ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT

VERITEK

For

MERCURY NZ LIMITED
NZBN: 9429037705305

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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.

Mercury operates three reconciliation participant codes:

- **MRPL** which is a grid connected generator,
- **MEEN** for NHH and HHR settled ICPs, and
- **TRUS** for NHH and HHR settled ICPs. TRUS was acquired from Trustpower Limited on 1 May 2022, and was subject to a material change audit dated 19 April 2022.

Findings relate to all three codes unless specifically stated otherwise.

MEEN

Switching and registry management

For switching, the late files are decreasing in number over time with better monitoring processes and staff number stability. More staff are being trained to handle switching files.

SAP's logic for calculating average daily kWh, determining AN response codes, and selecting last actual read dates, has continued to cause some low impact data accuracy issues. Switching files are manually created using the registry user interface where SAP cannot issue them, and some switch event information is manually populated in SAP, including renegotiated switch event readings. Some of this manually entered data was found to be incorrect.

A technical non-compliance is recorded because ICPs which switch in from GBUG (GBUG is not included in the scope of this audit) after one day of supply, because GBUG cannot supply them, are treated as switch moves, regardless of whether the customer is moving in.

The sample of customer cancellation withdrawals checked during the audit were compliant. A self-breach where enticements were offered to a customer switching out in April 2022 is recorded as non-compliance.

Registry updates can occur via SAP, or directly on the registry with SAP updated at the same time. The main control to ensure consistency of information is SAP's daily exception reporting which identifies failed registry updates. Some fields do have additional validations performed but the frequency and completeness of the checks varies, and some checks are irregular due to high workloads. There is no full validation between SAP and the registry, and I found some data inaccuracies during the audit which would have been identified and corrected sooner had more thorough validation been in place. Recommendations to improve validation have been made, so that issues can be identified and resolved through normal business processes instead of groups of discrepancies being discovered, investigated, and resolved during audits.

There have continued to be some process and system issues which have led to some late and inaccurate registry updates. Training and improved monitoring processes are helping to improve compliance, and there has been an increase in the percentage of updates completed on time for all update types. Data inaccuracies identified during the audit have been passed to Mercury for investigation and correction, and most have already been resolved.

Data collection and reconciliation

The main data collection and reconciliation related issues are as follows:

- there are still 502 HHR settled ICPs where the interval data from ARC Innovations is inaccurate,

- meter condition information for manually read meters is being imported and analysed where a meter reading is not obtained, but is not imported and analysed when a meter reading is obtained,
- all estimated meter readings and customer meter readings are changed to permanent estimates at the 6-month point, which does not achieve compliance with the Code requirement to use reasonable endeavours to get meter readings for at least 12 months prior to changing estimates to permanent estimates; this can lead to incorrect apportionment of consumption information,
- submission errors were found with eight of the 17 distributed unmetered load databases; Mercury is making sound progress with remedial actions with all of these, and
- at least eight ICPs have distributed generation but submission is not occurring for the generation kWh; in most cases, this is due to the appropriate metering not yet being in place and a further 38 ICPs are being investigated because the distributor has recorded the presence of distributed generation, but submission is not occurring.

TRUS

Switching and registry management

Trustpower has continued to maintain an overall high level of compliance for registry management despite the changes that have occurred and are still ongoing with the sale to Mercury. The new connection process has been strengthened during the audit period resulting in an improved level of accuracy and a continued high percentage of new connections updated within five days of being electrically connected. Two areas of improvement were identified:

- management of standard and shared unmetered load has moved through a number of areas during the audit period and this audit identified some training opportunities, and
- there is no reporting in place to monitor where access cannot be gained for another party so no quantification of how well this process is working.

Switching management was examined and the timeliness of switching continues to be good overall. Some accuracy improvements were identified:

- for correct use of AN and NW codes additional training is planned for the team,
- two examples of the expected read not being applied in GTV were identified; these are likely to be one off instances, but reminded the team of the need to use the correct start reads, and
- some incorrect last read dates being sent; most of these were due to human error but some were automated, so Trustpower is examining these scenarios to ensure the correct information is sent.

Overall, the registry management and switching were found to be of a similar standard to that found in the last audit.

Data collection and reconciliation

Data collection and reconciliation functions are generally well managed. Good reporting is in place for most functions and once an exception is identified these are well tracked through to completion. Four areas of improvement were identified:

- AMI meter event logs and time difference reports are not well understood and are not independently reviewed by Trustpower; there is a reliance on the AMI MEPs assessment of impact to reconciliation in determining the corrective actions which can lead to volume corrections not being applied,
- resolution of inactive consumption exceptions is being delayed while attempts to identify a potential customer are undertaken, however the code requires that revised submission information if provided at the earliest opportunity,
- for a small number of ICPs, some incomplete time-of-day profiles were applied resulting in some volumes being apportioned to incorrect time-of-day submission periods; additional monitoring is required to ensure these time-of-day profiles are being correctly assigned, and

- some changes to UML daily average kWh values are not being reflected in submission volumes are the system appears to being selecting the first daily kWh record and not the latest record.

Conclusion

The audit identified 50 non-compliances and 36 recommendations are made. The increase in the number of non-compliances from 39 to 50 reflects that this is the first time both the TRUS and MEEN codes have been included in the same audit.

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 96, which results in an indicative audit frequency of three months.

I have considered this result in conjunction with Mercury's responses, and I recommend the next audit is conducted in 12 months.

The matters raised are shown in the tables below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Relevant information	2.1	10.6,11.2 & 15.2	**MEEN** Some registry discrepancies resulting in submission inaccuracies. Arc provides interval data to one decimal place, which is not considered to be sufficiently accurate. At least eight ICPs have solar generation but submission is not occurring, and notification of gifting has not been provided. ICPs 0000540450TE6E7 and 0007301973NVCDF are believed to have incorrect average daily kWh recorded resulting in a small amount of under submission (0.76 W or 3.2 kWh per annum). Generation interval data for Maraetai increments in units of 10 kWh with zero decimal places. ICP 1099569118CN9D3 has been stopped since 2019 but the correction was only conducted for the current customer, which was a five-month period back from 21 March 2022. There was at least 3,600 kWh not accounted for. **TRUS** Some registry discrepancies resulting in submission inaccuracies ICP 0000702000MP807 unmetered load details corrected post the last audit and this is now outside the 14-month revision cycle. Unmetered load details are incorrect on the registry and two examples were found where the UNM flag was incorrect and therefore the unmetered load has not been submitted resulting in a very minor under submission. Some incorrect “active” dates. Two examples where switch reads were not applied resulting in 237 kWh of over submission for the incorrect period. Bridged meter corrections not applied for two of a sample of 13 ICPs. Two ICPs from a sample of 20 with inactive consumption where the actions taken did not ensure all consumption was accounted for resulting in 27 kWh of volume not being submitted. Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process. A sample of three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission, resulting in 2,095 kWh under submission per annum. ICP 0000901755WW6EB had generation kWh apportioned to a period where generation was not present	Moderate	Medium	4	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Audit trails	2.4	21 Schedule 15.2	**MEEN** Audit trail not kept where SAP estimates and customer reads are made permanent estimates	Strong	Low	1	Identified
Electrical Connection of Point of Connection	2.11	10.33A	**MEEN** No MEP nominations were raised for ICPs 0006050069RNDB1 and 0001426079UN6E1, which are “active” with metering category 9. Four metered new connections had late meter certification of a sample of 20 ICPs checked (from a potential population of 50 ICPs). 20 reconnections of metered ICPs of a sample of 20 ICPs had late meter certification (from a potential population of 135 ICPs). **TRUS** 20 reconnections of metered ICPs of a sample of 20 ICPs had late meter certification (from a potential population of 121 ICPs). One metered newly connected ICP (0110013358EL533) was not certified within five business days of becoming active.	Moderate	Low	2	Identified
Meter bridging	2.17	10.33C and 2A of Schedule 15.2	**TRUS** Corrections not conducted for two ICPs where meters were bridged.	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Changes to registry information	3.3	10 of schedule 11.1	**MEEN** 727 late reconnection updates. 340 late disconnection updates. 41,066 late trader updates. 277 ICPs did not have ANZSIC codes populated within 20 business days of switching in, or initial electrical connection. **TRUS** 512 late reconnection updates. 472 late disconnection updates. 1760 late trader updates. 79 ICPs did not have ANZSIC codes populated within 20 business days of switching in, or initial electrical connection.	Moderate	Low	2	Identified
Trader responsibility for an ICP	3.4	11.18	**MEEN** 5 (0.05%) of the 9,459 MEP nominations identified on the event detail report were issued to the wrong MEP and rejected. ICP 1100000219WM256's MEP nomination was not issued and accepted within 14 business days of initial electrical connection. **TRUS** One invalid MEP nomination was sent.	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Provision of information to the registry manager	3.5	9 of Schedule 11.1	**MEEN** Alleged breach 2209MERC2. 947 late updates to "active" status for new connections. 12 late MEP nominations for new connections. Nine ICPs had incorrect "active" status event dates. Two were corrected during the audit and seven remain incorrect. **TRUS** 661 late updates to "active" status for new connections. 28 late MEP nominations for new connections. 11 new ICPs had incorrect "active" status dates of the sample of 29 new connections checked.	Moderate	Low	2	Identified
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	**MEEN** 2,978 ICPs with T994 ANZSIC codes. A sample of 30 ICPs were checked and corrected to residential ANZSIC codes before or during the audit. One meter category three ICP had a residential ANZSIC code assigned in error and was corrected during the audit. Six category two meters of a sample of 20 ICPs had a residential ANZSIC code assigned in error and were corrected during the audit. Nine of a sample of 80 "active" ICPs had incorrect ANZSIC codes assigned and were corrected during the audit. **TRUS** One category 2 ICP with a residential ANZSIC code applied. Four ICPs of the 80 ICPs sampled with an incorrect ANZSIC code applied.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	**MEEN** DUML ICP 0000043663HR00F has its UNM flag set to N but should have its UNM flag set to Y. No MEP nominations were raised for ICPs 0006050069RNDB1 and 0001426079UN6E1, which are "active" with metering category 9. Three ICPs missed having shared unmetered load re-added when users processed meter changes and were corrected during the audit. Ten ICPs with no unmetered load recorded by the distributor had incorrect trader unmetered load information and were corrected during the audit. ICPs 0000540450TE6E7 and 0007301973NVCDF are believed to have incorrect average daily kWh recorded resulting in a small amount of under submission (0.76 W or 3.2 kWh per annum). 15 DUML ICPs which had the unmetered flag set to no, and a blank unmetered daily kWh. 14 were corrected during the audit and DUML ICP 0000043663HR00F remains incorrect. **TRUS** 27 ICPs had an incorrect daily unmetered kWh value recorded on the registry.	Weak	Low	3	Identified
Management of "active" status	3.8	17 Schedule 11.1	**MEEN** Ten new connections had incorrect "active" status dates. Three were corrected during the audit and seven remain incorrect. **TRUS** Ten new ICPs had the incorrect "active" status dates of the samples checked. All but one ICP has since been corrected. ICP 0001853487ALE7F reconnected on 31 July 2019 but updated to "active" from 1 August 2019.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Management of "inactive" status	3.9	19 Schedule 11.1	**MEEN** Two ICPs had incorrect "inactive" status dates and were corrected during the audit. **TRUS** Two ICPs with incorrect inactive events applied. Two ICPs where inactive consumption was not included in the submission process resulting in an under submission of 27 kWh. Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process.	Strong	Low	1	Identified
Inform registry of switch request for ICPs - standard switch	4.1	2 Schedule 11.3	**TRUS** One ICP loaded as a transfer switch in error.	Strong	Low	1	Identified
Losing trader response to switch request and event dates - standard switch	4.2	3 & 4 of schedule 11.3	**MEEN** Five of a sample of 46 transfer AN files with the AA response code checked contained incorrect response code. **TRUS** One of a sample of 22 AN files checked contained incorrect response code of AA. Three ANs had proposed event dates more than ten business days after NT receipt.	Strong	Low	1	Identified
Losing trader must provide final information - standard switch	4.3	5 of schedule 11.3	**MEEN** 11 CS breaches. The CS average daily kWh will be incorrect if the ICP has less than two validated readings in the last six months, or the file is generated manually. Ten CS files checked had incorrect average daily kWh applied because of this. Six CS files had incorrect last actual read dates. One manually created CS file had an incorrect event read and event read type and was later withdrawn. **TRUS** Four WR breaches. S Seven CS files sent with the incorrect last actual read date. Six due to human error and one system (ICP 0000492310WPEB5) generated error.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Retailers must use same reading - standard switch	4.4	(1) and 6A Schedule 11.3	**MEEN** Four RR breaches. Seven of the ten RRs checked had an actual read type applied in SAP instead of an estimate. **TRUS** Three RR breaches. The read for one accepted RR not applied in GTV. Estimated CS read not used and no RR issued for ICP 0000062604TR22A resulting in an estimated 238 kWh of over submission for the incorrect period.	Moderate	Low	2	Identified
Non-half hour switch event meter reading - standard switch	4.5	6(2) and (3) Schedule 11.3	**TRUS** One RR incorrectly rejected.	Moderate	Low	2	Cleared
Gaining trader informs registry of switch request - switch move	4.7	9 Schedule 11.3	**MEEN** Switch move is also applied for any ICP switching to MEEN from GBUG where GBUG has switched the ICP in and then discovered they cannot supply it. 11 ICPs switching from GBUG had switch move applied when no customer was moving in on the switch event date.	Strong	Low	1	Disputed

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Losing trader provides information - switch move	4.8	10 of schedule 11.3	**MEEN** Eight of a sample of 63 move switch AN file with the AA response code checked contained the incorrect response code. Four AN breaches. 12 WR breaches. 137 T2 breaches. **TRUS** Five of a sample of six move switch AN file with the AA response code checked contained the incorrect response code. All five move switch AN files sampled with the OC response code checked contained the incorrect response code. One AN had a proposed event date more than ten business days of NT receipt.	Moderate	Low	2	Identified
Losing trader must provide final information - switch move	4.10	11 of schedule 11.3	**MEEN** The CS average daily kWh will be incorrect if the ICP has less than two validated readings in the last six months, or the file is generated manually. 23 ICPs checked had incorrect average daily kWh applied because of this. Three CS files had incorrect switch event read types. Six CS files had incorrect last actual read dates. Two CS files for ICPs supplied for brief periods contained information for MEEN's last period of supply because the incoming CS had not been processed and were later withdrawn. **TRUS** Two incorrect high daily consumption values sent from a sample of five. All three sampled of a possible 43 CS files sent with an actual read from the event date incorrectly labelled as an estimated read. All five sampled of a possible 38 CS files were sent with either an incorrect read date (four instances) or one ICP was sent with an estimated read rather than the last actual read. Three of a possible nine CS files were sent with the incorrect last read date. Five sampled of a possible 20 CS files were sent with the incorrect last actual read date.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	**MEEN** Six of the ten RRs checked had an actual read type applied in SAP instead of estimate. For one manually created RR, the read was not updated at all on receipt of the AC. 34 RR breaches. Five AC breaches. **TRUS** 28 RR breaches.	Moderate	Low	2	Identified
Gaining trader informs registry of switch request - gaining trader switch	4.12	14 Schedule 11.3	**MEEN** One ICP with category 2 metering was requested as a HH switch.	Strong	Low	1	Identified
Losing trader provision of information - gaining trader switch	4.13	15 Schedule 11.3	**TRUS** Five HH ANs were issued with the MU (unmetered supply) response code when they were metered, and no unmetered load was connected.	Strong	Low	1	Identified
Withdrawal of switch requests	4.15	17 & 18 of schedule 11.3	**MEEN** Four NWs contained some incorrect content and were rejected. One incoming NW was rejected in error and accepted on reissue by the other trader. Two NW breaches. 34 AW breaches. **TRUS** 50 NA breaches. 13 SR breaches. Seven incorrect NW codes found in the sample of 35 checked.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Metering information	4.16	21 of schedule 11.3	**MEEN** Three CS files had incorrect switch event read types. Three CS files had incorrect switch event read information and were later withdrawn. **TRUS** All three sampled of a possible 43 MI CS files sent with an actual read from the event date incorrectly labelled as an estimated read.	Moderate	Low	2	Identified
Switch protection	4.17	11.15AA to 11.15AB	**MEEN** Alleged breach 2205MER1 for contacting a customer during the switch protected period and offering an enticement.	Strong	Low	1	Cleared
Maintaining shared unmetered load	5.1	11.14	**MEEN** Three ICPs missed having shared unmetered load re-added when users processed meter changes and were corrected during the audit. **TRUS** Two ICPs with shared unmetered load indicated but no value recorded on the registry.	Weak	Low	3	Identified
Distributed unmetered load	5.4	11 Schedule 15.3, Clause 15.37B	**MEEN** Inaccurate submission information for several databases. One database audit report outstanding.	Moderate	High	6	Identified
Electricity conveyed & notification by embedded generators	6.1	10.13	**MEEN** While meters were bridged, energy was not metered and quantified according to the code for five ICPs. Some ICPs with distributed generation not quantified. **TRUS** While meters were bridged, energy was not metered and quantified according to the code for 58 ICPs. ICP 0000901755WW6EB had generation kWh apportioned to a period where generation was not present.	Moderate	Low	2	Identified
Responsibility for metering at GIP	6.2	10.26 (6), (7) and (8)	**MEEN** Ten meter certification expiry dates were updated late.	Weak	Low	3	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Reporting of defective metering installations	6.4	10.43(2) and (3)	**TRUS** MEP not notified in a timely manner for three ICPs where metering installations could be inaccurate, defective, or not fit for purpose.	Moderate	Low	2	Investigating
Collection of information	6.5	2 Schedule 15.2	**MEEN** Four ICPs were not read within the maximum interrogation cycle.	Strong	Low	1	Identified
Derivation of meter readings	6.6	3(2) Schedule 15.2	**MEEN** If readings are obtained the meter condition information is not imported and actioned, therefore the following checks are not conducted: • ensure seals are present and intact, • check for phase failure (if supported by the meter), • check for signs of tampering and damage, and • check for electrically unsafe situations. The customer reading for ICP 0000712872HBF96 taken on 8 April 2022 was incorrectly labelled as an actual read. Customer reads are not being validated against another set of validated meter reads before being considered permanent estimates after six months.	Moderate	Low	2	Identified
NHH meter reading application	6.7	6 Schedule 15.2	**MEEN** Three CS files contained readings which did not reflect an actual or reasonable estimate reading effective from the last day of supply. All of the switches were later withdrawn and there is no impact on reconciliation. **TRUS** All three sampled of a possible 43 MI CS files sent with an actual read from the event date incorrectly labelled as an estimated read. Disconnection reads applied to the day before the disconnection.	Moderate	Low	2	Identified
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	**MEEN** The best endeavours requirement was not met for 163 ICPs not read during the period of supply. **TRUS** Exceptional circumstances not proven for three of a sample of ten ICPs not read during the period of supply.	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	**MEEN** ICP 0000020823EAE94 not read within 12 months and there was no correspondence with the customer because the ICP was on a smart round.	Strong	Low	1	Cleared
Correction of HHR metering information	8.2	19(2) Schedule 15.2	**MEEN** Removed meter data not reconciled for the day of the meter change for HHR to HHR AMI meter changes	Moderate	Low	2	Investigating
Identification of readings	9.1	3(3) Schedule 15.2	**MEEN** Three switch move CS files contained incorrect switch event read types. 13 ICPs which had undergone read renegotiations had incorrect switch event read types recorded in SAP. No visible audit trail present for the change in treatment of estimated and customer reads in the calculation of historic estimate (HE) volumes within SAS or SAP. **TRUS** All three sampled of a possible 43 ICPs sent with the incorrect last read type of "E".	Moderate	Low	2	Identified
Meter data used to derive volume information	9.3	3(5) of schedule 15.2	**MEEN** Raw meter data is rounded upon receipt and not when volume information is created. **TRUS** Raw meter data is rounded upon receipt and not when volume information is created.	None	Low	5	Investigating
NHH metering information data validation	9.5	16 Schedule 15.2	**MEEN** Not all inactive consumption is being identified and investigated. **TRUS** Not all identified inactive consumption is being resolved in a timely manner where attempts are made to identify a potential customer.	Strong	Low	1	Identified
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	**MEEN** Clock synchronisation reports not reviewed for all MEPs. **TRUS** Event information is not analysed and acted upon for all MEPs. Voltage on the load side of the meter should be obtained and evaluated.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Calculation of ICP days	11.2	15.6	**MEEN** Minor ICP days discrepancies identified. **TRUS** ICP days submitted for generation only ICPs.	Strong	Low	1	Identified
HHR aggregates information provision to the reconciliation manager	11.4	15.8	**TRUS** The September 2021 revision 7 HHR aggregates file did not reflect the submitted HHR volumes for nine NSPs with a difference of 571 kWh.	Strong	Low	1	Cleared
Creation of submission information	12.2	15.4	**MEEN** At least eight ICPs have solar generation but submission is not occurring, and notification of gifting has not been provided. **TRUS** The September 2021 revision 7 HHR aggregates file did not reflect the submitted HHR volumes for nine NSPs with a difference of 571 kWh. Bridged meter corrections not applied for two of a sample of 13 ICPs. Two ICPs from a sample of 20 with inactive consumption where the actions taken did not ensure all consumption was accounted for resulting in 27 kWh of volume not being submitted. Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process. Three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission resulting in 2,095 kWh under submission per annum. Two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission.	Moderate	Low	2	Identified

Accuracy of submission information	12.7	15.12	**MEEN** Inaccurate submission as follows: • precision of grid generation volumes for Maraetai generation station is insufficient as volumes are reported in increments of 10 kWh, • non-solar distributed generation submitted using PV1 profile code, • ICPs 0000540450TE6E7 and 0007301973NVCDF are believed to have incorrect average daily kWh recorded resulting in a small amount of under submission (0.76 W or 3.2 kWh per annum), and • seven new connections have incorrect "active" status dates causing a minor impact on the accuracy of volume and ICP days submissions. **TRUS** Bridged meter corrections not applied for two of a sample of 13 ICPs. One of 29 new connections sampled with the incorrect "active" date ICP 0000574440NRF1C was electrically connected on 15 July 2022 but due to metering issues the first "active" date is recorded as 19 August 2022. The volume for the period from 15 July 2022 to 18 August 2022 has not been reconciled. One of 20 reconnections sampled with the incorrect "active" date ICP 0001853487ALE7F was reconnected on 31 July 2019 but was incorrectly updated to "active" for 2 August 2019. The "active" date was changed to 1 August 2019 on 10 June 2022, but this is still incorrect and is now outside the 14-month revision cycle. ICP 1000599753PCDB2 made "active" on 16 April 2021 was found to have an existing electrically connected meter on site and is likely to have been consuming since mid-2018 resulting in under submission. Two examples where switch reads were not applied resulting in 237 kWh of over submission for the incorrect period. The September 2021 revision 7 HHR aggregates file did not reflect the submitted HHR volumes for nine NSPs with a difference of 571 kWh. Two ICPs from a sample of 20 with inactive consumption where the actions taken did not ensure all consumption was accounted for resulting in 27 kWh of volume not being submitted. Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process. Three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission resulting in 2,095 kWh under submission per annum. Two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			ICP 0000901755WW6EB had generation kWh apportioned to a period where generation was not present.				
Permanence of meter readings for reconciliation	12.8	4 Schedule 15.2	**MEEN** All estimated reads treated as permanent estimates after six months, but the Code requires Mercury to use reasonable endeavours to get meter readings for at least 12 months. Some estimates were not replaced by revision 14.	Moderate	Medium	4	Identified
Reconciliation participants to prepare information	12.9	2 Schedule 15.3	**MEEN** ICPs 0000540450TE6E7 and 0007301973NVCDF are believed to have incorrect average daily kWh recorded resulting in a small amount of under submission (0.76 W or 3.2 kWh per annum). **TRUS** Three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission resulting in 2,095 kWh under submission per annum. Two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission.	Moderate	Low	2	Identified
Historic estimate process	12.11	4 and 5 Schedule 15.3	**MEEN** Some HE calculations use estimated readings, which have been made permanent after six months rather than at the 14-month point.	Moderate	Low	2	Identified
Forward estimate process	12.12	6 Schedule 15.3	**MEEN** The accuracy threshold was not met for all months and revisions. **TRUS** The accuracy threshold was not met for all months and revisions	Strong	Low	1	Identified
Compulsory meter reading after profile change	12.13	7 Schedule 15.3	**MEEN** ICP 1000584371PCEA2 changed profile from RPS to HHR on 19 April 2022 but the reading used was an estimate not an actual.	Strong	Low	1	Investigating

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	**MEEN** Historic estimate thresholds were not met for some revisions. **TRUS** Historic estimate thresholds were not met for some revisions.	Strong	Low	1	Identified
					Future Risk Rating	**99**	

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

Improve data validation processes	2.1	**MEEN**
		As a minimum I recommend:
		• Mercury reviews the registry AC020 audit compliance report accuracy queries and investigates and resolves data discrepancies, and
		• SAP data is validated against the registry at least monthly for:
		  ○ unmetered load flags, daily unmetered kWh and trader unmetered load details,
		  ○ all reconciliation report aggregation factors, including Network, NSP, dedicated NSP, loss factor, flow direction, and profile, and
		  ○ ICP status.

Unmetered new connections	2.9	**TRUS** Review process for unmetered new connections for when the MEEN code is managed in GTV.
New connections	2.9	**TRUS** Review the new connections process when Jobtrack is replaced, to ensure the streamlining of information from contractors into GTV.
Bridged meter corrections for ICPs that have switched away	2.17	**TRUS** Recommend that all bridged meter corrections applied up to a switch loss date uses the adjustment (ADJ) process and not use an estimated switch loss read to ensure the volume correction is not undone due to a switch read amendment (RR).

Subject	Section	Recommendation
Provision of information on Utilities Disputes using chat	2.19	**MEEN** Information on Utilities Disputes is expected to be provided at least once in any series of related communications to a customer, regardless of whether the communication is complaint related. I recommend updating processes to ensure information on Utilities Disputes is consistently provided as part of any chats.
Changes to registry information	3.3	**TRUS** Modify reporting to exclude decommissioned ICPs from any changes to the registry post the decommissioning date.
Monitor MN responses for rejections.	3.4	**MEEN** Monitor MN responses for rejections. Where rejections occur investigate to determine the correct MEP and whether the nomination should be reissued.
Active ICPs with T994 (don't know) ANZSIC codes.	3.6	**MEEN** Check the customer industry for "active" ICPs with T994 (don't know) ANZSIC codes and update where the correct customer industry can be determined. Investigate why the number of ICPs with T994 ANZSIC codes is increasing and take action to ensure that valid codes are consistently applied where the customer industry is known.
Identification and correction of inaccurate unmetered load information	3.7	**MEEN** Reinstate the SAS queries to identify discrepancies between registry and SAP unmetered load information. Where an ICP switches in with trader unmetered load details but no distributor unmetered load, check to determine whether the unmetered load appears correct and reasonable and investigate to confirm the correct values if unsure. Monitor long term unmetered BTS ICPs and investigate unmetered BTS ICPs which have metering installed to determine whether the unmetered load can be removed.
Check unmetered load details	3.7	**MEEN** Check whether the trader unmetered load details are correct for these ICPs with no unmetered load recorded by the distributor: • 0006950760RN3FF 0.6 kWh per day no description, • 0006889514RN932 0.4 kWh per day no description, • 0005649089WA391 1.00 kWh per day no description, • 1000015953BP63F 0.8 kWh per day no description and category 1 MTRX metering is installed, • 1000015954BPBF5 0.8 kWh per day 0080;10;80Wx1under verandah light and category 1 MTRX metering is installed, • 0007168347RNE85 believed to be permanent metered and to be checked to confirm unmetered BTS can be removed, and • 0007205264RN2D8 believed to be permanent metered and to be checked to confirm unmetered BTS can be removed.
Unmetered load	3.7	**TRUS**

Subject	Section	Recommendation
		Check with the WBOP DC DUML database trader (Manawa) whether the streetlights associated with ICP 1000595713PC497 are also recorded in the Council's database.
Enter reconnection reads into GTV	3.8	**TRUS** Reconnection readings should be entered wherever possible to ensure that consumption is apportioned to the correct period by the historic estimate process. Because GTV's historic estimate process allocates all consumption in each read-to-read period against the "active" days within the read period, it will be important to ensure that no consumption is present during read-to-read periods which are entirely inactive. If consumption does occur during an inactive period, it is likely that the status is incorrect.
Enter disconnection reads into GTV	3.9	**TRUS** Disconnection readings should be entered wherever possible to ensure that consumption is apportioned to the correct period by the historic estimate process. Because GTV's historic estimate process allocates all consumption in each read-to-read period against the "active" days within the read period, it will be important to ensure that no consumption is present during read-to-read periods which are entirely inactive. If consumption does occur during an inactive period, it is likely that the status is incorrect.
ICPs at new and ready status	3.10	**TRUS** Recommend Trustpower approach Manawa Energy who are listed as the owners of the TRPG network code on the participant register to get this ICP "decommissioned-set up in error".
Preventing late CS files caused by applying the gaining trader's backdated event date	4.3	**MEEN** Where a gaining trader's NT requests a backdated event date, preventing MEEN from issuing a transfer NT within five business days of the event date, consider: • proposing a different event date which is preferably within five business days of the NT receipt date, but may be ten business days of the NT receipt date, or • issuing a NW with withdrawal code CE and providing an email to the other trader explaining the event date issue.
Calculation of CS average daily kWh for automated CS files	4.3	**MEEN** Ensure that average daily kWh is calculated in line with the requirements of the Registry Functional Specification and Authority guidance when ICPs are migrated to Gentrack.
CS last actual read dates	4.3	**MEEN** Ensure that last actual read dates reflect the date of the last actual read during MEEN's period of supply when ICPs are migrated to Gentrack.
Calculation of CS average daily kWh for manual CS files	4.3	**MEEN** Update procedures to ensure that average daily kWh is calculated in line with the requirements of the Registry Functional Specification and Authority guidance, instead of applying 19 kWh to all manually generated files.
Average daily consumption	4.10	**TRUS** Quantify how many ICPs are sent with zero consumption due to two reads being received on the same day.

Subject	Section	Recommendation
Distributed generation exception reporting	6.1	**MEEN** Add an exception for ICPs with installation type B or G and no settled EG register.
ICPs to investigate to confirm whether generation is present	6.1	**MEEN** Confirm whether generation is present and if so, arrange for compliant metering to be installed or notification of gifting to be provided: 1001252773UNA63, 1001116111UN2B1, 1001159194UN841, 0491137168LC906, 0000223388UN94E, 0000162782UN15F, 0000466087UN841, 0007178455RN34E, 1002041538LCF13, 0220523875LC32A, 0030530186PCA23, 1001142826LCE6A, 1002158415LC434, 0400404060LC46C, 0038640800PC434, 0000039113CP890, 0000610616UNA44, 0076383388WE5A3, 1001270361LCCD3, 0344418987LC7DD, 0378418698LCD01, 0000524551HB73F, 0000461116HBC88, 0085704601PCD4D, 0000181478WAB2B, 0000100353UND41, 0006983448RN10C, 1001262525LC2DB, 1002036226LC7FE, 1000584124PC1E2, 0000806302HB9DE, 0013561418ELD65, 0346767024LC814, 0000610977TU415, 0000304593HB8FF, 0000312560TE948, 0000275815HB647, and 0000381548TUB88.
Independently review AMI MEPs time difference reports	6.5	**TRUS** Trustpower to develop a process to automatically retrieve these reports and identify any exceptions that might impact submission volume accuracy where time-of-day profiles are used.
Reinstate separate monthly summary meter condition report between MRS and Mercury	6.6	**MEEN** Reinstate separate monthly non-critical meter condition report (broken seals, different meter number, suspect tamper) between MRS and Mercury's Premise and Metering team to enable timely investigation and resolution of issues identified.
Photos of Category 2 installations	6.6	**MEEN** Require MRS to provide a photo of all manually read Category 2 meters to check for phase failure.
Check for phase failure reporting over the last 12 months	6.6	**MEEN** Request phase failure examples from MRS for the last 12-month period to ensure there are none overlooked.
Transition to manual read sequence for non-communicating AMI meters	6.10	**TRUS** Recommend that Trustpower also uses the trigger of the registry AMI communicating flag to update the meter read sequence to ensure the earliest possible attempt to complete a manual read is undertaken.
Meter read frequency reporting accuracy	6.10	**TRUS** Trustpower reviews the selection criteria of the meter read frequency report and confirms that the report is accurately presenting Trustpower's read attainment levels and to ensure this is understood by the relevant operations teams.
HHR correction audit trail	9.4	**MEEN** Extend the use of the grid generation audit trail template for corrections to all C&I interval data corrections.
Stopped meter corrections	9.5	**MEEN** Confirm whether NHH corrections for stopped or faulty meters is conducted for just the current customer, or for the full period of the error.

Subject	Section	Recommendation
AMI events	9.6	**MEEN** Identify all meter types where “voltage on the load side of the meter” is an event and ensure it is provided in all cases.
HHR estimates for HHM profile	9.6	**MEEN** Develop reporting of the quantity of estimated intervals per NSP/MEP/revision to assist with managing MEP performance.
AMI events	9.6	**TRUS** Obtain event information description information from MEPs. Ensure all events, including tamper, are appropriately evaluated.
Review precision of all grid generation bus metering points.	12.7	**MEEN** Review number of decimal places retrieved from all bus level grid generation metering points to ensure AV130 submission volumes are submitted to an accuracy of two decimal places.
Monitor accuracy of profile assignment to meter register	12.7	**TRUS** Develop a process to monitor submission profile assignment to meter registers ensuring the submission data is accurate and there are no overlaps or gaps in the time-of-day profile codes applied.
Accuracy and completeness checks done before amending read types for ICPs without actual reads causing forward estimate volumes in the 14-month revision	12.8	**TRUS** Review the process to check that for the list of ICPs with interim estimate reads causing forward estimate volumes in the 14-month revision that the reasonable endeavours threshold for meter read attainment has been met.
Review selection criteria for updating interim estimate read type to permanent estimate read type once reasonable endeavours threshold has been met	12.8	**TRUS** Review the process to select the interim estimate reads to update the read type to permanent estimate once the reasonable endeavours threshold for meter read attainment has been met.
Review scheduled meter red dates for seasonal load ICPs with communicating AMI meters	12.12	**TRUS** Trustpower to regularly review the NSP level submission accuracy and where the accuracy levels are not being achieved, to review the scheduled AMI meter read dates of any seasonal load at these NSPs to ensure these are close to month end as practicable.

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 the following exemptions:

- **Exemption 309 (MEEN)**
  Mercury is exempted from complying with the obligation in clause 10.14(2)(b) of the Electricity Industry Participation Code 2010 ("Code") to not treat load expected to exceed 9,000 kWh in any 12-month rolling period as unmetered load. This exemption applies only to installation control points ("ICPs") 0000161894CK3EF, 0000161895CKFAA, 0001393839UN86B, 0000161897CKF2F, 0000190118TR62B, 0000161899CKCB4 and 0000161900CK406.

  The exemption expires on the earlier of 17 June 2028, when Mercury is no longer recorded as the trader, when the ICPs are metered, when the ICPs are decommissioned, or when the load for any of the ICPs exceeds 9,000 kWh per annum.

- **Exemption 307 (MEEN)**
  Mercury is exempted from complying with the obligation in clause 10.24(c) of the Electricity Industry Participation Code 2010 ("Code") to not to use subtraction to determine submission information. This exemption applies only to ICP 0003133903AA777.

  The exemption expires on the earlier of 1 December 2030, the date when Mercury is no longer recorded in the registry as being the trader for ICP 0003133903AA777, the date when Accucal is no longer recorded on the registry as the MEP, the date on which the meter programming, metering or distribution configuration is changed, the date on which any other consumer is connected to the same 11kV distribution substation as ICP 0003133903AA777, and the date on which any other consumer is connected to the same 11kV distribution substation as ICP 0003133903AA777.

- **Exemption 281 (MEEN)**
  Mercury is exempted from the obligation to arrange a distributor audit under clause 11.10 of the Electricity Industry Participation Code 2010 ("Code"). This exemption applies only in respect of the grid exit point (GXP) at Atiamuri (ATI2201 MRPL GN).

  This exemption expires on 16 August 2029.

- **Exemption 233 (MRPL)**
  Mercury is exempted from complying with the obligation in clause 8(g) of Schedule 15.3 of the Electricity Industry Participation Code 2010 ("Code") to provide non-half-hour ("NHH") submission information instead of half-hour ("HHR") submission information for distributed unmetered load ("DUML").

