits. Because AMS and EDM I's audits were completed more than seven months ago, I confirmed that there were no issues with HHR data collection processes since their audits in 2020.

Generation data is collected by AMS via the services access interface.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 11(2) Schedule 15.2*

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

*The following information is collected during each interrogation:*

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

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

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

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

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

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

#### **Audit observation**

HHR data is collected by EDM I and AMS. HHR interrogation data requirements were reviewed as part of their agent audits.

Generation data is collected by AMS.

#### **Audit commentary**

Compliance with this clause has been demonstrated by AMS and EDM I as part of their agent audits. Because AMS and EDM I's audits were completed more than seven months ago, I confirmed that there were no issues with HHR data collection processes since their 2020 audits.

Generation data is collected by AMS via the services access interface, and interrogation data is obtained.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 11(3) Schedule 15.2*

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

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

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

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

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

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

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

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

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

#### **Audit observation**

HHR data is collected by EDM I and AMS. HHR interrogation data requirements were reviewed as part of their agent audits.

Generation data is collected by AMS.

#### **Audit commentary**

Compliance with this clause has been demonstrated by AMS and EDM I as part of their agent audits. Because AMS and EDM I's audits were completed more than seven months ago, I confirmed that there were no issues with HHR data collection processes since their 2020 audits.



Generation data is collected by AMS via the services access interface, including an interrogation log. Generation data is monitored by Mercury's generation engineers and any events that may affect accuracy are reported to the Energy Services team.

**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

Trading period duration was reviewed as part of the MEP and agent audits.

Mercury's clock synchronisation process ensures that trading period duration for generation meters is normally 30 minutes within  $\pm 2$  seconds. A sample of clock synchronisation events were reviewed.

#### Audit commentary

Compliance with this clause has been demonstrated by the agents and MEPs and is discussed in their audit reports. Because AMS and EDM's audits were completed more than seven months ago, I confirmed that there were no changes to HHR processes since their 2020 audits.

The clock synchronisation process for generation meters is discussed in **section 6.5**. There were no clock errors during the audit period which led to corrections being required.

#### 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.

#### Audit commentary

When this data reaches SAP the level of security is also robust, and unauthorised personnel cannot access data. Metering, Billing, Energy Services and Risk Control staff have access to modify meter reading information in SAP.

I reviewed raw NHH meter data from January 2017, and HHR and generation meter data from January 2017 recorded in SAP, confirming that meter reading data is retained for at least 48 months.

Readings cannot be modified without an audit trail being created. Validation occurs in a temporary table before it becomes a permanent record and meter readings are not edited. I viewed these audit trails, and they are discussed in further detail in **section 2.4**.

No paper-based readings are received.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 21(5) Schedule 15.2*

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

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

#### **Audit observation**

Processes to record non-metering information were discussed.

#### **Audit commentary**

Mercury collects unmetered data in relation to streetlights, and this information is appropriately archived.

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

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

*19(1)(b) - replacement of the original meter reading by another meter reading (even if the replacement meter reading may be at a different date)*

*19(1)(c) - if the original meter reading cannot be confirmed or replaced by a meter reading from another interrogation, then an estimated reading is substituted, and the estimated reading is marked as an estimate and it is subsequently replaced in accordance with clause 4(2).*

#### Audit observation

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

#### Audit commentary

Where errors are detected during validation of non-half hour meter readings then firstly a check reading is performed. If an original meter reading cannot be confirmed by a check reading, then an estimated reading is used.

When a meter reading is found to be transposed, Mercury swaps the readings between registers and the corrected readings are appropriately recorded as estimates.

The process to correct meter readings is compliant.

#### Audit outcome

Compliant

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

#### Code reference

Clause 19(2) Schedule 15.2

#### Code related audit information

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

*19(2)(a) - if a check meter or data storage device is installed at the metering installation, data from this source may be substituted.*

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

### Audit observation

Processes for the correction of HHR meter readings were reviewed. Five examples of HHR corrections were reviewed.

### Audit commentary

Where errors are detected during validation of HHR metering information, and check metering data is not available, then data from a period with a quantity and profile similar to that expected is used. SAP has a dropdown list for the user to select the correction technique. The common techniques are as follows:

- extrapolate - a previous similar time period is used,
- interpolate - a previous time period is used, and the result is permanent,
- divide/multiply - this technique is used for examples like phase failure,
- add - data is added to existing data, and
- type in - if a manual calculation is performed or if check metering is used the result can be entered in.

When previous time periods are used, the day of the week is considered, so if data is missing for a Tuesday, the data for the same time period on the previous Tuesday will be considered. Statutory holidays are also taken into consideration. SAP has a built-in audit trail for all estimations and corrections.

Mercury provided five examples of HHR data corrections during the audit period where they have typed in the missing intervals. These are estimated by calculating manually using the previous two half hour periods. All of the five were appropriately corrected. All changes have an audit trail and a journal, which is recorded in the "attachment list" in SAP.

During the previous audit, it was identified that one ICP had interpolated data based on previously extrapolated data. Mercury changed their process so that all corrections are based on actual data and not on corrected data.

Corrections to generation data seldom occurs and if it does the same process is used.

### 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

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

### Audit observation

Error and loss compensation arrangements were discussed.

### Audit commentary

Mercury does not deal with any loss and compensation arrangements.

Where loss compensation is required, Mercury's HHR agents adjust the data. ICPs requiring loss compensation are identified through the load check process employed at the time of certification or recertification.

## Audit outcome

Compliant

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

#### Code reference

*Clause 22(1) and (2) Schedule 15.2*

#### Code related audit information

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

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

*22(2)(a) - the date of the correction or alteration*

*22(2)(b) - the time of the correction or alteration*

*22(2)(c) - the operator identifier of the reconciliation participant*

*22(2)(d) - the half-hour metering data or the non half hour metering data corrected or altered, and the total difference in volume of such corrected or altered data,*

*22(2)(e) - the technique used to arrive at the corrected data,*

*22(2)(f) - the reason for the correction or alteration.*

#### Audit observation

Corrections are discussed in **sections 2.1, 8.1** and **8.2**, 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 was reviewed as part of their MEP audits.

#### Audit commentary

I reviewed journals for HHR and NHH data corrections and noted that they were compliant with the requirements of this clause.

## 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 Mercury's systems in **section 2.3**.

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

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

#### Audit commentary

Readings are clearly identified as required by this clause.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 3(4) Schedule 15.2*

#### Code related audit information

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

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

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

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

#### Audit observation

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

#### Audit commentary

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

#### Audit outcome

Compliant

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

#### Code reference

Clause 3(5) Schedule 15.2

#### Code related audit information

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

#### Audit observation

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

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

#### Audit commentary

The MEPs and agents retain the raw, unrounded data. Compliance with this clause has been demonstrated by Mercury's MEPs and agents as part of their own audits. Mercury receives data from EDM I in the PROFVAL format and is not affected by the non-compliance recorded in EDM I's agent audit report. Because the Wells, AMS and EMS agent reports were more than seven months old on the audit due date, I confirmed that there had been no changes to agent systems or processes which could affect Mercury's compliance.