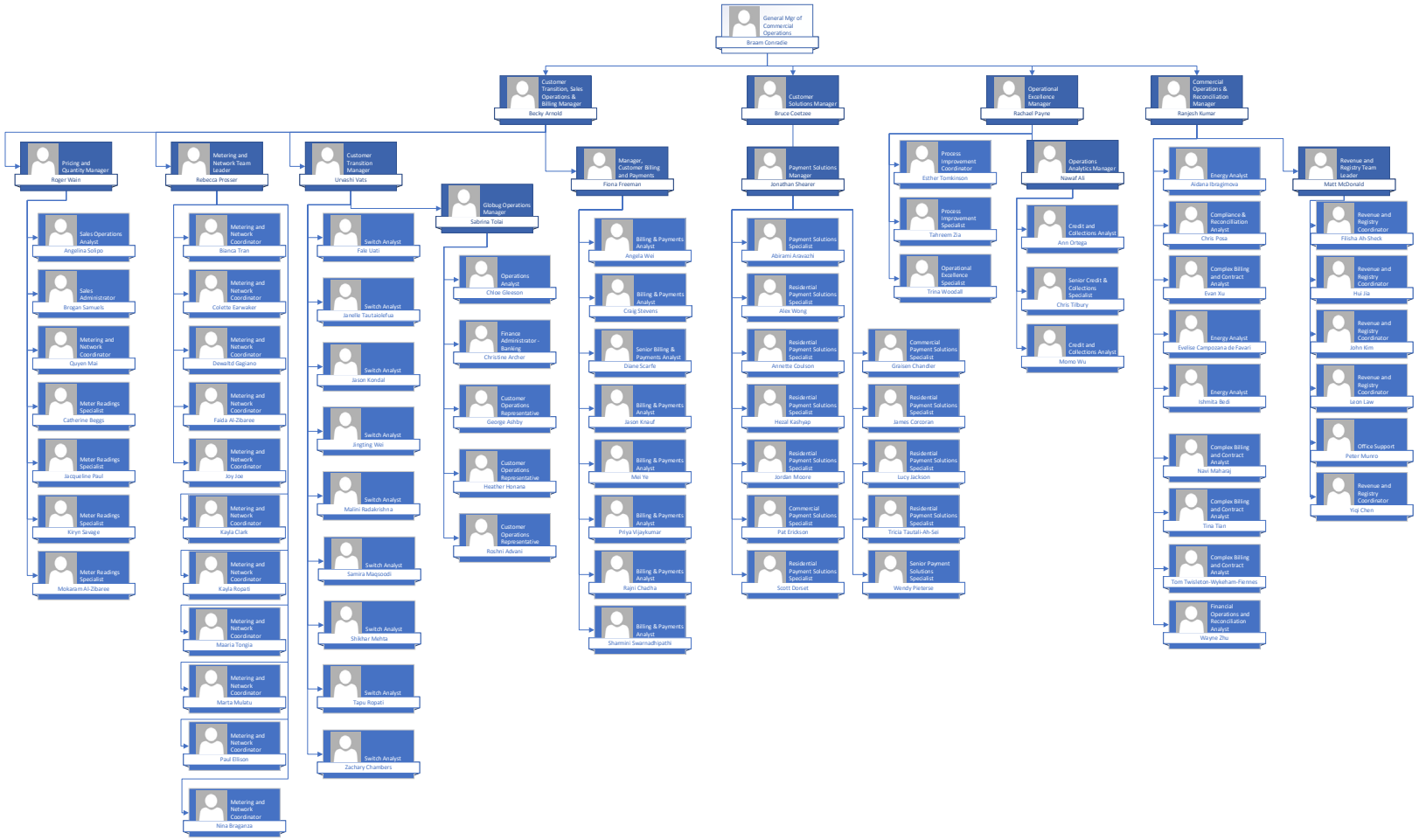
  This exemption expires on 31 October 2023.

- **Exemption 250 (TRUS)**
  Exemption 250 from Clause 10.14(2)(b) allows five unmetered ICPs to consume more than 6,000 kWh per annum. This exemption expires on 31 December 2026, when all the ICPs are all metered, or when Trustpower is no longer responsible for the ICPs. The TRUS code is no longer responsible for any of these ICPs because they switched to the CNIR code owned by Manawa.

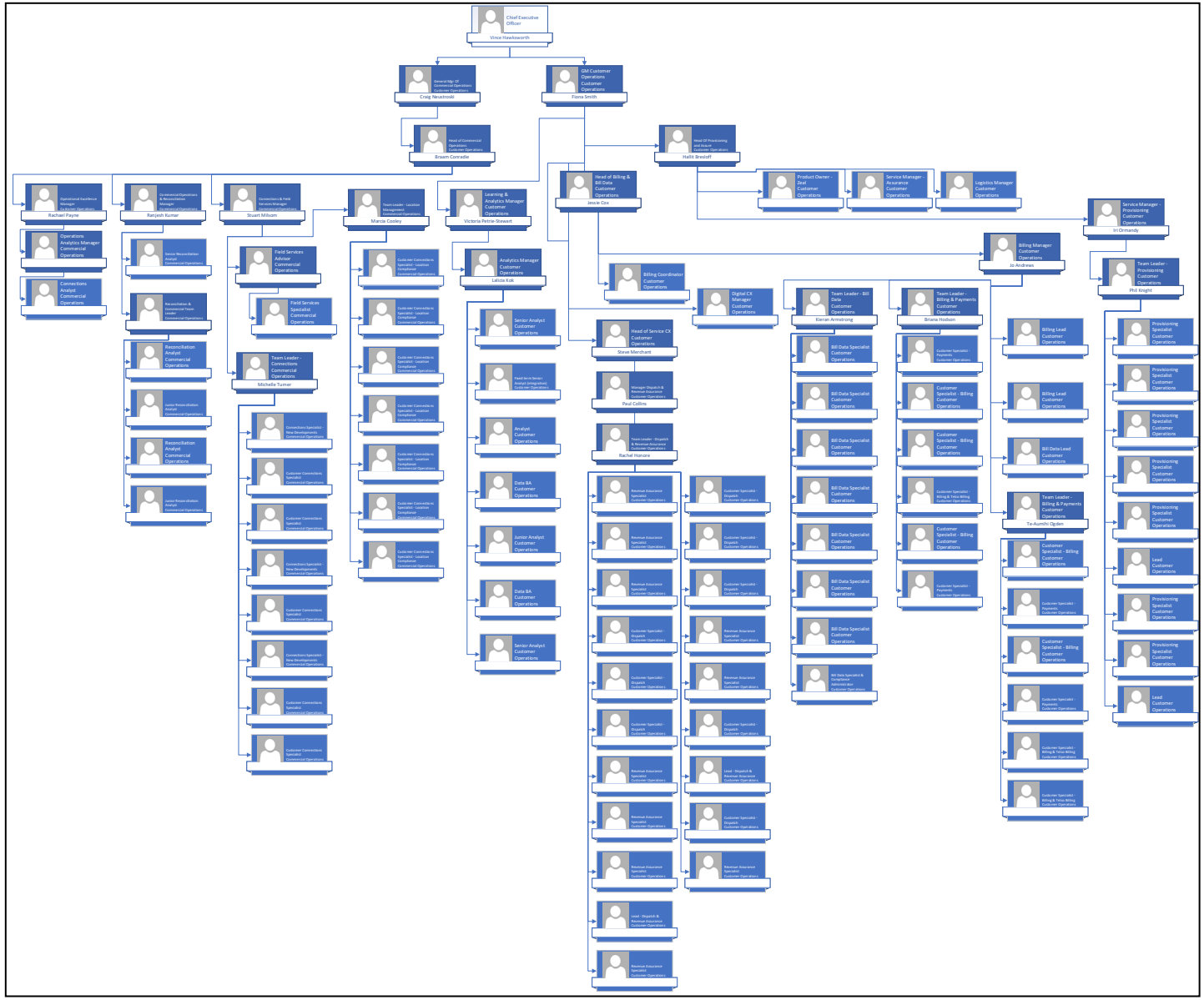
  This exemption expires on 31 October 2026.

1.2. Structure of Organisation

Mercury provided their current organisational structure.



Trustpower provided a copy of their organisation structure.



1.3. Persons involved in this audit

Auditors:

Name	Company	Role
Steve Woods	Veritek Limited	Lead Auditor
Rebecca Elliot	Veritek Limited	Supporting Auditor
Bernie Cross	Veritek Limited	Supporting Auditor
Tara Gannon	Veritek Limited	Supporting Auditor

Mercury personnel assisting in this audit with the MEEN code were:

Name	Title
Ranjesh Kumar	Commercial Operations and Reconciliation Manager
Chris Posa	Compliance & Reconciliation Analyst
Filisha Ah-Sheck	Risk Control Co-ordinator
Rebecca Prosser	Metering & Network Team Leader
Mokram Al-Zibaree	Meter Reading Specialist
Jacqueline Paul	Meter Reading Specialist
Evelise Campozana de Favari	Energy Analyst
Leon Law	Revenue and Registry Coordinator
Urvashi Vats	Customer Transition Manager
Tapu Ropati	Switch Analyst
Aidana Ibragimova	Energy Analyst
Navi Maharaj	Complex Billing Team Leader
Hui Jia	Revenue and Registry Coordinator
Tom Fiennes	Complex Billing & Contracts Analyst
Evelise Campozana de Favari	Energy Analyst

Name	Title
Dewaltd Gagiano	Metering and Network Coordinator
Kiryn Savage	Meter Readings Specialist
Roger Wain	Pricing and Quantity Manager

Mercury personnel assisting in this audit with the TRUS code were:

Name	Title
Andrea Tobin	Revenue Assurance Administration
Angela Kennerley	Contact Centre Manager
Evan Dobbs	Energy Provisioning Specialist
Jane Burtenshaw	Energy Provisioning Specialist
Jungeun Lee	Reconciliation Analyst
Jo Andrews	Billing Manager
Laura Wilson	Energy Provisioning Specialist
Leanne Ellis	Commercial and Reconciliation Team Leader
Marcia Cooley	Location Management Team Leader
Mea De Silva	Billing Team Member
Michael Hayles	COBU Analytics
Michelle Turner	New Connections Manager
Paul Collins	Assurance/Collections and Dispatch Manager
Sarah McNeely	Contact Centre Manager
Shay McNae	Connection Analyst
Shiniqua Potaka	Bill Data Team Lead

Name	Title
Sophie Graham	Compliance Administrator
Scott Smith	Energy Provisioning Team Leader
Tara Lowe	Customer Connections Specialist

Other personnel assisting in this audit were:

Name	Title	Company
Julie Feasey	Senior C and I Data Services Specialist	Vector Metering
Ellen Jackman	Senior C&I Data Services Specialist	Vector Metering
Nick Appleby	Solution Support Specialist	EDMI NZ Limited
Hannah Kelly	Solutions Support Specialist	Hannah Kelly
Robyn Dunlop	General Manager	Robyn Dunlop
Dominic Imo	MRS Technical Support Team-lead	Arthur D Riley & Co Ltd (MRS)

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 EDMI provide HHR data.
- Councils provide HHR and NHH DUML data.
- MRS (AD Reilly) provides NHH data.
- Intellihub provides estimated AMI 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.

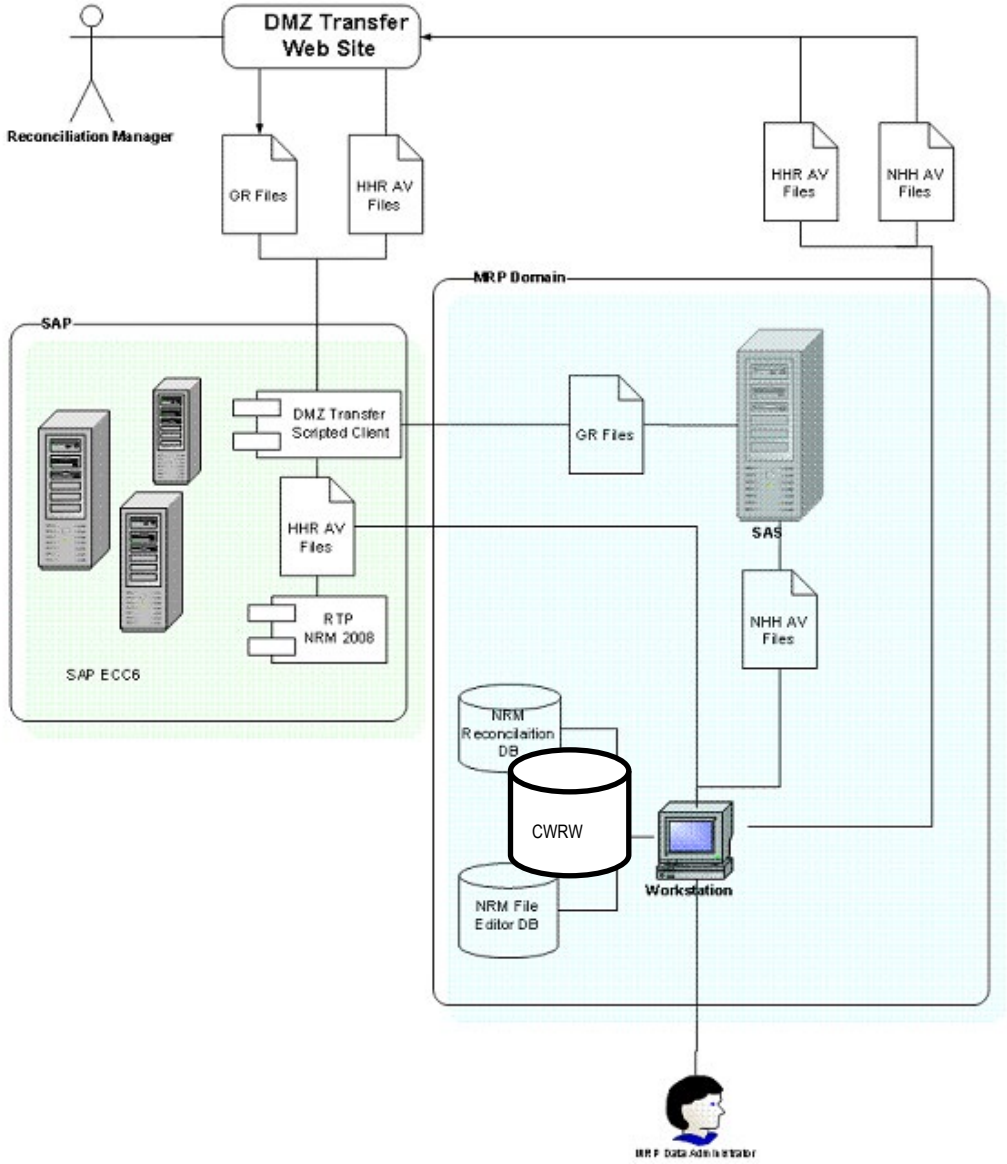
AMS, IntelliHUB, and Arc provide AMI data as MEPs, and are subject to a separate audit regime.

1.5. Hardware and Software

Mercury

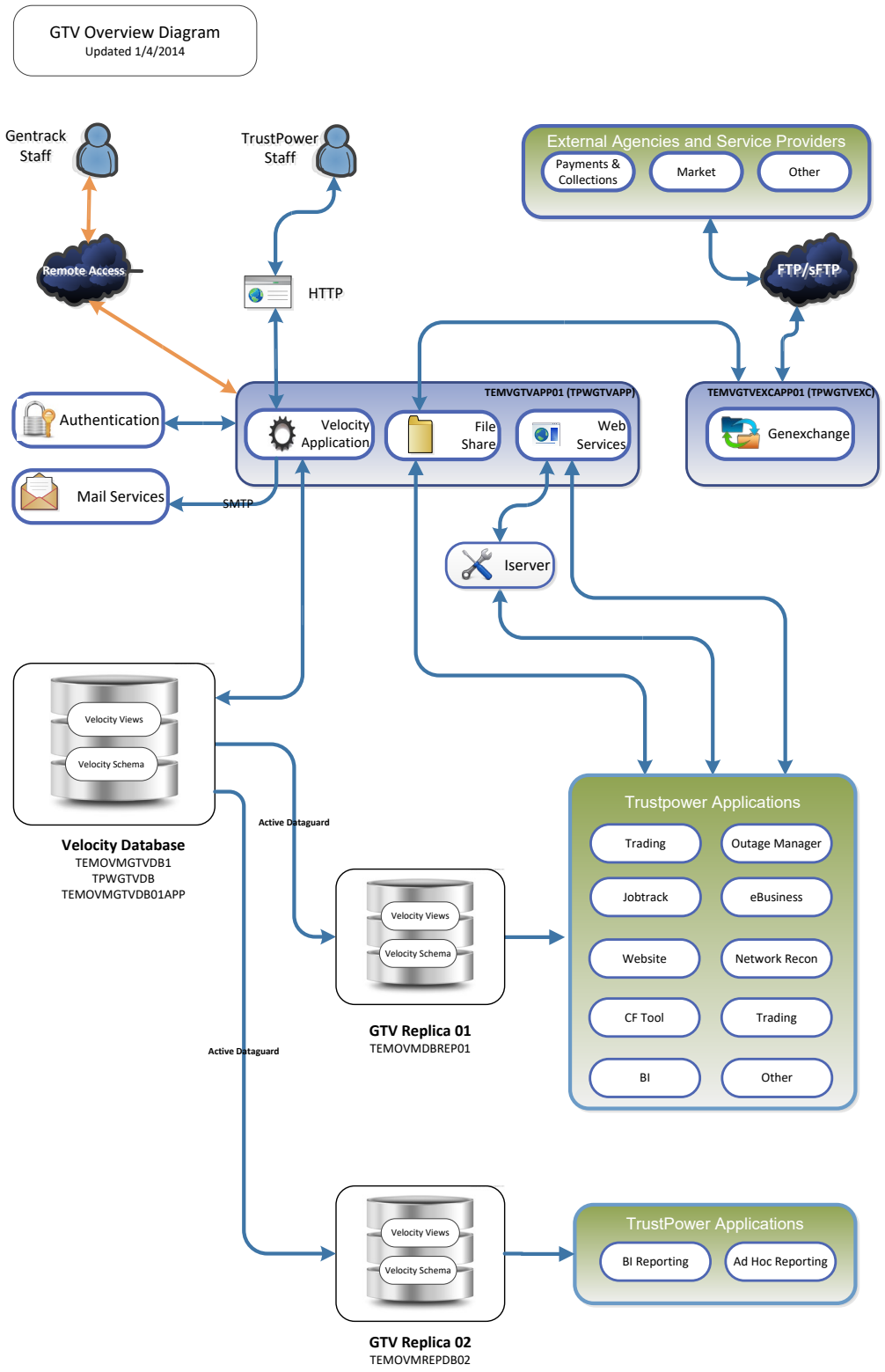
A diagram of Mercury's system configuration is shown below.

Information on backup processes was provided, and these processes are in accordance standard industry procedures. Access to systems is restricted using logins and passwords.



Trustpower

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



Access to systems is restricted using logins and passwords. There are many comprehensive back up processes in place. Trustpower provided a detailed breakdown of these. The last DR exercise was undertaken in September 2022.

Agents

Agent systems are discussed in their agent audit reports.

1.6. Breaches or Breach Allegations

The Electricity Authority confirmed that there have been two alleged breaches relevant to the scope of this audit for Mercury Energy.

Breach ref	Clause breached	Status	Comment
2205MERC1	Part 11 clause 11.15AA	Early closure	Mercury contacted a customer during the switch protected period and offered an enticement to remain with Mercury.
2209MERC2	Part 11 clause 11.2 Part 11 Schedule 11.1 clause 11.10 (1) Part 11 Schedule 11.1 clause 11.10 (2) Part 11 Schedule 11.1 clause 11.17 (1)	The Authority noted the breach caused low market and minor operational impact. The Authority decided to take no further action on the breach.	Northpower alleges that Mercury Energy has failed to update the connection status of 14 ICPs to "active" where they have been electrically connected within the five business days required by the Code, despite email reminders from Northpower. The oldest of these was energised on 5 January 2022, making it around nine months overdue.

1.7. ICP Data

MEEN

All "active" ICPs are summarised by metering category in the table below. Active ICPs with a metering category of 9 or blank are discussed in **section 2.9.**

Metering Category	**Nov 2022**	**Nov 2021**	**Nov 2020**	**2020**	**2019**	**2018**	**2017**
1	296,941	304,599	314,092	326,699	348131	345,836	338,896
2	3,008	3,023	3,074	3,050	3,299	3,100	3,288
3	930	809	607	574	556	550	622
4	357	307	234	207	181	160	159
5	26	23	23	22	19	19	16
9	456	467	461	461	472	469	107
Blank	595	576	616	664	638	590	304

Status	Nov 2022	Nov 2021	Nov 2020	2020	2019	2018	2017
Active (2,0)	302,313	309,804	319,107	331,677	350,724	343,392	326,093
Inactive – new connection in progress (1,12)	738	564	4	2	3	2	2
Inactive – electrically disconnected vacant property (1,4)	5,705	4,818	4,699	4,275	3,998	4,201	3,575
Inactive - reconciled elsewhere (1,5)	3	1	2	2	1	5	5
Inactive – electrically disconnected ready for decommissioning (1,6)	281	238	180	167	313	511	714
Inactive – electrically disconnected remotely by AMI meter (1,7)	34	26	28	19	24	13	5
Inactive – electrically disconnected at pole fuse (1,8)	26	25	18	15	14	10	1
Inactive – electrically disconnected due to meter disconnected (1,9)	1,776	1,743	1,695	1,662	1,373	226	25
Inactive – electrically disconnected at meter box fuse (1,10)	1	1	2	1	1	-	-
Inactive – electrically disconnected at meter box switch (1,11)	1	-	1	1	4	-	-
Decommissioned (3)	27,830	27,002	25,825	24,865	22,751	21,852	20,269

TRUS

All "active" ICPs are summarised by metering category in the table below. Active ICPs with a metering category of 9 or blank are discussed in **section 2.9.**

Metering Category	Nov 2022
1	254,455
2	721
3	-
4	-

5	-
9	21
Blank	141

Status	Nov 2022
Active (2,0)	255,338
Inactive – new connection in progress (1,12)	1,625
Inactive – electrically disconnected vacant property (1,4)	4,643
Inactive - reconciled elsewhere (1,5)	1
Inactive – electrically disconnected ready for decommissioning (1,6)	150
Inactive – electrically disconnected remotely by AMI meter (1,7)	880
Inactive – electrically disconnected at pole fuse (1,8)	79
Inactive – electrically disconnected due to meter disconnected (1,9)	70
Inactive – electrically disconnected at meter box fuse (1,10)	2
Inactive – electrically disconnected at meter box switch (1,11)	1
Decommissioned (3)	29,728

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 and in Tauranga and remotely via teams from 27th March to 30th March 2023.

Mercury NZ Limited operates three reconciliation participant codes:

- **MRPL** which is a grid connected generator,
- **MEEN** for NHH and HHR settled ICPs, and
- **TRUS** for NHH and HHR settled ICPs. TRUS was acquired from Trustpower Limited on 1 May 2022, and was subject to a material change audit dated 19 April 2022.

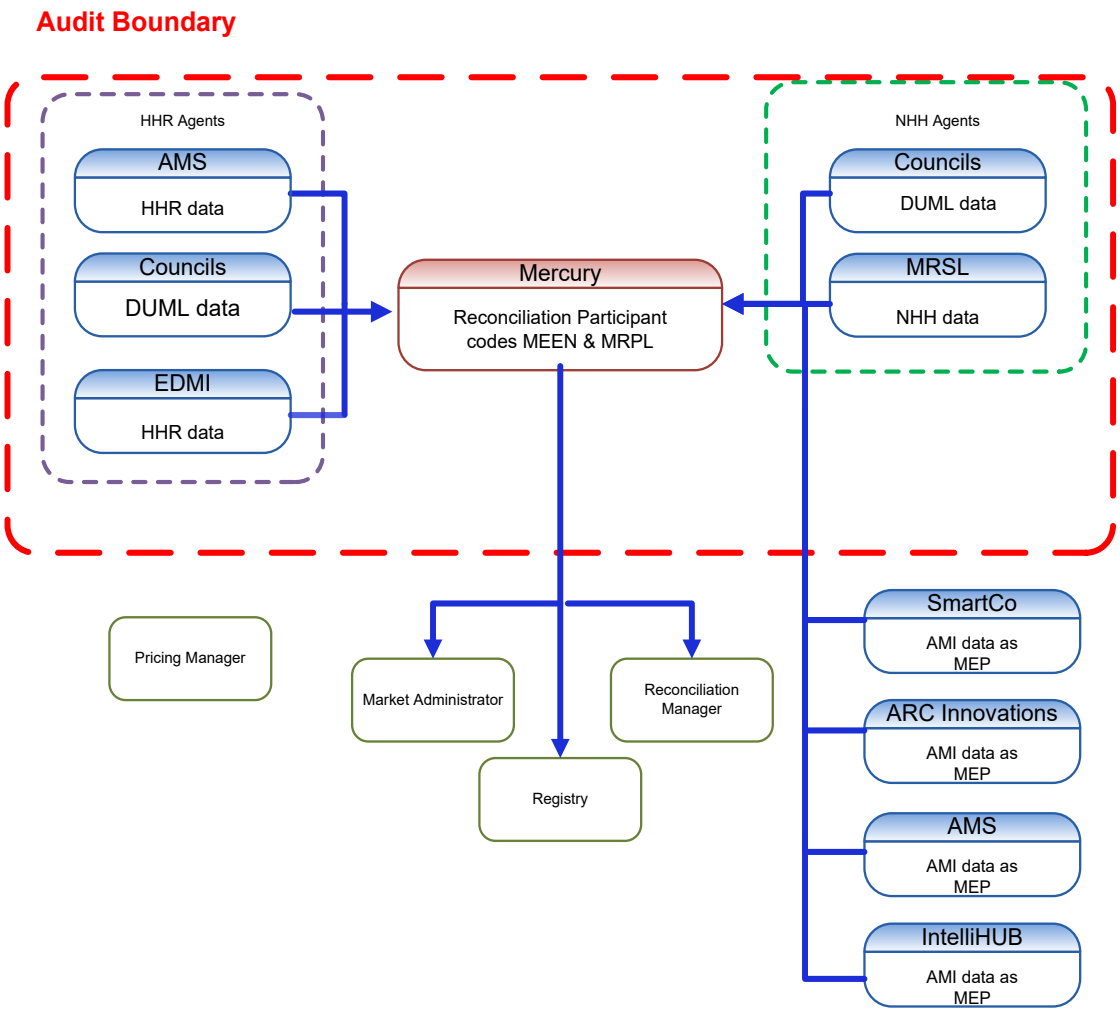
Mercury NZ Limited is also the "ultimate holding company" for Glo-bug Limited, but Glo-bug is not included in the scope of this audit.

Findings relate to all three codes unless specifically stated otherwise.

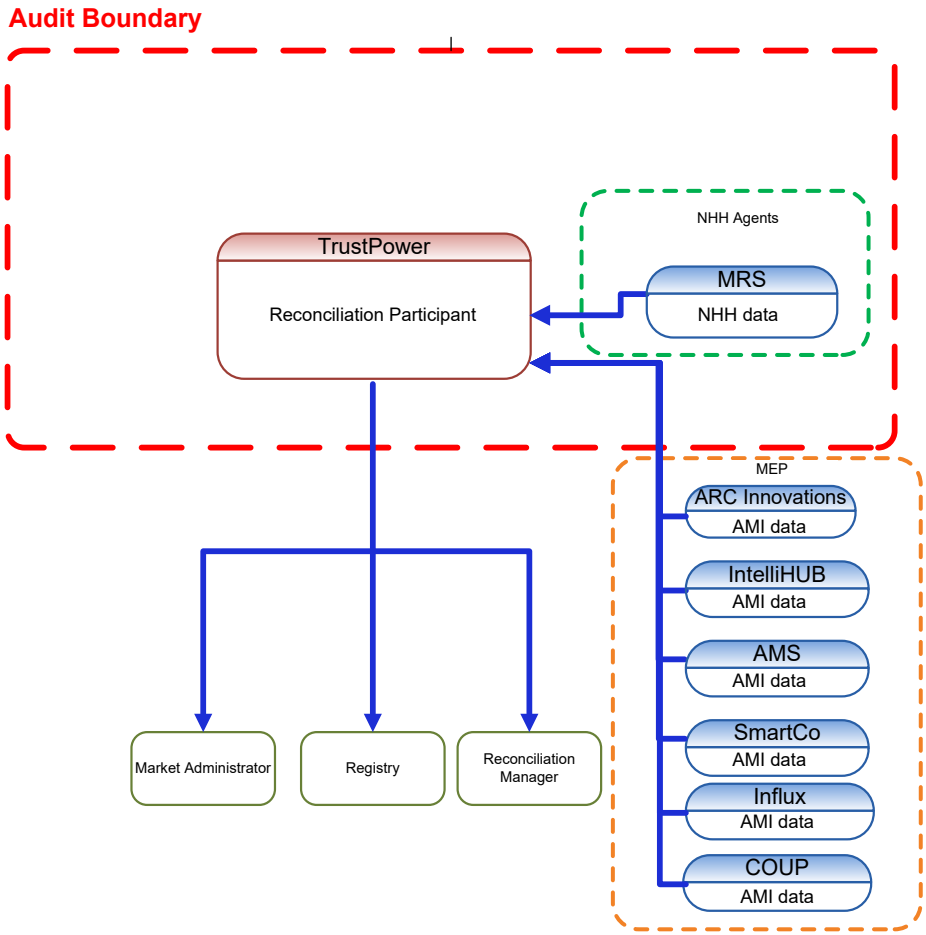
The audit analysis was conducted on:

- a registry list and event detail report for 1 January 2022 to 17 November 2022,
- a registry list and meter event detail report for 17 November 2022, and
- an audit compliance report for 1 January 2022 to 22 November 2021 for MEEN and 1 January 2022 to 17 November 2022 for TRUS.

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



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



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	MEPs providing data
(a) - Maintaining registry information and performing customer and embedded generator switching		
(b) – Gathering and storing raw meter data	MRS – NHH AMS – HHR EDMI – HHR	IntelliHUB– AMI as an MEP ARC Innovations – AMI as an MEP AMS – AMI as an MEP Smartco – AMI as an MEP Influx – AMI as an MEP Counties Power- AMI as an MEP

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs providing data
(c)(iii) - Creation and management of HHR and NHH volume information	AMS – HHR EDMI – HHR Various Councils – DUML 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		

AMS, Smartco and IntelliHUB conduct AMI data collection as MEPs and not as agents to reconciliation participants. MEPs are subject to a separate audit regime.

Mercury receives DUML data from a number of Councils, who are considered agents under clause 15.34 of part 15. These databases are audited separately. A summation of these audits is detailed in **section 5.4**. All TRUS DUML ICPs switched from TRUS to CNIR prior to the change of ownership but TRUS is still responsible for settlement revisions for the period the ICPs were with TRUS.

TRUS also receives data from Powerco, who provide NHH meter readings from their substations. These parties provide digital photos of the meters, and the readings are entered into GTV by Trustpower personnel. They are considered contractors rather than agents and they operate under the control of TRUS.

The remaining agents listed above have been audited in accordance with the Guidelines for Reconciliation Participant Audits V7.2. Their audit reports are expected to 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 and 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 that there had been no changes to systems or processes which could affect Mercury's compliance.

1.10. Summary of previous audit

Mercury Energy March 2022 RP audit

The previous RP audit report conducted in March 2022 by Rebecca Elliot (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.

Subject	Section	Clause	Non-compliance	Status
Material change	1.11	16A.11	Material change audit not conducted for the automation of the new connections process.	Cleared
Relevant information	2.1	10.6,11.2 & 15.2	Some registry discrepancies resulting in submission inaccuracies. Some ICPs with distributed generation not quantified. Consumption on inactive ICPs not always corrected as soon as practicable. Arc provides interval data to one decimal place, which is not considered to be sufficiently accurate. Generation interval data for Maraetai increments in units of 10 kWh with zero decimal places.	Still existing
Audit trails	2.4	21 Schedule 15.2	Audit trail not kept where SAP estimates and customer reads are made permanent estimates	Still existing
Electrical Connection of Point of Connection	2.11	10.33A	Two "active" ICPs with no metering installed and no unmetered load. Six metered new connections had late meter certification of a sample of 20 ICPs checked. Potential population of 100 ICPs. Nine reconnections of metered ICPs of a sample of 20 ICPs had late meter certification. Potential population of 148 ICPs. Three ICPs reconnected and requested for the incorrect gain date from the losing trader.	Still existing
Changes to registry information	3.3	10 of schedule 11.1	707 updates to "active" status for reconnections were made more than five business days after the event date. 72 updates to "inactive - new connection in progress" status were made after the initial electrical connection date. 320 updates to "inactive" statuses apart from "inactive - new connection in progress" were made more than five business days after the event date. 41,581 late trader updates. 388 ANZSIC code updates were not completed within 20 business days of commencement of trading.	Still existing
Trader responsibility for an ICP	3.4	11.18	A small number of invalid MEP nominations were sent.	Still existing
Provision of information to the registry manager	3.5	9 of Schedule 11.1	1,285 late updates for new connections (65.06% updated within five business days). Three ICPs of a sample of 27 ICPs with potential late meter certification had been made "active" for the incorrect date. Four (0007201529RN6A4, 1002137904UN6F8, 1002137734LCD1F and 0007202684RN003) of a sample of	Still existing

Subject	Section	Clause	Non-compliance	Status
			30 new connections with date discrepancies made "active" for the incorrect date. ICP 0000048279WE539 switched out at the "new connection in progress" status resulting in the consumption period with Mercury not being reconciled.	
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	1,398 ICPs with T994 ANZSIC codes. 17 of a sample of 21 ICPs (from a possible 125) meter category code 2/3 were incorrectly recorded as residential. Five of a sample for 80 "active" ICPs (6% error rate) with the incorrect ANZSIC code.	Still existing
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	Two ICPs with the incorrect daily kWh figure resulting in a very minor submission inaccuracy.	Still existing
Management of "active" status	3.8	17 Schedule 11.1	Two ICPs of a sample of ten ICPs with no MEP nomination or metering recorded on the registry at the incorrect status. Three ICPs of a sample of 27 ICPs with potential late meter certification had been made "active" for the incorrect date. Four (0007201529RN6A4, 1002137904UN6F8, 1002137734LCD1F and 0007202684RN003) of a sample of 30 new connections with date discrepancies made "active" for the incorrect date. Eight of a sample of 40 ICPs (20 reconnections and 20 reconnected with expired meter certification) updates were incorrectly updated to "active".	Still existing
Management of "inactive" status	3.9	19 Schedule 11.1	Some ICPs with incorrect "inactive" statuses not identified. Three ICPs no longer required at the "new connection in progress status". ICP 0000048279WE539 switched out at the "new connection in progress" status resulting in the consumption period with Mercury not being reconciled.	Still existing
Losing trader response to switch request and event dates - standard switch	4.2	3 & 4 of schedule 11.3	Less than 50% of ANs had proposed event dates within five business days of NT receipt. Four ANs had proposed event dates more than ten business days after NT receipt. Four of a sample of 17 AN files checked contained incorrect response codes of AA.	Still existing
Losing trader must provide final information - standard switch	4.3	5 of schedule 11.3	One CS breach. One E2 breach. Three WR breaches. Average daily consumption calculation will be incorrect if the last read is more than six months prior to the end date. One ICP with an average daily consumption figure greater than 200 kWh calculated incorrectly.	Still existing

Subject	Section	Clause	Non-compliance	Status
			31 CS files sent with the incorrect last read date due to human error. Two CS files were sent with a last read date after the period of supply. One ICP was sent with the incorrect last read date	
Retailers must use same reading - standard switch	4.4	(1) and 6A Schedule 11.3	Four of the 12 ICPs sampled were not supported by two actual reads. Three RR breaches.	Still existing
Losing trader provides information - switch move	4.8	10 of schedule 11.3	Four of a sample of 19 AN files checked contained incorrect response codes of AA. 22 ANs has a proposed event date before the gaining trader's requested date. One AN file had proposed event dates more than ten business days after NT receipt. 19 WR breaches. Six E2 breaches. 37 T2 breaches.	Still existing
Losing trader must provide final information - switch move	4.10	11 of schedule 11.3	Average daily consumption calculation will be incorrect if the last read is more than six months prior to the end date. Two ICPs with an average daily consumption figure greater than 200kWh per day calculated incorrectly. Eight files sent with an incorrect last read date and read type of "E". ICP 1000596369PCDBA was sent with the incorrect last read. Ten files sampled of a possible 26 CS files were sent with a last read labelled incorrectly as an actual. All five files sampled of a possible 35 CS files were sent with a last read date after the period of supply.	Still existing
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	One of the ten RRs sampled was not supported by two actual reads. 22 RR breaches.	Still existing
Withdrawal of switch requests	4.15	17 & 18 of schedule 11.3	Five sent with the incorrect withdrawal code of a sample of 21 rejected NWs. 140 NA breaches. 26 SR breaches.	Still existing
Metering information	4.16	21 of schedule 11.3	Eight files sent with an incorrect last read date and read type of "E". Ten files sampled of a possible 26 CS files were sent with a last read labelled incorrectly as an actual. One switch move switch sent with incorrect last read.	Still existing

Subject	Section	Clause	Non-compliance	Status
Distributed unmetered load	5.4	11 Schedule 15.3, Clause 15.37B	Submission errors found in six 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)	13 meter certification expiry dates were updated late.	Still existing
Collection of information	6.5	2 Schedule 15.2	ICP 0000033002TC7DD was not interrogated within the maximum interrogation cycle	Still existing
Derivation of meter readings	6.6	3(2) Schedule 15.2	Customer reads are not being validated against another set of validated meter reads before being considered permanent estimates after six months.	Still existing
NHH meter reading application	6.7	6 Schedule 15.2	Not all reconnection reads are being applied from 0000hrs on the day of a registry status change to “active”.	Still existing
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	The best endeavours requirement was not met for 152 ICPs not read during the period of supply.	Still existing
Correction of HHR metering information	8.2	19(2) Schedule 15.2	HHM interval volumes not aligned with accumulating register reads.	Still existing
Identification of readings	9.1	3(3) Schedule 15.2	No visible audit trail present for the change in treatment of estimated and customer reads in the calculation of historic estimate (HE) volumes within SAS or SAP.	Still existing
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
Half hour estimates	9.4	15 Schedule 15.2	HHR volumes are estimated as zero in order to create a placeholder in the AV-090 and AV-140 files where data not yet provided by the HHR data collectors in time for submission.	Cleared
NHH metering information data validation	9.5	16 Schedule 15.2	Not all inactive consumption is being identified and investigated.	Still existing
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	Clock synchronisation and event reports not reviewed for all MEPs. Voltage on the load side of a disconnected meter event is not sent by all AMI MEPs,	Still existing

Subject	Section	Clause	Non-compliance	Status
Creation of submission information	12.2	15.4	At least 25 ICPs have solar generation but submission is not occurring as mentioned in Section 2.1.	Still existing
Accuracy of submission information	12.7	15.12	Inaccurate submission as follows: • precision of grid generation volumes for Maraetai generation station is insufficient as volumes are reported in increments of 10 kWh, • non solar distributed generation submitted using PV1 profile code, • two ICPs with the incorrect daily kWh value, • 15 ICPs at the incorrect statuses causing submission inaccuracies, some switch meter reads incorrectly labelled and one incorrect switch read	Still existing
Permanence of meter readings for reconciliation	12.8	4 Schedule 15.2	All estimated reads treated as permanent estimates after six months, but the Code requires Mercury to use reasonable endeavours to get meter readings for at least 12 months. Some estimates were not replaced by revision 14.	Still existing
Reconciliation participants to prepare information	12.9	2 Schedule 15.3	ICP 1002125124LCA15 not submitted as HHR where the metering installation category is 3 and the billing capacity is 500 kVA. Some unmetered load calculations were incorrect. ICP 0005011390CNB4E incorrect multiplier applied to HHR volumes by EDMI from December 2017 to July 2021.	Still existing
Historic estimate process	12.11	4 and 5 Schedule 15.3	Historic estimate calculations incorrect for 5 scenarios.	Still existing
Forward estimate process	12.12	6 Schedule 15.3	The accuracy threshold was not met for all months and revisions.	Still existing
Historical estimate reporting to RM	13.3	10 of Schedule 15.3	Historic estimate thresholds were not met for some revisions.	Still existing

Subject	Section	Recommendation	Status
Distributed Generation	2.1	Liaise with Orion and the customer to confirm what generation is present for ICP 0007130338RNA72.	Adopted, arranging for EG metering to be installed.
Changes to registry information	3.3	Review the process to manage ICPs where the meter has been removed to ensure that any ICPs to be decommissioned are identified and advised to the distributor.	Adopted

Subject	Section	Recommendation	Status
Provision of information	3.5	Put a check in place that does not allow a switch out to for ICPs at the "inactive - new connection in progress" status.	Not adopted
Management of "inactive" status	3.9	Remind the new connections team that the "new connection in progress" status must be reversed if an ICP is no longer required.	Adopted
Read Requests	4.4	Remind teams who raise the RR requests that these must be supported with two actual reads.	Adopted
Meter reading attainment	6.6	Reinstate separate monthly non-critical meter condition report (broken seals, different meter number, suspect tamper) between MRS and Mercury's Premise and Metering team to enable timely investigation and resolution of issues identified.	Not adopted
Half hour estimates	9.4	Extend the use of the grid generation audit trail template for corrections to all C&I interval data corrections.	Not adopted
Identification and escalation of missing AMI interval data to MEPs	9.6	Develop and implement reporting of missing/estimated interval data used in submission of the HHM profile and the process to escalate these instances to the relevant AMI MEP for resolution.	Adopted
Review precision of all grid generation bus metering points.	12.7	Review number of decimal places retrieved from all bus level grid generation metering points to ensure AV130 submission volumes are submitted to an accuracy of two decimal places.	Not adopted
Forward estimate process	12.12	Review the use of seasonal adjustment daily shape values to apply a seasonal factor to forward estimate volumes.	Adopted

Mercury Energy April 2022 TRUS acquisition material change audit

The material change audit report conducted in April 2022 by Steve Woods and Rebecca Elliot 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.