AMS, Arc, Smartco, IntelliHUB, Counties and FCLM readings are rounded to zero decimal places on import. This has previously been recorded as compliant because the MEP has the unrounded raw meter data, however a recent review of the wording of this clause has led to a revised interpretation, which is that rounding should not occur until volume information is created. Rounding occurs prior to the creation of volume information, therefore non-compliance exists.

ARC Innovations meters record data to one decimal place. Compliance is recorded in this section because data is not rounded or truncated on receipt by Mercury. Non-compliance is recorded in **sections 2.1** and **12.7** in relation to submission accuracy.

#### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.3 With: Clause 3(5) of schedule 15.2  From: 01-Mar-20 To: 01-Mar-21	Raw meter data is rounded upon receipt and not when volume information is created.  Potential impact: Low  Actual impact: Low  Audit history: Once  Controls: None  Breach risk rating: 5
Audit risk rating	Rationale for audit risk rating



<b>Low</b>	There are no controls to prevent rounding of raw meter data, the system is designed to round as soon as the data arrives.		
	There is very little impact because no metered consumption information is “missing”, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
We maintain that there is very little impact because there is no missing metered consumption information. Acknowledging that our application for exemption was rejected, the implication of this newly interpreted compliance requirement remains severe in terms of cost and strategy and the best solution currently remains under consideration.		Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		As above.	

#### 9.4. Half hour estimates (Clause 15 Schedule 15.2)

##### Code reference

Clause 15 Schedule 15.2

##### Code related audit information

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

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

##### Audit observation

The HHR estimate process was examined. I checked a sample of ten HHR corrections, where the estimation and correction techniques are the same. There were no recent estimates because the delivery of HHR data is reliable.

##### Audit commentary

When Mercury has not received data prior to the deadline for providing submission information, then estimated data is provided. There is a requirement to use “reasonable endeavours” to ensure this data is accurate to within 10%.

Consumption is estimated using standard techniques as detailed in **section 8.2**. As mentioned above, there were no recent examples of C&I estimation because the delivery of HHR data is reliable. I checked the AMI HHR estimation methodology and confirm it is compliant.

Estimates are created and supplied by IntelliHUB. The process for calculating the estimates was checked during their HHR agent audit and the methodology is sound. IntelliHUB produces estimates for inactive periods, and Mercury’s submission process excludes any volumes during inactive periods from submission. IntelliHUB does not provide updated actual data to replace estimates if the actual data is obtained more than 15 days after the event date, which is recorded as non-compliance in **section 2.1**.

## 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.

#### Audit commentary

Data validation for NHH metering information occurs at multiple levels.

##### Meter reader validation

For manually read meters, Wells performs a localised validation within their hand-held devices to ensure the reading is within expected high/low parameters. This is described further in the Wells audit report. Wells also provide information on meter condition, where it could affect meter accuracy or safety. This is discussed further in **section 6.6**.

##### Read import validation.

All NHH read data undergoes validation. I viewed the exception reports generated by the validation process, and a sample of data which failed validation.

The read validation process includes:

- identification of reads with invalid dates and times, or a date that does not match the expected read order date, it will also identify obvious data corruption,
- checks that the data relates to an ICP, meter, and register held within the system,
- checks that the read matches the number of digits expected for the meter, and
- it is not possible to enter a read for a period which has already been billed, unless the previous invoice is reversed and rebilled.

##### Billing validation

The billing validation process identifies:

- any outstanding read orders, which are investigated to determine why a read was not received,
- high reads and reads lower than the previous read, and
- if a billing period will be less than ten days, and the invoice is not a final invoice.

Exceptions identified through the billing validation process are reviewed. Validation tools are used to assess whether consumption appears reasonable and include comparisons with historic consumption. Based on the review findings, reads are either validated or left unvalidated. Unvalidated reads are not used by the billing or reconciliation processes.

#### Zero consumption

The zero-consumption process has been revised and a new report has been developed that will identify ICPs with zero consumption. This is run on a regular basis and all ICPs are investigated. The process will identify any bridged meters. I confirmed that bridged consumption information is appropriately estimated and flows through to submission files.

#### Negative consumption

Negative consumption is reviewed. SAP records any negative reading as implausible, and the read will be locked and not used for billing or reconciliation. Where a switch in read is too high, the first read received by Mercury may be lower than the switch read. If the difference is over 250 kWh, Mercury will request a read renegotiation. If the difference is less than 250 kWh Mercury will estimate zero consumption while they wait for actual reads to catch up to and exceed the switch in read. Where they believe it will take an extended period for the actual reads to exceed the switch in reads, Mercury will provide a refund to the customer and change the switch read to match the actual read.

#### Consumption while inactive

Consumption while inactive is identified by the data analysts. A report is run that identifies all ICPs with an inactive status and consumption. Currently there are 84 ICPs (10,584 kWh) on this list. The number on this list has continued to decline over the last three audits. Staff check each ICP to determine whether they are connected and return them to active status and refer them to the Vacant and Disconnection teams if necessary. ICPs with inactive consumption for over three months and the highest inactive consumption are addressed as a priority.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 17 Schedule 15.2*

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

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

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

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

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

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

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

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

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

#### **Audit observation**

I reviewed and observed the HHR, generation, and AMI data validation processes, including checking a sample of data validations and process documentation.

#### **Audit commentary**

Electronic data used to determine volume information is provided by MEPs, AMS and EDM I as agents, and by AMS for generation information.

This function was examined as part of the MEP and agent audits. Because the agent audits were completed more than seven months ago, I confirmed that there were no issues with AMS and EDM I's HHR data collection processes since their June and May 2019 respective audits.

#### **HHR**

Interrogation occurs regularly so there is little risk that data will be overwritten.

The HHR validation process occurs within SAP, and any exceptions identified through this process are locked so the data will not be used for billing or reconciliation until it is approved. I saw evidence of this process in operation.

The HHR validation process includes:

- a master data check to ensure data is for the correct ICP,
- identification of invalid dates and times,
- identification of unexpected zero values (these settings are at ICP level and some are set to allow for a certain number of zeros depending on the customer type),
- comparison with expected or previous flow patterns,
- max kW for the relevant CT/VT ratio, and
- negative values.

Each exception is manually reviewed by the Energy Services team. If the data is found to be acceptable it will be manually unlocked, otherwise the data remains locked until investigation is complete. I reviewed examples of exceptions and noted that they were investigated including checking consumption changes with the account manager and customer where necessary.

An automated sum check process compares the register reads to the sum of interval data. The pass/fail threshold is 0.1 kWh per interrogation cycle. There is also a rolling 3-month check between register reads and intervals with a threshold of 0.5 kWh. Mercury will only use data where the register read is on the midnight hour so the comparison can be made without the complexity associated with part intervals. The process ensures days without midnight reads are not missed by comparing data from the previous midnight read to the next midnight read where data is missing. Any failures appear on an exception report to be checked manually and are resolved by importing the exceptions file into SAP.

Missing data is identified through a report run on business day two each month. Any missing data is followed up with the agent, and estimated, if it is not received before the submission deadline.