Subject	Section	Clause	Non-compliance	Status
Relevant information	2.1	15.2	Some inaccurate information is recorded on the registry and/or in GTV. Some submission inaccuracies. Corrections not conducted for two ICPs where meters were bridged. Investigation and correction not conducted for three ICPs with potentially inaccurate metering installations.	Still existing
Temporary Electrical Connection of an ICP	2.10	10.33	11 ICPs were temporarily electrically connected without written permission from the network.	Cleared

Subject	Section	Clause	Non-compliance	Status
Electrical Connection of Point of Connection	2.11	10.33A	73 metered reconnected ICPs were not certified within five business days of becoming active. Three metered newly connected ICPs were not certified within five business days of becoming active.	Still existing
Meter bridging	2.17	10.33C and 2A of Schedule 15.2	Corrections not conducted for two ICPs where meters were bridged.	Still existing
Changes to registry information	3.3	10 Schedule 11.1	205 ICPs were not updated to "inactive" status on the registry within five business days of the event date. 377 ICPs were not updated to "active" status on the registry within five business days of the event date. 2,149 ICPs did not have trader information updated on the registry within five business days of the event date. 59 ICPs did not have ANZSIC codes populated within 20 business days of switch in or initial electrical connection.	Still existing
Trader responsibility for an ICP	3.4	11.18	11 ICPs with the incorrect MEP nominated in the first instance. MEP not notified for one of the ten decommissioned ICPs checked.	Still existing
Provision of information to the registry manager	3.5	9 Schedule 11.1	13 new ICPs (11 temporarily connected and ICPs 1000599753PCDB2 and 1002108871LC5B6) had the incorrect "active" status dates of the samples checked. 417 late updates to "active" status for new connections. 59 late ANZSIC codes not updated within 20 days of commencing trading. 40 late updates to 1,12 "inactive - new connection in progress" status for new connections, which also resulted in late MEP nominations. ICP 0000702000MP807 unmetered load details not populated when electrically connected.	Still existing
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	Seven category 2 ICPs with a residential ANZSIC code applied. Nine ICPs of the 120 ICPs sampled with an incorrect ANZSIC code applied.	Still existing
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	Two ICPs had incorrect daily unmetered kWh recorded on the registry. ICP 0000702000MP807 unmetered load details not populated when electrically connected.	Still existing

Subject	Section	Clause	Non-compliance	Status
Management of "active" status	3.8	17 Schedule 11.1	13 new ICPs (11 temporarily connected and ICPs 1000599753PCDB2 and 1002108871LC5B6) had the incorrect "active" status dates of the samples checked. ICPs 0000931333NVFD5 and 0119010321LC5F4 incorrectly left active.	Still existing
Management of "inactive" status	3.9	19 Schedule 11.1	ICP 0151745161LC3F3 was incorrectly backdated to inactive on 15 April 2021 for 25 June 2020 due to human error resulting in the volumes for the R14 revisions for the months of July to November 2020 not being submitted. Three ICPs recorded as ready for decommissioning in error. ICP 1000020907BP931 was recorded as disconnected meter removed in error.	Still existing
Losing trader response to switch request and event dates - standard switch	4.2	3 and 4 Schedule 11.3	Five ICPs with proposed event dates greater than ten business days of the NT receipt date.	Still existing
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	One TR breach. CS average daily consumption of zero was invalidly recorded for 0001061745AL30B (15 July 2021).	Still existing
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	Two AN files had the incorrect response code applied. Three ET breaches. Four E2 breaches.	Still existing
Losing trader determines a different date - switch move	4.9	10(2) Schedule 11.3	Two incorrect AN codes sent. One CS file breach. Seven T2 breaches.	Cleared
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	One incorrect negative daily consumption value sent. Five ICPs with the incorrect last read type of "E". Two CS file sent with a read for the date of the switch event.	Still existing
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	Six RR breaches.	Still existing
Gaining trader informs registry of switch request - gaining trader switch	4.12	14 of Schedule 11.3	All HH switch requests sent with the incorrect profile of GXP.	Cleared

Subject	Section	Clause	Non-compliance	Status
Losing trader provision of information - gaining trader switch	4.13	14 of Schedule 11.3	ICP0002272113ML5AB was issued incorrectly with the MU (unmetered load) due to human error.	Cleared
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	Three incorrect NW codes found of the sample checked. One NW request sent in error. One WR breach. 13 SR breaches. 35 NA breaches.	Still existing
Metering information	4.16	21 Schedule 11.3	Five ICPs with the incorrect last read type of "E".	Still existing
Maintaining shared unmetered load	5.1	11.14	Two ICPs with the incorrect shared unmetered load recorded.	Still existing
Electricity conveyed & notification by embedded generators	6.1	10.13, Clause 10.24 and 15.13	Some ICPs with distributed generation not quantified. While meters were bridged, energy was not metered and quantified according to the code for 40 ICPs.	Still existing
Reporting of defective metering installations	6.4	10.43(2) and (3)	MEP not notified for three ICPs where metering installations could be inaccurate, defective, or not fit for purpose	Still existing
NHH meter reading application	6.7	6 Schedule 15.2	Five ICPs with the incorrect last read type of "E". Disconnection reads applied to the day before the disconnection.	Still existing
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	Exceptional circumstances not proven for two of a sample of five ICPs not read during the period of supply.	Still existing
Identification of readings	9.1	3(3) Schedule 15.2	Five ICPs with the incorrect last read type of "E".	Still existing
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
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	Event information is not analysed and acted upon for all MEPs. Voltage on the load side of the meter should be obtained and evaluated.	Still existing

Subject	Section	Clause	Non-compliance	Status
ICP days	11.2	15.6	ICP days submitted for generation only ICPs.	Still existing
Grid connected generation	12.6	15.11	Both TRUS and CNIR codes in the NSP vols file for the period October 1st to 7th.	Cleared
Accuracy of submission information	12.7	15.12	Corrections not conducted for two ICPs where meters were bridged. 13 new ICPs had the incorrect "active" status dates of the samples checked: - 11 ICPs temporarily electrically connected but not made "active" resulting in the volumes being reconciled for the incorrect period. - ICP 1002108871LC5B6 made "active" to replace an incorrectly decommissioned ICP for 25 May 2019 on 4 May 2021 resulting in an estimated 1,310 kWh under submission as the volumes from May 19-February 2020 not being recoiled as they are beyond the 14-month revision cycle. - ICP 1000599753PCDB2 made "active" on 16 April 2021 was found to have an existing electrically connected meter on site and is likely to have been consuming since mid-2018 resulting in under submission. ICP 0151745161LC3F3 was incorrectly backdated to "inactive" on 15 April 2021 for 25 June 2020 due to human error and reversed to "active" during the audit resulting in the volumes for the R14 revisions for the months of July to November 2020 not being submitted. Two ICPs not "active" for the correct date as the NT request date was after the reconnection date resulting in consumption being reconciled to the incorrect period. One example of a disconnection read not being entered resulting 10kWh of under submission.	Still existing
Forward estimate process	12.12	6 Schedule 15.3	Some FE thresholds not met in some instances.	Still existing
Historical estimate reporting to RM	13.3	10 Schedule 15.3	Historic estimate thresholds were not met for some revisions.	Still existing

Subject	Section	Recommendation	Status
Management of "active" status	3.8	Reconnection readings should be entered wherever possible to ensure that consumption is apportioned to the correct period by the historic estimate process. Because GTV's historic estimate process allocates all consumption in each read-to-read period against the "active" days within the read period, it will be important to ensure that no consumption is present during read-to-read periods which are entirely inactive. If consumption does occur during an inactive period, it is likely that the status is incorrect.	Not adopted
Management of "inactive" status	3.9	Disconnection readings should be entered wherever possible to ensure that consumption is apportioned to the correct period by the historic estimate process. Because GTV's historic estimate process allocates all consumption in each read-to-read period against the "active" days within the read period, it will be important to ensure that no consumption is present during read-to-read periods which are entirely inactive. If consumption does occur during an inactive period, it is likely that the status is incorrect.	Not adopted
Interrogate meters once	6.8	Change the period of supply report to exclude HHR ICPs, ICPs where an actual read was obtained at the time of switch in or switch out and ICPs where the first reading was a "new connection" actual reading.	Adopted
NHH metering information data validation	9.5	Ensure appropriate resourcing is in place to process discrepancies and corrections.	Adopted
Electronic meter readings and estimated readings	9.6	Obtain event information description information from MEPs. Ensure all events, including tamper, are appropriately evaluated.	Not adopted

2. OPERATIONAL INFRASTRUCTURE

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

Code reference

Clause 10.6, 11.2, 15.2

Code related audit information

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

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

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

Audit observation

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

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

Audit commentary

MEEN

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. Manual updates occur when automated updates fail due to errors, or an update requires reversal or replacement of historic registry records.

Error cases are created in SAP where registry updates fail, and I saw evidence that these are investigated and resolved daily.

Changes to registry data managed by other participants, such as NSPs, price categories, loss factors, installation types, 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, such as where a new price category has not been created in SAP.

Registry data validation

Where updates are processed automatically and are successful registry and SAP data should be aligned. During the audit I found some instances where data was updated manually, where the update had been missed from either SAP or the registry, or data differed between the systems. There are some validation checks between SAP and the registry but these are largely completed as time and workloads allow. I recommend prioritising data validation to both improve submission accuracy, and decrease workloads relating to backdated corrections.

The previous three audits found that some invalid registry status and trader information updates had been processed by SAP. I found evidence of this still occurring at times, including the switch loader processes invalidly updating unmetered load details. Increased validation would help to identify and resolve these issues.

A suite of SAS queries are run to validate data:

Query	Frequency	Process
Multiplier check	Monthly	Checks that the multiplier flag and meter multiplier in SAP matches the registry. Discrepancies are investigated to confirm whether the registry or SAP is correct, and Mercury corrects their records or advises the MEP if there is an issue with the MEP's data.
ANZSIC codes	Weekly	Checks for ANZSIC codes which are inconsistent with customer information. A bulk file of corrections is prepared to update the registry and SAP. A part time staff member spends 2 to 3 hours per week on validation of ANZSIC codes.
Active ICPs with meter category 9 and no unmetered load recorded	Monthly	Checks for "active" ICPs meter category 9 and no unmetered load recorded, which are investigated to determine what action is required to arrange metering or add unmetered load.
Expired meter certifications	Weekly	Identifies any ICPs reconnected in the past month with expired meter certifications, so that the customer can be contacted to arrange recertification of the meter.

Mercury also reviews "active" ICPs with meter category 9 or blank and no unmetered load recorded on AC020 report was time allows.

Mercury stopped reviewing these queries during the audit period:

Query	Process
MEP reversals	This query was run monthly, but has not been run regularly during the audit period. Identified ICPs where an MEP has been nominated but no MEP data has been updated. If an MEP nomination is more than three months old a trader update will be processed to revert to the old MEP.
MEP nomination rejections	No longer reviewed. I found five MEP nominations were rejected during the audit period because the wrong MEP was nominated. Four were reissued when the correct MEP contacted Mercury requesting a nomination and the other was not reissued.
Unmetered load	These queries were run every two months but have not been run during the audit period. Identified discrepancies between the registry and retailer time slice table, and the registry and installation facts. This query is no longer used and MEEN relies on the AC020 trader compliance report as time and workloads allow. The AC020 report will identify inconsistencies between registry fields, but not inconsistencies between SAP and the registry.

Description	Recommendation	Audited party comment	Remedial action
Improve data validation processes	**MEEN** As a minimum I recommend: • Mercury reviews the registry AC020 audit compliance report accuracy queries and investigates and resolves data discrepancies, and • SAP data is validated against the registry at least monthly for: o unmetered load flags, daily unmetered kWh and trader unmetered load details, o all reconciliation report aggregation factors, including Network, NSP, dedicated NSP, loss factor, flow direction, and profile, and o ICP status.	With the current TRUS reporting they are monitoring these on a daily basis without utilising the AC020 report. Until we migrate into GTV we can ensure we start using the AC020 report more regularly to pick up on these data discrepancies.	Identified

Registry information accuracy

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

Issue	Nov 2022 Qty	Nov 2021 Qty	Dec 2020 Qty	2020 Qty	2019 Qty	2018 Qty	2017 Qty	Comments
Active with blank ANZSIC	2	2	2	2	2	2	2	See **section 3.6**
Active with ANZSIC "T999" not stated	0	0	0	0	0	0	2	Compliant
Active with ANZSIC "T994" don't know	2,978	1,398	249	618	269	388	1,662	See **section 3.6**
UML load = zero	28	19	6	0	6	3	3	All were DUML or residual load ICPs. See **section 2.9**.
Incorrect UML load	15	2	0	2	-	6	2	13 were corrected during the audit. See **section 3.7**
No MEP recorded or	2	70	90	55	105	2	2	No MEP nominations were raised for ICPs 0006050069RNDB1 and

Issue	Nov 2022 Qty	Nov 2021 Qty	Dec 2020 Qty	2020 Qty	2019 Qty	2018 Qty	2017 Qty	Comments
nominated and UML= "N"								0001426079UN6E1, which are active with metering category 9. See **section 3.7**
UML load removed and an MEP is nominated but is still UML in SAP	0	0	0	0	0	0	2	Compliant
Shared unmetered load incorrect	3	0	0	0	0	0	0	Three ICPs missed having shared unmetered load re-added when users processed meter changes, and were corrected during the audit. See **section 5.1**.
ICPs with different UNM load to that recorded by the Distributor	66	2	5	11	35	40	2	64 were confirmed to be correct and two were incorrect. See **section 3.7**.
ICPs with Distributor unmetered load populated but retail unmetered load is blank and UML flag =N	19	16	13	15	23	13	45	See **section 3.7**.
Incorrect profile	4,218	3,884	3,828	3,478	3,010	1	1	No ICPs with metering category 3 or higher had NHH profiles. No ICPs had the HHR submission flag without HHR or HHM profile. No ICPs had the HHR and HHM submission flag set to Y. 4,218 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

Issue	Nov 2022 Qty	Nov 2021 Qty	Dec 2020 Qty	2020 Qty	2019 Qty	2018 Qty	2017 Qty	Comments
								correctly applied in the AV080 NHH submissions for NHH ICPs with generation, but the PV1 and EG1 profiles were 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 **section 6.1**.
Incorrect statuses or status event dates	12	18	15	24	26	-	-	Ten new connections had incorrect "active" status dates. Three were corrected during the audit and seven remain incorrect. Two ICPs had incorrect "inactive" status dates and were corrected during the audit.

I found that due to some deficiencies in the data validation process, some exceptions were not identified until the audit was completed. Most of these exceptions were corrected during the audit but the following items remain incorrect:

ICP	Trader event number	Trader event input date	Issue
0000014898NT3F1	REC-29628626	7 June 2022	The trader event date was entered as 27 May 2021 but should have been 27 May 2022. The other trader event attributes were correct.

ICP	Active status event date	Correct active status event date	Comment
0000053680HRE94	3 October 2022	2 October 2022	Need assistance from the network to claim ICP from an earlier date
0000061677NTD07	9 December 2021	8 December 2021	Account set up from 9 December 2021
0077451056WACF7	22/ December 2021	21 December 2021	Data entry error
1002137904UN6F8	18 March 2021	17 March 2021	Data entry error
0000574282NRE70	16 May 2022	13 May 2022	Data entry error
1099582983CNA70	20 September 2022	5 September 2022	Data entry error

1099582303CN530	17 March 2022	9 March 2022	SAP error caused incorrect date

During the evaluation of the submission processes it was identified that ICP 0001405038UN32C was submitted as RPS for the period March to October 2022 but was showing as HHR in the registry. The aggregates file was correct, but the registry was incorrect.

Submission information accuracy

Arc Innovations meters

As recorded in previous audits, 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, Mercury may not be charged at the wholesale rate that applied during the trading period when the electricity was consumed. 502 active HHR settled category 1 and two HHR settled category 2 meters are affected. There is no way of getting more accurate information, therefore this matter is recorded as non-compliance below.

Quantification of distributed generation volumes

161 ICPs have generation capacity recorded by the distributor but no settled I flow registers are present. I checked all the affected ICPs and found energy was being exported to the grid but not gifted or quantified by a meter for five ICPs (0005003215TU75A, 0000648490HB0FD, 0879163805LC318, 0006682995RN9C7 and 0000053053HB1B5) where jobs to install EG metering were underway, and three ICPs (0385939981LC85F, 0000045433CP1F9 and 0000048274WEA62) where MEEN is working with the customer to arrange EG meter installation. A further 38 ICPs need to be investigated to determine whether generation is present and if so, arrange for compliant metering to be installed or notification of gifting to be provided. A recommendation is made in **section 6.1**.

Previous audit accuracy issues

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

- ICP 0007130338RNA72 is indicated by Orion to have wind generation, which was confirmed to be correct in their report; MEEN had confirmed that generation is present and is in the process of arranging for generation metering to be installed, and
- ICP 0004922952WE458 is confirmed not to be exporting to the grid and therefore the distributor should remove these details from the registry; the distributor still has generation details recorded on the registry.

Incorrect unmetered average daily kWh leading to incorrect submission data

Two ICPs are believed to have incorrect average daily kWh:

ICP	Daily Unmetered kWh	Unmetered Load Details - Trader	Issue
0000540450TE6E7	1.8	Trader	TOPE had advised there are two bulbs onsite estimated to be 100W

ICP	Daily Unmetered kWh	Unmetered Load Details - Trader	Issue
		0002:11.0:UVL Distributor 0002:11.0:	each, resulting in estimated daily kWh of 2.2. MEEN advised that they have not updated the value as TOPE's wattage figure is estimated.
0007301973NVCDF	2.88	Trader 0264;12.0;3 x 80W Mercury Under Veranda Lights Distributor 0264;12.0;3 x 80W Mercury Under Veranda Lights	MEEN confirmed that the three lights are 90W each. The daily unmetered kWh should be updated to 3.24, and the trader unmetered load details should be 270;12.0;3x80W Mercury UV lights.

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	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. Where the ICP is currently being settled using the HHM profile the ICP settlement methodology is changed from HHR to NHH, and this change is backdated to enable the correction of the consumption volumes to be applied as a NHH correction. I checked ten examples of suspected stopped or faulty meters to determine whether corrections had been processed. In nine cases, the correction was processed accurately, and consumption flowed through to submission files. ICP 1099569118CN9D3 has been stopped since 2019 but the correction was only conducted for the current customer, which was a five-month period back from 21 March 2022. There was at least 3,600 kWh not accounted for.
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	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. Mercury provided six examples of bridged meters which were unbridged during the audit period. Consumption during the bridged period had been estimated for all six examples and correct submission occurred.
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 118 ICPs (29,042 kWh) on the report, an increase in kWh from 270 ICPs (22,587 kWh) during

	the last audit. 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. This report only looks for consumption between actual readings held in the SAP system and assumes that there is an actual read as of the date of disconnection. As the process to remotely reconnect an ICP is manual the application of an actual read to denote the status change is also manual and in a number of cases the disconnection read is applied as an estimate and a reconnection read is not applied if there is already an estimated read present in SAP. The use of estimate reads to denote the beginning of the disconnection period means the reporting cannot detect where consumption is detected on inactive ICP's until two scheduled actual reads are recorded in SAP. For short term periods of disconnection, the absence of actual reads or permanent estimate reads within SAP means not all ICPs are being included in this report. I reviewed an extreme case sample of the 20 ICPs with the largest quantities of inactive consumption (363 to 3,463 kWh) and found that in most cases the disconnection date in the report was aligned with the inactive date in the registry. In all cases, I found that the consumption was accurate and submitted as required.
Unmetered load corrections	I checked a sample of three changes to unmetered load details and they were all conducted correctly.

TRUS

Registry Synchronisation

I observed the process to update status and trader information in the registry. Status and/or trader attributes are updated for a time slice in GTV, which specifies the date that the record applies from. The change is automatically sent from GTV to the registry.

Notifications files are imported into GTV, and action is taken as required.

Acknowledgement files are imported into GTV and reviewed for issues like rejected MEP nominations, invalid profiles, and invalid submission types using Trustpower's BI reporting. Not all registry acknowledgements are checked due to the volume of files received. The last audit noted that status updates were failing in some instances due to timing issues of event management in GTV and status discrepancies not being checked for a match rather than date accuracy. Trustpower have adopted the last audit's recommendation to compare the GTV connection date to other date fields, and the registry active status date. I did not find any evidence of incorrect active dates due to the issues identified in the last audit.

Trustpower's registry validation and management processes continue to be robust. The switching and metering teams are responsible for ensuring that data entered through their processes is accurate.

A Work-Flow Analyst is responsible for ensuring that the GTV life cycle accurately reflects what is recorded on the registry, and life cycle discrepancy reporting is used. Work queue items are actioned and monitored daily, and focus is on discrepancies in the current values rather than historic values.

A suite of daily data discrepancy reports is used to ensure information is accurate and consistent:

- all trader-maintained fields are checked against the registry,
- distributor maintained fields are held in GTV and checked against the registry, with a focus on fields used for reconciliation submission aggregation and pricing,
- ANZSIC codes are checked for consistency, missing codes, and T99 series codes,

- trader and distributor unmetered load fields in the registry and GTV are compared, and discrepancies are thoroughly investigated with assistance from the account manager and/or customer and the distributor, and
- ICPs with installation type B which do not have import/export metering and PV1 profile are investigated to confirm whether generation is present, and service orders to install import/export metering are raised as required.

Registry information accuracy

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

Issue	Nov 2022 Qty	Comments
Active with blank ANZSIC	0	Compliant
Active with ANZSIC "T999" not stated	0	Compliant
Active with ANZSIC "T994" don't know	0	Compliant
UML load = zero	0	Compliant
Incorrect UML load	6	Five ICPs have had their standard unmetered load removed in GTV but these changes haven't flowed to the registry. ICP 0000013010EA66D has unmetered load recorded but no unmetered load details recorded by Trustpower or the Network. This has been confirmed to have been physically removed in 2017. This is being corrected.
No MEP recorded or nominated and UML= "N"	67	All were timing differences or had an accepted MEP nomination. See **section 2.9**.
Shared unmetered load incorrect	10	All ten ICPs no longer have any shared unmetered load associated but these changes haven't flowed from GTV to the registry.
ICPs with different UNM load to that recorded by the Distributor	2	ICP 1000595713PC497 has the correct UNM load value recorded in GTV but these changes haven't flowed to the registry. ICP 0000400354WA934 had a backdated change to the unmetered load value in the registry. The kWh figure is correct in GTV but this hasn't flowed to the registry.
ICPs with distributor unmetered load populated but retail unmetered load is blank and UML flag =N	4	The Networks have since removed the unmetered load from the registry for two ICPs confirming Trustpower is correct. Two ICPs have shared unmetered load associated in GTV but this hasn't flowed to the registry. As these ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission.

Issue	Nov 2022 Qty	Comments
Incorrect profile	0	Compliant
Incorrect statuses or status event dates	13	11 incorrect first active dates of the 41 ICPs sampled. These have all been corrected. See **section 3.8**. Two incorrect "inactive" status events applied. Neither had any material impact on submission. See **section 3.9**.

Data discrepancies identified during the previous audit were re-checked and confirmed to be resolved except for ICP 0000702000MP807. This was electrically connected on 23 April 2021, but the meter was not installed until 4 May 2021. The period intervening should have been recorded as an unmetered supply, but this was not corrected post the last audit and this is now outside of the 14-month revision process. This is recorded as non-compliance below.

Submission information accuracy

NHH corrections

Read and volume accuracy issues are identified through Trustpower's validation processes, which are described in detail in **sections 9.5** and **9.6**.

Changes to consumption information can occur if changes have been made to billing information. In these situations, Trustpower adopts a "reverse and rebill" process to correct billing and therefore consumption information. This process was examined and as long as the "reverse and rebill" process is used, consumption information for prior consumption periods is included in the revision process and provided to the reconciliation manager. In situations where consumption will not be billed to a consumer, GTV has a field for "adjustment consumption" (ADJ). The correct consumption is calculated and recorded on a "Revenue Assurance Case Summary" worksheet, then entered into the ADJ field, where it automatically flows through to submission and revision files.

Trustpower have added an additional peer review of all corrections before they are released. All corrections were conducted accurately, and the consumption information was correctly recorded in the relevant revision files for of the examples checked.

If the period of the correction is longer than 14 months, an adjustment is made to the period to ensure all consumption is apportioned to the 14-month period.

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

Defective meters	TRUS provided ten examples of stopped or faulty meters, which were identified by the billing team, reconciliation team, meter reader or customer, or on meter replacement. All corrections were processed correctly. Where reads were available, they were used. Where consumption was missing, it was calculated either using consumption from the replaced meter or consumption on the meter prior to it becoming faulty. The volume was applied across the correct period in all instances, and this flowed through to submission files. I checked the meter condition reports from MRS and checked a sample of 11 ICPs where MRS had reported potentially defective meters across six different meter condition codes to confirm what actions were undertaken. In all cases the meter condition was reviewed by Trustpower and follow up actions were undertaken where required.
Incorrect multipliers	Multiplier corrections are processed by reversing invoices for the affected period up to 14 months, correcting the master data and then re-invoicing. Where the affected period extends

	back more than 14 months then an adjustment (ADJ) is applied to ensure the overall volume is accounted for within the available 14-month window. No examples relevant to this audit period were identified.
Bridged meters	Discrepancy reporting is in place to monitor any status mismatches between GTV and the registry. These are managed on a daily basis. Trustpower has a robust methodology to identify and resolve bridged meters. Reporting is in place for ICPs switched in with AMI meters and zero consumption, plus there is monitoring for the word "bridged" in the daily reconnection reports. A list of 58 bridged meters was provided. A sample of 13 bridged meters were reviewed and the MEP was notified in all instances and for ten ICPs the meter was unbridged and recertified. Three ICPs switched away before the meter was unbridged and Trustpower notified the gaining trader of the meter bridge once the switch was completed. Corrections were also reviewed for the sample of 13 and found: • corrections were applied for eight ICPs using an appropriate daily average consumption and using the adjustment (ADJ) process with GTV, all corrections were for less than 14 months so no apportionment was required to ensure all volume was recorded within the available revision window, • for ICPs 0000420763WEEE7 and 1002106746LC84B both required meter replacements to resolve the meter bridge and the removed meter read was estimated to include a volume correction for the bridged period, • ICP 0435675230LC66D was bridged as part of the switch gain process on 28 March 2022 and the customer moved out on 5 May 2022 before the ICP was disconnected again on 25 May 2022 and switched away on 30 May 2022; no correction was applied for any of the period Trustpower was recorded as trader for this ICP, • ICP 0043223686PCC51 was bridged on 29 June 2022 as part of the switch move gain process with a transfer date of 30 June 2022; the ICP switched away on 8 July 2022 and no correction was applied for this period, and • ICP 0000196942UN3A7 was bridged on 15 January 2022 as part of the switch move gain process with a transfer date of 13 January 2022, then the ICP switched away on 28 January 2022; but as the AMI meter was also non communicating for this period an estimate transfer read was provided which also doubled as a volume correction for the bridged period - the use of estimated switch reads as the vehicle for bridged meter volume corrections does not ensure that the volume correction remains a permanent correction for submission purposes as the gaining trader can dispute this read via the read amendment (RR) process which would result in the undoing of this volume correction. A recommendation is recorded in **section 2.17** for Trustpower to ensure that all volume corrections for bridged meters up to a switch date are applied using the adjustment (ADJ) process.
Consumption while inactive	Inactive ICPs with consumption are identified through the NHH read validation process discussed in **section 9.5**. Trustpower provided a list of 272 ICPs with "inactive" status and consumption after the final reading on the customer's account. 44 had consumption of less than 1 kWh and seven recorded negative consumption. A sample of 20 with the largest inactive consumption recorded were reviewed and the following was found: • ten have been resolved by either updating the status event to "active" status just prior to the detection of the inactive consumption or reversing the "inactive" status event, • one ICP (1002069373LC1A9) detected consumption for the day prior to a switch loss and no follow up with the gaining trader to determine verify if the correct transfer date was requested or no update of the registry status has been applied,

<table>
<tr><td></td><td>

one ICP (0005791707RN508) was resolved by reversing the “inactive” status back more than 14 months resulting in 27 kwh of inactive consumption not being included in the submission process through the 14-month revision window, and
ICP 0000865145NV098 was severely damaged by fire on 20 September 2022 so a removed read was estimated up to the date of the fire damage, however the “inactive” status event date on the registry is one month earlier (20 August 2022) with an update date of 20 September 2022.

Seven ICPs remain unresolved where the ICPs remain with an “inactive” status on the registry and consumption is still being recorded by the meters but not included in the submission process with an impact of 6,078 kwh.
</td></tr>
<tr><td>Unmetered load corrections</td><td>
I checked a sample of three TRUS ICPs where the daily unmetered kWh changed on the registry.

In all three cases GTV was selecting the first (initial) daily kWh value recorded to calculate the unmetered load volume for submission purposes rather than the latest daily kWh value recorded. The table below identifies the volume impact for the December 2022 consumption period.
<table>
<tr><th>ICP</th><th>December 2022 UNM submission</th><th>Dec kWh manual calc</th><th>Difference</th></tr>
<tr><td>1000595713PC497</td><td>0.93</td><td>94.86</td><td>93.93</td></tr>
<tr><td>0000542701TUA4C</td><td>26.66</td><td>85.56</td><td>58.9</td></tr>
<tr><td>0000400354WA934</td><td>77.5</td><td>102.672</td><td>25.172</td></tr>
</table>
</td></tr>
<tr><td>Unmetered load correctly recorded</td><td>Two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission.</td></tr>
<tr><td>Active date discrepancies</td><td>As recorded in section 3.5, ICP 0000574440NRF1C was electrically connected on 15 July 2022 but the contractor installed an NGCM meter instead of a MTRX meter. NGCM refused to load the meter to the registry as this was not hung under their test house. Metering is loaded to Gentrack from the registry so as the meter was never loaded to the registry the first active date was the MTRX meter on 19 August 2022. The volume for the period from 15 July 2022 to 18 August 2022 has not been reconciled and is recorded as non-compliance below and in sections 3.5, 3.8 and 12.7.</td></tr>
</table>

Quantification of distributed generation volumes

The meter configuration for ICP 0000901755WW6EB was reviewed as I flow volumes were being reported in submission information for periods prior to the profile reflecting that distributed generation is present and also that metering was recorded as having an I flow register configured. Trustpower identified that the IHUB meter was installed in March 2021 as part of a new connection with an I flow register as part of the meter configuration. However, this generation register had the settlement indicator flag set to N. This meter was set up in Trustpower’s systems as having both import and export registers available for submission in error. IHUB does not provide meter reads for registers not flagged for inclusion in the settlement process, so Trustpower did not receive reads for the I flow register until IHUB updated the settlement indication flag on 12 February 2022. Once Trustpower received the first scheduled meter read for this I flow register, the submission process apportioned the volume back to the initial installation read resulting in some generation volumes being recorded for periods where generation is not present for this ICP. Non-compliance is recorded here and in **sections 6.1** and **12.7.**

Switch read application

One example of an estimated CS read not being used was identified in **section 4.4**. The ICP switched away from Trustpower on read 33475 on 16 August 2022. It then switched back to Trustpower on 30 August 2022 with an estimated read of 33713 but Trustpower used the loss read of 33475 as their start

read resulting in 238 kWh of over submission for the incorrect period. An RR should have been issued if the CS read was not accepted.

One example of a read request for ICP 1000604052PCFA5 that was accepted for a 1 kWh change, but the read was not applied in GTV. This is recorded as non-compliance below and in **sections 4.4** and **12.7.**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 10.6,11.2 & 15.2	**MEEN** Some registry discrepancies resulting in submission inaccuracies. Arc provides interval data to one decimal place, which is not considered to be sufficiently accurate. At least eight ICPs have solar generation but submission is not occurring, and notification of gifting has not been provided. ICPs 0000540450TE6E7 and 0007301973NVCDF are believed to have incorrect average daily kWh recorded resulting in a small amount of under submission (0.76 W or 3.2 kWh per annum). Generation interval data for Maraetai increments in units of 10 kWh with zero decimal places. ICP 1099569118CN9D3 has been stopped since 2019, but the correction was only conducted for the current customer, which was a five-month period back from 21 March 2022. There was at least 3,600 kWh not accounted for. **TRUS** Some registry discrepancies resulting in submission inaccuracies. ICP 0000702000MP807 unmetered load details corrected post the last audit and this is now outside the 14-month revision cycle. Unmetered load details incorrect on the registry and two examples were found where the UNM flag was incorrect and therefore the unmetered load has not been submitted resulting in a very minor under submission. Some incorrect active dates. Two examples where switch reads were not applied resulting in 237 kWh of over submission for the incorrect period. Bridged meter corrections not applied for two of a sample of 13 ICPs. Two ICPs from a sample of 20 with inactive consumption where the actions taken did not ensure all consumption was accounted for resulting in 27 kWh of volume not being submitted. Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process. A sample of three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission, resulting in 2,095 kWh under submission per annum.