HHR meter event information is managed by EDM I and AMS, who email Mercury if events have occurred that require their attention. I reviewed examples of meter change information provided by EDM I and AMS.

#### **Generation**

Reads are received via SFTP. They are imported into SAP automatically and validated using the same process as other HHR data.

No event logs are provided. A web-based system provides information on any outages or issues and was viewed during the audit. Generation staff monitor metered consumption and notify the Energy Services team if they become aware of any issues.

Generation data is matched to check meter data, any differences over  $\pm 2\%$  are checked with a generation engineer. For Atiamuri, up to 4 MW may be fed into the local network and is not measured by the check meter system. This is considered when reviewing the differences between the primary and check meter data.

#### AMI

Mercury receives AMI data from several MEPs. As discussed in **section 9.5**, all NHH reads are checked for missing data, invalid dates and times, unexpected zero values, and comparison against consumption history.

The Code requires “...a review of meter and data storage device event log. Any event that could have affected the integrity of metering data must be investigated.”

Mercury receives emailed meter event information from all MEPs, including lists of non-communicating meters which need to be moved to manual meter reading routes. These metering events are reviewed and actioned, and I saw evidence of field services jobs raised as a result.

Mercury also receives a file of all events from each MEP.

#### **Audit outcome**

Compliant

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

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

#### Code reference

Clause 13.136

#### Code related audit information

*The generator (and/or embedded generator) must provide to the pricing manager and 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

Mercury is not responsible for any generation stations where information is provided to the pricing manager 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 pricing manager and 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 pricing manager and 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

Mercury is not responsible for any generation stations where information is provided to the pricing manager 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

Mercury is not responsible for any generation stations where information is provided to the pricing manager in accordance with this clause.

#### Audit outcome

Not applicable

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

#### Code reference

*Clause 13.140*

#### Code related audit information

*If the generator provides half-hourly metering information to the pricing manager or 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

Mercury is not responsible for any generation stations where information is provided to the pricing manager in accordance with this clause.

#### Audit outcome

Not applicable

## 11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

### 11.1. Buying and selling notifications (Clause 15.3)

#### Code reference

*Clause 15.3*

#### Code related audit information

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

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

#### Audit observation

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

#### Audit commentary

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

Submissions are checked against open trading notifications prior to submission as part of the NZRM/ALLA file editor checks described in **section 12.3**.

#### 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 HHR ICP days for 20 NSPs and NHH ICPs for 20 NSPs to confirm the AV110 ICP days calculation for September 2020 was correct.

I reviewed variances for 22 months of GR100 reports and investigated any large discrepancies.



### Audit commentary

The process for the calculation of ICP days was examined by checking HHR ICP days for 20 NSPs and NHH ICPs for 20 NSPs to confirm the AV110 ICP days calculation was correct. The ICP days reported were as expected.

The following table shows the ICP days difference between Mercury files and the RM return file (GR100) for all available revisions for 22 months. The discrepancies are small and consistently negative, indicating that retailer ICP days are consistently higher than the registry.

Month	Ri	R1	R3	R7	R14
Jan 2019	-0.02%	-0.03%	-0.03%	-0.03%	-0.03%
Feb 2019	-0.02%	-0.04%	-0.03%	-0.03%	-0.03%
Mar 2019	0.00%	-0.02%	-0.04%	-0.04%	-0.04%
Apr 2019	-0.02%	-0.03%	-0.04%	-0.04%	-0.04%
May 2019	-0.03%	-0.04%	-0.02%	-0.04%	-0.04%
Jun 2019	-0.03%	-0.04%	-0.03%	-0.04%	-0.04%
Jul 2019	-0.05%	-0.05%	-0.05%	-0.04%	-
Aug 2019	-0.03%	-0.04%	-0.05%	-0.05%	-
Sep 2019	-0.03%	-0.05%	-0.05%	-0.04%	-
Oct 2019	-0.04%	-0.05%	-0.05%	-0.04%	-
Nov 2019	-0.04%	-0.05%	-0.05%	-0.04%	-
Dec 2019	-0.03%	-0.05%	-0.05%	-0.04%	-
Jan 2020	-0.03%	-0.05%	-0.05%	-0.05%	-
Feb 2020	-0.04%	-0.05%	-0.06%	-0.06%	-
Mar 2020	-0.02%	-0.05%	-0.05%	-0.05%	-
Apr 2020	-0.03%	-0.05%	-0.05%	-	-
May 2020	-0.04%	-0.05%	-0.06%	-	-

Month	Ri	R1	R3	R7	R14
Jun 2020	-0.05%	-0.07%	-0.08%	-	-
Jul 2020	-0.05%	-0.07%	-0.08%	-	-
Aug 2020	-0.05%	-0.06%	-	-	-
Sep 2020	-0.05%	-0.07%	-	-	-
Oct 2020	-0.04%	-	-	-	-

I checked a sample of five HHR differences and five NHH differences present at r7 or later:

- one issue related to the use of the incorrect NSP, which was changed by the network and backdated 17 years, and
- all other issues related to ICP days being submitted for the day of disconnection; ICP days were correct but different to the ICP days expected by the registry.

I rechecked the previous audit issue relating to ICP 0068548000WR39B. Mercury was recorded in the registry as the trader for ICP 0068548000WR39B from 22 June 2018, but SAP has this ICP as being with Genesis from 17 July 2018 to 31 October 2018. Therefore, no submission occurred for this ICP during this period. The trader events in the registry were updated in March 2020 resulting in corrections to ICP days and submission. This appears to be a one-off issue and no further examples were identified.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 11.2 With: Clause 15.6  From: 01-May-19 To: 19-Jun-31	Inaccurate ICP days were reported for one ICP. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are currently rated as strong as they will mitigate risk to an acceptable level.  The impact is assessed to be low because only one discrepancy was identified, and it related to an unusual case of an NSP being changed with a backdated date of 17 years.		
Actions taken to resolve the issue		Completion date	Remedial action status

Non-compliance	Description	
The one instance of non-compliance is an extreme case. We will continue with our strong controls in this area.	N/A	Identified
<b>Preventative actions taken to ensure no further issues will occur</b>	<b>Completion date</b>	
As above.	N/A	