From: 01-Jan-22 To: 07-Dec-22	ICP 0000901755WW6EB had generation kWh apportioned to a period where generation was not present. Potential impact: Medium Actual impact: Medium Audit history: Multiple Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are rated as moderate as they will mitigate risk most of the time, but there is room for improvement around timeliness of corrections and also identification of where a correction is required to be applied and ensuring the correction is applied within the 14-month revision window. The audit risk rating is assessed to be medium when considering the accumulative impact on settlement.

Actions taken to resolve the issue	Completion date	Remedial action status

MEEN		Identified
Some registry discrepancies resulting in submission inaccuracies. Specific comments are included in the relevant sections of this report.	N/A	
Arc provides interval data to one decimal place, which is not considered to be sufficiently accurate. ARC meters were only designed to record the interval data to one decimal place. The EA has granted an exemption to the MEP but this does not extend to traders. In May 2022 Vector Metering advised that they are actively replacing all of the ARCS meters and have to date replaced more than 60% of the ARCS meters Mercury were trading on with the remainder to be replaced over the next 12 months.	Ongoing	
At least eight ICPs have solar generation but submission is not occurring, and notification of gifting has not been provided. Keep a record of any ICPs that have suspected solar, either due to reverse power being reported from the MEP or the installation type changing to B. Arrange contact with customer to confirm solar and get IMP/EXP meter installed.	May 2023	
ICPs 0000540450TE6E7 and 0007301973NVCDF are believed to have incorrect average daily kWh recorded resulting in a small amount of under submission (0.76 W or 3.2 kWh per annum). 0000540450TE6E7 - site visit was completed in 2022 to confirm the correct unmetered supply, SAP and registry updated to reflect this. 0007301973NVCDF - arranged contact with customer to confirm unmetered load.	May 2023	
Generation interval data for Maraetai increments in units of 10 kWh with zero decimal places. We will investigate the data consistency with the meter provider and request the necessary amendments.	Ongoing	
ICP 1099569118CN9D3 has been stopped since 2019, but the correction was only conducted for the current customer, which was a five-month period back from 21 March 2022. There was at least 3,600 kWh not accounted for. Investigated and determined this should have been taken from 2019 when the meter was faulty and not current customers timeframe of 21 March 2022.	May 2023	
TRUS		
Some registry discrepancies resulting in submission inaccuracies. Specific comments are included in the relevant sections of this report.	N/A	
ICP 0000702000MP807 unmetered load details corrected post the last audit and this is now outside the 14-month revision cycle. We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	June 2023	
	June 2023	

Unmetered load details incorrect on the registry and two examples were found where the UNM flag was incorrect and therefore the unmetered load has not been submitted resulting in a very minor under submission. We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	Ongoing	
Some incorrect active dates. TRUS has updated the CO status of ICP# 0000574440NRF1C to reflect the IED date and installation of NGCM metering on the 15/07/2022. TRUS continues to work with the livening agent and MEPs to have this metering loaded on the to registry.	May 2023	
Two examples where switch reads were not applied resulting in 237 kWh of over submission for the incorrect period. Agent was advised of issue and given retraining.	Jun 2023	
Bridged meter corrections not applied for two of a sample of 13 ICPs. We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	June 2023	
Two ICPs from a sample of 20 with inactive consumption where the actions taken did not ensure all consumption was accounted for resulting in 27 kWh of volume not being submitted. We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	June 2023	
Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process. We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	June 2023	
A sample of three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission, resulting in 2,095 kWh under submission per annum. We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	May 2023	
ICP 0000901755WW6EB had generation kWh apportioned to a period where generation was not present. This has been corrected. ICP had invoices reversed so an install read and install date could be correctly updated. ICP has been correctly rebilled.		
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN		
Some registry discrepancies resulting in submission inaccuracies. N/A	N/A	
Arc provides interval data to one decimal place, which is not considered to be sufficiently accurate. N/A	N/A	
At least eight ICPs have solar generation but submission is not occurring, and notification of gifting has not been provided. Monitor this report more regularly and work with the MEPs and networks to support getting a resolution for some of the older cases I am struggling to get resolved.	Ongoing	
ICPs 0000540450TE6E7 and 0007301973NVCDF are believed to have incorrect average daily kWh recorded resulting in a small amount of under submission (0.76 W or 3.2 kWh per annum). Restart the unmetered report to find discrepancies, this report was previously stopped when we started utilising the AC Report directly from the registry, but discovered it didn't identify this discrepancy.	May 2023	
Generation interval data for Maraetai increments in units of 10 kWh with zero decimal places. N/A	N/A	
ICP 1099569118CN9D3 has been stopped since 2019, but the correction was only conducted for the current customer, which was a five-month period back from 21 March 2022. There was at least 3,600 kWh not accounted for. Have updated training material to clearly outline that correction should applied from the time the meter was faulty. Reminder provided to all staff.	May 2023	
TRUS		
Some registry discrepancies resulting in submission inaccuracies. N/A	N/A	
ICP 0000702000MP807 unmetered load details corrected post the last audit and this is now outside the 14-month revision cycle. Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	June 2023	
Unmetered load details incorrect on the registry and two examples were found where the UNM flag was incorrect and therefore the unmetered load has not been submitted resulting in a very minor under submission. Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	June 2023	
Some incorrect active dates. TRUS continues to utilise exception reporting to identify and resolve any discrepancies that occur between GTV and the registry. Additional reporting has been implemented between Audits that will further reduce any discrepancies in dates between the registry and GTV.	Ongoing	

Two examples where switch reads were not applied resulting in 237 kWh of over submission for the incorrect period. Training within the team to ensure everyone knows how to correctly process RR.	May 2023	
Bridged meter corrections not applied for two of a sample of 13 ICPs. Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	June 2023	
Two ICPs from a sample of 20 with inactive consumption where the actions taken did not ensure all consumption was accounted for resulting in 27 kWh of volume not being submitted. Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	June 2023	
Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process. Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	June 2023	
A sample of three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission, resulting in 2,095 kWh under submission per annum. Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	June 2023	
ICP 0000901755WW6EB had generation kWh apportioned to a period where generation was not present. A review of all TRUS ICPs with EG found this is the only instance of this occuring. Updating of billable flags is usually done automatically through metering validations but this was adjusted manually causing the error. Additional training has been completed to minimise this but as it was the only instance we believe current controls minimise risk of this occurring.	May 2023	

2.2. Provision of information (Clause 15.35)

Code reference

Clause 15.35

Code related audit information

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

Audit observation

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

Audit commentary

This area is discussed in a number of sections in this report and compliance is confirmed with regard to timeliness and format of information in accordance with Part 15.

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

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

- Mercury received NHH readings from MRS (AD Reilly), and from MEPs,
- Mercury received HHR data from AMS and EDMI, and
- Generation data is received via SFTP, and automatically imported into SAP.

To confirm the process, I traced:

- HHR volumes for three NSPs from the source files to the HHR aggregated submission to confirm the process, and
- generation HHR volumes for two grid metering points.

Audit commentary

MEEN

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.

MRS provide a daily file for all reads obtained the previous day via FTP. MRS 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 MRS from the source files to SAP. All readings matched.

HHR

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

MRPL Generation

Generation station data is received via SFTP from AMS, and automatically imported into SAP. Generation station information was checked by comparing the data imported into SAP against check meter information provided. It was observed that the interval data for Maraetai Power Station was in increments of 10 kWhs indicating a potential precision issue in the process of downloaded these meters and a recommendation to investigate the level of precision of grid generation bus meters is described in **section 12.7.**

TRUS

NHH

NHH meter readings are transmitted by SFTP from Influx and MRS. Influx is only providing NHH meter readings for some substations belonging to The Lines Company where H&S requirements prevent MRS from attending these sites. Some substation meter readings are provided by Powerco and these are sent in pdf format with photos.

AMI data and reads from agents are stored in a separate database with appropriate controls in place. Two days after a scheduled read is due a web process is run. This retrieves the relevant read from the database and these are then loaded into GTV and are treated as any other manual reads.

Audit outcome

Compliant

2.4. Audit trails (Clause 21 Schedule 15.2)

Code reference

Clause 21 Schedule 15.2

Code related audit information

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

The audit trail must include details of information:

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

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

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

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

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

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

Audit observation

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

Audit commentary

MEEN and MRPL

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. However, after six months all reads held within the SAS system are available for historic estimation (HE) calculation meaning all estimate and customer reads are now considered permanent estimates. This change in the treatment of these reads is not reflected in SAP and I could not see an appropriate audit trail held in the SAS system that reflects this change for each reading not confirmed as a validated actual meter reading.

TRUS

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

Agents

The agent audit reports record compliance with this clause.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.4 With: Clause 21 Schedule 15.2 From: 01-Jan-22 To: 31-Dec-22	**MEEN** Audit trail not kept where SAP estimates and customer reads are made permanent estimates. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong as the audit trails around data gathering, validation and processing functions in SAP as excellent. The non-compliance is around the mass treatment of estimates and customer reads after six months in the SAS system. The audit risk rating is assessed to be low as the impact on market settlement is low.

Actions taken to resolve the issue	Completion date	Remedial action status
We will be reviewing our process on permanent estimates and our treatment of customer and estimated reads, however currently improvement process postponed till further integration with TRUS.	Late 2022/ early 2023	Identified

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

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

Code reference

Clause 10.4

Code related audit information

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

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

Audit observation

I reviewed the current terms and conditions to determine compliance.

Audit commentary

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

Audit commentary

MEEN

MEEN's contract with their customers includes consent to access for authorised parties for the duration of the contract.

MEEN assists other parties to gain access to their customers' metering installations where requested by determining why access has been refused and contacting the customer to arrange access. I reviewed three examples where the MEP had been unable to obtain access due to customer refusal, access being blocked, or invalid customer details and confirmed MEEN used their best endeavours to arrange access.

TRUS

Trustpower's contract with their customers includes consent to access for authorised parties for the duration of the contract.

Trustpower assists other parties to gain access to their customers' metering installations where requested. This process may involve investigation to determine why access has been refused and contacting the customer to arrange access to be provided.

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

MEEN

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

TRUS

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 the current terms and conditions to determine compliance.

Audit commentary

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

Audit outcome

Compliant

2.9. Connection of an ICP (Clause 10.32)

Code reference

Clause 10.32

Code related audit information

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

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

Audit observation

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

Audit commentary

MEEN

New connections

For new connections on the Vector and Powerco network, the customer or customer's agent applies to the network for a new connection and the network contacts Mercury for approval. For other networks, the customer applies directly to Mercury, who requests a new connection from the network.

Once the ICP is ready, Mercury raises a job for meter installation and connection.

- Jobs for AMS and Intellihub are raised using the B2B tool, which automatically sets up the ICP in SAP, claims the ICP at "inactive - new connection in progress" status, and nominates the MEP at the time the job is issued. Mercury estimates that 99% of new connections use the B2B process.
- Jobs for other MEPs including Counties Power and Influx are issued from SAP. The ICP and MEP information must be manually entered into SAP, and then a trader update including MEP nomination and status update to "inactive - new connection in progress" will be sent to the registry.

Up to November 2021, SAP allowed connection jobs to be issued for ICPs currently at "new" status. When the connection was complete, SAP automatically updated the status to "inactive - new connection in progress" instead of "active". Now, SAP only allows connection jobs to be issued where the ICP is already at "inactive - new connection in progress" and moves the ICP to "active" once connection paperwork is received. During the last audit there were 393 late updates to "inactive - new connection in progress" status because of this issue, and this audit there were 12 late updates.

Open jobs are monitored for Intellihub and AMS, who complete most of the new connections. They provide weekly service level reports giving a reason if a job completion date needs to be extended, which is uploaded into SAP. Mercury is working closely with their account manager at Intellihub to improve the timeliness of work completion. A small number of new connections (around 1%) are completed by other MEPs and these are not actively monitored due to workloads.

Once connection paperwork is received, the status is updated to active.

- For AMS and Intellihub paperwork is returned via the B2B system, which installs the meter in SAP and moves the ICP to "active" status. The B2B team then checks that the installed details are correct and adds customer information.
- For other MEPs paperwork is received by email and manually attached to the job in SAP. All meter, status and customer information is added manually in SAP.

HHR new connections are initiated by the commercial operations team and monitored using the WIP spreadsheet, and by the customer's account manager. HHR new connections do not use the B2B process and are updated manually, with the MEP nominated at the time a job is issued. A WIP spreadsheet tracks progress with HHR new connections.

Active ICPs without metering or unmetered load recorded

The design of the new connections process does not allow ICPs to be connected without authorisation by Mercury, or an arrangement with an MEP if the ICP is to be metered.

The audit compliance report recorded 62 active ICPs where the metering category was 9 or blank, and the unmetered flag was set to no:

Comment	Count
The ICP became inactive, became decommissioned, had metering added, or unmetered load added after the report was run.	52
MEP nomination accepted and asset meter data is to be populated.	7
DUML ICP 0000043663HR00F has its UNM flag set to N but should have its UNM flag set to Y.	1
No MEP nominations were raised for ICPs 0006050069RNDB1 and 0001426079UN6E1, which are active with metering category 9.	2
Total	62

The audit compliance report identified 18 new connections where an MEP nomination was not accepted within 14 business days. 17 new connections were for unmetered load, and 1100000219WM256 was a backdated new connection with an FCLM meter where the MEP nomination was not processed at the time that the field services job was raised. There is no B2B arrangement in place with FCLM and the process is completed manually.

TRUS

Trustpower's new connection application process varies by distributor. In most cases, the customer or the customer's agent requests a new connection from Trustpower, who then request a new ICP from the distributor. For some distributors, the customer or their agent requests the new connection directly from the distributor or their approved contractor, and the distributor advises Trustpower that a new ICP is to be created. Trustpower have a blanket acceptance with some networks and responds to any acceptance requests as received.

Once the distributor has provided an ICP it is entered into GTV and assigned to the customer. An automated process retrieves the registry information for the new ICP using an event detail report and creates a system work action for the ICP to be claimed at 1,12 "inactive - new connection in progress" status and an MEP nomination is sent at the same time.

GTV and Jobtrack are used to manage new connections. Jobtrack is a custom web-based system built by Trustpower which is used to dispatch field services jobs. Field service orders are raised in GTV and transferred to Jobtrack. A few contractors input field results directly into Jobtrack, and others provide paperwork via email which is manually entered into Jobtrack. Work orders remain open until completion paperwork is received. Open jobs are tracked using the Jobtrack operational reporting and followed up if paperwork is not received. Job closure information is transferred from Jobtrack to GTV, and then the status update is automatically transferred from GTV to the registry. As discussed in **section 3.8**, Jobtrack is going to be replaced at some point, but this has been delayed due to the changes

currently underway. I recommend that when this project gets underway that the new connection process is reviewed to streamline information flow from the contractor into GTV.

Description	Recommendation	Audited party comment	Remedial action
New connections	Review the new connections process when Jobtrack is replaced, to ensure the streamlining of information from contractors into GTV.	Jobtrack replacement currently delayed due to integration project. When Jobtrack replacement project is reprioritised all field works area's (including New Connections) will be analysed to ensure we are putting any new systems to best use.	Investigating

If an MEP provides meter certification or a distributor updates meter certification details prior to Trustpower receiving connection paperwork, the daily new connections automation process will update the affected ICPs to "active" status based on the initial electrical connection date and meter certification date, in an effort to ensure that the registry is updated within five business days. Once connection paperwork is received, corrections to the "active" status date are carried out as required.

TRUS does not undertake HHR new connections and are not expected to in the near future.

Daily discrepancy reporting is in place to detect status mismatch between GTV and the registry for both NHH and HHR new connections, including:

- **Current status mismatch,**
- **New connections connected and no metering** shows ICPs which have been connected, and do not have metering recorded in the registry and/or GTV within ten business days, and within 20 business days; staff follow up the late metering paperwork with the MEP, and
- **CO date mismatch** shows differences between GTV's connection date and the initial electrical connection date, which are investigated and resolved.

Active ICPs without metering or unmetered load recorded

The design of the new connections process does not allow ICPs to be connected without authorisation by Trustpower, or an arrangement with an MEP when the ICP is to be metered. TRUS replies on the network to advise when unmetered new connections are livened. Examination of the new connections found five unmetered new connections that were backdated an average of 372 days, as detailed in **section 3.9**; all of these related to streetlighting or Chorus cabinets which have subsequently switched away to Manawa Energy. Whilst TRUS does not intend to undertake unmetered new connections with the MEEN code being moved to GTV I recommend that this process is reviewed.

Description	Recommendation	Audited party comment	Remedial action
Unmetered new connections	Review process for unmetered new connections for when the MEEN code is managed in GTV.	Current TRUS policy of no unmetered New Connections will be adopted post integration of participant codes.	Identified

The audit compliance report recorded 67 active ICPs where the metering category was 9 or blank, and the unmetered flag was set to no:

Comment	Count
The ICP had metering installed after the report was run.	66
MEP nomination accepted and asset meter data is to be populated.	1
Total	67

The AC020 report did not record any ICPs where the MEP had been nominated but no response had been received within 14 days of the nomination.

Audit outcome

Compliant

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

Code reference

Clause 10.33(1)

Code related audit information

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

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

Audit observation

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

Audit commentary

MEEN

If a temporary electrical connection is required, Mercury will ensure that the ICP is claimed so that they are recorded as responsible for the ICP in the registry.

Mercury was not aware of any new connections which were temporarily electrically connected during the audit period, and none were identified.

TRUS

TRUS claims ICPs at 1,12 “inactive - new connection in progress” status which helps to ensure that the trader is recorded on the registry if an ICP is temporarily electrically connected.

TRUS has improved the process to manage temporarily electrically connected ICPs post the last audit. Any ICPs electrically connected with a meter certification date earlier than the first active date are investigated and if confirmed to be electrically connected the dates are amended to reflect the one day of electrical connection.

Audit outcome

Compliant

2.11. Electrical Connection of Point of Connection (Clause 10.33A)

Code reference

Clause 10.33A(1)

Code related audit information

A reconciliation participant may electrically connect or authorise the electrical connection of a point of connection only if:

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

Audit observation

The new connection process was examined in detail to evaluate the strength of controls. The AC020 report was examined to confirm process compliance and that controls are functioning as expected.

Audit commentary

MEEN

Active ICPs without metering or unmetered load recorded

The design of the new connections process does not allow ICPs to be connected without authorisation by Mercury, or an arrangement with an MEP if the ICP is to be metered.

The audit compliance report recorded 62 active ICPs where the metering category was 9 or blank, and the unmetered flag was set to no:

Comment	Count
The ICP became inactive, became decommissioned, had metering added, or unmetered load added after the report was run.	52
MEP nomination accepted and asset meter data is to be populated.	7
DUML ICP 0000043663HR00F has its UNM flag set to N but should have its UNM flag set to Y.	1
No MEP nominations were raised for ICPs 0006050069RNDB1 and 0001426079UN6E1, which are active with metering category 9.	2
Total	62

New Connections

The new connection process has been automated using the B2B tool during the audit period. When the AFS job is created the master data process claims the ICP in the registry and moves it to the "inactive - new connection in progress" status. When the job is issued to the contractor the MEP nomination is sent.

Analysis of AC020 trader compliance report found 71 new connections were not certified within five business days of electrical connection. 18 had unmetered builders' temporary supplies prior to being metered, and three had permanent unmetered load and did not require meter certification.

50 ICPs had no meter or late meter certification populated at the time the report was run. A typical sample of 20 of these were examined and found:

- 14 were certified on time but the registry was updated late by the MEP,
- two had unmetered BTS installed; the meter was certified when the ICP became permanent, and
- four certifications were genuinely late and three of those were for TOU ICPs.

Reconnected ICPs

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.

Metering installations at 135 metered ICPs were not certified within five business days of reconnection. A typical sample of 20 ICPs with expired meter certification were examined and found:

- 12 ICPs were not included on the weekly report of reconnected ICPs without certification because they were made "active" during switch in, or SAP updated the ICP to "active" status as part of the inactive consumption process, or the reconnection occurred during a SAP outage,
- four ICPs had jobs raised to recertify the meters but there were delays in the MEP completing the certification; two of the ICPs switched out before the recertifications could be completed,
- multiple attempts were made to arrange recertification with the customer for two ICPs; one of the ICPs later switched out before certification could be arranged,
- one ICP had its meter replaced before it was recertified, and
- one ICP switched out soon after being reconnected, before it was recertified.

Bridged meters

Mercury confirmed six ICPs were bridged to reconnect during the audit period and were later unbridged. All the meters were certified on un-bridging.

TRUS

Active ICPs without metering or unmetered load recorded

The design of the new connections process does not allow ICPs to be connected without authorisation by Trustpower, or an arrangement with an MEP if the ICP is to be metered.

The audit compliance report recorded 67 active ICPs where the metering category was 9 or blank, and the unmetered flag was set to no:

Comment	Count
The ICP had metering installed after the report was run.	66
MEP nomination accepted and asset meter data is to be populated.	1
Total	67

New Connections

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

Analysis of AC020 trader compliance report found 88 new connections were not certified within five business days of electrical connection. One had an unmetered builders' temporary supply prior to being metered, and ten had permanent unmetered load and did not require meter certification.

77 ICPs had no meter or late meter certification populated at the time the report was run. A typical sample of 20 of these were examined and found:

- 19 were certified from the "active" date but the metering was loaded to the registry late, and
- ICP 0110013358EL533 was certified late by the MEP.

No ICPS were found with meter certifications earlier than the first active date due to the temporary electrical connection to certify the meters. TRUS investigate all ICPs with meters certified earlier than the first active date and if found to be temporarily electrically connected, correct the status for the one active day and then make them inactive until electrically connected.

Reconnections

TRUS use a daily discrepancy report to identify ICPs which are reconnected without full meter certification. The report is reviewed, and the MEP is emailed using an email template to advise that connection has occurred at an ICP with expired metering certification.

Metering installations at 121 metered ICPs were not certified within five business days of reconnection. A typical sample of 20 ICPs with expired meter certification were examined and found:

- an email notification was sent to the MEP for 12 ICPs,
- four were returned to active due to Revenue Assurance identifying consumption on a self-reconnected site so were not reconnected by TRUS,
- ICP 0047039972LC6A3 was recertified on the day of reconnection and was included in the report incorrectly,
- ICP 0000018315NT16E was reconnected by the network and not TRUS so didn't appear on the report to be notified to the MEP,
- ICP 0000146978TR047 requested for 14 June 2022 and reconnected 14 June 2023 but losing trader sent as of 15 June 2023 and active date was manually loaded to the registry and therefore did not appear on the report, so this wasn't notified to the MEP, and
- ICP 0000037909TR62A was closed out incorrectly so the MEP notification was missed being sent.

The two reconnections with no notification to the MEP of expired metering are recorded as non-compliance. These are exceptions and the reporting is identifying when notifications to the MEP in the majority of instances. The code requires that the trader have certified metering in place within five business days of reconnection so the 120 ICPs not certified within five business days are recorded as non-compliance below.

Meter recertification for bridged meters

Trustpower no longer use the daily discrepancy report to identify ICPs which are unbridged without the meter being recertified. All reconnections are reviewed daily to identify any bridged meters. The volume of these has increased since the code changed to allow this. This has caused a resource constraint and it is taking longer to get meters unbridged. The ICP is estimated during the bridged period and a correction is made once the meter is unbridged. This is discussed in **section 2.1**.

Trustpower provided details of 58 bridged meters during the audit period. 51 were unbridged during the audit period and 46 of those were certified on unbridging. Five switched away before they were unbridged as detailed below:

ICP	Bridge Start	Bridge Stop	Findings
0000027169WE7AF	24 March 22	Switched away	Wasn't unbridged by TRUS before this ICP switched to MEEN on 2 May 2022
0154081515LC8CC	11 May 22	Switched away	Wasn't unbridged by TRUS before this ICP switched to GEOL on 9 July 2022
0000196942UN3A7	15 January 2022	Switched away	Wasn't unbridged by TRUS before this ICP switched to CTCT on 28/1/2022
0435675230LC66D	28 March 2022	Switched away	Wasn't unbridged by TRUS before this ICP switched to CTCT on 1 June 2022
0043223686PCC51	29 June 2022	Switched away	Wasn't unbridged by TRUS before this ICP switched to GENE on 7 October 2022

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.11 With: 10.33A From: 01-Jan-22 To: 17-Nov-22	**MEEN** No MEP nominations were raised for ICPs 0006050069RNDB1 and 0001426079UN6E1, which are active with metering category 9. Four metered new connections had late meter certification of a sample of 20 ICPs checked (from a potential population of 50 ICPs). 20 reconnections of metered ICPs of a sample of 20 ICPs had late meter certification (from a potential population of 135 ICPs). **TRUS** 20 reconnections of metered ICPs of a sample of 20 ICPs had late meter certification (from a potential population of 121 ICPs). One metered newly connected ICP (0110013358EL533) was not certified within five business days of becoming active. 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 the reporting in place will mitigate risk to an acceptable level but there is a resource constraint that prevents the controls being rated as strong. The audit risk rating is low as volume of ICPs affected is small overall.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
MEEN		Identified
No MEP nominations were raised for ICPs 0006050069RNDB1 and 0001426079UN6E1, which are active with metering category 9. This has been corrected.	May 2023	
Four metered new connections had late meter certification of a sample of 20 ICPs checked (from a potential population of 50 ICPs). We are actively working with the MEP and network to correct these ICPs statues	Ongoing	
20 reconnections of metered ICPs of a sample of 20 ICPs had late meter certification (from a potential population of 135 ICPs). We have ensured that a job has been raised for al these ICPs with the MEPs.	May 2023	
TRUS		
20 reconnections of metered ICPs of a sample of 20 ICPs had late meter certification (from a potential population of 121 ICPs). Current reporting identifies ICPs that have been reconnected without current certification. In almost all instances the MEP is notified of a reconnection on an uncertified site via email. In most cases MEPs do not recertify within 5 business days.	May 2023	
One metered newly connected ICP (0110013358EL533) was not certified within five business days of becoming active. ICP was identified through current mismatch reporting in the New Connection space that looks at discrepancies between initial connection date, IED and meter cert dates. MEP confirmed ICP was certified late, TRUS unable to do anything to resolve the instance of this issue.	May 2023	
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN **No MEP nominations were raised for ICPs 0006050069RNDB1 and 0001426079UN6E1, which are active with metering category 9.** Training with team around Metering changes, and our responsibility to nominate participants. **Four metered new connections had late meter certification of a sample of 20 ICPs checked (from a potential population of 50 ICPs).** We identified this was some issues with our B2B system which was resolved in November 2021, but we appeared to have missed some ICPS that were impacted. There is also some training issues that resulted in these being updated incorrect manually and missed during our validation checks. We will provide training as required to reduce this. **20 reconnections of metered ICPs of a sample of 20 ICPs had late meter certification (from a potential population of 135 ICPs).** >Monitor AC report and raise job to recertify meter when status is updated to active on an uncertified site. >The AC report will include sites that were system updated to "active" with no reconnection job, sites that were made “active” during switch in, or status update to “active” as part of the inactive consumption process >We will continue to work with MEPs to improve in late meter certification **TRUS** **20 reconnections of metered ICPs of a sample of 20 ICPs had late meter certification (from a potential population of 121 ICPs).** TRUS is comfortable that current reporting is capturing all instances of reconnections on uncertified sites and MEPs are being notified. TRUS continues to engage with MEPs to rectify uncertified sites as the occur. **One metered newly connected ICP (0110013358EL533) was not certified within five business days of becoming active.** TRUS has discrepancy reporting that looks at mismatches between initial CO date, IED, and meter cert date. All mismatches are looked into and mismatches are corrected where possible. TRUS is comfortable current reporting is robust enough and captures all instances of mismatches between dates.	Ongoing May 2023 May 2023 May 2023 May 2023	

2.12. Arrangements for line function services (Clause 11.16)

Code reference

Clause 11.16

Code related audit information

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

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

Audit observation

The process to ensure an arrangement is in place before trading commences on a network was reviewed.

Audit commentary

MEEN

Mercury has demonstrated that arrangements are in place for existing networks during previous audits. Two new networks were added during the audit period and I confirmed arrangements are in place.

TRUS

A table within GTV prevents the loading of any installation data, prior to the establishment of arrangements for line services.

TRUS works under Mercury's approvals and as detailed above they have demonstrated that arrangements are in place. One new network was added during the audit period and an arrangement is in place.

Audit outcome

Compliant

2.13. Arrangements for metering equipment provision (Clause 10.36)

Code reference

Clause 10.36

Code related audit information

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

Audit observation

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

Audit commentary

All new connections are taken to the 1,12 "inactive - new connection in progress" status and an MEP is nominated at the same time.

MEEN

Mercury has demonstrated that arrangements are in place for existing MEPs during previous audits. No new MEPs were added during the audit period.

TRUS

GTV holds a table detailing all the MEPs that they have arrangements with. This ensures that only MEPs that have an arrangement are selected.

TRUS works under Mercury's approvals and as detailed above they have demonstrated that arrangements are in place. No new MEPs were added during the audit period.

Audit outcome

Compliant

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

Code reference

Clause 10.33B

Code related audit information

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

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

Audit observation

The process for reconnecting ICPs in the process of switching in was examined. Traders are only able to update ICP status for event dates where they are responsible for the ICP on the registry.

Audit commentary

MEEN

If an ICP was reconnected as part of the switching process and the switch was later withdrawn, Mercury would restore the disconnection and reimburse the losing trader for any direct costs incurred if requested. No incidents of this occurring were identified.

TRUS

All new customers are credit checked in the first instance. If they pass the credit check the reconnection is actioned. Trustpower expects to reconnect a customer within four hour and the NT is sent to the registry requesting the ICP. There are some occasions where a reconnection will be processed from a partial credit check. In these instances, the reconnection will proceed but the customer must provide ID and a bond within 48 hours. If they are subsequently declined, they are advised they have 48 hours to switch to another provider. The NT is expected to be sent the next day. If the customer doesn't provide the required information after 48 hours the switch is withdrawn, and a disconnection is booked. This process is managed by the vacant properties team.

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

Audit outcome

Compliant

2.15. Electrical disconnection of ICPs (Clause 10.33B)

Code reference

Clause 10.33B

Code related audit information

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

Audit observation

The disconnection process was examined. Traders are only able to update ICP status for event dates where they are responsible for the ICP on the registry.

Audit commentary

MEEN

Mercury checks they are listed as the current trader in the registry before initiating a disconnection. If the meter is an AMI meter a remote disconnection will be requested in the first instance. Wells and Top Energy are used for all physical disconnections.

TRUS

The disconnection process in relation to reconnected ICPs that subsequently get disconnected is described in **section 2.14.** Other than these ICPs Trustpower will only disconnect ICPs where they are the trader recorded on the registry. Trustpower checks they are listed as the current trader in the registry before initiating a disconnection.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

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

Audit observation

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

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

Audit commentary

MEEN

Mercury does not remove or break seals, work is completed by appropriately qualified staff. A job is raised for any such incidents and issued to the MEP to return to site and reseal and recertify the meter. I saw four examples of these jobs during the audit.

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

Mercury receives work completion paperwork from MEPs and uses this information to confirm the correct ICP attributes including status and profile; and updates their system and the registry.

I checked a sample of 32 disconnections, 20 reconnections and six bridged meters and found that where physical disconnection or reconnection was initiated, the MEP was advised where the ICP was metered, or remote disconnection or reconnection had occurred.

TRUS

Trustpower uses the MEP who in turn utilise a test house for the reconnection or disconnection of ICPs and typically they don't bridge meters. MEPs are required to ensure that only qualified personnel perform work and manage and trace seals. MEPs do not usually provide details of seals in their job completion paperwork.

Trustpower receives work completion paperwork from MEPs and uses this information to confirm the correct ICP attributes including status and profile; and updates their system and the registry.

I checked a sample of 30 disconnections, 28 reconnections, 57 ICPs with distributed generation and 13 bridged meters and found that where physical disconnection or reconnection was initiated, the MEP was advised where the ICP was metered, or remote disconnection or reconnection had occurred.

Audit outcome

Compliant

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

Code reference

Clause 10.33C and 2A of Schedule 15.2

Code related audit information

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

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

If the trader bridges a meter, the trader must:

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

The trader must determine meter readings as follows:

- *by substituting data from an installed check meter or data storage device*

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

Audit observation

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

Audit commentary

MEEN

Meters will only be bridged if they cannot be reconnected without bridging and delaying reconnection would cause significant disadvantage to the customer because they would be without hot water or power.

Bridged meters are identified through the read validation process, or reconnection paperwork returned from the contractor, which is reviewed daily. Once a bridged meter is identified, MEEN contacts the customer to advise them and raises a job for the meter to be unbridged as soon as possible.

Mercury confirmed six ICPs were bridged to reconnect during the audit period and were later unbridged. All the meters were certified on un-bridging.

All six bridged meter corrections/estimation calculations were reviewed, and all six corrections were correctly applied in SAP. All six ICPs related to these bridged meter corrections were flagged as being submitted as NHH.

Where an ICP is submitted as HHR, and a bridged meter scenario occurs then Mercury will transition the ICP to NHH submission prior to the bridged meter event to enable the volume correction to be undertaken as NHH.

TRUS

Bridged meters are identified through the read validation process, or reconnection paperwork returned from the contractor. Meters will only be bridged if they cannot be reconnected without bridging and delaying reconnection would cause significant disadvantage to the customer because they would be without hot water or power.

A list of 58 bridged meters was provided. A sample of 13 bridged meters were reviewed and the MEP was notified in all instances and for ten ICPs the meter was unbridged and recertified. Three ICPs switched away before the meter was unbridged and Trustpower notified the gaining trader of the meter bridge once the switch was completed.

Corrections were also reviewed for the sample of 13 and found:

- corrections were applied for eight ICPs using an appropriate daily average consumption and using the adjustment (ADJ) process with GTV; all corrections were for less than 14 months so no apportionment was required to ensure all volume was recorded within the available revision window,
- for ICPs 0000420763WEEE7 and 1002106746LC84B both required meter replacements to resolve the meter bridge and the removed meter read was estimated to include a volume correction for the bridged period,
- ICP 0435675230LC66D was bridged as part of the switch gain process on 28 March 2022 and the customer moved out on 5 May 2022 before the ICP was disconnected again on 25 May 2022 and switched away on 30 May 2022; no correction was applied for any of the period Trustpower was recorded as trader for this ICP,

- ICP 0043223686PCC51 was bridged on 29 June 2022 as part of the switch move gain process with a transfer date of 30 June 2022 and the ICP switched away on 8 July 2022; no correction was applied for this period, and
- ICP 0000196942UN3A7 was bridged on 15 January 2022 as part of the switch move gain process with a transfer date of 13 January 2022, then the ICP switched away on 28 January 2022 but as the AMI meter was also non communicating for this period an estimate transfer read was provided which also doubled as a volume correction for the bridged period - the use of estimated switch reads as the vehicle for bridged meter volume corrections does not ensure that the volume correction remains a permanent correction for submission purposes as the gaining trader can dispute this read via the read amendment (RR) process which would result in the undoing of this volume correction and I recommend that Trustpower ensures that all volume corrections for bridged meters up to a switch date are applied using the adjustment (ADJ) process.

Description	Recommendation	Audited party comment	Remedial action
Bridged meter corrections for ICPs that have switched away	Recommend that all bridged meter corrections applied up to a switch loss date uses the adjustment (ADJ) process and not use an estimated switch loss read to ensure the volume correction is not undone due to a switch read amendment (RR).	We acknowledge the recommendation and are reviewing whether to adopt it.	Investigating

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.17 With: Clause 10.33C and 2A of Schedule 15.2 From: 15-Jan-22 To: 08-Jul-22	**TRUS** Corrections not conducted for two ICPs where meters were bridged. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. 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 acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	June 2023	Investigating

Preventative actions taken to ensure no further issues will occur	Completion date	
Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	June 2023	

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

Code reference

Clause 11.30

Code related audit information

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

Audit observation

A sample of invoices and letter templates relating to invoicing were reviewed to confirm that the ICP number is present.

Audit commentary

MEEN

Invoices and credit notes contain the ICP number, and ICP numbers are included in communications relating to the sale of electricity. Only the account number is included on correspondence relating to payments, as one account can have one or many ICPs attached.

TRUS

Invoices and credit notes contain the ICP number, and ICP numbers are included in communications relating to the sale of electricity. Only the account number is included on correspondence relating to payments, as one account can have one or many ICPs attached.