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

#### Code reference

Clause 15.7

#### Code related audit information

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

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

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

#### Audit observation

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

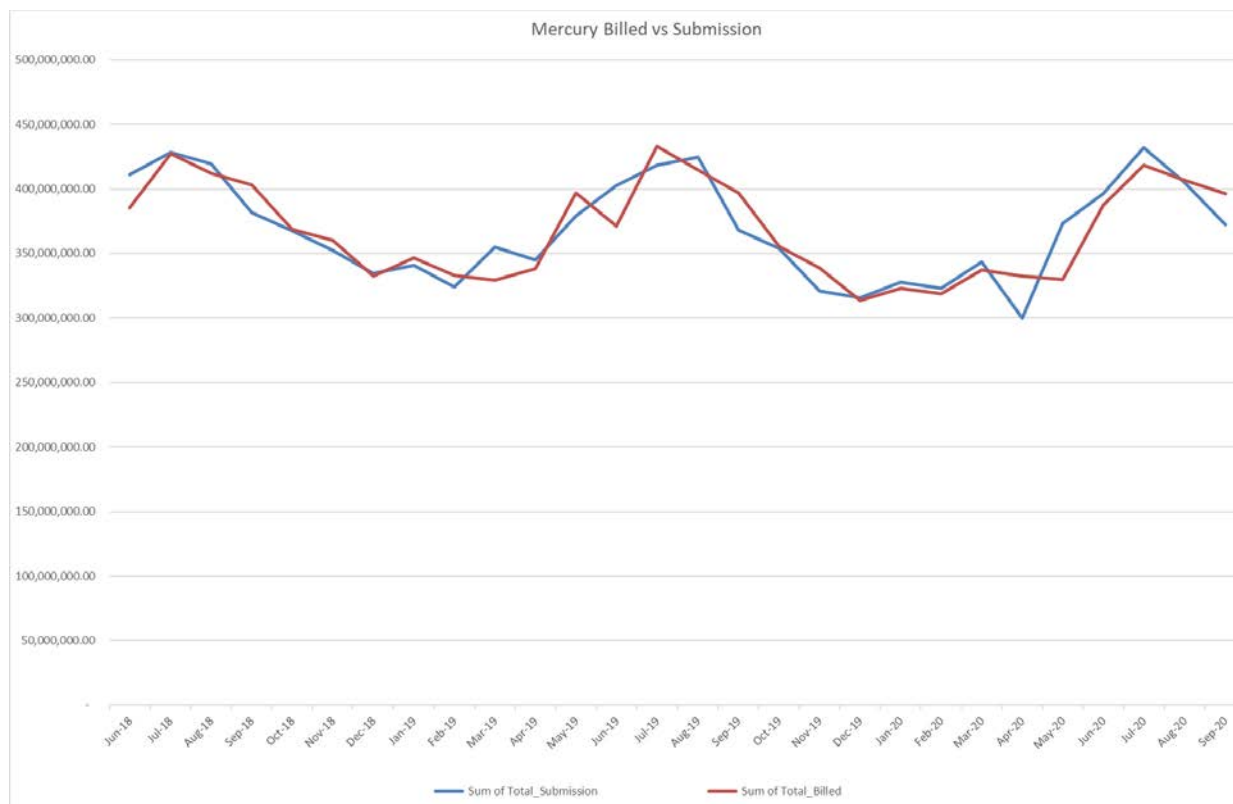
GR130 reports for January 2016 onwards were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

#### Audit commentary

The process for calculating and submitting electricity supplied information was examined by checking individual invoices for a typical sample of five NSPs to ensure the billed amount equalled the figure in the ICP level file which forms the basis of the aggregate file sent to the RM. The file is correct for the sample checked.

The chart below shows a comparison between submissions and electricity supplied information. At an aggregate level, billed data is 0.1% lower than submitted data for the year ended September 2020 and 0.0% higher than submission for the two years ended September 2020.

#### Comparison between Submitted Volumes and Electricity Supplied



## Audit outcome

Compliant

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

### Code reference

Clause 15.8

### Code related audit information

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

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

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

### Audit observation

I confirmed 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 matching one month's volumes for three ICPs to the source files.

The GR090 ICP missing files were examined for all revisions for June 2019 to September 2020. An extreme case sample of the 25 ICPs missing for the most months were reviewed.

### Audit commentary

Mercury's HHR aggregates report contains submission information, not electricity supplied information as specified under clause 15.8. Although the reports Mercury produces are consistent with the Reconciliation Manager Functional Specification, this is recorded as technical non-compliance below.

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. There were only small rounding differences between the volumes and aggregates. I checked the differences at NSP level for one submission and confirmed that they related to rounding; the aggregates file is rounded to zero decimal places at ICP level and the volumes are rounded to two decimal places at trading period level.

The HHR aggregates file was checked to ensure it matched the HHR volumes file and the raw meter data.

Mercury reviews the ICP missing files on business days five and ten, to identify any issues that require correction.

The GR090 ICP missing files were examined for all revisions for June 2019 to September 2020. An extreme case sample of the 25 ICPs missing for the most months were reviewed, and found:

- six ICPs were missing from some periods because of backdated changes, switches or withdrawals,
- one unmetered ICP was missing on the registry because Mercury is unable to update the submission flag to HHR for some ICPs following the part 10 implementation; they are working to resolve this,
- 14 ICPs were recorded against the incorrect network, all had the correct NSP recorded but the NSPs are connected to two networks (STK0331 for Nelson and Tasman, and HEP0331 for United Networks and Vector), this matter was resolved in March 2020 and all submissions are correct since then,
- the previous audit found ICP 0100822002LCF9B had the incorrect RPS profile recorded on the registry but was being submitted using the HHM profile; this has been corrected and RPS submission is occurring,
- ICP 0000160705CKEE2 had a 16 August 2019 NSP change processed from 01 January 2010, this is now resolved, and
- ICPs 0327312033LC2D6 and 0000184853CTB54, did not have settlement units correctly set up; this is resolved and these ICPs have appeared in revision files.

The issues of incorrect information are recorded as non-compliance in **sections 2.1** and **12.7**.

#### Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 11.4</p> <p>With: Clause 15.8</p> <p>From: 01-Mar-20</p> <p>To: 01-Mar-21</p>	<p>HHR aggregates file does not contain electricity supplied information.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>
Actions taken to resolve the issue	Completion date

Low	The issue relating to content of the aggregates file is an error in the code, Mercury is providing submission information as expected.		
Actions taken to resolve the issue		Completion date	Remedial action status
Non-compliance is disputed. Mercury is handling and presenting data as required by the Reconciliation Manager file specification.		N/A	Disputed
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>This is an industry known issue which The EA is aware off. Mercury will continue to prepare the aggregates file as required by the Reconciliation Manager file Specification.</p> <p>Mercury requests the EA to amend the code accordingly as this has existed for some time.</p>		N/A	

## 12. SUBMISSION COMPUTATION

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

#### Code reference

Clause 15.36

#### Code related audit information

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

#### Audit observation

Daylight savings processes for MEPs and agents were reviewed as part of their audits.

Daylight savings processes for generation occur automatically.

A diverse characteristics sample of three daylight savings adjustments were reviewed, covering changes to and from daylight savings, each agent, and generation consumption.

#### Audit commentary

Daylight savings processes for MEPs and agents were reviewed as part of their audits. Because AMS and EDM's audits were completed more than seven months ago, I confirmed that there were no issues with HHR processes since their 2020 audits.

The "trading period run on" technique is used for daylight saving adjustment. This was confirmed by checking data recorded for the end of daylight savings in April 2020 and beginning of daylight savings in September 2020. The correct number of trading periods were recorded for the sample of daylight savings adjustments reviewed.

#### Audit outcome

Compliant

### 12.2. Creation of submission information (Clause 15.4)

#### Code reference

Clause 15.4

#### Code related audit information

*By 1600 hours on the 4th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all NSPs for which the reconciliation participant is recorded in the registry as having traded electricity during the consumption period immediately before that reconciliation period (in accordance with Schedule 15.3).*

*By 1600 hours on the 13th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all points of connection for which the reconciliation participant is recorded in the registry as having traded electricity during any consumption period being reconciled in accordance with clauses 15.27 and 15.28, and in respect of which it has obtained revised submission information (in accordance with Schedule 15.3).*

#### Audit observation

The process to create submissions was reviewed.

A sample of submission data was checked, and correction processes were checked in **sections 2.1, 8.1 and 8.2**.

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

#### Audit commentary

Prior to submission, data is checked using Mercury's submission checker and NZRM/ALLA file editor tools.

Mercury's ICP days, NHH volumes, HHR volumes, HHR aggregates and as billed data are imported into the submission checker. The submission checker is used to create graphs and tables to compare the data, including review of historic consumption patterns, differences between revisions, and consistency checks between the reports. The results are reviewed by the energy analysts and approved in writing by the Pricing Operations and Energy Services Manager. In some cases, volumes may be queried with other teams or customers prior to approval.

NZRM/ALLA file editor compares volume, ICP days, and billed submissions to the NZRM balancing area data, to ensure trading notifications are open. Corrections are processed by the NZRM/ALLA file editor, and I confirmed that a full audit trail is created as part of this process. The most common corrections are:

- there is no NHH or HHR data for an expected aggregation factor combination, and zero records are inserted, and
- removal of zero consumption data if there is no open contract for the aggregation factor combination.

GR170 and AV080 files for nine months and revisions were compared, and found to contain the same NSPs, confirming that zeroing is occurring as required.

Generation data is separately checked prior to submission. Generation data is matched to check meter data, any differences over  $\pm 2\%$  are checked with a generation engineer. The submission checker is now also used for generation data.

No breaches had been recorded for late provision of submission information. Data is reviewed prior to submission as discussed in **section 12.3**.

#### NHH

Mercury prepares reconciliation submissions using reconciliation consumption generated by SAP. A sample of NHH ICPs were checked to make sure they are handled correctly, including vacant ICPs with consumption, disconnected ICPs with consumption, and ICPs with standard or shared unmetered load:

- a sample of five ICPs with vacant consumption were checked and found to be correctly reported,
- a sample of ten ICPs with the highest amount of inactive consumption were checked - consumption during the disconnected period was reported,
- ICP 0048240328PCC75 is now supplied by Powerco's "Basepower" system, which is a solar installation with batteries and a diesel backup generator, is not connected to the network and is recorded as inactive, reconciled elsewhere (I have recorded in **Sections 2.1 and 3.9**, that this ICP should be recorded as inactive, ready for decommissioning),
- a typical sample of 50 ICPs with distributed generation without import export metering were checked and found:
  - two ICPs do not have generation installed,
  - seven ICPs have since had generation metering installed, and generation consumption is being measured and reported in accordance with the code,
  - four ICPs have generation installed but have no generation metering installed and are not being submitted for and are not on the gifting register (the ICPs are 0000610616UNA44, 0085704601PCD4D, 0000610690UNE81 and 0000566237HBE97),
  - 26 ICPs are being gifted, these relate to Tesla batteries installed by Vector,
  - two ICPs have solar but are not exporting to the network,
  - nine ICPs are still being investigated,



- a typical sample of five ICPs with distributed generation with import export metering were checked and the submission was correct, and
- a sample of 10 ICPs with unmetered volumes were checked, including standard unmetered and shared unmetered; submission is correct.

Further information on calculation of historic estimate is recorded in **section 12.11**, the correction process is documented in **section 8.1**, and aggregation of the AV080 report was found to be compliant in **section 12.3**.

#### HHR

The AV090 and AV140 (half hour volumes and aggregates) submissions are discussed in **section 11.4** and **8.2**.

#### Generation

A sample of generation NSPs were checked to ensure that volumes were correctly recorded in the AV130 report in **section 12.6**.

The incorrect submission information is recorded in **section 12.7**.

#### **Audit outcome**

##### Non-compliant

Non-compliance	Description		
Audit Ref: 12.2 With: Clause 15.4  From: 01-Mar-20 To: 01-Mar-21	At least four ICPs have solar generation but submission is not occurring. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
We have reporting in place to identify ICPs where solar is present and we have received no notification from the customer or network. We monitor this reporting and contact customers to arrange for import/export metering installation. The four examples identified in the audit were all captured in our reporting and we are taking steps to install the metering.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

We will continue with our reporting and customer follow up processes mentioned above. We are also in the process of implementing letter notifications to notify customers of a meter change for ICPs where solar generation has been confirmed.	June 2021	
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### 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 submissions are accurate were discussed and observed, including review of reports used in the process.

The process for aggregating the AV080 was examined by checking five NSPs with a small number of ICPs. The GR170 to AV080 files for nine months were compared, to confirm zeroing occurs.

#### Audit commentary

In **section 11.4**, I recorded that 14 ICPs had the incorrect network recorded. This clause only relates to the accuracy of NSP information; therefore, non-compliance is recorded in **section 12.7**.

There was one example of an incorrect NSP. ICP 0000160705CKEE2 had a 16 August 2019 NSP change processed from 01 January 2010, leading to submission against the incorrect NSP. This is now resolved.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.3 With: Clause 15.5  From: 01-Jun-19 To: 31-Aug-19	One ICP recorded with the incorrect NSP. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are rated as strong, because risks are controlled to an acceptable level. The audit risk rating is low, as this affected only a small number of ICPs, and this will be corrected in the next revision.		
Actions taken to resolve the issue		Completion date	Remedial action status
<b>ICP 0000160705CKEE2</b> The NSP for this ICP has been corrected. This was a one-off error which we are investigating.		Completed	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
<b>ICP 0000160705CKEE2</b> We have raised this with IT for investigation and will implement any required changes to ensure any future discrepancies are identified and corrected in a timely manner.		June 2021	

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

##### Code reference

Clause 15.9

##### Code related audit information

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

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

##### Audit observation

The NSP table on the registry and registry list were reviewed.

##### Audit commentary

Mercury is not responsible for any GIPs; compliance was not assessed.

## Audit outcome

Compliant

### 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

Mercury is not a local or embedded network owner; compliance was not assessed.

## Audit outcome

Not applicable

### 12.6. Grid connected generation (Clause 15.11)

#### Code reference

*Clause 15.11*

#### Code related audit information

*The participant (if a grid connected generator) must deliver to the reconciliation manager for each of its points of connection, the following:*

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.11(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period (clause 15.11(b)).*

#### Audit observation

The process to create AV130 (NSP volume information) was reviewed.

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

#### Audit commentary

Mercury creates AV130 submissions for grid connected generation. No breaches had been recorded for late provision of submission information.

Data for a sample of three NSPs was traced from the meter data received through to the AV130 submission files; all values matched.

Revision submissions are not provided unless data has changed. Mercury confirmed that there had been no changes since the data was originally submitted.