Audit outcome

Compliant

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

Code reference

Clause 11.30A

Code related audit information

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

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

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

Audit observation

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

Audit commentary

MEEN

Clear and prominent information on Utilities Disputes is provided:

- in Mercury's terms and conditions
- on Mercury's website under https://www.mercury.co.nz/help/contact-us/formal-complaints.aspx ,
- on invoices,
- as part of the letterhead information for outbound letters,
- in inbound calls, and
- as part of email footers.

Staff are trained to provide information on Utilities Disputes when conversing with customers using online chat, if the conversation relates to a complaint.

Description	Recommendation	Audited party comment	Remedial action
Provision of information on Utilities Disputes using chat	Information on Utilities Disputes is expected to be provided at least once in any series of related communications to a customer, regardless of whether the communication is complaint related. I recommend updating processes to ensure information on Utilities Disputes is consistently provided as part of any chats.	We have now updated our process to ensure information on Utilities Disputes is consistently provided as part of any chats.	Identified

TRUS

Clear and prominent information on Utilities Disputes is provided:

- in Trustpower's terms and conditions,
- on Trustpower's website under https://www.trustpower.co.nz/power,
- on invoices,
- on outbound letters,
- inbound calls,
- chat, and
- as part of email footers.

Audit outcome

Compliant

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

Code reference

Clause 11.30B

Code related audit information

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

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

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

Audit observation

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

Audit commentary

MEEN

Clear and prominent information on Powerswitch is provided:

- on Mercury's website under https://www.mercury.co.nz/pricing,
- on invoices,
- as part of the letterhead information for outbound letters, and
- as part of email footers.

Inclusion of information on Powerswitch on invoices meets the requirement to provide information on Powerswitch to consumers at least annually.

TRUS

Clear and prominent information on Powerswitch is provided on:

- Trustpower's website under https://www.trustpower.co.nz/power,
- outbound and emails and letters relating to pricing and billing, and
- invoices.

Inclusion of information on Powerswitch on invoices meets the requirement to provide information on Powerswitch to consumers at least annually.

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

Audit commentary

The new connection processes are detailed in **section 2.9**, and the accuracy and timeliness of registry updates is discussed in **section 3.5**. The processes in place ensure that the trader required information is populated as required by this clause.

MEEN

I walked through the registry update process for a sample of 32 new connections NHH, HHR and unmetered ICPs.

TRUS

I walked through the registry update process for a sample of 20 NHH and unmetered new connections and one HHR new connection that has since switched to Manawa.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 11.1

Code related audit information

If information provided by a trader to the registry manager about an ICP changes, the trader must provide written notice to the registry manager of the change no later than 5 business days after the change.

Audit observation

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

The AC020 reports for each code were reviewed. A sample of late status updates, trader updates and MEP nominations were checked as described in the audit commentary.

Audit commentary

MEEN

<u>Status updates</u>

The disconnection and reconnection process varies depending on the reason for disconnection and reconnection.

Credit disconnections and reconnections are processed manually each week. A report of all credit reconnections is run on a Monday night. Staff check each ICP to determine whether a disconnection has already been processed and if the ICP has been disconnected for more than one day. If the ICP has been disconnected for more than one day they ensure both the disconnection and reconnection are processed. There have been some instances where credit disconnections have been missed due to the manual process, and monitoring of the inactive consumption report has helped to identify these.

For vacant disconnections an automated update is processed when SAP receives a response to a vacant disconnection service order. When the ICP is ready to be reconnected a reconnection service order is raised, and an automated status update is processed when SAP receives reconnection paperwork. Open service orders are monitored and any jobs due to be completed more than five days ago are followed up with the contractor. There have been some issues with missed updates where the ICP was disconnected by another trader and no disconnection service order was present for Mercury to record the reconnection service order against. Further training has been provided and an improved process has been implemented.

Where a disconnected ICP begins recording energy consumption, SAP automatically updates the status to "active" from the last reading date. The process was modified during the audit period so that an email alert is sent to a staff member, so that they can confirm whether the consumption is genuine and update the status from the day after the last reading date which did not record consumption.

The timeliness of status updates to "active" (for reconnections) is set out in the table below:

Event	Period ended	ICPs notified greater than 5 days	Average notification days	Percentage compliant
Active	2017	205	21.2	83%
	2018	758	26.3	74%
	2019	791	17.6	80.1%
	2020	923	14.52	82.74%
	Dec 2020	624	7.97	85.93%
	Nov 2021	707	7.01	86.95%
	Nov 2022	**727**	**10.56**	**87.84%**

226 of the 727 late reconnections were updated more than 30 business days after the event, 126 were updated more than 100 business days after the event, and one was updated more than 1,000 business days after the event. The latest update was 1,170 business days after the event date.

The ten latest updates, and the ten late updates between 30 and 531 business days after the event date were checked and found to be caused by:

- corrections following discovery of consumption during inactive periods, identification of incorrect status records during the previous audit, or receiving confirmation that readings which appeared to confirm inactive consumption were actually misreads,
- corrections for reconnected ICPs which switched in with "inactive" status, which were not automatically updated when reconnection paperwork was received because they had been disconnected by the previous trader and there was no corresponding Mercury disconnection service order; the ICPs were identified through the inactive consumption checks, or when the network queried the ICP status with Mercury,
- credit disconnections where the manual reconnection update was missed, which were identified through the inactive consumption checks, or when the network queried the ICP status with Mercury, and
- automated status updates processed by SAP, as a result of a disconnection reversal.

All of the late updates had the correct status and event date applied, and many were found and resolved through the inactive consumption process and cleansing of historic records, once this report was implemented following the last audit.

The timeliness of status updates to inactive is set out in the table below:

Event	Period ended	ICPs notified greater than 5 days	Average notification days	Percentage compliant
Inactive	2019	588	11.34	86.49%
	2020	512	7.07	87.39%
	Dec 2020	337	7.86	92.16%
	Nov 2021	713	6.46	89.14%
	Nov 2022	340	3.27	96.45%

12 of the late updates were to 1,12 "inactive - new connection in progress" status, compared to 393 during the last audit. Up to November 2021, SAP allowed connection jobs to be issued for ICPs currently at "new" status. When the connection was complete, SAP automatically updated the status to "inactive - new connection in progress" instead of "active". Now, SAP only allows connection jobs to be issued where the ICP is already at "inactive - new connection in progress" and moves the ICP to "active" once connection paperwork is received. I checked the five latest updates to "inactive - new connection in progress" status and found that they had been delayed by this issue.

The 328 late updates to other "inactive" status reasons were checked. 122 were updated more than 30 business days after the event, 49 were updated more than 100 business days after the event, and five were updated more than 1,000 business days after the event. The latest update was 2,022 business days after the event date.

The five latest updates (or all late updates) for each "inactive" status reason code were checked and found to be caused by:

- corrections following identification of incorrect status records during the previous audit or through Mercury's own investigations, or discovery of discrepancies between SAP and registry statuses, and
- delays in receiving confirmation of the disconnection from the field.

All of the late updates had the correct status and event date applied.

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.

The timeliness of trader updates to "inactive" is set out in the table below:

Period ended	ICPs notified greater than 5 days	Average notification days	Percentage compliant
2019	76,952	37	9.5%
2020	39,229	13.47	32.51%
Dec 2020	58,841	13.46	12.45%
Nov 2021	41,581	13.74	37.90%
Nov 2022	**41,066**	**11.54**	**39.76%**

38,761 (94.3%) of the late updates included a profile and/or submission type change.

3,431 of the 41,066 late updates were updated more than 30 business days after the event, 301 were updated more than 100 business days after the event, and ten were updated more than 1,000 business days after the event. The latest update was 1,780 business days after the event date. I checked:

- ten changes to unmetered load information, including the five latest updates,
- ten changes to submission type information, including the five latest updates,
- ten changes to profile type information, including the five latest updates,
- ten MEP nominations, including the five latest updates, and
- ten ANZSIC code changes, including the five latest updates.

I found that the backdated updates were caused by:

- late provision of information from other parties, such as requests for corrections to unmetered load details at the request of a customer or distributor, or a request for a backdated MEP nomination,
- backdated switches in, where the trader update could not be processed until the switch was complete,
- backdated profile and/or submission type changes once the need for the change was identified,
- backdated ANZSIC code changes which were made effective from the last trader update date,
- a correction to restore an MEP nomination removed in error as part of a bulk trader update using a SAS query, and
- selection of an incorrect trader event date for 0000014898NT3F1.

The following incorrect trader records were identified:

ICP	Trader event number	Trader event input date	Issue
0000014898NT3F1	REC-29628626	7 June 2022	The trader event date was entered as 27 May 2021 but should have been 27 May 2022. The other trader event attributes were correct.

The audit compliance report recorded 277 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 they were caused by backdated new connections or switches in.

TRUS

Status updates

Changes to status are updated within the GTV life cycle and automatically transferred to the registry. Jobtrack's operational reporting is used daily to monitor ICPs where status changes are expected and follow up outstanding paperwork.

The timeliness of status updates to "active" (for reconnections) is set out in the table below and shows a consistently high level of timeliness.

Event	Period ended	ICPs notified greater than 5 days	Average notification days	Percentage compliant
Active	2015	183	10.5	76%
	2016	700	8.1	80%
	2017	2,942	5.4	88%
	2018	1,405	4	84%
	2020	481	2.93	90.82%
	Jan 2021	446	4.92	87.78%
	Dec 2021	377	4.11	90.06%
	Nov 2022	**512**	**3.87**	**90.69%**

96 of the 512 late disconnections were updated more than 30 business days after the event, 23 were updated more than 100 business days after the event, and one was updated more than 1,000 business days after the event. The latest update was 1,289 business days after the event date. The ten latest updates, and the ten late updates between 30 and 167 business days after the event date were examined and found:

- 14 were corrections to the "active" date to align with dates of "active" vs "inactive" periods and were identified via meter work being returned late, open work orders being closed out or correction of human errors identified via discrepancy reporting or revenue assurance work:
    - two ICPs were reconnected by other traders in anticipation of switching but weren't and the status wasn't returned to disconnected; Trustpower subsequently identified these as part of the revenue assurance work,
    - ICP 0000079404TRF2C was reconnected by Globug but a switch was never initiated and ICP 0010378144ELD9B was reconnected by Genesis, but the switch was subsequently withdrawn; these are expected to be examined in the relevant trader's audit,
- four were due to being backdated switch ins. These were made active as soon as the switch was completed,
- ICP 0000920980TU69E was due to late notification from the MEP, and
- ICP 0000126141TRBBB was due to the late notification from the network due to a reconnection post a fire.

The timeliness of status updates to "inactive" is set out in the table below and demonstrates a consistent performance with previous audits.

Status	Period ended	ICPs notified greater than 5 days	Average Business Days between Status Event and Status Input Dates	Percentage on time
Inactive	2015	39	4.14	90.74%
	2016	105	17.39	85.50%
	2017	241	5.99	92.57%
	2018	145	3.72	93.32%
	2020	913	6.81	92.68%
	Jan 2021	634	7.36	93.96%
	Dec 2021	503	6.28	95.30%
	Nov 2022	**857**	**5.28**	**94.23%**

413 of the late updates were to 1,12 "inactive - new connection in progress" status. 385 of the late updates are considered to be on time because they were made before initial electrical connection. The other 28 updates to 1,12 were genuinely late because they were made after initial electrical connection. I checked the ten latest and found:

- seven were due to corrections to the first active date causing this status also to be backdated, and
- three were because the "User Required Details" automation wasn't working correctly so that if any details were missing the update to the registry wasn't being sent; analysis identified potentially 28 ICPs were affected, and this has been corrected with no examples of this happening post July 2022.

The 444 late updates to other "inactive" status reasons were checked. 180 were updated more than 30 business days after the event, 61 were updated more than 100 business days after the event, and one was updated more than 1,000 business days after the event. The latest update was 5,789 business days after the event date. I checked the ten latest updates to "inactive vacant" and five (or all late updates) for the other "inactive" status reason codes and found:

- 17 ICPs were late due to late notification from the contractor or the network,
- five ICPs were identified from the reporting put in place to identify temporarily electrically connected ICPs and these were corrected upon discovery,
- four were corrections to status updates,
- three ICPs were due to another trader correcting their status prior to Trustpower's period of supply, so Trustpower had to reload their status event to correct,
- ICP 0000940134TU773 had duplicated work orders and when the second work order was closed it sent another disconnected status update to the registry for a later date; this had no material impact as the status was already disconnected, and
- ICP 0000600120TU93B was updated late due to the returned paperwork being missed and not being processed.

Trader updates

Changes to trader information are updated within the GTV life cycle and automatically transferred to the registry.

The MEP nomination process is well managed. The MEP is nominated at the time the service order is raised, and bulk updates are made for AMI meter roll outs. In some cases, the MEP will initiate a change, and ask Trustpower to raise an MEP nomination. There is reporting in place to identify any MEP mismatches between the job issued and the MEP nominated. This also identifies any missing MEP nominations for jobs issued.

The timeliness of trader updates is set out in the table below:

Period ended	ICPs notified greater than 5 days	Average Business Days between Status Event and Status Input Dates	Percentage on time
2020	7,896	3.64	89.90%
Jan 2021	2,964	4.25	93.23%
Dec 2021	2,149	10.74	85.65%
Nov 2022	1,760	5.9	83.92%

781 (44.4%) of the late updates included a profile change, and 717 (40.7%) included an ANZSIC code change.

266 of the 1,760 late updates were updated more than 30 business days after the event, 91 were updated more than 100 business days after the event, and five were updated more than 1,000 business days after the event. The latest update was 1,998 business days after the event date. I checked:

- ten changes to unmetered load information, including the five latest updates and found:
    - six of these related to distributed unmetered load updates; these have since switched away to Manawa,
    - two were the late removal of unmetered builders temporary supply,
    - ICP 0007210398RN714 was an ANZSIC code update and not a change to unmetered load,
    - ICP 0000400354WA934 was a change to the unmetered load value; the daily kWh figure in the registry is not correct but is correct in GTV which is discussed further in **section 3.7**,
- all changes to submission type information were corrections and related to ICPs that have subsequently switched away to Manawa,
- ten changes to profile type information, including the five latest updates; these were examined and found that they related to backdated meter changes, meter configuration changes or certification expiry and when the MEP loads these late to the registry this causes a backdated profile change - one opportunity for improvement was identified:
    - ICP 0001670845TGE39 is a decommissioned ICP and when the meter certification expired a profile change was sent to the registry so I recommend that the reporting is modified to exclude all decommissioned ICPs:

Description	Recommendation	Audited party comment	Remedial action
Changes to registry information	Modify reporting to exclude decommissioned ICPs from any changes to the registry post the decommissioning date.	Reporting has been updated to exclude any sites at decommissioned status.	Cleared

- ten MEP nominations, including the five latest updates; these were examined and found:

- seven were due to corrections where an MEP with two codes was nominated but then the other MEP coded meter was installed e.g., IHUB and MTRX,
- one was due to a backdated switch,
- one was an ANZSIC code update incorrectly identified as an MEP change, and
- an ANZSIC code update incorrectly nominated IHUB as the MEP for ICP 0000373690MP340; a backdated MEP nomination for the correct MEP was then issued,

- ten ANZSIC code changes, including the five latest updates; these were examined and found that they were corrections identified via the discrepancy reporting e.g., if metering is loaded late for a permanent connection, then this causes the change from construction to residential to be backdated.

The audit compliance report recorded 79 ICPs where the ANZSIC code was updated later than 20 business days after the TRUS commenced trading. I checked the ten latest updates and found they were caused by backdated new connections, switches in, reconnections on switches in, withdrawals or corrections.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.3 With: Clause 10 of schedule 11.1 From: 01-Jan-22 To: 17-Nov-22	**MEEN** 727 late reconnection updates. 340 late disconnection updates. 41,066 late trader updates. 277 ICPs did not have ANZSIC codes populated within 20 business days of switching in, or initial electrical connection. **TRUS** 512 late reconnection updates. 472 late disconnection updates. 1760 late trader updates. 79 ICPs did not have ANZSIC codes populated within 20 business days of switching in, or initial electrical connection. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time. 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

MEEN **727 late reconnection updates.** >Mid 2022 we implemented an SAP change where a reconnection raised on a site that was previously disconnected by Mercury will automatically update the previous disconnection service order and where possible, automatically update status to active. >SAP auto updates/system issues from previous audit is now being monitored via exception email which will allow us to investigate as soon as the status is updated >Sites which switch in with "inactive" status will be investigated via Inactive consumption report, implemented mid 2022 >Any reconnection that is missed in our current processes should be picked up in the Inactive consumption report for investigation **340 late disconnection updates.** No action required as it's a late update - refer to preventive action **41,066 late trader updates.** There will be some form of late trader updates, like meter change which was completed but not notified to retailer until later date so MEP nomination has to be back dated which causes late trader updates or disconnection/reconnection paperwork delayed causing status to be updated late. **277 ICPs did not have ANZSIC codes populated within 20 business days of switching in, or initial electrical connection.** We are running our ANZSIC reporting on a weekly as well as using the AC report to pick up ANZSIC issues that requires attention and update. **TRUS** **512 late reconnection updates.** **472 late disconnection updates.** **1760 late trader updates.** TRUS continues to engage with third parties e.g. MEPs and Networks to try and reduce the number of late updates across reconnections, disconnections and trader updates impacted by late updates/job closures on their part. TRUS continues to monitor a number of reports to identify any gaps in our processes or current reporting to ensure all updates are made in as timely fashion as possible. **79 ICPs did not have ANZSIC codes populated within 20 business days of switching in, or initial electrical connection.** We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	May 2023 N/A May 2023 May 2023 Ongoing June 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN **727 late reconnection updates.** Staff Training has been administered so any site that is reconnected via email (system exceptions), will manually be updated to active	November 2022	
340 late disconnection updates. Increase frequency checks on exceptions so the status is updated in a more timely manner. Follow up on incomplete jobs earlier, with relevant contractors and/or MEPs	May 2023	
41,066 late trader updates. Remind all staff about updating timeslices going forward where possible rather than altering old time slices which causes late trader updates.	May 2023	
277 ICPs did not have ANZSIC codes populated within 20 business days of switching in, or initial electrical connection. We will continue to run our ANZSIC report as well as use to AC report to update incorrect or missing ANZSIC codes.	May 2023	
TRUS **512 late reconnection updates.** **472 late disconnection updates.** **1760 late trader updates.** TRUS continues to engage with third parties around late updates that impact our ability to update Trader owned fields in a timely manner. Conversations with IHUB specifically continue around the ongoing issue of alternate MEP metering being installed causing late MEP nominations.	Ongoing	
79 ICPs did not have ANZSIC codes populated within 20 business days of switching in, or initial electrical connection. Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	June 2023	

3.4. Trader responsibility for an ICP (Clause 11.18)

Code reference

Clause 11.18

Code related audit information

A trader becomes responsible for an ICP when the trader is recorded in the registry as being responsible for the ICP.

A trader ceases to be responsible for an ICP if:

- *another trader is recorded in the registry as accepting responsibility for the ICP (clause 11.18(2)(a)); or*
- *the ICP is decommissioned in accordance with clause 20 of Schedule 11.1 (clause 11.18(2)(b)).*
- *if an ICP is to be decommissioned, the trader who is responsible for the ICP must (clause 11.18(3)):*

- *arrange for a final interrogation to take place prior to or upon meter removal (clause 11.18(3)(a)); and*
- *advise the MEP responsible for the metering installation of the decommissioning (clause 11.18(3)(b)).*

A trader who is responsible for an ICP (excluding UML) must ensure that an MEP is recorded in the registry for that ICP (clause 11.18(4)).

A trader must not trade at an ICP (excluding UML) unless an MEP is recorded in the registry for that ICP (clause 11.18(5)).

Audit observation

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

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

Audit commentary

MEEN

Retailers responsibility to nominate and record MEP in the registry

The new connection process is discussed in detail in **section 2.9**. The design of the new connections process does not allow ICPs to be connected without authorisation by Mercury, or an arrangement with an MEP if the ICP is to be metered. When the job is issued to the contractor the MEP nomination is sent. The timeliness of MEP nominations is discussed further in **section 3.3**.

Mercury maintains a matrix of which MEP to nominate based on the connection type and region on Sharepoint. The matrix is updated as changes occur. The preferred MEP is manually entered into a field in SAP to create the MEP nomination.

Prior to the audit period MEEN used a monthly query to identify rejected MEP nominations which may need to be reissued, but this is no longer monitored. 5 (0.05%) of the 9,459 MEP nominations identified on the event detail report were rejected. Four nominated SMCO on a network where IHUB is the preferred MEP, and it was likely an incorrect value was recorded in the matrix at the time the files were generated. The other appears to have had the wrong MEP keyed into SAP. Four of the nominations were reissued after the correct MEP contacted MEEN to request a nomination, and the other was not reissued.

Description	Recommendation	Audited party comment	Remedial action
Monitor MN responses for rejections	Monitor MN responses for rejections. Where rejections occur investigate to determine the correct MEP and whether the nomination should be reissued.	We currently have a spreadsheet report that identifies MEP rejections, however this will need to be reviewed and possibility rebuilt. The current TRUS reporting does monitor for this on a regular basis.	Identified

The audit compliance report recorded 62 active ICPs where the metering category was 9 or blank, and the unmetered flag was set to no:

Comment	Count
The ICP became inactive, became decommissioned, had metering added, or unmetered load added after the report was run.	52
MEP nomination accepted and asset meter data is to be populated.	7
DUML ICP 0000043663HR00F has its UNM flag set to N but should have its UNM flag set to Y.	1
No MEP nominations were raised for ICPs 0006050069RNDB1 and 0001426079UN6E1, which are active with metering category 9.	2
Total	62

The audit compliance report identified 18 new connections where an MEP nomination was not accepted within 14 business days. 17 new connections were for unmetered load, and ICP 1100000219WM256 was a backdated new connection with an FCLM meter where the MEP nomination was not processed at the time that the field services job was raised. There is no B2B arrangement in place with FCLM and the process is completed manually.

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 disconnection. Mercury also advises the MEP responsible that a site is to be decommissioned, by issuing a request for them to retrieve their meter.

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

TRUS

Retailers Responsibility to Nominate and Record MEP in the Registry

The new connection process is discussed in detail in **section 2.9** above. Trustpower nominate the MEP at the same time as taking the ICP to the "inactive - new connection in progress" status. All new connections have an MEP nominated. Selection of the MEP is semi-automated to select the MEP based on area. In addition to this, training documentation is available for users to reference.

The design of the new connections process does not allow ICPs to be connected without authorisation by Trustpower, or an arrangement with an MEP if the ICP is to be metered.

The audit compliance report recorded 67 active ICPs where the metering category was 9 or blank, and the unmetered flag was set to no:

Comment	Count
The ICP had metering installed after the report was run.	66
MEP nomination accepted and asset meter data is to be populated.	1
Total	67

The AC020 report did not record any ICPs where the MEP had been nominated but no response had been received within 14 days of the nomination, or any "active" ICPs with a blank MEP.

There is a report in place that notifies the team immediately of any MEP rejections, but this doesn't appear to be reviewed, as it happens so infrequently. One of the 14,291 MEP nominations identified on the event detail report was rejected. This was examined and found that it was sent in error and no subsequent nomination was sent. This was reversed during the audit.

ICP Decommissioning

Trustpower continues with their obligations under this clause. ICPs that are vacant and either "active" or "inactive" are still maintained in GTV.

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 disconnection. Trustpower also advise the MEP responsible that a site is to be decommissioned. This can be late if the network notifies Trustpower late. Additional reporting has been put in place during the audit period to ensure that all MEPs are notified as early as possible, and a quarterly report is in place to confirm that the daily process has been completed as expected.

A sample of ten ICPs were examined, and I confirmed an attempt to read the meter was made at the time of removal and the last read was applied correctly.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.4 With: Clause 11.18 From: 01-Jan-22 To: 17-Nov-22	**MEEN** 5 (0.05%) of the 9,459 MEP nominations identified on the event detail report were issued to the wrong MEP and rejected. ICP 1100000219WM256's MEP nomination was not issued and accepted within 14 business days of initial electrical connection. **TRUS** One invalid MEP nomination was 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**
Low	The controls are strong, as the improved reporting in place will mitigate risk to an acceptable level. The audit risk rating is assessed to be low as the as the volume of invalid MEP nominations was very small and the correct MEP was subsequently nominated.

Actions taken to resolve the issue	Completion date	Remedial action status

MEEN **5 (0.05%) of the 9,459 MEP nominations identified on the event detail report were issued to the wrong MEP and rejected.** We believe our current process is strong and we do have a spreadsheet that we use to monitor any MEP rejections to ensure that these are resolved quickly. **ICP 1100000219WM256's MEP nomination was not issued and accepted within 14 business days of initial electrical connection.** Based on investigation this seems to be a human-error mistake that missed doing the MEP nomination when issuing out the new connection. **TRUS** **One invalid MEP nomination was sent.** ICP was identified via reporting however no action was taken as MEP nomination was raised in error. Rejected MEP nomination was reversed during Audit.	May 2023 May 2023 May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN **5 (0.05%) of the 9,459 MEP nominations identified on the event detail report were issued to the wrong MEP and rejected.** Continue to use the MEP rejection report, will require to be updated as we move away from SAP. **ICP 1100000219WM256's MEP nomination was not issued and accepted within 14 business days of initial electrical connection.** Further training provided to avoid human-error mistakes **TRUS** **One invalid MEP nomination was sent.** Reporting around rejected MEP nominations runs daily and delivers whenever there are results. Additional training has been completed to ensure any results are correctly actioned, including where MEP nominations are raised incorrectly.	May 2023 May 2023 May 2023	

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

Code reference

Clause 9 Schedule 11.1

Code related audit information

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

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

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

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

Audit observation

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

Audit commentary

MEEN

New connection information timeliness

The new connection process is described in detail in **section 2.9**. 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%
	Dec 2020	636	4.75	84.06%
	Nov 2021	1,285	8.91	65.06%

	Nov 2022	**947**	**7.96**	**74.38%**

947 updates were completed more than five business days after the event date. 215 of those were more than 30 business days after the event date, and 35 more than 100 business days after the event date. The latest update was 461 business days after the event date.

I checked a sample of the five late unmetered load new connections (including all that were not builder's temporary supplies), all seven late HHR new connections and 20 late NHH new connections including the ten latest and found they were delayed by:

- late receipt of connection paperwork or late confirmation of the correct connection date,
- delays in processing the connection paperwork due to workloads and staff turnover,
- delays in the network adding pricing information updating the ICP's status to "ready", and
- delays in confirming an ICP had been connected where it had switched in from another retailer as it was being connected, and the previous retailer had initiated the connection.

All of the late updates had the correct status update and event date, apart from one ICP which was recorded as "active" from the date the paperwork was received instead of the connection date. The status date was corrected during the audit. The connections team is now fully staffed and it is expected that late updates caused by workloads will decrease in future audits.

As discussed in **section 3.3**, there were 12 late updates to 1,12 "inactive - new connection in progress" status for new connections, which also resulted in late MEP nominations. Up to November 2021, SAP allowed connection jobs to be issued for ICPs currently at "new" status. When the connection was complete, SAP automatically updated the status to "inactive - new connection in progress" instead of "active". Now, SAP only allows connection jobs to be issued where the ICP is already at "inactive - new connection in progress" and moves the ICP to "active" once connection paperwork is received. During the last audit there were 393 late updates to "inactive - new connection in progress" status because of this issue, and this audit there were 12 late updates.

An alleged breach was raised by Northpower in relation to this issue before it was resolved:

Breach ref	Clause breached	Comment	Status
2209MERC2	Part 11 clause 11.2 Part 11 Schedule 11.1 clause 11.10 (1) Part 11 Schedule 11.1 clause 11.10 (2) Part 11 Schedule 11.1 clause 11.17 (1)	Northpower alleges that Mercury Energy has failed to update the connection status of 14 ICPs to "active" where they have been electrically connected within the five business days required by the Code, despite email reminders from Northpower. The oldest of these was energised on 5 January 2022, making it around nine months overdue.	The Authority noted the breach caused low market and minor operational impact. The Authority decided to take no further action on the breach under regulation 11(1)(c) of the Electricity Industry (Enforcement) Regulations 2010 (Regulations).

The audit compliance report identified 18 new connections where an MEP nomination was not accepted within 14 business days. 17 new connections were for unmetered load, and 1100000219WM256 was a backdated new connection with an FCLM meter where the MEP nomination was not processed at the time that the field services job was raised. There is no B2B arrangement in place with FCLM and the process is completed manually.

New connection information accuracy

The AC020 report identified 97 ICPs with an initial electrical connection date populated which had not been made "active":

- 65 ICPs were updated to "active" after the report was run; 64 had correct "active" status dates applied but ICP 0022260119WA596 was made "active" from the date it became permanent instead of when the builder's temporary supply was connected and was corrected during the audit,
- one ICP was never connected and was decommissioned after the report was run,
- 31 ICPs remained at "ready" or "inactive - new connection in progress" status; I checked a sample and found no paperwork had been received for nine of the ICPs, and one had its connection job cancelled and was being queried with the network.

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 503 ICPs with date discrepancies. For 11 ICPs the active date and initial electrical connection date was consistent and the ICP was unmetered. The other 492 exceptions were checked:

Exception type	Quantity	Sample	Quantity incorrect	Findings
IECD = active date and MCD ≠ active date	4	4	3	Three of the ICPs had incorrect active dates and are still to be corrected.
IECD ≠ active date and MCD = active date	32	5	1	One of the ICPs had an incorrect active date and was corrected during the audit.
IECD ≠ active date and MCD ≠ active date	6	5	4	Four of the ICPs had incorrect active dates and are still to be corrected.
IECD = active date and no MCD	31	5	-	All ICPs checked had correct active dates.
No IECD and MCD = active date	378	5	-	All ICPs checked had correct active dates.
No IECD and no MCD	32	5	-	All ICPs checked had correct active dates.
No IECD and unmetered	9	5	-	All ICPs checked had correct active dates.
Total	492	34	8	One corrected during the audit Seven remain incorrect and are listed in the table below.

The following ICPs still have incorrect status records:

ICP	Status event date	Correct status event date	Comment
0000053680HRE94	3 October 2022	2 October 2022	Need assistance from the network to claim ICP from an earlier date
0000061677NTD07	9 December 2021	8 December 2021	Account set up from 9 December 2021
0077451056WACF7	22 December 2021	21 December 2021	Data entry error

1002137904UN6F8	18 March 2021	17 March 2021	Data entry error
0000574282NRE70	16 May 2022	13 May 2022	Data entry error
1099582983CNA70	20 September 2022	5 September 2022	Data entry error
1099582303CN530	17 March 2022	9 March 2022	SAP error caused incorrect date

I also checked a further 32 new connections for accuracy. They had the correct status update and event date, apart from one ICP which was recorded as "active" from the date the paperwork was received instead of the connection date. The status date was corrected during the audit. The connections team is now fully staffed and it is expected that late updates caused by workloads will decrease in future audits.

I checked a sample of 20 new connections with late meter certification and found they had been updated to active from the correct date and the meter certification was genuinely late.

I rechecked the previous audit connection date accuracy issues and found that they had been resolved and correct dates are now applied.

The previous audit recommended putting checks in place to prevent ICPs from switching out at "inactive - new connection in progress" status. This has not been adopted.

TRUS

New connection information timeliness

The new connection process is described in detail in **section 2.9**. MEP nomination occurs when the ICP is at "inactive - new connection in progress" status as part of the service request process. As discussed in **section 3.3**, there were 28 late updates to 1,12 "inactive - new connection in progress" status for new connections, which also resulted in late MEP nominations. All MEP nominations were accepted within 14 business days of initial electrical connection.

The timeliness of status updates to active for new connections is set out in the table below:

Review period end	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
2015	358	14%	14.3
2016	140	80%	4.7
2017	169	91%	2.8
2018	120	91%	2.9
2020	487	92.60%	3.17
Jan 2021	642	88.26%	6.81
Dec 2021	417	92.14%	4.22
Nov 2022	**661**	**90.40%**	**5.11**

661 updates were completed more than five business days after the event date. 63 of those were more than 30 business days after the event date, and one more than 100 business days after the event date.

The latest update was 5,753 business days after the event date. All the late new connections had metering category 1 or 2 or were unmetered.

I checked 20 late NHH new connections including the ten latest and five late unmetered new connections, and the one late new connection for an ICP with metering category 3:

- ICP 0000165174CK6DC is a category 3 metered site that switched out to Manawa Energy but had to be switched back to correct the ICP's first "active" date as this occurred during Trustpower's period of supply.
- ten were due to corrections to the first "active" date which were due to the issue recorded in the last audit of temporarily electrically connected ICPs not being recorded as "active" for the correct period has been resolved; additional reporting has been put in place that identifies any ICPs with a meter certification prior to the first "active" date but when this reporting was deployed it identified some historic ICPs that required correction, and this caused some additional backdates,
- five were late due to late notification from the field; Trustpower have reporting in place to identify any ICPs where the initial electrical connection date has been populated and they have not received notification and they then follow up the contractor to get the paperwork back,
- five updates were for unmetered new connections:
    - three of these were late due to no or late notification from the network; two of the three were identified via the report that identifies any ICPs that have been at the "inactive - new connection in progress" status for more than 185 days,
    - ICP 1000590071PC3C0 was part of the Chorus clean-up project and this ICP has since switched to Manawa Energy, and
    - ICP 1100000269WM70B was a correction to the first "active" date as the network had advised the incorrect start date in the first instance.

New connection information accuracy

The new connection process is described in detail in **section 2.9**. As discussed in **section 3.3**, there were 28 late updates to 1,12 "inactive - new connection in progress" status for new connections, which also resulted in late MEP nominations.

The AC020 report identified six ICPs with an initial electrical connection date populated which had not been made "active". All were timing differences and the ICPs were moved to "active" status effective from the initial electrical connection date after the report was run as part of BAU.

Active dates for new connections were compared to the distributor's initial electrical connection date and the MEP's certification date using the AC020 report. The AC020 report identified 870 ICPs with date discrepancies, 11 discrepancies were not genuine because the ICPs were unmetered, and the "active" status date matched the initial electrical connection date. The 859 ICPs with genuine discrepancies were checked:

Exception type	Quantity	Sample	Quantity incorrect	Findings
IECD = active date and MCD ≠ active date	4	4	4	All were correct in the first instance and matched to the initial electrical connection date, but the metering date confirmed electrical connection was earlier and all have since been reverted to the correct first "active" date.
IECD ≠ active date and MCD = active date	12	5	4	Three were due to the first "active" date being matched to the meter

Exception type	Quantity	Sample	Quantity incorrect	Findings
				certification date but this was later than electrical connection date. All have been corrected. ICP 0000574440NRF1C was electrically connected on 15 July 2022 but the contractor installed an NGCM meter instead of a MTRX meter. NGCM refused to load the meter to the registry as this was not hung under their test house. Metering is loaded to Gentrack from the registry so as the meter was never loaded to the registry the first "active" date was the MTRX meter on 19 August 2022. The volume for the period from 15 July 2022 to 18 August 2022 has not been reconciled and is recorded as non-compliance below and in **sections 2.1, 3.8** and **12.7**.
IECD ≠ active date and MCD ≠ active date	2	2	1	ICP 0007205074RN272 switched in from another trader at the "inactive - new connection in progress" status for event date 4 February 2022. Trustpower made it "active" from their first day of supply. The network and MEP indicate that the ICP was electrically connected by the losing trader on 2 December 21 but was never made "active".
IECD = active date and no MCD	58	5	0	All meter certifications are now loaded to the registry and align with the first "active" date.
No IECD and MCD = active date	760	5	0	All initial electrical connection dates now loaded to the registry and align with the first "active" date
No IECD and MCD ≠ active date	1	1	1	ICP 0000038047TC7D7 was confirmed as electrically connected on 29 July 2022 and not 22 July 2022. This has been corrected.
No IECD and no MCD	20	5	1	ICP 0000062430NTA8F was recorded as electrically connected on 11 November 2022 due to incorrect paperwork returned. The date has since been confirmed as

Exception type	Quantity	Sample	Quantity incorrect	Findings
				14 November 2022 and has been corrected and all dates align.
No IECD and unmetered	2	2	0	All initial electrical connection dates now loaded to the registry and align with the first "active" date
Total	859	29	11	

I also checked a further 21 new connections for accuracy – from the late updates sample and confirmed all have the correct first "active" date.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.5 With: Clause 9 of schedule 11.1 From: 17-Mar-21 To: 31-Mar-23	**MEEN** Alleged breach 2209MERC2. 947 late updates to "active" status for new connections. 12 late MEP nominations for new connections. Nine ICPs had incorrect "active" status event dates. Two were corrected during the audit and seven remain incorrect. **TRUS** 661 late updates to "active" status for new connections. 28 late MEP nominations for new connections. 11 new ICPs had incorrect "active" status dates of the sample of 29 new connections checked. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**

Low	For MEEN controls are rated as moderate as there is some room for improvement, especially to the timeliness of new connection updates. For TRUS controls are rated as strong as the reporting in place mitigates risk to an acceptable level and identifies potential "active" date discrepancies with robust processes to investigate these as they are identified. Overall the controls are rated as moderate. The audit risk rating is low as most new connections were on time and processed from the correct date. TRUS' processes ensure that ICPs are made "active" for the correct date.