#### Audit outcome

Compliant

### 12.7. Accuracy of submission information (Clause 15.12)

#### Code reference

Clause 15.12

#### Code related audit information

*If the reconciliation participant has submitted information and then subsequently obtained more accurate information, the participant must provide the most accurate information available to the reconciliation manager or participant, as the case may be, at the next available opportunity for submission (in accordance with clauses 15.20A, 15.27, and 15.28).*

#### Audit observation

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

#### Audit commentary

Review of alleged breaches confirmed that no reconciliation submissions were made late.

There were some submission inaccuracies identified.

- Generation kWh is not being submitted for at least four ICPs with distributed generation. Raw data is not yet available, therefore a revision cannot occur, so non-compliance is recorded in **sections 2.1 and 12.2**, but not in this section.
- There is an issue with ARC Innovations meters when used for HHR settlement. The on-site setup is that a meter pulses into a data storage device, which counts the pulses and “stores” them every 200 pulses which equals 0.1 kWh. There is only one decimal place, so the smallest increment of consumption is 0.1. The issue is made worse for installations with a multiplier, for example if the multiplier is 100, the smallest increment per interval is 10 kWh, which means the accuracy per interval is poor. Unfortunately, this means the HHR data derived from ARC meters is not considered to be accurate in accordance with Clause 15.2. The total kWh per month will be accurate but if volumes are not recorded and reported against the correct trading period, but Mercury may not be charged at the wholesale rate that applied during the trading period when the electricity was consumed. 2,592 active HHR settled category 1 and two Category 2 meters are affected. There is no way of getting more accurate information, therefore this matter is recorded as non-compliance in **section 2.1**.
- IntelliHUB does not provide updated actual data to replace estimates if the actual data is obtained more than 15 days after the event date. This is non-compliance because more accurate information is available but is not used.
- Three ICPs where the read values did not match that sent in the CS file as detailed in **sections 4.4 and 4.10**.

The GR090 ICP missing files were examined for all revisions for June 2019 to September 2020. An extreme case sample of the 25 ICPs missing for the most months were reviewed, and found:

- six ICPs were missing from some periods because of backdated changes, switches or withdrawals; submission information was corrected as soon as practicable,

- one unmetered ICP was missing on the registry because Mercury is unable to update the submission flag to HHR for some ICPs following the part 10 implementation; they are working to resolve this, and submission information is correct,
- 14 ICPs were recorded against the incorrect network, all had the correct NSP recorded but the NSPs are connected to two networks (STK0331 for Nelson and Tasman, and HEP0331 for United Networks and Vector), this matter was resolved in March 2020 and all submissions are correct since then,
- the previous audit found ICP 0100822002LCF9B had the incorrect RPS profile recorded on the registry but was being submitted using the HHM profile; this has been corrected and RPS submission is occurring,
- ICP 0000160705CKEE2 had a 16 August 2019 NSP change processed from 01 January 2010, this is now resolved, and
- ICPs 0327312033LC2D6 and 0000184853CTB54, did not have settlement units correctly set up; this is resolved and these ICPs have appeared in revision files.

I followed up the submission accuracy issues identified in the previous audit to determine whether they were resolved:

- two ICPs where the read values did not match that sent in the CS file as detailed in **sections 4.4** and **4.10** have not been corrected during the audit period and R14 has now been submitted.

#### Audit outcome

##### Non-compliant

Non-compliance	Description
Audit Ref: 12.7 With: Clause 15.12     From: 01-Mar-20 To: 01-Mar-21	Inaccurate submission as follows: <ul style="list-style-type: none"> <li>• Intellihub does not provide raw meter data to replace estimates for periods greater than 15 days. The quantify of estimates remaining is unknown.</li> <li>• 3 incorrect switch meter reads used in submission.</li> <li>• ICP 0000160705CKEE2 had a 16/08/19 NSP change processed from 01/01/10. This is now resolved.</li> <li>• ICPs 0327312033LC2D6 and 0000184853CTB54, did not have settlement units correctly set up. This is resolved and these ICPs have appeared in revision files.</li> <li>• 2 switch event meter readings not corrected from the 2020 audit.</li> </ul> Potential impact: Low Actual impact: Low Audit history: Three times Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating
Low	Controls are rated as moderate because they are effective most of the time. The impact is assessed to be low as there number of errors is low.
Actions taken to resolve the issue	
Completion date	Remedial action status

<p><b>Intellihub estimate replacements</b> We will be raising this with Intellihub and will investigate the options to ensure accuracy.</p> <p><b>Switch files sent with incorrect read values</b> A fix was implemented in Feb20 to address these issues. As there appear to be errors still occurring, we will raise this with our IT team to review the logic and implement the necessary changes.</p> <p><b>ICP 0000160705CKEE2</b> The NSP for this ICP has been corrected. This was a one-off error which we are investigating.</p> <p><b>ICPs 0327312033LC2D6 and 0000184853CTB54</b> These were investigated and corrected at the earliest opportunity and we have submitted accurate information in latest revisions.</p> <p><b>2 switch reads not corrected from 2020 audit</b> This was missed as 'follow up' work from the last audit and corrections were not been made in time for R14. We will be raising this with the team to ensure all necessary corrections are made in a timely manner to allow for accurate submission. In these two cases correct RR processes were not followed and we will be reiterating with the teams involved, the importance of following these procedures.</p>	<p>Sep 2021</p> <p>Completed</p> <p>Completed</p> <p>April 2021</p>	Identified
<b>Preventative actions taken to ensure no further issues will occur</b>	<b>Completion date</b>	
<p><b>Switch files sent with incorrect read values</b> A fix was implemented in Feb20 to address these issues. As there appear to be errors still occurring, we will raise this with our IT team to review the logic and implement the necessary changes.</p> <p><b>ICP 0000160705CKEE2</b> We have raised this with IT for investigation and will implement any required changes to ensure any future discrepancies are identified and corrected in a timely manner.</p> <p><b>ICPs 0327312033LC2D6 and 0000184853CTB54</b> We will continue investigate all ICP inaccuracies in a timely manner to allow for accurate submission.</p> <p><b>2 switch reads not corrected from 2020 audit</b> As above</p>	<p>Sep 2021</p> <p>Sep 2021</p> <p>Ongoing</p> <p>As above.</p>	

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

### Code reference

Clause 4 Schedule 15.2

### Code related audit information

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

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

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

#### Audit observation

Three AV080 14-month revisions were reviewed to identify any forward estimate still existing. All NSPs with forward estimate remaining on any of the revisions were checked to determine the reasons for the forward estimate.

#### Audit commentary

SAP has an automated permanent estimate process which runs each night. If a read is older than six months and has been billed, SAP will change its type to a permanent estimate. Once billed in SAP, reads are locked and cannot be modified unless the invoice is reversed.

Review of the 14-month revisions for March 2019 to May 2019 showed 42.84 kWh of forward estimate remained in March 2019. There are four ICPs with FE still present, as discussed in the table below.