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN		Identified
Alleged breach 2209MERC2. Full details in the breach response. The majority of the late status updates were due to delays in receiving the relevant paperwork from the MEP. The Authority noted the breach caused low market and minor operational impact. The Authority decided to take no further action on the breach under regulation 11(1)(c) of the Electricity Industry (Enforcement) Regulations 2010 (Regulations).	December 2022	
947 late updates to "active" status for new connections. After B2B was implimented we didn't pick up an issue in that if the ICP status was NEW then B2B didn't change the status to 001/12, so it was only updating the status to this when the job was completed causing issues with the incorrect status and dates as we had to then manually update to active from the correct date.	November 2021	
12 late MEP nominations for new connections. Based on investigation this seems to be a human-error mistake that missed doing the MEP nomination when issuing out the new connection.	May 2023	
Nine ICPs had incorrect "active" status event dates. Two were corrected during the audit and seven remain incorrect. We are actively working with the MEP and network to correct these ICPs statues	Ongoing	
TRUS		
661 late updates to "active" status for new connections.	May 2023	
28 late MEP nominations for new connections.		
11 new ICPs had incorrect "active" status dates of the sample of 29 new connections checked.		
TRUS has robust reporting across the New Connections processes. Reports are delivered and worked daily to identify all sites with date mismatches between first active date, IED and meter certification date. Reporting introduced after previous audit created a need for some further backdated corrections which are reflected in this audit, reporting is now up to date and worked as discrepancies arise.		

Preventative actions taken to ensure no further issues will occur	Completion date	
MEEN		
Alleged breach 2209MERC2. To mitigate delays caused by paperwork not being received for jobs, we have started to use validations from our meter readings team to help us to identify these sites earlier and take prompt action to query with the MEP.	September 2022	
947 late updates to "active" status for new connections. We updated the B2B process to not allow the job to be issued if the ICP status was sitting as NEW, so team have to wait for ICP status to be READY to allow the correct status updates to flow through as job is issued and then completed.	November 2021	
12 late MEP nominations for new connections. Further training provided to avoid human-error mistakes	May 2023	
Nine ICPs had incorrect "active" status event dates. Two were corrected during the audit and seven remain incorrect. There is an existing reporting in the GTV space, as we do not currently report on this in SAP	May 2023	
TRUS		
661 late updates to "active" status for new connections.	Ongoing	
28 late MEP nominations for new connections.		
11 new ICPs had incorrect "active" status dates of the sample of 29 new connections checked.		
TRUS will continue to utilise exception and discrepancy reporting to identify any gaps in our processes and ensure all updates are made in as timely a fashion as possible. TRUS will continue to engage with third parties where needed to minimise impacts from late updates by third parties e.g. MEPs/Networks.		

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

Code reference

Clause 9 (1(k) of Schedule 11.1

Code related audit information

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

Audit observation

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

Audit commentary

MEEN

ANZSIC codes are confirmed as part of the customer application process. SAS queries to identify missing and unknown ANZSIC codes are run weekly, and historic ICPs with unknown ANZSIC codes are being worked through. The previous audit noted that NTs were defaulting to ANZSIC code T994, but I found that only seven switch move and three transfer switch NT files had the T994 code applied during this audit period.

Missing ANZSIC codes

Two DUML ICPs with blank ANZSIC codes were identified on the AC020 report. The same two exceptions have been present since 2018, and the registry will not allow an update to the trader details until an MEP is registered for a HHR site even though these are DUML ICPs. I have not recorded non-compliance as this is a registry issue.

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

Unknown ANZSIC codes

There were 2,978 ICPs with ANZSIC code T994 "don't know", an increase from 1,398 last audit, and 249 the audit before. This makes up 0.99% of all "active" ICPs.

A sample of 30 ICPs were checked, six were updated to residential ANZSIC codes prior to the audit and 24 were updated to residential ANZSIC codes during the audit. I recommend that the remaining ICPs with T994 ANZSIC codes are checked and updated where the correct customer industry can be determined.

Description	Recommendation	Audited party comment	Remedial action
Active ICPs with T994 (don't know) ANZSIC codes	Check the customer industry for "active" ICPs with T994 (don't know) ANZSIC codes and update where the correct customer industry can be determined. Investigate why the number of ICPs with T994 ANZSIC codes is increasing and take action to ensure that valid codes are consistently applied where the customer industry is known.	We are running our weekly ANZSIC report as well as use the AC report to update ICPs with the correct ANZSIC code accordingly. We have a switch in issue where ANZSIC codes are not populating which is causing the registry to be updated to T994. TRUS process will be adopted post integration.	Identified

Residential ANZSIC codes for ICPs with category two or higher

The AC020 report recorded 57 category 2 ICPs with residential ANZSIC codes (a decrease from 126 last audit), and one ICP with meter category three with a residential ANZSIC code. I checked a sample of 20 ICPs with meter category two and the ICP with meter category three and found 14 were genuinely residential and had the correct code applied, and seven should have had a business ANZSIC code and were corrected during the audit.

Sample review

A diverse sample of 80 “active” ICPs were checked to confirm the validity of ANZSIC codes, including ICPs assigned to each of the ten most frequently used codes. I found that nine were incorrect, and were updated to the correct codes during the audit.

TRUS

ANZSIC codes are captured at the point of customer registration and then reconfirmed as part of the welcome call to newly connected customers. ANZSIC code discrepancies between GTV and the registry are identified and resolved as part of the registry discrepancy reporting process.

Missing and unknown ANZSIC codes

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

Residential ANZSIC codes for ICPs with category two or higher

The AC020 trader compliance report recorded 14 category 2 ICPs with residential ANZSIC codes and no ICPs with meter category three with a residential ANZSIC code. I checked all 14 and confirmed all were correct except for ICP 0000051236HR2E8 and this has since been corrected.

Sample review

A diverse sample of 80 “active” ICPs were checked to confirm the validity of ANZSIC codes, including ICPs assigned to each of the ten most frequently used codes. Four ICPs were found to be incorrect and have since been corrected which represents a 5% error rate.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.6 With: 9 (1(k) of Schedule 11.1 From: 01-Jan-22 To: 31-Mar-23	**MEEN** 2,978 ICPs with T994 ANZSIC codes. A sample of 30 ICPs were checked and corrected to residential ANZSIC codes before or during the audit. One meter category three ICP had a residential ANZSIC code assigned in error and was corrected during the audit. Six category two meters of a sample of 20 ICPs had a residential ANZSIC code assigned in error and were corrected during the audit. Nine of a sample of 80 “active” ICPs had incorrect ANZSIC codes assigned and were corrected during the audit. **TRUS** One category 2 ICP with a residential ANZSIC code applied. Four ICPs of the 80 ICPs sampled with an incorrect ANZSIC code applied. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**

Low	For MEEN controls are rated as moderate because of the relatively high number of T994 ANZSIC codes. For TRUS controls are rated as strong as controls are robust. Overall the controls are assessed to be moderate. 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
MEEN As per above, we will continue to run the ANZSIC report as well as use the AC report to correct any ANZSIC code that requires updating/correcting. Currently there are a lot of ICP's on the AC report which requires investigating and updating to correct ANZSIC. Resources issues at times make it challanging to get these done before the new AC report comes through but always update as much as possible. The number of ICP's should gradually come down as we continue to work on it. With regards to the meter category, we dont have any reporting to pick these up on our end but there is a bit of information on the AC report we can use. **TRUS** **One category 2 ICP with a residential ANZSIC code applied.** **Four ICPs of the 80 ICPs sampled with an incorrect ANZSIC code applied.** We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	May 2023 June 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN We will review the reporting post integration regarding the meter category. **TRUS** **One category 2 ICP with a residential ANZSIC code applied.** **Four ICPs of the 80 ICPs sampled with an incorrect ANZSIC code applied.** Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	May 2023 June 2023	

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

Code reference

Clause 9(1)(f) of Schedule 11.1

Code related audit information

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

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

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

Audit observation

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

- unmetered load is identified by the distributor, and none is recorded by Mercury,
- unmetered load is identified by Mercury, and none is recorded by the distributor,
- unmetered load is indicated but the unmetered daily kWh is zero or blank, and
- Mercury' unmetered load figure does not match with the distributor's figure (where it is possible to calculate this if the distributor is using the recommended format) and the variance is greater than 0.1 kWh per day (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 0.1 kWh per day).

Audit commentary

MEEN

Management of unmetered load information

MEEN supplies 557 "active" ICPs with unmetered load recorded by the distributor.

All unmetered load new connections follow the new connections process. Unmetered load capacity changes most commonly occur when there is a change to shared unmetered load, or an unmetered builder's temporary supply becomes permanent and metered. MEEN normally receives confirmation of the changes from the relevant network, including the load and the date that the change came into effect and uses this information to update their records and the registry.

Unmetered daily kWh is 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).

Previously MEEN ran SAS queries every two months to identify discrepancies between the registry and retailer time slice table, and the registry and installation facts. This query is no longer used, and MEEN relies on the AC020 trader compliance report as time and workloads allow. The AC020 report will identify inconsistencies between registry fields, but not inconsistencies between SAP and the registry.

Active ICPs with no metering or unmetered load recorded by Mercury

The audit compliance report recorded 62 "active" ICPs where the metering category was 9 or blank, and the unmetered flag was set to no:

Comment	Count
The ICP became inactive, became decommissioned, had metering added, or unmetered load added after the report was run.	52
MEP nomination accepted and asset meter data is to be populated.	7
DUML ICP 0000043663HR00F has its UNM flag set to N but should have its UNM flag set to Y.	1
No MEP nominations were raised for ICPs 0006050069RNDB1 and 0001426079UN6E1, which are "active" with metering category 9.	2
Total	62

Active ICPs with unmetered load recorded by the distributor but not the trader

The AC020 report recorded 19 ICPs where the distributor recorded unmetered load, but the trader did not:

- one ICP had become metered, and MEEN had correctly removed the unmetered load, but the distributor had not,
- 15 were DUML ICPs which had the unmetered flag set to no, and a blank unmetered daily kWh; for 14 of the ICPs the unmetered flag and daily kWh was corrected during the audit but DUML ICP 0000043663HR00F has its UNM flag set to N but should have its UNM flag set to Y, and
- three ICPs missed having shared unmetered load re-added when users processed meter changes and were corrected during the audit.

Active ICPs with unmetered load recorded by the trader but not the distributor

593 "active" ICPs have unmetered load recorded by the trader but not the distributor:

Unmetered load type based on trader details	Count
Builder's temporary supply	4
DUML	3
Residual load	16
Telecommunications cabinet	552
Lighting, electric fences and gates	10
No trader unmetered load details	8
Total	593

I checked the eight ICPs with no trader unmetered load details recorded, and all ICPs which had metering installed as well as unmetered load recorded by the distributor:

- seven ICPs had no unmetered load connected at the time of switch in, but old unmetered load details inherited from the previous retailer; the trader unmetered load information was corrected during the audit,

- five had unmetered load details inherited from the previous retailer at the time of switch in, and MEEN is unsure whether they are correct; I recommend these are investigated, and
- three ICPs had incorrect unmetered load details created by the switch in loader or switch out loader process and were corrected during the audit; in rare instances where a switch is reversed, the switch loader process replaces the timeslice which is not required instead of deleting it - MEEN could not confirm why the process added the invalid unmetered load details.

Accuracy of daily unmetered kWh

28 ICPs had the unmetered flag set to yes and a daily unmetered kWh of zero or ENG. 16 SB (residual load ICPs) have zero and 12 DUML ICPs have ENG in the unmetered daily kWh field and are compliant.

The AC020 report recorded 66 ICPs where the daily unmetered kWh differed from the recalculation based on the distributor information by more than ± 0.1 kWh. I found 64 ICPs had correct daily unmetered kWh recorded by MEEN, because:

- they were DUML ICPs and are compliant, or
- they had been confirmed to be correct in a previous audit, or
- MEEN completed the new connection and had verified their average daily kWh as part of the connection process, or
- they invalidly appeared on the report because the calculation process did not handle shared unmetered load correctly, or the distributor recorded kW instead of W.

The other two ICPs are believed to have incorrect average daily kWh:

ICP	Daily Unmetered kWh	Unmetered Load Details - Trader	Issue
0000540450TE6E7	1.8	Trader 0002:11.0:UVL Distributor 0002:11.0:	TOPE had advised there are two bulbs onsite estimated to be 100W each, resulting in estimated daily kWh of 2.2. MEEN advised that they have not updated the value as TOPE's wattage figure is estimated.
0007301973NVCDF	2.88	Trader 0264;12.0;3 x 80W Mercury Under Veranda Lights Distributor 0264;12.0;3 x 80W Mercury Under Veranda Lights	MEEN confirmed that the three lights are 90W each. The daily unmetered kWh should be updated to 3.24, and the trader unmetered load details should be 270;12.0;3x80W Mercury UV lights.

Unmetered builder's temporary supply (BTS) ICPs

Ten unmetered BTS ICPs with the unmetered flag set to Y were recorded on the registry list. Five have since been decommissioned, or become permanent and metered and had their unmetered load removed.

The other five are under investigation:

ICP	ICP creation	Unmetered load details	Metering category	Comment
0007168347RNE85	25 June 2015	Trader only 0192;08.0;Unmetered Temporary Supply	1	Believed to be permanently metered, to confirm with network that unmetered BTS can be removed.
0007205264RN2D8	2 November 2021	Trader only 0192;08.0;Unmetered Temporary Supply	1	Believed to be permanently metered, to confirm with network that unmetered BTS can be removed.
0007189650RN03A	20 March 2019	Distributor 0192;08.0;Unmetered Temporary Supply Trader 0192;08.0;Unmetered Temporary Supply	No meter	Under investigation to determine whether the ICP can have metering installed and be moved to permanent.
0000509351DEAD4	29 May 2019	Trader only 192;8.0;BUILDERS TEMP SUPPLY	No meter	Under investigation to determine whether the ICP can have metering installed and be moved to permanent.
0007195908RN648	12 June 2020	Distributor 0192;08.0;Unmetered Temporary Supply Trader 0192;08.0;Builders temporary supply	No meter	Under investigation to determine whether the ICP can have metering installed and be moved to permanent.

The incorrect information identified during the audit was not found and resolved earlier because MEEN's unmetered load validation checks do not consistently identify all discrepancies and are only completed as time and workloads allow. To improve future compliance I recommend improving validation, and resolving discrepancies identified during this audit.

Description	Recommendation	Audited party comment	Remedial action
Identification and correction of inaccurate unmetered load information	Reinstate the SAS queries to identify discrepancies between registry and SAP unmetered load information. Where an ICP switches in with trader unmetered load details but no distributor unmetered load, check to determine whether the unmetered load appears correct and reasonable and investigate to confirm the correct values if unsure.	Unmetered SAS query/report has been reinstated to be run on a monthly to potentially pick up ICP's where the AC report wasn't able to pick up. Unmetered load will continue to be look at on the AC report also while returning to run the SAS query.	Identified

Description	Recommendation	Audited party comment	Remedial action
	Monitor long term unmetered BTS ICPs and investigate unmetered BTS ICPs which have metering installed to determine whether the unmetered load can be removed.		
Check unmetered load details	Check whether the trader unmetered load details are correct for these ICPs with no unmetered load recorded by the distributor: • 0006950760RN3FF 0.6 kWh per day no description, • 0006889514RN932 0.4 kWh per day no description, • 0005649089WA391 1.00 kWh per day no description, • 1000015953BP63F 0.8 kWh per day no description and category 1 MTRX metering is installed, • 1000015954BPBF5 0.8 kWh per day 0080;10;80Wx1under verandah light and category 1 MTRX metering is installed, • 0007168347RNE85 believed to be permanent metered and to be checked to confirm unmetered BTS can be removed, and • 0007205264RN2D8 believed to be permanent metered and to be checked to confirm unmetered BTS can be removed.	ICP: 0006950760RN3FF & 0006889514RN932 - Have emailed network to see if they have any further information about the unmetered load against these ICP's. The unmetered load details were copied based on previous retailers information that was on the registry. ICP: 0005649089WA391 - have emailed previous retailer TRUS to see if they have any information on their end which could assist us in updated the unmetered load details. TRUS advised they raised job with Waipa to attend to confirm unmetered load to which they advised TRUS there is unmetered load for some street light but couldn't confirm wattage. TRUS tried to get their customer to arrange sparky to confirm but never heard back. Further investigation required on our end to determine correct unmetered data. ICPs 1000015953BP63F & 1000015954BPBF5 - same as first two ICP's. ICP's 0007168347RNE85 & 0007205264RN2D8 - unmetered load has been removed from MEEN gain date. Reason why unmetered load was populated was because previous retailer did not remove the unmetered BTS load after site had meter installed so when site switched to MEEN we populated SAP with metered and unmetered details as per details on registry.	Identified

TRUS

Management of unmetered load information

TRUS supplies 279 "active" ICPs with unmetered load recorded by the distributor.

All unmetered load new connections or capacity changes require an application to Trustpower that is reviewed and authorised to ensure accuracy.

The ongoing management of unmetered load has moved through several areas in Trustpower during the audit period. This has resulted in a loss of knowledge, corrections to unmetered loads being slow to be processed and an increase in unmetered load discrepancies.

There is a daily discrepancy report that identifies differences between the trader and distributor unmetered load fields in both GTV and the registry, but this report isn't being monitored as regularly as previously due to resource constraints and training being needed.

Active ICPs with no metering or unmetered load recorded by Trustpower

The design of the new connections process does not allow ICPs to be connected without authorisation by Trustpower, or an arrangement with an MEP if the ICP is to be metered.

The audit compliance report recorded 67 "active" ICPs where the metering category was 9 or blank, and the unmetered flag was set to no:

Comment	Count
The ICP had metering installed after the report was run.	66
MEP nomination accepted and asset meter data is to be populated.	1
Total	67

Active ICPs with unmetered load recorded by the distributor but not the trader

The AC020 report recorded four ICPs where the distributor recorded unmetered load but the trader did not. Two were due to timing differences. The remaining two were ICPs that have switched in and the associated shared unmetered load is present in GTV, but this has not been updated in the registry. This is recorded as non-compliance in **section 5.1**. As detailed in **section 2.1**, the unmetered load is not included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission. Trustpower are investigating this as it appears that updates are not getting to the registry.

Active ICPs with unmetered load recorded by the trader but not the distributor

39 "active" ICPs have unmetered load recorded by the trader but not the distributor:

Unmetered load type based on trader details	Count	Incorrect	Findings
Builders' temporary supply	5	4	Unmetered load removed from GTV but not updated on the registry.
Communications	1	1	Unmetered load removed from GTV but not updated on the registry.
Electric fence	3	0	Historic and likely to be accurate as this was prior to the distributors being

Unmetered load type based on trader details	Count	Incorrect	Findings
			required to record unmetered load details in the registry.
Lighting	14	7	The unmetered load has been removed in GTV for seven of these, but the changes have not flowed to the registry. Seven of these are likely to be correct as this was prior to the distributors being required to record unmetered load details in the registry.
Shared unmetered	12	10	The unmetered load has been removed in GTV for seven of these, but the changes have not flowed to the registry.
No trader unmetered load details	4	0	Historic and likely to be accurate as this was prior to the distributors being required to record unmetered load details in the registry.
Total	39	22	

Accuracy of daily unmetered kWh

One ICP had the unmetered flag set to yes and a daily unmetered kWh of zero, which was correct based on the trader and distributor unmetered load details.

The AC020 report recorded two ICPs where the daily unmetered kWh differed from the recalculation based on the distributor information by more than ± 0.1 kWh. Both were examined and found:

- one was correct but invalidly appeared on the report because the report calculation process did not handle shared unmetered load correctly, or the distributor recorded kW instead of W,
- as detailed in **section 3.3**, ICP 0000400354WA934 had backdated change to the unmetered load value; the figure is recorded correctly in GTV but the daily kWh figure in the registry is not correct, and
- ICP 1000595713PC497 is correctly recorded in GTV but this hasn't flowed to the registry and is being corrected; these are streetlights associated with a small subdivision and I recommend that Trustpower check with the WBOP DC trader (Manawa) to see if these lights are now recorded in that DUML database as part of the Council's load:

Description	Recommendation	Audited party comment	Remedial action
Unmetered load	Check with the WBOP DC DUML database trader (Manawa) whether the streetlights associated with ICP 1000595713PC497 are also recorded in the Council's database.	We acknowledge the recommendation and are reviewing whether to adopt it.	Investigating

Unmetered builder's temporary supply (BTS) ICPs

Six unmetered BTS ICPs with the unmetered flag set to Y were recorded on the registry list. These were examined and found:

- for three ICPs the unmetered BTS details have been removed in GTV, but this hasn't flowed to the registry; these are being corrected, and
- the remaining three have since been “decommissioned - set up in error”.

Trustpower are no longer going to use unmetered builders temporary supplies so this issue is not expected to occur going forward.

Previous audit exceptions

I rechecked the previous audit exceptions and found they had been resolved apart from ICP 0000702000MP807 which was electrically connected on 23 April 2021, but the meter was not installed until 4 May 2021. The period intervening should have been recorded as an unmetered supply, but this was not corrected post the last audit and this is now outside of the 14-month revision process. This is recorded as non-compliance in **section 2.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.7 With: Clause 9(1)(f) of Schedule 11.1 From: 01-Jan-22 To: 17-Nov-22	**MEEN** DUML ICP 0000043663HR00F has its UNM flag set to N but should have its UNM flag set to Y. No MEP nominations were raised for ICPs 0006050069RNDB1 and 0001426079UN6E1, which are “active” with metering category 9. Three ICPs missed having shared unmetered load re-added when users processed meter changes and were corrected during the audit. Ten ICPs with no unmetered load recorded by the distributor had incorrect trader unmetered load information and were corrected during the audit. ICPs 0000540450TE6E7 and 0007301973NVCDF are believed to have incorrect average daily kWh recorded resulting in a small amount of under submission (0.76 W or 3.2 kWh per annum). 15 DUML ICPs which had the unmetered flag set to no, and a blank unmetered daily kWh. 14 were corrected during the audit and DUML ICP 0000043663HR00F remains incorrect. **TRUS** 27 ICPs had an incorrect daily unmetered kWh value recorded on the registry. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**

Low	The controls are recorded as weak because: • MEEN's validation processes require improvement to ensure that unmetered load information is consistently accurate, and • TRUS has had changes of staff and training is planned to bring the new team up to speed. The impact on settlement and participants is minor, as the discrepancies are small.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
MEEN All necessary fixes and corrections in the registry have been made. **TRUS** We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	May 2023 June 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN		
DUML ICP 0000043663HR00F has its UNM flag set to N but should have its UNM flag set to Y. Further training with team around DUML sites	Ongoing	
No MEP nominations were raised for ICPs 0006050069RNDB1 and 0001426079UN6E1, which are "active" with metering category 9. Training with team around Metering changes, and our responsibility to nominate participants	Ongoing	
Three ICPs missed having shared unmetered load re-added when users processed meter changes and were corrected during the audit. Further training with team around DUML sites	Ongoing	
Ten ICPs with no unmetered load recorded by the distributor had incorrect trader unmetered load information and were corrected during the audit. Further training with team around DUML sites.	Ongoing	
ICPs 0000540450TE6E7 and 0007301973NVCDF are believed to have incorrect average daily kWh recorded resulting in a small amount of under submission (0.76 W or 3.2 kWh per annum). Monitor going forward.	Ongoing	
15 DUML ICPs which had the unmetered flag set to no, and a blank unmetered daily kWh. 14 were corrected during the audit and DUML ICP 0000043663HR00F remains incorrect. Further training with team around DUML sites	Ongoing	
TRUS		
27 ICPs had an incorrect daily unmetered kWh value recorded on the registry. Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	June 2023	

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

Code reference

Clause 17 Schedule 11.1

Code related audit information

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

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

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

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

Audit observation

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

The timeliness of data for reconnections is assessed in **section 3.3**, and a sample of 20 updates were checked for accuracy using the audit compliance and event detail reports.

Audit commentary

MEEN

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 new connection process is discussed in **section 2.9**. I checked the accuracy of new connection information by reviewing the AC020, registry list and event detail reports.

The AC020 report identified 97 ICPs with an initial electrical connection date populated which had not been made "active":

- 65 ICPs were updated to "active" after the report was run; 64 had correct "active" status dates applied but ICP 0022260119WA596 was made "active" from the date it became permanent instead of when the builder's temporary supply was connected and was corrected during the audit,
- one ICP was never connected and was decommissioned after the report was run,
- 31 ICPs remained at "ready" or "inactive - new connection in progress" status; I checked a sample of ten and found no paperwork had been received for nine of the ICPs, and one had its connection job cancelled and was being queried with the network.

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 503 ICPs with date discrepancies. For 11 ICPs the "active" date and initial electrical connection date was consistent and the ICP was unmetered. The other 492 exceptions were checked:

Exception type	Quantity	Sample	Quantity incorrect	Findings
IECD = active date and MCD ≠ active date	4	4	3	Three of the ICPs had incorrect "active" dates and are still to be corrected.
IECD ≠ active date and MCD = active date	32	5	1	One of the ICPs had an incorrect "active" date and was corrected during the audit.
IECD ≠ active date and MCD ≠ active date	6	5	4	Four of the ICPs had incorrect "active" dates and are still to be corrected.
IECD = active date and no MCD	31	5	-	All ICPs checked had correct "active" dates.
No IECD and MCD = active date	378	5	-	All ICPs checked had correct "active" dates.
No IECD and no MCD	32	5	-	All ICPs checked had correct "active" dates.
No IECD and unmetered	9	5	-	All ICPs checked had correct "active" dates.

Total	492	34	8	One corrected during the audit. Seven remain incorrect and are listed in the table below.

The following ICPs still have incorrect status records:

ICP	Status event date	Correct status event date	Comment
0000053680HRE94	3 October 2022	2 October 2022	Need assistance from the network to claim ICP from an earlier date
0000061677NTD07	9 December 2021	8 December 2021	Account set up from 9 December 2021
0077451056WACF7	22 December 2021	21 December 2021	Data entry error
1002137904UN6F8	18 March 2021	17 March 2021	Data entry error
0000574282NRE70	16 May 2022	13 May 2022	Data entry error
1099582983CNA70	20 September 2022	5 September 2022	Data entry error
1099582303CN530	17 March 2022	9 March 2022	SAP error caused incorrect date

I also checked a further 32 new connections for accuracy. They had the correct status update and event date, apart from one ICP which was recorded as "active" from the date the paperwork was received instead of the connection date. The status date was corrected during the audit. The connections team is now fully staffed, and it is expected that late updates caused by workloads will decrease in future audits.

I checked a sample of 20 new connections with late meter certification and found they had been updated to "active" from the correct date and the meter certification was genuinely late.

I rechecked the previous audit connection date accuracy issues and found that they had been resolved and correct dates are now applied.

The previous audit recommended putting checks in place to prevent ICPs from switching out at "inactive - new connection in progress" status. This has not been adopted.

Reconnections

The disconnection and reconnection process varies depending on the reason for disconnection and reconnection.

Credit disconnections and reconnections are processed manually each week. A report of all credit reconnections is run on a Monday night. Staff check each ICP to determine whether a disconnection has already been processed and if the ICP has been disconnected for more than one day. If the ICP has been disconnected for more than one day they ensure both the disconnection and reconnection are processed. There have been some instances where credit disconnections have been missed due to the manual process, and monitoring of the inactive consumption report has helped to identify these.

For vacant disconnections an automated update is processed when SAP receives a response to a vacant disconnection service order. When the ICP is ready to be reconnected a reconnection service order is raised, and an automated status update is processed when SAP receives a reconnection paperwork. Open service orders are monitored and any jobs due to be completed more than five days ago are followed up with the contractor. There have been some issues with missed updates where the ICP was disconnected

by another trader and no disconnection service order was present for Mercury to record the reconnection service order against. Further training has been provided and an improved process has been implemented.

Where a disconnected ICP begins recording energy consumption, SAP automatically updates the status to "active" from the last reading date. The process was modified during the audit period so that an email alert is sent to a staff member, so that they can confirm whether the consumption is genuine and update the status from the day after the last reading date which did not record consumption.

A sample of 20 reconnections were checked, and I confirmed that they were all accurate. I re-checked reconnection accuracy issues identified during the previous audit and found they had been resolved.

Reads are entered for manually processed disconnections and reconnections, and SAP will estimate a disconnection and reconnection reads if none are provided. Disconnection and reconnection readings are not entered where the update occurs automatically, and SAP will not estimate a disconnection or reconnection reading.

TRUS

GTV 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. When an ICP is loaded in GTV the user must specify whether the load is metered or unmetered.

New connections

As described in **section 3.5**, new ICPs are updated to "active" status once Trustpower confirms the ICP is electrically connected. This is normally when connection paperwork is received. In some cases, the distributor or MEP may update their connection information on the registry before connection paperwork is received. The daily new connections automation process identifies ICPs which have meter certification and/or an initial electrical connection date but have not been updated to "active" status. Bulk processes are used to update these ICPs to "active" status based on the initial electrical connection date and meter certification date, in an effort to ensure that the registry is updated within five business days. Once connection paperwork is received, corrections to the "active" status date are carried out as required.

The AC020 report identified six ICPs with an initial electrical connection date populated which had not been made "active". All were timing differences and the ICPs were moved to "active" status effective from the initial electrical connection date after the report was run.

Active dates for new connections were compared to the distributor's initial electrical connection date and the MEP's certification date using the AC020 report. The AC020 report identified 870 ICPs with date discrepancies, 11 discrepancies were not genuine because the ICPs were unmetered, and the "active" status date matched the initial electrical connection date. The 859 ICPs with genuine discrepancies were checked:

Exception type	Quantity	Sample	Quantity incorrect	Findings
IECD = active date and MCD ≠ active date	4	4	4	All were correct in the first instance and matched to the initial electrical connection date, but the metering date confirmed electrical connection was earlier and all have since been reverted to the correct first "active" date.
IECD ≠ active date and MCD = active date	12	5	4	Three were due to the first "active" date being matched to the meter certification date but this was later than electrical

Exception type	Quantity	Sample	Quantity incorrect	Findings
				connection date. All have been corrected. ICP 0000574440NRF1C was electrically connected on 15 July 2022 but the contractor installed an NGCM meter instead of a MTRX meter. NGCM refused to load the meter to the registry as this was not hung under their test house. Metering is loaded to Gentrack from the registry so as the meter was never loaded to the registry the first "active" date was the MTRX meter on 19 August 2022. The volume for the period from 15 July 2022 to 18 August 2022 has not been reconciled and is recorded as non-compliance below and in **sections 2.1, 3.5** and **12.7**.
IECD ≠ active date and MCD ≠ active date	2	2	1	ICP 0007205074RN272 switched in from another trader at the "inactive - new connection in progress" status for event date 4 February 2022. Trustpower made it "active" from their first day of supply. The network and MEP indicate that the ICP was electrically connected by the losing trader on 2 December 2021 but was never made active.
IECD = active date and no MCD	58	5	0	All meter certifications are now loaded to the registry and align with the first "active" date.
No IECD and MCD = active date	760	5	0	All initial electrical connection dates now loaded to the registry and align with the first "active" date
No IECD and MCD ≠ active date	1	1	1	ICP 0000038047TC7D7 was confirmed as electrically connected on 29 July 2022 and not 22 July 2022. This has been corrected.
No IECD and no MCD	20	5	1	ICP 0000062430NTA8F was recorded as electrically connected on 11 November 2022 due to incorrect paperwork returned. The date has since been confirmed as 14 November 2022 and has been corrected and all dates align.
No IECD and unmetered	2	2	0	All initial electrical connection dates now loaded to the registry and align with the first "active" date.

Exception type	Quantity	Sample	Quantity incorrect	Findings
Total	859	29	10	Excludes the ICP 0007205074RN272 that switched in the incorrect status from the previous trader.

I also checked a further 21 new connections for accuracy – from the late updates sample and confirmed all have the correct first "active" date.

I re-checked new connection accuracy issues identified during the previous audit and found they had been resolved except for ICP 0000702000MP807. This was electrically connected on 23 April 2021, but the meter was not installed until 4 May 2021. The period intervening should have been recorded as an unmetered supply, but this was not corrected post the last audit and is now outside of the 14-month revision process. This is recorded as non-compliance in **section 2.1**.

Reconnections

GTV and Jobtrack are used to manage disconnections and reconnections. Field service orders are raised in GTV and transferred to Jobtrack, and job closure information is transferred from Jobtrack to GTV.

Jobtrack is used to dispatch field services jobs. Some contractors input field results directly into Jobtrack, and others provide paperwork which is manually entered into Jobtrack. Open jobs are tracked daily using the Jobtrack operational reporting and followed up if paperwork is not received. Daily discrepancy reporting is in place to detect status mismatch between GTV and the registry.

Wherever possible reconnections are conducted remotely. If remote reconnection cannot occur, a field services contractor is dispatched.

As detailed in the last few audits, I found that when reconnections are processed, reads are only usually entered if reconnection coincides with a meter change. I repeat the recommendation that disconnection and reconnection reads should be recorded to ensure that consumption is reported against the correct consumption period. This won't happen until Jobtrack is replaced and this has been unable to be progressed during the audit period due to the sale of the TRUS customer base to Mercury NZ. I have repeated the recommendation to maintain visibility.

Description	Recommendation	Audited party comment	Remedial action
Enter reconnection reads into GTV	Reconnection readings should be entered wherever possible to ensure that consumption is apportioned to the correct period by the historic estimate process. Because GTV's historic estimate process allocates all consumption in each read-to-read period against the "active" days within the read period, it will be important to ensure that no consumption is present during read-to-read periods which are entirely inactive. If consumption does occur during an inactive period, it is likely that the status is incorrect.	It is agreed that it would be advantageous to add reconnection reads to GTV where avaliable. There were plans to upgrade/replace Jobtrack but these have been delayed due to ongoing integration plans. This will be a top priority function when the Jobtrack upgrade/replacement is re-prioritised.	Identified

A sample of 20 reconnections were checked, and I confirmed that the status and date had been applied correctly for 19 ICPs. ICP 0001853487ALE7F was reconnected on 31 July 2019 but was incorrectly

updated to “active” for 2 August 2019. The “active” date was changed to 1 August 2019 on 10 June 2022, but this is still incorrect and is now outside the 14-month revision cycle. This is recorded as non-compliance below and in **sections 2.1**. and **12.7**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.8 With: Clause 17 Schedule 11.1 From: 01-Jan-22 To: 31-Mar-23	**MEEN** Ten new connections had incorrect “active” status dates. Three were corrected during the audit and seven remain incorrect. **TRUS** Ten new ICPs had the incorrect “active” status dates of the samples checked. All but one have since been corrected. ICP 0001853487ALE7F reconnected on 31 July 2019 but updated to “active” from 1 August 2019. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time. 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
MEEN We are actively working with the MEP and network to correct these ICPs statues. **TRUS** **Ten new ICPs had the incorrect “active” status dates of the samples checked. All but one have since been corrected. ICP 0001853487ALE7F reconnected on 31 July 2019 but updated to “active” from 1 August 2019.** All ICPs with incorrect active status dates identified have been corrected excluding the one ICP identified within the report. This ICP is outside of the submission period so any correction will not impact reconciliation for either retailer.	Ongoing May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN There is existing reporting in the GTV space, as we do not currently report on this in SAP. **TRUS** **Ten new ICPs had the incorrect "active" status dates of the samples checked. All but one have since been corrected. ICP 0001853487ALE7F reconnected on 31 July 2019 but updated to "active" from 1 August 2019.** Changes have been made to processes around reporting that looks at where CO statuses have failed to update due to TRUS not being the retailer at the time of the reconnection. ICPs identified to be reconnected prior to TRUS being the retailer will now be re-requested for the date of the reconnection.	Late-2023 May 2023	

3.9. Management of "inactive" status (Clause 19 Schedule 11.1)

Code reference

Clause 19 Schedule 11.1

Code related audit information

The ICP status of "inactive" must be managed by the relevant trader and indicates that:

- *electricity cannot flow at that ICP (clause 19(a)); or*
- *submission information related to the ICP is not required by the reconciliation manager for the purpose of compiling reconciliation information (clause 19(b)).*

Audit observation

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

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

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

Audit commentary

MEEN

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

ICPs at the "inactive - new connection in progress" status are monitored through the job tracking process described in **section 2.9**. At the moment only new connections with Intellihub metering are regularly monitored and followed up if paperwork is not received. There is no specific monitoring of ICPs at "inactive - new connection in progress" for extended periods.

20 ICPs have been at "inactive - new connection in progress" for more than two years:

- two are no longer required and were decommissioned after the report was run,
- five were connected after the report was run and have now moved to "active" status, and
- 13 ICPs created between 2018 and 2020 have been queried with the customer and their electrician to determine whether they are still required, and no response has been received.

The previous audit recommended that the new connections team be reminded to reverse ICPs from "inactive - new connection in progress" to "ready" status if they are no longer required. This recommendation has been adopted and the two ICPs which were no longer required had their status records corrected.

The AC020 report identified 97 ICPs with an initial electrical connection date populated which had not been made "active":

- 65 ICPs were updated to "active" after the report was run; 64 had correct "active" status dates applied but ICP 0022260119WA596 was made "active" from the date it became permanent instead of when the builder's temporary supply was connected and was corrected during the audit,
- one ICP was never connected and was decommissioned after the report was run, and
- 31 ICPs remained at "ready" or "inactive - new connection in progress" status. I checked a sample and found no paperwork had been received for nine of the ICPs, and one had its connection job cancelled and was being queried with the network.

Other "inactive" statuses

A sample of 31 updates to "inactive" statuses other than new connection in progress were checked and found all had the correct status and event date applied. I re-checked disconnection accuracy issues identified during the previous audit and found they had been resolved.

The AC020 report recorded one ICP with the "electrically disconnected remotely by AMI meter" status reason code applied where AMI metering was not recorded in the registry. The ICP was disconnected by another trader before it switched to MEEN.

I found that one decommissioned ICP had an incorrect "inactive" status event date, which was corrected during the audit.

Reads are entered for manually processed disconnections and reconnections, and SAP will estimate a disconnection and reconnection reads if none are provided. Disconnection and reconnection readings are not entered where the update occurs automatically, and SAP will not estimate a disconnection or reconnection reading.

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 118 ICPs (29,042 kWh) on the report, an increase in kWh from 270 ICPs (22,587 kWh) during the last audit. 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.

This report only looks for consumption between actual readings held in the SAP system and assumes that there is an actual read as of the date of disconnection. As the process to remotely reconnect an ICP is manual, the application of an actual read to denote the status change is also manual, and in a number of cases the disconnection read is applied as an estimate and a reconnection read is not applied if there is already an estimated read present in SAP. The use of estimate reads to denote the beginning of the disconnection period means the reporting cannot detect where consumption is detected on inactive ICPs until two scheduled actual reads are recorded in SAP. For short term periods of disconnection, the absence of actual reads or permanent estimate reads within SAP means not all ICPs are being included in this report.

I reviewed an extreme case sample of the 20 ICPs with the largest quantities of inactive consumption (363 to 3,463 kWh) and found that in most cases the disconnection date in the report was aligned with the

inactive date in the registry. In all cases, I found that the consumption was accurate and submitted as required.

TRUS

Inactive - new connection in progress

Trustpower monitors any ICPs which have been at "inactive - new connection in progress" status for more than 185 days using their discrepancy reporting. The customer is contacted to determine whether the ICP is still required. If the ICP is not still required, the status is reversed back to "ready", and the distributor is advised. Action taken is recorded as a note within the discrepancy report and in the memos in GTV.

47 ICPs have been at "new connection in progress" for more than two years. I checked the 15 ICPs with the oldest creation dates and confirmed all had been followed up with the applicant. 13 have been confirmed as still required and two have subsequently been returned to "ready" and set to "decommissioned- set up in error".

The AC020 report identified six ICPs with an initial electrical connection date populated which had not been made "active". All were timing differences and the ICPs were moved to "active" status effective from the initial electrical connection date after the report was run.

Inactive Status (excluding new connection in progress)

ICPs are only changed to an "inactive" status once Trustpower has received confirmation that the ICP is disconnected. Usually requests for disconnection are initiated by Trustpower and completed by an approved contractor, but sometimes the distributor or MEP will disconnect ICPs for safety, or the distributor will disconnect for credit where they bill the customer for line charges directly. Contractors are periodically audited to ensure the appropriate policies and procedures are being complied with.

When an ICP becomes vacant, Trustpower contacts the occupier requesting that they register for electricity supply. If no registration is received, the ICP will be disconnected seven to 14 days later.

After 20 days with no readings, disconnected AMI ICPs are moved to a manual meter reading route.

GTV and Jobtrack are used to manage disconnections and reconnections. Field service orders are raised in GTV and transferred to Jobtrack, and job closure information is transferred from Jobtrack to GTV.

Jobtrack is used to dispatch field services jobs. Some contractors input field results directly into Jobtrack, and others provide paperwork which is manually entered into Jobtrack. Open jobs are tracked daily using the Jobtrack operational reporting and followed up if paperwork is not received. Daily discrepancy reporting is in place to detect status mismatch between GTV and the registry.

As reported in the last three audits, there is no automated process to enter disconnection reads into GTV. Reads for credit disconnections are usually manually entered into GTV from the disconnection paperwork. As noted in **section 3.8**, this won't happen until Jobtrack is replaced and this has been unable to be progressed during the audit period due to the sale of the TRUS customer base to Mercury NZ. I have repeated the recommendation to maintain visibility.

Description	Recommendation	Audited party comment	Remedial action
Enter disconnection reads into GTV	Disconnection readings should be entered wherever possible to ensure that consumption is apportioned to the correct period by the historic estimate process. Because GTV's historic estimate process allocates all consumption in each read-to-read period against the "active" days within the read period, it will be important to ensure that no consumption is present during read-to-read periods which are entirely inactive. If consumption does occur during an inactive period, it is likely that the status is incorrect.	It is agreed that it would be advantageous to add disconnection reads to GTV where avaliable. There were plans to upgrade/replace Jobtrack but these have been delayed due to ongoing integration plans. This will be a top priority function when the Jobtrack upgrade/replacement is re-prioritised.	Identified

I reviewed a sample of 40 updates to "inactive" status, including at least five (or all) late status updates for each status reason code used during the audit period. The updates were accurately processed from the correct event date except for two ICPs:

- ICP 0000940134TU773 had duplicated work orders and when the second work order was closed it sent another disconnected status update to the registry for a later date; this had no material impact as the status was already disconnected, and
- ICP 0110012486EL548 was temporarily connected on 30 July 2021 and "inactive" status was entered from 31 July 2021; the ICP was incorrectly made "active" on 10 August 2021 but instead of reversing this status a further "inactive" status was applied from 10 August 2021 and the correct "active" date was entered for 17 August 2021 - this has no material impact on reconciliation as the ICP was inactive for the correct period.

The AC020 report recorded 62 ICPs with 1,7 "electrically disconnected due to meter disconnected" status where the AMI flag is set to no. All had the AMI flag set to yes at the time the disconnection event was processed.

I re-checked reconnection accuracy issues identified during the previous audit and found they had been resolved.

Consumption while inactive

Trustpower provided a list of 272 ICPs with "inactive" status and consumption after the final reading on the customer's account. 44 had consumption of less than 1 kWh and seven recorded negative consumption. A sample of 20 with the largest inactive consumption recorded were reviewed and the following was found:

- ten have been resolved by either updating the status event to "active" status just prior to the detection of the inactive consumption or reversing the "inactive" status event,
- one ICP (1002069373LC1A9) detected consumption for the day prior to a switch loss and no follow up with the gaining trader to determine verify if the correct transfer date was requested or no update of the registry status has been applied,
- one ICP (0005791707RN508) was resolved by reversing the "inactive" status back more than 14 months resulting in only 1,009 of the 1,030 kwh of inactive consumption being included in the submission process through the 14-month revision window,

- ICP 0000865145NV098 was severely damaged by fire on 20 September 2022; a removed read was estimated up to the date of the fire damage however the "inactive" status event date on the registry is one month earlier (20 August 2022) with an update date of 20 September 2022, and
- seven ICPs remain unresolved where the ICPs remain with an "inactive" status on the registry and consumption is still being recorded by the meters but no action has been taken to resolve this issue while attempts are made to identify a customer to sign into the ICP resulting in delays including this volume in the submission process with an impact of 6,078 kwh.

This is recorded as non-compliance below and in **sections 2.1** for incorrect registry information, **12.2** for missing submission information, and **12.7** for incorrect submission information.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.9 With: Clause 19 Schedule 11.1 From: 01-Jan-22 To: 17-Nov-22	**MEEN** Two ICPs had incorrect "inactive" status dates and were corrected during the audit. **TRUS** Two ICPs with incorrect inactive events applied. Two ICPs where inactive consumption was not included in the submission process resulting in an under submission of 27 kWh. Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because they mitigate risk most of the time. There is no impact on settlement as the volume impact to the submission process is minor.
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

MEEN These were identified during the audit and corrected at the time and auditor informed of this. **TRUS** **Two ICPs with incorrect inactive events applied.** Both ICPs identified within the audit as having the incorrect inactive event date have been corrected. **Two ICPs where inactive consumption was not included in the submission process resulting in an under submission of 27 kWh.** **Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process.** We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	March 2023 May 2023 June 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN We have had an increase in headcount within team since 2022 to help manage the volume for reporting for inactive sites. **TRUS** **Two ICPs with incorrect inactive events applied.** ICP 0110012486EL548 was incorrectly updated after being identified through new reporting that was implemented after the previous audit. The New Connections team is now experienced with this report and understand the process required to correctly work these discrepancies. This is backed up by only a single issue having been identified. **Two ICPs where inactive consumption was not included in the submission process resulting in an under submission of 27 kWh.** **Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process.** Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	February 2023 May 2023 June 2023	

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

Code reference

Clause 15 Schedule 11.1

Code related audit information

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

Audit observation

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

MEEN

Mercury has not received any 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 any requests received are investigated to determine whether they are still required, and responses are provided back to the network.

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.

I checked the number of ICPs at "new" and "ready" status:

Status	Total	More than two years
ICPs at "ready" status	420	99
ICPs at "new" status	-	-

I checked the 20 oldest ICPs at "ready" status. One had its connection completed after the report was run and has been updated to "active" status. No application or connection information has been received for the other 19 ICPs.

TRUS

Trustpower take all new connections to the "inactive - new connection in progress" status. Daily discrepancy reporting is in place to identify ICPs where Trustpower is recorded as the proposed trader and the ICP is not loaded in GTV.

Any requests from distributors on ICPs which have been at "new" or "ready" status for more than two years are investigated and responded to when they are received.

ICPs at "ready" status are monitored using discrepancy reporting, and review dates are set for each ICP based on information provided by the customer or their electrician. Notes on action taken are recorded in the discrepancy report and in the GTV memos.

ICPs at "new" status are not actively monitored. If the distributor enters any information indicating that a "new" ICP has been connected, such as an initial electrical connection date, the ICP will appear in the connection date discrepancy reporting and be investigated.

I checked the number of ICPs at new and ready status:

Status	Total	More than two years
ICPs at "ready" status	245	3
ICPs at "new" status	31	3

I checked the six ICPs at either the "new" or "ready" status. Four have been removed from the registry since provided. Two of these were actioned as part of BAU. Trustpower have previously advised the networks that two of these ICPs were no longer required and a reminder was sent which prompted the network to decommission them.

As recorded in the last audit, Trustpower are the proposed trader for ICP 0001187170WF770 which has been "ready" since 2008. This is an SB ICP for the New Zealand Windfarm generation. This is not an embedded generator, so the SB ICP is no longer required. I recommend Trustpower approach Manawa Energy who are listed as the owners of the TRPG network code on the participant register to get this ICP "decommissioned- set up in error".

Description	Recommendation	Audited party comment	Remedial action
ICPs at new and ready status	Recommend Trustpower approach Manawa Energy who are listed as the owners of the TRPG network code on the participant register to get this ICP "decommissioned-set up in error".	This site is now at "decommissioned-set up in error".	Cleared

Audit outcome

Compliant

4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

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

Code reference

Clause 2 Schedule 11.3

Code related audit information

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

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

A gaining trader must advise the registry manager of a switch no later than 2 business days after the arrangement comes into effect and include in its advice to the registry manager that the switch type is TR and 1 or more profile codes associated with that ICP.

Audit observation

The switch gain process was examined to determine when Mercury deem all conditions to be met. An extreme case sample of the most backdated NT files were checked to confirm that these were notified to the registry within two business days, and a typical sample were checked to confirm that the correct switch type was selected.

Audit commentary

MEEN

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.

All 9,531 transfer switch NTs where the meter category information was available on the PR255 report had metering category 1 or 2. I checked the five most backdated transfer NT files and found they were sent within two business days of pre-conditions being cleared, and the correct switch type was recorded.

TRUS

Trustpower's processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. Trustpower confirmed that they do not hold electricity only customer switches for the five-business day cooling off period, and instead withdraw the switch if the customer changes their mind. Switches for bundled customers (which purchase telecommunications as well as energy) are held for the five-business day cooling off period. Both approaches are confirmed to be a compliant practice as advised by the Electricity Authority via email on May 22nd, 2013.

Switch type is selected based on information provided by the customer on application. The customer is asked whether they are moving to a new address or remaining at the same address and transferring between retailers as part of the application process. ICP 0000183502WA6A3 indicated they were moving but this was loaded as a transfer switch in error. This is recorded as non-compliance below.

All 11,801 transfer switch NTs where the meter category information was available on the PR255 report had metering category 1 or 2. The five NT files checked were sent within two business days of pre-conditions being cleared.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.1 With: Clause 2 of schedule 11.3 From: 22-Oct-22 To: 25-Oct-22	**TRUS** One ICP loaded as a transfer switch in error. 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 processes in place are robust and training is comprehensive. This was a one-off human error. The risk rating is assessed to be low to none as the losing trader can request a switch withdrawal if required.

Actions taken to resolve the issue	Completion date	Remedial action status
Training was undertaken to prevent agent from making the same error in the future.	May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Refresher training with Contact Centre, further comms to go out to Contact Centre, updated with Training team to ensure new inductees are trained correctly.	May 2023	

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

Code reference

Clauses 3 and 4 Schedule 11.3

Code related audit information

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

- *provide acknowledgement of the switch request by (clause 3(a) of Schedule 11.3):*

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

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

Audit observation

The event detail report was reviewed to:

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

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

Audit commentary

MEEN

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.

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

AN content

I compared the AN response codes applied to the latest ICP attributes on the registry list with history for the 858 ANs which had the AA (acknowledge and accept), AD (advanced metering), MU (unmetered supply) or PD (premises electrically disconnected) code applied. 809 ANs (94.29%) were confirmed to have codes consistent with the latest registry information. I checked five or all ANs per exception type where the code was inconsistent with the latest ICP attributes. They were timing differences and correct information was applied apart from five ICPs which had AA (acknowledge and accept) but should have had AD (advanced metering) or PD (premises disconnected). The previous audit also found ICPs where AA was applied when another code also applied and an IT ticket had been raised to investigate this. No further changes to SAP are expected before MEEN migrates to Gentrack.

I checked the only AN with the OC (occupied premises) code and five ANs with the CO (contracted customer) code and found the AN content was correct.

The event detail report was reviewed for all 1,053 transfer switches to assess compliance with the setting of event dates requirements:

- 1,027 ANs (97.5%) had proposed event dates within five business days of NT receipt, and
- all ANs had proposed event dates within ten business days of NT receipt.

TRUS

AN timeliness

Trustpower monitors the timeliness of switches using:

- the Electricity Switch Loss Approve Errors (HOLDS) report, which shows any ICPs which require intervention or review before GTV can issue the AN file, such as switch move NTs received for

occupied premises, and ICPs with no reads during the period of supply (the held ICPs are worked through daily, and prioritised by the AN due date), and

- the switch breach history report is monitored three to four times per day to ensure that ANs are issued by their due date.

Switch timeliness and event date setting is also monitored using Trustpower's switching compliance report, which is reviewed monthly.

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

AN content

AN files are automatically generated by GTV.

I compared the AN response codes applied to the latest ICP attributes on the registry list with history for the 13,803 ANs which had the AA (acknowledge and accept), AD (advanced metering), MU (unmetered supply) or PD (premises electrically disconnected) code applied and the ICP appeared on the registry list with history. 13,509 ANs (97.8%) were confirmed to have codes consistent with the latest registry information. I checked five or all ICPs for each exception type where the code was inconsistent with the latest ICP attributes and found all were timing differences and correct information was applied apart from ICP 0000024720NTD74 which was sent as AA but has unmetered load associated with it so should have been sent with "MU". This is recorded as non-compliance below.

I checked five ICPs with the OC (occupied premises) code applied. According to the Electricity Switching memo sent switching out to the industry on 5 August 2016, the OC code should only be sent if "the existing customer has not yet advised they are moving out". The AA would have been more accurate for these ICPs but technically they are an occupied premise, so I have not recorded non-compliance. Trustpower are checking the coding hierarchy to ensure OC is not applied to transfer switches.

The event detail report was reviewed for all 13,843 transfer switches to assess compliance with the setting of event dates requirements:

- 12,631 ANs (91.24%) had proposed event dates within five business days of NT receipt,
- 13,840 ANs (99.97%) had proposed event dates within ten business days of NT receipt, and
- three ANs had proposed event dates more than ten business days of NT receipt, and in all cases the proposed event date matched the date requested by the gaining trader in the NT file and a switch withdrawal was sent the same day.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.2 With: Clauses 3 & 4 of schedule 11.3 From: 16-Mar-22 To: 16-Nov-22	**MEEN** Five of a sample of 46 transfer AN files with the AA response code checked contained incorrect response code. **TRUS** One of a sample of 22 AN files checked contained incorrect response code of AA. Three ANs had proposed event dates more than ten business days after NT receipt. 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	The controls are rated as moderate for MEEN because SAP sometimes applies the AA code incorrectly for ICPs which are disconnected or have AMI metering installed. The controls are rated as strong for TRUS as AN code assignment is automated based on hierarchy and the AN proposed dates process is robust. Controls are assessed to be strong overall, based on the number of exceptions identified as a proportion of those checked. The impact is assessed as low as there is no material impact on reconciliation or other participants.

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN Team has been refreshed via training on assigning AN code. **TRUS** **One of a sample of 22 AN files checked contained incorrect response code of AA.** Training was undertaken to prevent agent from making the same error in the future. Documention was also reviewed to ensure accuracy. **Three ANs had proposed event dates more than ten business days after NT receipt.** Corrected as part of CS process.	May 2023 May 2023 May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN As above. **TRUS** **One of a sample of 22 AN files checked contained incorrect response code of AA.** Full team training session to be held to ensure everyone understands and completes process correctly. **Three ANs had proposed event dates more than ten business days after NT receipt.** Reporting already in place.	May 2023 June 2023 N/A	

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

Code reference

Clause 5 Schedule 11.3

Code related audit information

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

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

Audit observation

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

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

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

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

Audit commentary

MEEN

<u>CS timeliness</u>

Switch timeliness is managed using the switch breach report. There are two reports produced and reviewed daily at 6.15am and 8.15am. The earlier report excludes T2, CS and E2 breaches and the later report includes them.

As reported in the last two audits, occasionally (one every two to three months) CS files are not sent to the registry by SAP. This is checked daily using the switch breach history report, and any instances are manually processed on the registry.

The switch breach history report recorded 11 CS breaches, where the CS was issued more than five business days after the transfer date. I checked the five latest (which were six to 18 days overdue) and found MEEN had accepted the gaining trader's request for a backdated event date, making it impossible for MEEN to issue the CS file within five business days of the transfer date. In these situations, MEEN could propose a new event date in their AN file or request a switch withdrawal.

Description	Recommendation	Audited party comment	Remedial action
Preventing late CS files caused by applying the gaining trader's backdated event date	Where a gaining trader's NT requests a backdated event date, preventing MEEN from issuing a transfer NT within five business days of the event date, consider: • proposing a different event date which is preferably within five business days of the NT receipt date, but may be ten business days of the NT receipt date, or • issuing a NW with withdrawal code CE, and providing an email to the other trader explaining the event date issue.	MEEN takes the recommendation on board and will issue NW.	Identified

CS content

Where there are two or more validated actual or customer reads within the last six months, SAP calculates the average daily kWh as the average daily volume between the most recent validated read and previous validated read. Where there are less than two actual reads, zero is applied. If a CS file is generated manually the average daily kWh of 19 is usually applied, and I identified four transfer CS files where this occurred.

According to the Registry Functional Specification and guidance from the Authority, the average daily kWh should be calculated as the average daily volume between the two most recent validated meter reads regardless of when they occurred. If less than two validated readings are available, and the ICP has switched in from another trader, the incoming CS average daily kWh is expected to be applied. If the ICP is a new connection, the best estimate of the expected average daily kWh should be applied.

I reviewed the average daily kWh values applied for all transfer CS files.

Average daily kWh	Count of transfer CS files	Comment
Negative	-	Compliant.
Zero	39	I checked a typical sample of five CS files. One of the ICPs had genuine zero average daily kWh. The other four ICPs did not have two validated actual readings. Three switched in from other traders and had values between 11 kWh and 33 kWh in their incoming CS files. The other ICP was a new connection.
More than 200 kWh	1	The average daily kWh was correct.

I checked for discrepancies between the last actual read date and switch event reading type for all 593 transfer switch CS files and found:

- two CS files had a last actual read date on the last day of supply, because SAP selects the last actual read date, rather than the last actual read date during MEEN's period of supply,
- four CS files had a last actual read date the day before the event date and an estimated switch event read type; one file was created manually with an incorrect reading and later withdrawn, and one file was created manually with an incorrect last actual read date, and
- five CS files had a last actual read date after the CS event date; I checked a sample of three and found SAP selects the last actual read date, rather than the last actual read date during MEEN's period of supply.

The exceptions found are listed in the table below.

ICP	CS file	CS update date	Issue
0007757212NV36F	CS-4216695	22 February 2022	CS last actual read date was after the period of supply.
0000211942UN456	CS-4339654	3 June 2022	CS last actual read date was after the period of supply.
0008025835HB568	CS-4515493	14 October 2022	Manually created with an incorrect event read and event read type and later withdrawn.
1002078019UNC9E	CS-4519383	18 October 2022	Manually created with an incorrect last actual read date.
0000221703UND91	CS-4244034	17 March 2022	CS last actual read date was after the period of supply.
0001142260PC377	CS-4533565	28 October 2022	CS last actual read date was after the period of supply.
0544098714LC815	CS-4536944	31 October 2022	CS last actual read date was after the period of supply.

I checked a sample of a further five CS files and found that all details were correct except for the average daily kWh for two ICPs due to SAP's calculation logic.

No further changes are expected to be made to SAP, and I recommend that MEEN ensures that the logic for CS average daily kWh and last actual read dates is correct when they migrate their ICPs to Gentrack.

Description	Recommendation	Audited party comment	Remedial action
Calculation of CS average daily kWh for automated CS files	Ensure that average daily kWh is calculated in line with the requirements of the Registry Functional Specification and Authority guidance when ICPs are migrated to Gentrack.	MEEN takes the recommendation on board.	Identified
CS last actual read dates	Ensure that last actual read dates reflect the date of the last actual read during MEEN's period of supply when ICPs are migrated to Gentrack.	MEEN takes the recommendation on board.	Identified
Calculation of CS average daily kWh for manual CS files	Update procedures to ensure that average daily kWh is calculated in line with the requirements of the Registry Functional Specification and Authority guidance, instead of applying 19 kWh to all manually generated files.	MEEN takes the recommendation on board.	Identified

TRUS

CS timeliness

Trustpower monitors the timeliness of switches using:

- the Electricity Switch report, which shows any CS files which are due to be issued, and
- the switch breach history report is monitored three to four times per day to ensure that AN and CS files are issued by their due date.

The switch breach history report recorded four WR breaches where the CS arrival date was more than two business days after the AW arrival date. These were missed as the daily breach report does not include WR breaches. Once this was realised, Trustpower enhanced their own process to check for these in the registry so that WR breaches can be actioned on time.

CS content

Average daily kWh is based on the consumption between the last two validated actual or permanent estimate readings recorded in GTV. When an ICP switches out without at least two actual readings the average daily kWh from the incoming CS is applied. Zero-day bills are not automatically produced, the previous invoice is reversed and replaced with a final invoice.

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

Average daily kWh	Count of transfer CS files	Comment
Negative	0	Compliant.
Zero	305	A typical sample of five files were checked and found all were correct.
More than 200 kWh	45	The five largest values were checked and found all were correct.

I checked for discrepancies between the last actual read date and switch event reading type for all 12,801 transfer switch CS files and found:

- three CS files had a last actual read date on the last day of supply:
  - ICP 0000045048TR83A was sent with the correctly labelled read but with the incorrect last read date due to human error,
  - ICP 0000917454TUA92 was sent incorrectly with an actual read for the event date rather than the midnight read from the day before due to human error,
  - ICP 0000492310WPEB5 was sent with the correctly labelled estimated read received on 5 May 2022 but with an incorrect last read date of the event date of 18 May 2022,
- nine CS files had a last actual read date the day before the event date and an estimated switch event read type; I checked a sample of three and found all had the incorrect last actual read date due to human error as these were loaded manually,
- one CS file (ICP 0001300065TG40B) was sent for the event date of 19 February 2022 but with a last read of 24 February 2022 due to human error as this was loaded manually, and
- four CS files only contained a CSPREMISES row, and the ICPs were unmetered.

I checked a sample of a further five CS files and found that all details were correct.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.3 With: Clause 5 of schedule 11.3	**MEEN** 11 CS breaches. The CS average daily kWh will be incorrect if the ICP has less than two validated readings in the last six months, or the file is generated manually. Ten CS files checked had incorrect average daily kWh applied because of this. Six CS files had incorrect last actual read dates. One manually created CS file had an incorrect event read and event read type and was later withdrawn. **TRUS** Four WR breaches. Seven CS files sent with the incorrect last actual read date. Six due to human error and one system (ICP 0000492310WPEB5) generated error. Potential impact: Low Actual impact: Low

From: 03-Dec-21 To: 17-Nov-22	Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are moderate. • For MEEN the logic to create the average daily kWh and last actual read date is not consistent with the Registry Functional Specification and will result in incorrect values being applied under certain circumstances. In most cases, CS content will be correct and files will be issued on time. Processes for ICPs supplied for short periods have improved during the audit period. • For TRUS some of the processes are manual and so more open to errors occurring. The audit risk rating is assessed to be low, because: • last actual read dates do not have a direct impact on reconciliation, • the CS file containing incorrect event readings was withdrawn, • most ICPs switching out will have two validated readings within the last six months, and in these cases SAP's average daily kWh calculation will be consistent with the registry functional specification, and • there were a small number of late CS files which were 6-18 days overdue because MEEN had applied the gaining trader's backdated requested transfer date.

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN Team has been given a refresher via training on assigning AN code if has to be completed manually. In the light of integration and Mercury moving to GTV system, we recommend not raising a ticket to address the issue.	May 2023	Identified
TRUS **Four WR breaches.** Daily registry checks now include WR check so they are not missed.	Pre-audit after first breach	
Seven CS files sent with the incorrect last actual read date. Six due to human error and one system (ICP 0000492310WPEB5) generated error. Training was undertaken to prevent agent from making the same error in the future. Documentation was also reviewed to ensure accuracy.	May 2023	
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN As above. **TRUS** **Four WR breaches.** BI report now in place for rejected withdrawals. This is auto delivered to group email. **Seven CS files sent with the incorrect last actual read date. Six due to human error and one system (ICP 0000492310WPEB5) generated error.** Full team training session to be held to ensure everyone understands and completes process correctly.	N/A Pre-audit June 2023	

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

Code reference

Clause 6(1) and 6A Schedule 11.3

Code related audit information

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

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

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

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

Audit observation

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

The event detail report was analysed to identify all read change requests and acknowledgements during the audit period. A sample of RR and AC files issued for transfer switches were checked to confirm that the content was correct, and that SAP reflected the outcome of the RR process.

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

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

Audit commentary

MEEN

RR and AC files are triggered in SAP by the switching team. As for AN and CS files, occasionally files which have triggered fail to be sent to the registry and need to be processed manually in SAP and the registry at the same time. The switching team checks 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. Late ACs will be identified the following morning using the switch breach history report.

RR

ICPs requiring RRs are identified through the read validation process. Where a switch in read is too high the first read received by Mercury may be lower than the switch read. SAP records any negative reading as implausible, and the read will be locked and not used for billing or reconciliation. 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.

RR requests are generally initiated via email between the two parties and an RR is issued once agreement has been reached. Once an AC is received in response to MEEN's RR it is directed to a work queue in the switching console, and staff update the readings in SAP manually depending on the AC response code.

The previous audit recommended reminding the teams who raise RR requests that it is necessary to obtain two actual validated reads before issuing an RR. This was completed, and all RRs checked during this audit were appropriately supported by validated actual readings.

Mercury issued 44 RR files for transfer switches. 35 were accepted and nine were rejected. A sample of five rejected files and five accepted files were checked. There was a genuine reason for Mercury's RR, the RR was supported by actual validated readings, and the event reading in SAP reflected the outcome of the RR process. For seven of the ten RRs checked, when the reads were manually updated in SAP on receipt of the AC, actual read type (the default value) was applied, instead of the estimated value.

ICP	RR file	RR update date	Issue
0050283001WR3CE	RR-180712	6 April 2022	SAP read type is actual but should be estimated.
0000590803TUAD7	RR-183593	15 June 2022	SAP read type is actual but should be estimated.
0000515228NR706	RR-183821	21 June 2022	SAP read type is actual but should be estimated.
0000039769CP95A	RR-180130	28 March 2022	SAP read type is actual but should be estimated.
0000141540TRDC7	RR-181837	4 May 2022	SAP read type is actual but should be estimated.
0005401410RNA1C	RR-188432	10 October 2022	SAP read type is actual but should be estimated.
0000579449UN5D9	RR-188635	13 October 2022	SAP read type is actual but should be estimated.

The switch breach history report recorded four RR breaches for transfer switches where the files were 128 to 180 days overdue. These were checked and found that all were delayed due to the time taken to gain two actual reads and confirm that an RR was required.

AC

All incoming RR requests are evaluated and validated against the ICP information. If the request is within validation requirements it is accepted. This task is carried out by the Contact Centre and Readings Management teams.

Mercury issued four AC files for transfer switches. One was rejected and three were accepted. The rejected file was rejected for valid reasons, and all the switches were later withdrawn.

The switch breach history report did not record any late AC files for transfer switches.

CS files with estimated readings where no RR is issued

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

TRUS

RR

RR requests are generally initiated via email between the two parties and once agreement has been reached, an RR file is sent to complete the process. RR requests are required to be supported by two validated actual readings.

Once an acknowledgement file is received from the other trader, the switching team advises the billing team of the outcome, and the billing team manually updates GTV and corrects the customer's billing.

Trustpower issued 101 RR files for transfer switches. 78 were accepted and 23 were rejected. A sample of five rejected files and five accepted files were checked and found all were compliant.

The switch breach history report recorded three RR breaches for transfer switches where the files were 126 to 145 days overdue. All were delayed due to the time taken to get two actual reads.

AC

All RR requests are evaluated and validated against the ICP information. If the request meets validation requirements it is accepted.

Trustpower issued 194 AC files for transfer switches. 180 were accepted and 14 were rejected. A sample of five rejected files and five accepted files were checked, and all were compliant. The rejected files were rejected for valid reasons. I found one example of a read request for ICP 1000604052PCFA5 that was accepted for a 1 kWh change but the read was not applied in GTV. This is recorded as non-compliance below and in **sections 2.1** and **12.7**.

The switch breach history report did not record any late AC files for transfer switches.

CS files without RRs raised

Review of five incoming transfer CS files with estimated reads where no RR was issued confirmed that the correct readings were recorded in GTV for reconciliation except for ICP 0000062604TR22A. The ICP switched away from Trustpower on read 33475 on 16 August 2022. It then switched back to Trustpower on 30 August 2022 with an estimated read of 33713 but Trustpower used the loss read of 33475 as their start read and no RR was issued. This will have resulted in 238 kWh of over submission for the incorrect period and is recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.4 With: Clauses 6(1) and 6A Schedule 11.3 From: 06-Apr-22 To: 13-Oct-22	**MEEN** Four RR breaches. Seven of the ten RRs checked had an actual read type applied in SAP instead of an estimate. **TRUS** Three RR breaches. The read for one accepted RR not applied in GTV. Estimated CS read not used and no RR issued for ICP 0000062604TR22A resulting in an estimated 238 kWh of over submission for the incorrect period. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are recorded as moderate: • for MEEN RR content was correct, most files were on time and read values were correctly recorded, but some read types were incorrectly entered in SAP on manual entry, and • for TRUS the controls will mitigate risk most of the time but there is room for improvement. The audit risk rating is low but has the potential of a medium if estimated reads are not used and no RRs are issued.

Actions taken to resolve the issue	Completion date	Remedial action status

MEEN This was identified as a system issue in SAP. Setting up of accounts upon switch completion is semi-automated - we have taken this opportunity to recheck the read entered and alter it if has been changed to Actual. **TRUS** **Three RR breaches.** **The read for one accepted RR not applied in GTV.** Training was undertaken to prevent agent from making the same error in the future. Documention was also reviewed to ensure accuracy. **Estimated CS read not used and no RR issued for ICP 0000062604TR22A resulting in an estimated 238 kWh of over submission for the incorrect period.** Training was undertaken to prevent agent from making the same error in the future. Documention was also reviewed to ensure accuracy.	May 2023 May 2023 May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN As above. **TRUS** **Three RR breaches.** **The read for one accepted RR not applied in GTV.** Full team training session to be held to ensure everyone knows how to correctly process RR. **Estimated CS read not used and no RR issued for ICP 0000062604TR22A resulting in an estimated 238 kWh of over submission for the incorrect period.** Training within the team to ensure everyone knows how to correctly process RR.	N/A May 2023 May 2023	

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

Code reference

Clause 6(2) and (3) Schedule 11.3

Code related audit information

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

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

Audit observation

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

Audit commentary

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.

MEEN

Mercury did not issue or receive any RR requests under clause 6(2) and (3) of Schedule 11.3. No transfer switches were issued with a profile indicating a HHR submission type.

TRUS

82 RR files were issued to Trustpower within five business days of switch completion where the gaining trader indicated that they would use the HHR profile, and the CS file contained estimated event readings. 81 were accepted and the file for 0000494290WEFBC was rejected. Technically this should have been accepted but as the read was lower than the gained read it was rejected and the gaining trader did not re-request it.

Trustpower did not issue any RR requests under clause 6(2) and (3) of Schedule 11.3. No transfer switches were issued with a profile indicating a HHR submission type.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.5 With: Clauses 6(2) and (3) Schedule 11.3 From: 26-Oct-22 To: 01-Nov-22	**TRUS** One RR incorrectly rejected. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong and will mitigate risk to an acceptable level. The audit risk rating is low as this will have a minor effect on submission accuracy.

Actions taken to resolve the issue	Completion date	Remedial action status
Had to reject completion of RR on our gain before RR on our loss could be accepted.	May 2023	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	

Nothing can be done to prevent this as only one RR can be actioned at any given time.	N/A	

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. An extreme case sample of the most backdated NT files were checked to confirm that these were notified to the registry within two business days, and a typical sample were checked to confirm that the correct switch type was selected.

Audit commentary

MEEN

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, and this information is collected as part of the customer application process.

Switch move is also applied for any ICP switching to MEEN from GBUG where GBUG has switched the ICP in and then discovered they cannot supply it. This typically occurs where ICPs do not have a single AMI or HHR meter register, or have meter communications faults. GBUG attempts to arrange a meter change and if that is unsuccessful, the customer is contacted and with their consent the ICP is switched to MEEN or another trader. The switch is processed from the day after the switch in, leaving Globug with one day of supply. MEEN applies the switch move code to the NT to ensure that the ICP switches in from the correct date.

All 22,555 switch move NTs where the meter category information was available on the PR255 report had metering category 1 or 2. I checked the ten most backdated switch move NT files and found they were sent within two business days of pre-conditions being cleared. The correct switch type was recorded for nine of the NT files, but the NT issued to GBUG for an ICP they supplied for one day did not have a customer moving in on the event date.

I checked a further ten switch move NT files issued to GBUG for ICPs they supplied for one day, and found none of the ICPs had customers moving in on the switch event date.

TRUS

Trustpower's processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. Trustpower confirmed that they do not hold electricity only customer switches for the five-business day cooling off period, and instead withdraw the switch if the customer changes their mind.

Switch type is selected based on information provided by the customer on application. The customer is asked whether they are moving to a new address or remaining at the same address and transferring between retailers as part of the application process.

All 21,275 switch move NTs where the meter category information was available on the PR255 report had metering category 1 or 2. The ten NT files checked were sent within two business days of pre-conditions being cleared.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.7 With: Clause 9 Schedule 11.3 From: 16-Oct-21 To: 27-Aug-22	**MEEN** Switch move is also applied for any ICP switching to MEEN from GBUG where GBUG has switched the ICP in and then discovered they cannot supply it. 11 ICPs switching from GBUG had switch move applied when no customer was moving in on the switch event date. 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 strong because correct switch types are applied for most ICPs. The non-compliance affects a small subset of switches between Mercury Energy's participant codes. The impact is low. Use of the MI switch type ensures that switch event dates are correctly applied.