ICP	kWh of FE	Comment
1099566327CN292	4	The last meter reading in March 2019 was not billed, therefore it was not changed to a permanent estimate.
0159991854LC55C	14.15	A switch out occurred on 08/03/19 on an actual read, but this wasn't used for submission.
0000047024DEF43	10.84	This ICP was disconnected but a disconnection reading was not present.
0000206890UNC14	13.85	Readings were taken but not loaded to SAP

#### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.8 With: Clause 4 Schedule 15.2  From: 01-Mar-19 To: 31-Mar-19	FE still present for 42.84 kWh for March 2019. 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 moderate 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
A strong validation process is already in place to ensure the forward estimates meet the 100% target. The cases above were not identified in time due to human error.	N/A	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
We will be investigating the four cases above and will implement any required process changes and will provide additional staff training as required, to prevent recurrence.	June 2021	

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

### Code reference

Clause 2 Schedule 15.3

### Code related audit information

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

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

### Audit observation

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

Aggregation and content of reconciliation submissions was reviewed, and the registry list file as of 25 November 2020 and AC020 trader compliance report for 1 February 2020 to 8 December 2020 were examined.

### Audit commentary

Compliance with this clause was assessed:

- all ICPs with meter category 3 or higher have submission type HHR,
- unmetered load submissions were checked in **section 12.2**, and compliance is confirmed,
- no profiles requiring a certified control device are used,
- no loss or compensation arrangements are required,
- aggregation of the AV080, AV110, AV090 and AV140 submissions are covered in **sections 13.2, 11.2, and 11.4** respectively.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 3 Schedule 15.3*

#### Code related audit information

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

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

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

#### Audit observation

Review of nine AV080 submissions, 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 confirm that forward and historic estimates are included and identified.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 4 and 5 Schedule 15.3*

#### Code related audit information

*The methodology outlined in clause 4 of Schedule 15.3 must be used when preparing historic estimates of volume information for each ICP when the relevant seasonal adjustment shape is available.*

*If a seasonal adjustment shape is not available, the methodology for preparing an historical estimate of volume information for each ICP must be the same as in clause 4, except that the relevant quantities  $kWh_{px}$  must be prorated as determined by the reconciliation participant using its own methodology or on*

a flat shape basis using the relevant number of days that are within the consumption period and within the period covered by kWh<sub>PK</sub>.

#### Audit observation

Mercury provided examples of historic estimate calculations, which were reviewed. The check of calculations included confirming that readings and Seasonal Adjusted Shape Values (SASV) were applied correctly. The table below shows that all scenarios tested are compliant.

#### Audit commentary

Mercury provided examples of historic estimate calculations which were reviewed. I found that correct shape files had been applied.

The process for managing shape files was examined. There is an automated process where the RM web server is polled for new files, which are moved to the system production files. I viewed the data capture process and noted that files had been processed as expected, and the most recent files were available.

Consumption while inactive will only be reported if the ICP is active for at least part of the read-to-read period that consumption occurs within. The historic estimate process apportions consumption between reads to the days that the ICP was active within the read-to-read period.

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
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

Test	Scenario	Test expectation	Result
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 appropriately validated.	Compliant
n	ICP with a photo read during the month	Photo reads are not used to calculate historic estimate.	No instances found
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly.	Compliant

I've recorded compliance for all scenarios above, however I did identify one issue in relation to Scenario A. The original test was conducted for ICP 0000235467UNE09 and there wasn't a reconnection read, therefore consumption was apportioned over the period 11 March 2020 to 31 March 2020 (there was a read at the beginning of 11 March 2020) rather than the period 18 March 2020 to 31 March 2020 (reconnection occurred on 18 March 2020). The process change identified is that a permanent estimate will be used for the reconnection date if an actual read is not available. A different ICP was subsequently checked (0000037268WE008) where readings were present and this one calculated correctly.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.11 With: Clause 4 and 5 Schedule 15.3  From: 01-Mar-20 To: 31-Mar-20	Scenario A calculating incorrectly if a reconnection reading is not available. 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
We have very strong controls in place for all HE scenarios. The example found is a one off and we will be reviewing processes to ensure reconnection reads are always available on the reconnection date.		June 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

As above.	As above.	
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## 12.12. Forward estimate process (Clause 6 Schedule 15.3)

### Code reference

Clause 6 Schedule 15.3

### Code related audit information

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

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

### Audit observation

The process to create forward estimates was reviewed.

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

### Audit commentary

Mercury's forward estimates are based on either:

- historic readings, or
- historic daily average consumption based on price plan and billing group.

Mercury's forward estimate process also includes a "factoring" process, which involves the use of the average of the previous two-year's profile shape. This ensures that submission information is not understated or overstated during "shoulder" months.

The accuracy of the initial submission, in comparison to each subsequent revision is required to be within 15% and within 100,000kWh. The table below shows the target was not met for all revisions.

### Quantity of balancing areas with differences over 15% and 100,000 kWh

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total
Mar 2019	1	2	2	2	307
Apr 2019	1	1	1	1	306
May 2019	1	0	0	0	307
Jun 2019	1	2	2	2	308
July 2019	1	1	1		307
Aug 2019	1	1	1		310
Sep 2019	1	1	1		312
Oct 2019	1	1	1		312
Nov 2019	2	2	2		312
Dec 2019	2	1	2		314
Jan 2020	1	1	2		314
Feb 2020	0	1	1		317
Mar 2020	0	0			318
Apr 2020	2	1			319
May 2020	1	2			319
June 2020	2	1			323
July 2020	1				323

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Mar 2019	2.03%	0.56%	0.53%	0.48%
Apr 2019	-0.70%	-2.33%	-2.44%	-2.45%

Month	Revision 1	Revision 3	Revision 7	Revision 14
May 2019	1.19%	-0.50%	-0.62%	-0.55%
Jun 2019	-3.56%	-5.62%	-5.79%	-5.77%
July 2019	0.06%	-1.29%	-1.36%	
Aug 2019	-2.81%	-3.92%	-3.92%	
Sep 2019	-3.78%	-5.19%	-5.21%	
Oct 2019	-1.14%	-2.52%	-2.76%	
Nov 2019	2.80%	1.95%	1.85%	
Dec 2019	2.28%	1.31%	1.00%	
Jan 2020	0.37%	-0.60%	-0.71%	
Feb 2020	2.05%	-0.07%	0.14%	
Mar 2020	3.65%	0.40%		
Apr 2020	7.93%	4.68%		
May 2020	3.10%	0.29%		
June 2020	3.44%	1.55%		
July 2020	0.72%			

I checked sample of ten differences over the threshold. The differences related to:

- commercial sites switching in and forward estimates being higher or lower than the actual reads received,
- human error when setting up the pricing for one balancing area,
- profile shapes provided by the NZRM being different to the profiles used to calculate forward estimate for the initial allocation, and
- profile shapes changing due to balancing area changes for one network; this issue will be identified in the future because there is now validation at ICP level by the Energy Services team for very high consumption.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.12 With: Clause 6 Schedule 15.3 From: 01-Jun-19 To: 31-Jul-20	The accuracy threshold was not met for all months and revisions. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate, as they are sufficient to ensure data is within the accuracy threshold most of the time. The audit risk rating is low as forward estimates are washed up through the revision process.		
Actions taken to resolve the issue		Completion date	Remedial action status
We believe that we have strong controls in place as shown by high attainment percentages across the board. Processes remain in place to correct data as actual data is obtained and submissions are corrected via the washup process. Elements of the non-compliance such as irregular balancing area shapes are outside the control of Mercury and as such should not be contributing towards our rating.		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We believe that our controls are strong in this area however we will continue to work on improvements to improve accuracy.		Ongoing	

### 12.13. Compulsory meter reading after profile change (Clause 7 Schedule 15.3)

#### Code reference

Clause 7 Schedule 15.3

#### Code related audit information

*If the reconciliation participant changes the profile associated with a meter, it must, when determining the volume information for that meter and its respective ICP, use a validated meter reading or permanent estimate on the day on which the profile change is to take effect.*

*The reconciliation participant must use the volume information from that validated meter reading or permanent estimate in calculating the relevant historical estimates of each profile for that meter.*

#### Audit observation

The event detail report for 1 February 2020 to 25 November 2020 was reviewed and identified:

- 1,094 upgrades from RPS to HHM or HHR, and
- 1,511 downgrades from HHR or HHM to RPS.



A diverse sample of ten ICPs with profile changes, including five upgrades to HHR and five downgrades to NHH were reviewed to confirm that there was an actual reading on the day of the profile change.

#### **Audit commentary**

All profile changes are conducted using an actual meter reading or a permanent estimate at 11.59pm on the last day with the old profile. Mercury provided an email from the Authority which confirmed that this was compliant, as long as the new profile came into effect at 0.00am the following day.

I reviewed a sample of ten profile changes, and they all had an actual reading at 23.59.59 the day before the profile change and the new profile came into effect at 0.00am the following day.

#### **Audit outcome**

Compliant

## 13. SUBMISSION FORMAT AND TIMING

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

#### Code reference

*Clause 8 Schedule 15.3*

#### Code related audit information

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

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

#### Audit observation

The process to ensure that AV080 submissions are accurate was discussed in **section 12.2**.

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

Zeroing in the AV080 submission is discussed in **section 12.3** and was found to be compliant.

#### Audit commentary

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

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

The aggregation of the submission files was checked and confirmed to be compliant:

- NHH volumes were examined by checking five NSPs with a small number of ICPs,
- HHR aggregates and HHR vols files for nine months and revisions were compared,
- ICP days were examined by checking five NHH and five HHR NSPs with a small number of ICPs, and
- electricity supplied information was examined by checking individual invoices for a typical sample of five NSPs to ensure the billed amount equalled the figure in the ICP level file which forms the basis of the aggregate file sent to the RM.

#### 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, AV130 and AV140 and reports as part of the aggregation checks.

#### Audit commentary

Review of nine AV080 non half hour volumes reports confirmed that submission data is rounded to two decimal places.

Review of nine AV090 HHR volumes reports confirmed that submission data is rounded to two decimal places.

Review of nine AV140 half hour aggregates reports confirmed that submission data is rounded to zero decimal places.

Review of four AV130 NSP volumes reports confirmed that submission data is 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

The quantity of historical estimates is contained in the submission file and is not a separate report. The proportion of HE in the revision files was checked for nine separate months. The table below shows that compliance has not been achieved in all instances due to read attainment issues.

The overall percentages of historic estimate are high.

#### Quantity of NSPs where revision targets were met.

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Mar-19	-	-	393	397
Apr-19	-	-	397	397
May-19	-	-	398	398
Nov-19	-	404	-	404
Dec-19	-	404	-	405
Jan-20	-	404	-	404
Mar-20	375	-	-	408
Apr-20	387	-	-	407
May-20	396	-	-	409

The table below shows that the percentage HE at a summary level is above the required targets.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Mar-19	-	-	99.99997%
Apr-19	-	-	100.00000%
May-19	-	-	100.00000%
Nov-19	-	99.99558%	-
Dec-19	-	99.99331%	-
Jan-20	-	99.98602%	-

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Mar-20	94.80979%	-	-
Apr-20	97.56451%	-	-
May-20	98.03358%	-	-

#### Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 13.3</p> <p>With: Clause 10 of Schedule 15.3</p> <p>From: 01-Mar-19</p> <p>To: 31-May-20</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: Strong</p> <p>Breach risk rating: 1</p>		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>The controls are rated as strong as the thresholds were met, and processes are in place to make estimated readings permanent.</p> <p>The audit risk rating is low, because Mercury were reasonably close to the target in all cases.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
We will continue with our strong controls.		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Mercury's profile shape forecasting process will be improved to increase the accuracy of the HE volumes, therefore increasing the accuracy of the revision 3 reported.		May 2021	

## CONCLUSION

Mercury has continued to improve their level of compliance during the audit period. This is evident as 15 of the 37 non-compliances found have a strong control rating. This indicates these issues are exceptions of a robust process.

The audit found 37 non-compliance issues, four recommendations are made, and no issues are raised. This is the third year of improvement with the score reducing to 76 from 89 in the 2020 audit and 115 recorded in the 2019 audit.

The Authority made recommendations to Mercury that they focus on the following areas prior to this audit:

1. **Automation project** – The major item that needs to be addressed is errors in their automated processes, which are causing a variety of problems.
2. **Distributed unmetered loads** – Mercury has 12 DUML databases, and problems were found with seven of them. Also, there are nine Vodafone ICPs with unmetered load greater than 6,000kWh, but no DUML database. Total volume estimated at 2GWh/year, but the quality of this estimate is unknown. Mercury is working with Vodafone to document and quantify this load according to the Code, and the Authority should expect to see a DUML audit before the next Mercury RP audit.
3. **Process compliance** – Mercury have processes in place for all functions but have not followed process in all cases. In particular, distributed generation data maintenance has been neglected. Mercury has a process to check these records but have not been doing so in recent months. The auditor sampled 129 ICPs where the registry recorded DG present, but no import-export metering. 21 had no DG, eight had generation but no generation metering.

The audit found that improvements have been made in relation to all three points above. Controls have been strengthened and remedial actions have been progressed in all areas.

The main findings are as follows:

- An overall improvement in all areas audited.
- The telecommunication ICPs (including ICP 0015723581ELA43 which has a single-phase meter on a telecommunications amplifier with a multiplier of 101 to cater for an additional 100 unmetered load connections) which do not have databases to record the items of load are still in the process of being resolved. I note that Mercury has made good progress with these and an audit of these by Veritek is by Veritek is scheduled for 11 May 2021.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and contains a future risk rating score of 76, which results in an indicative audit frequency of three months.

I have considered this result in conjunction with Mercury's responses, the overall improvement achieved during the audit period and recommend that the next audit be in 14 months.

## PARTICIPANT RESPONSE

Mercury has made several improvements since the last audit and the results are very apparent through this audit. We have addressed and fixed a lot of system issues and have made significant progress on the non-compliance of unmetered load >6,000 kWh, with a DUML audit booked for May 2021.

Our compliance levels have continued to increase over the last few years, and we expect this trend to continue as we work to have strong controls in all areas.