Actions taken to resolve the issue	Completion date	Remedial action status
These are GBUG Turndowns and are always created as Move Switches as site need to be switched to MEEN from GBUG gains date + one day. There is no change required here.	N/A	Disputed
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above.	N/A	

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

Code reference

Clause 10(1) Schedule 11.3

Code related audit information

10(1) Within 5 business days after receiving notice of a switch move request from the registry manager—

- *10(1)(a) If the losing trader accepts the event date proposed by the gaining trader, the losing trader must complete the switch by providing to the registry manager:*
  - *confirmation of the switch event date; and*
  - *a valid switch response code; and*
  - *final information as required under clause 11; or*
- *10(1)(b) If the losing trader does not accept the event date proposed by the gaining trader, the losing trader must acknowledge the switch request to the registry manager and determine a different event date that—*

    - *is not earlier than the gaining trader's proposed event date, and*
    - *is no later than 10 business days after the date the losing trader receives notice, or*
- *10(1)(c) request that the switch be withdrawn in accordance with clause 17.*

Audit observation

The event detail report was reviewed to:

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

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

Audit commentary

MEEN

AN file content

I compared the AN response codes applied to the latest ICP attributes on the registry list with history for the 467 ANs which had the AA (acknowledge and accept) or AD (advanced metering code applied. 278 ANs (59.5%) were confirmed to have codes consistent with the latest registry information. The majority that did not match (230) had the AA code applied when the latest registry record showed the AMI flag set to yes. I checked five or all ICPs per exception type where the code was inconsistent with the latest ICP attributes. They were timing differences and correct information was applied apart from the eight ANs which had AA (acknowledge and accept) but should have had AD (advanced metering) or PD (premises disconnected). The previous audit also found ICPs where AA was applied when another code also applied and an IT ticket had been raised to investigate this. No further changes to SAP are expected before MEEN migrates to Gentrack.

I checked five ICPs with the OC (occupied premises) code applied and found they were correct.

The event detail report was reviewed for all 1,834 switch move ANs to assess compliance with the setting of event dates requirements:

- all had proposed event dates within ten business days of the NT receipt date, and
- no ANs had a proposed event date before the gaining trader's requested date.

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.

The switch breach history report recorded four AN breaches for files issued one business day late. The switches required approval from the account manager to release the AN, and it is believed that delays in receiving this approval and heavy workloads caused the delays.

CS timeliness

As recorded in **section 4.3**, switch timeliness is managed using the switch breach report. There are two reports produced and reviewed daily at 6.15am and 8.15am. The earlier report excludes T2, CS and E2 breaches and the later report includes them.

As reported in the last two audits, occasionally (one every two to three months) CS files are not sent to the registry by SAP. This is checked daily using the switch breach history report, and any instances are manually processed on the registry.

The switch breach history report recorded:

- 12 WR (switch completion after withdrawal rejection) breaches, because the CS was issued more than two business days after receipt of an AW rejection; all the files were one to two days overdue because someone had incorrectly noted that the issue was resolved on the breach report, when it was not and the ICPs appeared again on the following day's report and the CS files were issued, and
- 137 T2 breaches where the CS file was delivered late (all the files were one to three days late); I checked the ten latest files and found they were late because:
    - the 8.15am switch breach history report was not assigned to another staff member when the primary staff member was away,
    - the CS file failed and needed to be processed manually using the registry user interface,
    - MEEN was waiting for actual reads, or
    - the CS missed being sent following a withdrawal process.

TRUS

AN content

AN files are automatically generated by GTV. These are reviewed manually before they are released.

I compared the AN response codes applied to the latest ICP attributes on the registry list with history for the 25,213 ANs which had the AA (acknowledge and accept), AD (advanced metering), MU (unmetered supply) or PD (premises electrically disconnected) code applied and the ICP appeared on the registry list with history. 23,784 ANs (94.3%) were confirmed to have codes consistent with the latest registry information. I checked five or all ICPs for each exception type where the code was inconsistent with the latest ICP attributes and found all were timing differences and correct information was applied apart from:

- five of the of the six AA coded ICPs sampled had advanced metering present so AD should have been sent, and
- four of the five MU coded ICPs had meters present and should have been sent with either the AA or the AD code.

I checked five ICPs with the OC (occupied premises) code applied and found all were vacant sites. This is the default code applied to all move switches and these were not checked before they were sent out. Additional training has been provided to the team.

The event detail report was reviewed for all 25,990 switch move AN files to assess compliance with the setting of event dates requirements:

- 25,989 ANs had proposed event dates within ten business days of NT receipt, and
- one AN had a proposed event date more than ten business days of NT receipt; this was actioned manually, and the event date was sent in error, the CS file was sent for the correct event date.

The switch breach history report recorded two E2 breaches where the NT proposed transfer date and CS actual transfer date do not match, and the CS actual transfer date is earlier than the NT proposed event date. GTV was enhanced for transfer switches but not for move switches where these continue to be managed manually. Both of these were processed a day early due to human error. ICP 0000050893WE2F9 was subsequently corrected for the requested date.

AN timeliness

Trustpower monitors the timeliness of switches using:

- the Electricity Switch Loss Approve Errors (HOLDS) report, which shows any ICPs which require intervention or review before GTV can issue the AN file, such as switch move NTs received for occupied premises, and ICPs with no reads during the period of supply (the held ICPs are worked through daily, and prioritised by the AN due date), and

- the switch breach history report is monitored three to four times per day to ensure that ANs are issued by their due date.

Switch timeliness and event date setting is also monitored using Trustpower's switching compliance report, which is reviewed monthly.

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

CS timeliness

Trustpower monitors the timeliness of switches using:

- the Electricity Switch Loss Approve Errors (HOLDS) report, which shows any ICPs which require intervention or review before GTV can issue the AN file, such as switch move NTs received for occupied premises, and ICPs with no reads during the period of supply; the held ICPs are worked through daily, and prioritised by the AN due date,
- the Electricity Switch report, which shows any CS files which are due to be issued, and
- the switch breach history report is monitored three to four times per day to ensure that AN and CS files are issued by their due date.

Switch timeliness and event date setting is also monitored using Trustpower's switching compliance report, which is reviewed monthly.

The switch breach history report recorded:

- four WR breaches where the CS arrival date was more than two business days after AW completion; as detailed in **section 4.3**, these were missed as the daily breach report does not include WR breaches and once this was realised, Trustpower enhanced their own process to check for these in the registry so that WR breaches are actioned on time, and
- two T2 breaches for CS arrival dates more than five business days after NT receipt, where no NW has been provided and the NT proposed event date matches the AN transfer date; ICP 1002152028LCED6 was sent late due to human error and ICP 0000036431DEFB9 was requested ten days in advance by the gaining trader but the code requires that a move switch is completed in five days which caused Trustpower to breach in this instance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.8 With: Clause 10 of schedule 11.3 From: 18-Dec-21 To: 14-Nov-22	**MEEN** Eight of a sample of 63 move switch AN file with the AA response code checked contained the incorrect response code. Four AN breaches. 12 WR breaches. 137 T2 breaches. **TRUS** Five of a sample of six move switch AN file with the AA response code checked contained the incorrect response code. All five move switch AN files sample with the OC response code checked contained the incorrect response code. One AN had a proposed event date more than ten business days of NT receipt. Two E2 breaches Four WR breaches. Two T2 breaches. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate: • for MEEN SAP sometimes applies the AA code incorrectly for ICPs which are disconnected or have AMI metering installed, and some AN and CS files were late, and • for TRUS the move switch process has more manual processes than transfer switches which results in more human errors. The impact is assessed as low the number of late and incorrect files were minimal. The late files were sent soon after the due date.

Actions taken to resolve the issue	Completion date	Remedial action status

MEEN Team has been given a refresher on assigning AN code if it has to be completed manually. In the light of integration and Mercury moving to GTV system, we recommend not raising a ticket to address the issue. **TRUS** **Five of a sample of six move switch AN file with the AA response code checked contained the incorrect response code.** Training was undertaken to prevent agent from making the same error in the future. Documentation was also reviewed to ensure accuracy. **All five move switch AN files sample with the OC response code checked contained the incorrect response code.** Training was undertaken to prevent agent from making the same error in the future. Documentation was also reviewed to ensure accuracy. **One AN had a proposed event date more than ten business days of NT receipt.** **Two E2 breaches** Human Error but corrected as part of CS process. Training was undertaken to prevent agent from making the same error in the future. Documentation was also reviewed to ensure accuracy. **Four WR breaches.** **Two T2 breaches.** Training was undertaken to prevent agent from making the same error in the future. Documentation was also reviewed to ensure accuracy	May 2023 May 2023 May 2023 May 2023 May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN As above. **TRUS** **Five of a sample of six move switch AN file with the AA response code checked contained the incorrect response code.** Full team training session to be held to ensure everyone is processing task correctly. **All five move switch AN files sample with the OC response code checked contained the incorrect response code.** Full team training session to be held to ensure everyone is processing task correctly. **One AN had a proposed event date more than ten business days of NT receipt.** **Two E2 breaches** Reporting already in place. Full team training session to be held to ensure everyone is processing task correctly. **Four WR breaches.** **Two T2 breaches.** Full team training session to be held to ensure everyone is processing task correctly.	N/A June 2023. June 2023 June 2023 June 2023	

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

Code reference

Clause 10(2) Schedule 11.3

Code related audit information

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

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

Audit observation

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

Audit commentary

MEEN

MEEN applied the gaining trader's requested event date for 1,832 of the 1,834 switch move AN files. Both of the switches containing different dates were withdrawn before being completed. ICP

0009060411WM12C had a AN proposed event date before the gaining trader's requested date which is recorded as non-compliance is recorded in **section 4.8**.

TRUS

TRUS applied the gaining trader's requested event date for 21,502 of the 25,990 switch move AN files. I checked all switches where the AN file contained a non-compliant event date and found that they were withdrawn, and non-compliance is recorded in **section 4.8**. Other switches with different event dates were completed as required by this clause.

Audit outcome

Compliant

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

Code reference

Clause 11 Schedule 11.3

Code related audit information

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

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

Audit observation

The event detail report 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 records. The content checked included:

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

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

Audit commentary

MEEN

Where there are two or more validated actual or customer reads within the last six months, SAP calculates the average daily kWh as the average daily volume between the most recent validated read and previous validated read. Where there are less than two actual reads, zero is applied. If a CS file is generated manually average daily kWh of 19 is usually applied, and I identified 15 switch move CS files where this occurred.

According to the Registry Functional Specification and guidance from the Authority, the average daily kWh should be calculated as the average daily volume between the two most recent validated meter reads regardless of when they occurred. If less than two validated readings are available, and the ICP has switched in from another trader, the incoming CS average daily kWh is expected to be applied. If the ICP is a new connection, the best estimate of the expected average daily kWh should be applied.

I reviewed the average daily kWh values applied for all switch move CS files.

Average daily kWh	Count of switch move CS files	Comment
Negative	-	Compliant.
Zero	77	I checked a typical sample of five CS files, and found the ICPs did not have two validated actual readings. The five ICPs switched in from other traders and had values between 2 kWh and 71 kWh in their incoming CS files.
More than 200 kWh	2	The average daily kWh was correct.

I checked for discrepancies between the last actual read date and switch event reading type for all 798 switch move CS files.

- 22 CS files had a last actual read date more than one day before the event date and an actual switch event read type. I checked a sample of five and found that three had incorrect read types applied. The other two ICPs switched out before the most recent switch in was processed in SAP. The CS details for when MEEN last supplied the ICP in were applied in error, and the switches were later withdrawn. MEEN has improved automation of the switch in process in tranches during September 2022, November 2022, February 2023, and March 2023. The robot can normally process incoming switches successfully, unless there is an issue with dates which is directed to a work queue. Prior to this staff needed to manually load information in the incoming CS file which led to backlogs.
- Seven CS files had a last actual read date on the last day of supply. I checked a sample of three and found SAP selects the last actual read date, rather than the last actual read date during MEEN's period of supply.
- Ten CS files had a last actual read date the day before the event date and an estimated switch event read type. I checked a sample of five and found that the switches were later withdrawn or had a read renegotiation completed and I was unable to verify the values that should have applied when the CS was issued.
- Eight CS files had a last actual read date after the CS event date. I checked a sample of three and found SAP selects the last actual read date, rather than the last actual read date during MEEN's period of supply.
- Six CS files only contained a CSPREMISES row. One of the ICPs was unmetered at the time of the switch, and the other five had HHR metering.

ICP	CS file	CS update date	Issue
0000079785TR520	CS-4278916	13 April 2022	Read type is A but should be E.
0312933398LCF15	CS-4389420	6 July 2022	Read type is A but should be E.
0359396631LCA0E	CS-4498229	3 October 2022	Read type is A but should be E.
1002075064LC6AC	CS-4445519	18 August 2022	The ICP switched out before the most recent switch in was processed in SAP. The CS details for when MEEN last supplied the ICP in 2020 were applied, and the switch was later withdrawn.

0492516952LC67B	CS-4517569	17 October 2022	The ICP switched out before the most recent switch in was processed in SAP. The CS details for when MEEN last supplied the ICP in 2016 were applied, and the switch was later withdrawn.
0000034679EAC67	CS-4364669	22 June 2022	CS last actual read date was after the period of supply.
0437323617LCCE6	CS-4446857	19 August 2022	CS last actual read date was after the period of supply.
0000532643WE57B	CS-4476633	13 Sept 2022	CS last actual read date was after the period of supply.
0151930031LC570	CS-4390384	6 July 2022	CS last actual read date was after the period of supply.
0292662017LCC6B	CS-4486493	21 Sept 2022	CS last actual read date was after the period of supply.
0186513747LCA93	CS-4553924	7 Nov 2022	CS last actual read date was after the period of supply.

I checked a sample of a further five CS files and found that all details were correct except for the average daily kWh for three ICPs due to SAP's calculation logic.

No further changes are expected to be made to SAP, and I recommend that MEEN ensures that the logic for CS average daily kWh and last actual read dates is correct when they migrate their ICPs to Gentrack. Recommendations to improve CS accuracy are made in **section 4.3**.

TRUS

Average daily kWh is based on the consumption between the last two validated actual or permanent estimate readings recorded in GTV. When an ICP switches out without at least two actual readings the average daily kWh from the incoming CS is applied. Zero-day bills are no longer automatically produced, the previous invoice is reversed and replaced with a final invoice.

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

Average daily kWh	Count of switch move CS files	Comment
Negative	1	Any ICPs with a negative value are sent to an exception queue to be reviewed and corrected. This one was missed due to human error.
Zero	3,676	A typical sample of five files were checked. All were correct.
More than 200 kWh	60	The five largest values were checked and found two were incorrect: • ICP 1000601643PC86B was incorrect due to the volume being applied over one day and not applied across the correct period. This was corrected post the CS file being sent so volumes were applied correctly but caused the average daily kWh to be incorrect. • ICP 0009050820WM7B1 was incorrect due a change in the billable registers. The CS reads were correct.

I checked for discrepancies between the last actual read date and switch event reading type for all 27,256 switch move CS files and found:

- 43 CS files had a last actual read date on the last day of supply; I checked a sample of three and found the last actual read date on the event date was incorrectly sent as an estimate when the midnight read from the day prior should be sent as an actual - Trustpower are reviewing the logic for this scenario,
- 38 CS files had a last actual read date the day before the event date and an estimated switch event read type; I checked a sample of five and found:
    - three were manually loaded to the registry and the incorrect last read date was loaded, and
    - two were system generated; ICP 0001261986UNEB3 was sent with an incorrect last read date due to a new meter not being installed correctly and the last estimated read rather than actual read was sent for ICP 0000243873WA2B7 due to a timing issue,
- nine CS files had a last actual read date after the CS event date; I checked a sample of three found all were sent with the incorrect last read date, two due to reverse and rebilling timing issues and one due to human error and was loaded manually to the registry,
- 20 CS files had a last actual read date the day before the event date and an estimated switch event read type and all were manually created; I checked a sample of five and confirmed the last actual read date was incorrect due to human error, and
- 51 CS files only contained a CSPREMISES row, and the ICPs were unmetered; 50 were unmetered, and one had HHR category 2 metering with the AMI flag set to no.

Further training has been provided to ensure manually loaded CS files are processed correctly.

I checked a sample of a further five CS files and found that all details were correct except for ICP 0000051945TR009 which was incorrectly sent with an average daily consumption figure of zero due to two reads being received for the same day. I recommend Trustpower investigate how often this is occurring and if any system changes are required.

Description	Recommendation	Audited party comment	Remedial action
Average daily consumption	Quantify how many ICPs are sent with zero consumption due to two reads being received on the same day.	A ticket has been raised for this and we are investigating.	Investigating

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.10 With: Clause 11 of schedule 11.3 From: 29-Dec-21 To: 21-Oct-22	**MEEN** The CS average daily kWh will be incorrect if the ICP has less than two validated readings in the last six months, or the file is generated manually. 23 ICPs checked had incorrect average daily kWh applied because of this. Three CS files had incorrect switch event read types. Six CS files had incorrect last actual read dates. Two CS files for ICPs supplied for brief periods contained information for MEEN's last period of supply because the incoming CS had not been processed, and were later withdrawn. **TRUS** Two incorrect high daily consumption values sent. All three sampled of a possible 43 CS files sent with an actual read from the event date incorrectly labelled as an estimated read. All five sampled of a possible 38 CS files were sent with either an incorrect read date (four instances) or one ICP was sent with an estimated read rather than the last actual read. Three of a possible nine CS files were sent with the incorrect last read date. Five sampled of a possible 20 CS files were sent with the incorrect last actual read date. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I have rated the controls moderate: • for MEEN the logic to create the average daily kWh and last actual read date is not consistent with the Registry Functional Specification and will result in incorrect values being applied under certain circumstances, in most cases, CS content will be correct and processes for ICPs supplied for short periods have improved during the audit period, and • for TRUS risks are mitigated most of the time but there is room for improvement. The audit risk rating is assessed to be low, because: • last actual read dates do not have a direct impact on reconciliation, • the CS files containing incorrect event readings were withdrawn, • most ICPs switching out will have two validated readings within the last six months, and in these cases SAP's average daily kWh calculation will be consistent with the registry functional specification, and • the number of CS files affected is still relatively low in relation to the volume of switches processed.

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN Team has been given a refresher on the CS content if it has to be completed manually. In the light of integration and Mercury moving to GTV system, we recommend not raising a ticket to address the issue. **TRUS** Full team training session held to ensure everyone is processing task correctly.	May 2023 March 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN As above. **TRUS** Full team training session held to ensure everyone is processing task correctly.	N/A March 2023	

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

Code reference

Clause 12 Schedule 11.3

Code related audit information

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

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

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

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

Audit observation

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

The event detail report was analysed to identify all read change requests and acknowledgements during the audit period. A sample of RR and AC files issued for transfer switches were checked to confirm that the content was correct, and that SAP reflected the outcome of the RR process.

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

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

Audit commentary

MEEN

RR and AC files are triggered in SAP by the switching team. As for AN and CS files, occasionally files which have triggered fail to be sent to the registry and need to be processed manually in SAP and the registry at the same time. The switching team checks 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. Late ACs will be identified the following morning using the switch breach history report.

RR

ICPs requiring RRs are identified through the read validation process. Where a switch in read is too high the first read received by Mercury may be lower than the switch read. SAP records any negative reading as implausible, and the read will be locked and not used for billing or reconciliation. 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.

RR requests are generally initiated via email between the two parties and an RR is issued once agreement has been reached. Once an AC is received in response to MEEN's RR it is directed to a work queue in the switching console, and staff update the readings in SAP manually depending on the AC response code.

Mercury issued 266 RR files for switch moves. 198 were accepted and 68 were rejected. A sample of five rejected files and five accepted files were checked. There was a genuine reason for Mercury's RR, the RR was supported by actual validated readings and the event reading in SAP reflected the outcome of the RR process.

For six of the ten RRs checked, when the reads were manually updated in SAP on receipt of the AC, actual read type (the default value) was applied, instead of the estimated value. For one manually created RR, the read was not updated at all on receipt of the AC.

ICP	RR file	RR update date	Issue
0000037846TR255	RR-180691	6 April 2022	SAP read type is actual but should be estimated.
0317611038LC4AC	RR-184731	12 July 2022	SAP read type is actual but should be estimated.
0000039689UNE77	RR-184741	12 July 2022	SAP read type is actual but should be estimated.
0000123934TR484	RR-188581	12 October 2022	SAP read type is actual but should be estimated.
0000021866CE4ED	RR-189362	31 October 2022	SAP read type is actual but should be estimated.
0000171845HB47B	RR-189643	4 November 2022	SAP read type is actual but should be estimated.
0000220414UN855	RR-176917	20 January 2022	SAP read is recorded as 1047 (E) but agreed switch read is 1043 (A). The latest RR was processed manually on the registry but was not updated in SAP.

The switch breach history report recorded 34 RR breaches for transfer switches where the files were 122 to 273 days overdue. I checked the ten latest files and found that they were delayed due to the time taken to gain two actual reads and confirm that an RR was required, or the RR process affected multiple traders and switch events which took a longer period to negotiate.

AC

All incoming RR requests are evaluated and validated against the ICP information. If the request is within validation requirements it is accepted. This task is carried out by the Contact Centre and Readings Management teams.

Mercury issued three AC files for switch moves. One was accepted and two were rejected. The rejected files were rejected for valid reasons, and all the switches were later withdrawn.

The switch breach history report recorded five AC files sent one business day late, because they were not resolved promptly when they appeared on the switch breach history report.

CS files with estimated readings where no RR is issued

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

TRUS

RR

RR requests are generally initiated via email between the two parties and once agreement has been reached, an RR file is sent to complete the process.

Once an acknowledgement file is received from the other trader, the switching team advises the billing team of the outcome, and the billing team manually updates GTV and corrects the customer's billing.

Trustpower issued 380 RR files for switch moves. 280 were accepted and 100 were rejected. A sample of five rejected files and five accepted files were checked, and all were compliant.

The switch breach history report recorded 28 RR breaches for switch moves where the files were 123 to 270 days overdue. I checked the ten latest and found five related to the same development where the paperwork was provided late causing the RR to be sent late. The remaining five were delayed due to time taken to get two actual reads.

AC

All RR requests are evaluated and validated against the ICP information. If the request meets validation requirements it is accepted.

Trustpower issued 434 AC files for switch moves. 53 were rejected and 381 were accepted. A sample of five rejected files and five accepted files were checked, and all were compliant. The rejected files were rejected for valid reasons.

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

CS files without RRs raised

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

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.11 With: Clause 12 Schedule 11.3 From: 20-Jan-22 To: 17-Nov-22	**MEEN** Six of the ten RRs checked had an actual read type applied in SAP instead of estimate. For one manually created RR, the read was not updated at all on receipt of the AC. 34 RR breaches. Five AC breaches. **TRUS** 28 RR breaches. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are recorded as moderate: • for MEEN, RR content was correct, most files were on time and almost all read values were correctly recorded but some read types were incorrectly entered in SAP on manual entry, and one AC was not processed in SAP, and • for TRUS the controls will mitigate risk most of the time but there is room for improvement as identified in **section 4.4**. The audit risk rating is low because the number of RRs issued is small. The incorrect read types have no impact on reconciliation and the missed AC file will result in over submission of 4 kWh. The late RRs were sent as soon as possible so that submission could be corrected.

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN This was identified as a system issue in SAP. Setting up of accounts upon switch completion is semi-automated- we have taken this opportunity to recheck the read entered and alter it if has been changed to Actual. **TRUS** Causes identified as access issues. Approval required TL prior to submission.	May 2023 N/A	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN As above. **TRUS** Not directly in Energy Provisioning control.	N/A N/A	

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

Code reference

Clause 14 Schedule 11.3

Code related audit information

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

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

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

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

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

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

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

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

> *14(4)(a) – the proposed event date is in the same month as the date on which the gaining trader advised the registry manager; or*
>
> *14(4)(b) – the proposed event date is no more than 90 days before the date on which the gaining trader advises the registry manager, and this date is agreed between the losing and gaining traders.*

Audit observation

The switch gain process was examined to determine when Mercury deem all conditions to be met. An extreme case sample of the most backdated NT files were checked to confirm that these were notified to the registry within two business days, and a typical sample were checked to confirm that the correct switch type was selected.

Audit commentary

MEEN

The Half Hour team are advised as soon as the contract pre-conditions have been satisfied. NT files are created manually using the registry interface or by importing a bulk upload script to the registry if NTs are required for more than 20 HH ICPs at a time. All switch requests are actioned the same day as they are received.

All 226 of the 227 HH switch NTs where the meter category information was available on the PR255 report had metering category 3, 4 or 5. ICP 0000007024TCCAB was requested as HH but had metering category 2 due to an error made when preparing a bulk upload script, as the wrong switch type code was applied for the row.

All 9,531 transfer switch NTs and 22,555 switch move NTs where the meter category information was available on the PR255 report had metering category 1 or 2.

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

TRUS

Trustpower are not anticipating undertaking any HH switching as this part of Trustpower has moved to the CNIR code. I did not identify any HH NTs on the event detail report.

All 11,801 transfer switch NTs and 21,275 switch move NTs where the meter category information was available on the PR255 report had metering category 1 or 2.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.12 With: Clause 14 of Schedule 11.3 From: 10-Jan-22 To: 10-Jan-22	**MEEN** One ICP with category 2 metering was requested as a HH switch. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong, because the incorrect switch type was an isolated data entry error and the other 32,312 NTs checked had a switch type consistent with the metering category. The impact is low because both traders settled the category 2 ICP as HH.

Actions taken to resolve the issue	Completion date	Remedial action status
Identified as a mistake while bulk uploading Switch NTs.	May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Refresher training on switching types by Category and reinforce care with bulk uploads.	Ongoing	

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

An event detail report was reviewed to identify AN files issued by Mercury during the audit period, and a sample of ANs were reviewed to determine whether the codes had been correctly applied.

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

Audit commentary

MEEN

The switching console manages HHR switch losses. The NT receipt starts the process, and ANs are created manually through the registry user interface once the sales team have confirmed whether an AN or NW should be sent.

Two HH ANs were issued during the period reviewed and the correct response codes were applied. The switch breach history report did not record any late HH AN files.

TRUS

Six ANs were issued by TRUS all had the MU (unmetered supply) response code. One was unmetered at the time the AN was issued because it was a new connection in progress (ICP0000165174CK6DC) and the other five ICPs were metered. These were sent with the incorrect AN code due to human error.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.13 With: Clause 14 of Schedule 11.3 From: 24-Jan-22 To: 01-Aug-22	**TRUS** Five HH ANs were issued with the MU (unmetered supply) response code when they were metered, and no unmetered load was connected. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong as HH TOU ICPs are no longer traded by TRUS. The potential impact is low as this has no material impact on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status
Training was undertaken to prevent agent from making the same error in the future. Documentation was also reviewed to ensure accuracy.	May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
No longer relevant as TRUS does not have HHR sites anymore.	October 2021	

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 HH switching process was examined. The switch breach history report for the audit period was reviewed to identify late CS files.

Audit commentary

MEEN

The switching console manages HHR switch gains. The NT generation starts the process, and CS files are created manually through the registry user interface once the sales team have confirmed whether an the ICP can switch out.

225 HH CS files were recorded on the event detail report and their content was correct. The switch breach report did not record any late HH CS files.

TRUS

Trustpower are not anticipating undertaking any HH switching as this part of Trustpower has moved to the CNIR code.

No HH CS files were issued, and the switch breach report did not record any late HH CS files.

Audit outcome

Compliant

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

Code reference

Clauses 17 and 18 Schedule 11.3

Code related audit information

A losing trader or gaining trader may request that a switch request be withdrawn at any time until the expiry of 2 calendar months after the event date of the switch.

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

- *for each ICP, the trader withdrawing the switch request must provide the registry manager with (clause 18(c)):*
  - *the participant identifier of the trader making the withdrawal request (clause 18(c)(i)); and*
  - *the withdrawal advisory code published by the Authority (clause 18(c)(ii))*
- *within five business days after receiving notice from the registry manager of a switch, the trader receiving the withdrawal must advise the registry manager that the switch withdrawal request is accepted or rejected. A switch withdrawal request must not become effective until accepted by the trader who received the withdrawal (clause 18(d))*

- *on receipt of a rejection notice from the registry manager, in accordance with clause 18(d), a trader may re-submit the switch withdrawal request for an ICP in accordance with clause 18(c). All switch withdrawal requests must be resolved within 10 business days after the date of the initial switch withdrawal request (clause 18(e))*
- *if the trader requests that a switch request be withdrawn, and the resolution of that switch withdrawal request results in the switch proceeding, within 2 business days after receiving notice from the registry manager in accordance with clause 22(b), the losing trader must comply with clauses 3,5,10 and 11 (whichever is appropriate) and the gaining trader must comply with clause 16 (clause 18(f)).*

Audit observation

The event detail reports were reviewed to:

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

The switch breach history report was checked for any late switch withdrawal requests or acknowledgements.

Audit commentary

MEEN

Like the other switching files, NW and AW files are triggered in SAP by the switching team.

NW

Each switch withdrawal request is assessed and actioned based on the staff member's findings.

250 of the 1,917 NWs issued (13.04%) were rejected. I checked the withdrawal codes for a diverse sample of 21 NWs including 16 rejected files and found four had incorrect content, and were rejected by the other trader.

ICP	NW file	NW update date	Issue
0000328735WTFC1	NW-1058590	9 March 2022	DF (date failed) was applied when the proposed event date was not more than ten business days in the future. CE (customer error) should have been applied.
1001239575LC647	NW-1092678	3 November 2022	DF (date failed) was applied when the proposed event date was not more than ten business days in the future. CE (customer error) should have been applied.
0015735954ELB63	NW-1064989	22 April 2022	MI (metering issue) was applied, but the NW should not have been issued because the metering issue occurred after the switch event date.
0113854838LCCC6	NW-1093478	8 November 2022	WP (wrong premises) was applied, but the premises was correct. Confusion was caused by MEEN's customer being the landlord.

The switch breach history report recorded two NW breaches where the NW arrival date is more than three business days after receipt of the NT where the NW arrives immediately after the NT. The delays were caused by late approval from the sales team to release the NW, and heavy workloads.

AW

177 (5.9%) of the 2,962 AWs issued by Mercury were rejections. I reviewed a sample of 21 rejections by Mercury (three per NW advisory code) and confirmed they were rejected based the information available at the time the response was issued, apart from ICP 0001455212UN59B which was rejected in error and accepted on reissue with the same code.

The switch breach history report recorded 34 AW breaches where the AW was sent one or two business days late. I checked the ten latest which were issued in 2022, and found that late AWs identified through the daily switch breach history report checks were not consistently being actioned on time. In 2023 two new staff members started and were trained on switch breach history report processes, also further monitoring controls have been put in place. If the Switch Analyst does not receive confirmation that the AW breaches have been cleared by the afternoon, she will personally check and process them.

TRUS

NW

Various Trustpower departments identify the need for a switch to be withdrawn, through review of ICP or customer provided information. All withdrawal requests are issued by the switching team by creating a NW service order, which includes the NW advisory code. Once the AW response is received from the other retailer, a bulk process is used to close the withdrawal work queue for the affected ICPs and update GTV.

Trustpower issued 6,289 NW files. 590 were rejected and 5,699 were accepted. I checked the withdrawal codes for a diverse sample of 35 rejected and found six were incorrect:

- ICP 0005369282RN92B was withdrawn with a CX code but it was a fraudulent registration therefore UA would be more accurate, and
- all five of the DF withdrawals were coded incorrectly as these were not requested ten days in advance but requested for the incorrect date and should have been sent as CE.

As detailed in **section 4.17**, a switch withdrawal was sent for ICP 0000564565WTCBC as Trustpower had not been able to contact the customer and they didn't want to breach for not completing the switch. In this instance the customer hadn't requested the switch to be cancelled so the incorrect code was applied and this caused the switch to be delayed.

The switch breach history report recorded:

- 50 NA breaches, where the NW arrival date was more than two calendar months after the CS actual transfer date; the files were 62 to 183 days overdue - I checked the ten latest files and found that all were delayed due to either late notification from the customer or the investigation required to confirm a withdrawal was required, and
- 13 SR breaches, where the NW was issued more than ten business days after the initial NW; the files were one to 131 days overdue - I checked a sample of the latest ten and found they were late due the time required to investigate and confirm the withdrawal.

AW

Withdrawal requests received from other retailers are directed to work queues for action, and responses are considered on a case-by-case basis.

494 (13.5%) of the 3,633 AWs issued by Trustpower were rejections. I reviewed a sample of 21 rejections by Trustpower (three per NW advisory code) and confirmed all were valid.

The switch breach history report did not record any AW breaches.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.15 With: Clauses 17 & 18 of schedule 11.3 From: 03-Dec-21 To: 17-Nov-22	**MEEN** Four NWs contained some incorrect content and were rejected. One incoming NW was rejected in error and accepted on reissue by the other trader. Two NW breaches. 34 AW breaches. **TRUS** 50 NA breaches. 13 SR breaches. Seven incorrect NW codes found in the sample of 35 checked. 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: • for MEEN due to the complexity of these types of withdrawals there are some late switch withdrawals and acceptances; a small number of NWs and AWs contained incorrect content due to confusion about whether the NW was required and/or the correct code, and • for TRUS the controls will mitigate risk most of the time but there is room for improvement, specifically in the application of NW codes. 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. The NW files with incorrect advisory codes were rejected, and the invalidly rejected incoming NW was accepted on reissue. 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

MEEN We have reviewed our breach report and will now be worked on day 2 to avoid any system/technical issue leading to breach. **TRUS** **50 NA breaches.** Unavoidable if wrong property identified outside of timeframe. **13 SR breaches.** Unavoidable if further investigation is required and the alt has rejected initial NW. **Seven incorrect NW codes found in the sample of 35 checked.** Robust discussion had with auditors regarding use of NW codes. Training was undertaken to prevent agent from making the same error in the future. Documentation was also reviewed to ensure accuracy.	May 2023 May 2023 May 2023 May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN As above. **TRUS** **50 NA breaches.** Refresher training with contact centre, further comms to go out to contact centre, updated with training team for new inductees. **13 SR breaches.** Auditor found nothing wrong. Found they were late due the time required to investigate and confirm the withdrawal. **Seven incorrect NW codes found in the sample of 35 checked.** Robust discussion had with auditors regarding use of NW codes. Training to be undertaken and documentation updated.	N/A May 2023 May 2023 June 2023	

4.16. Metering information (Clause 21 Schedule 11.3)

Code reference

Clause 21 Schedule 11.3

Code related audit information

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

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

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

Audit observation

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

Audit commentary

MEEN

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.

I found that one transfer switch and two switch move CS files contained incorrect event readings and were later withdrawn.

ICP	CS file	CS update date	Issue
0008025835HB568	CS-4515493	14 October 2022	Manually created with an incorrect event read and event read type and later withdrawn.
1002075064LC6AC	CS-4445519	18 August 2022	The ICP switched out before the most recent switch in was processed in SAP. The CS details for when MEEN last supplied the ICP in 2020 were applied, and the switch was later withdrawn.
0492516952LC67B	CS-4517569	17 October 2022	The ICP switched out before the most recent switch in was processed in SAP. The CS details for when MEEN last supplied the ICP in 2016 were applied, and the switch was later withdrawn.

A further three switch move CS files contained incorrect switch event read types:

ICP	CS file	CS update date	Issue
0000079785TR520	CS-4278916	13 April 2022	Read type is A but should be E.
0312933398LCF15	CS-4389420	6 July 2022	Read type is A but should be E.
0359396631LCA0E	CS-4498229	3 October 2022	Read type is A but should be E.

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

TRUS

The reads applied in switching files were examined. The meter readings used in the switching process are validated meter readings or permanent estimates.

As detailed in **section 4.10** 43 CS files had a last actual read date on the last day of supply. I checked a sample of three and found the last actual read date on the event date was incorrectly sent as an estimate. The midnight read from the day prior should be sent as an actual. Trustpower are reviewing the logic for this scenario.

This is recorded as non-compliance below and in **4.10, 6.7, 9.1** and **12.7.**

Trustpower'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: 03-Dec-21 To: 17-Nov-22	**MEEN** Three CS files had incorrect switch event read types. Three CS files had incorrect switch event read information and were later withdrawn. **TRUS** All three sampled of a possible 43 MI CS files sent with an actual read from the event date incorrectly labelled as an estimated read. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate for MEEN. In most cases, CS content will be correct. Processes for ICPs supplied for short periods have improved during the audit period. The controls are rated as moderate for TRUS and will mitigate risk most of the time but there is room for improvement. The audit risk rating is assessed to be low, because: • the CS files containing incorrect event readings were withdrawn, • incorrect CS event read types for transfer switches could have a minor impact on other participants if they wish to renegotiate an event read under Clause 6(2) and (3) Schedule 11.3, and • the number of CS files affected is still relatively low in relation to the volume of switches processed.

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN Team has been refreshed on CS content requirements. **TRUS** Investigation being undertaken to confirm if human error or system error. (sections 4.10, 4.16, 6.7 and 9.1)	May 2023 May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN As above. **TRUS** Confirming the logic to ensure correct read is picked up and used in CS file.	N/A July 2023	

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

Code reference

Clause 11.15AA to 11.15AC

Code related audit information

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

The losing retailer may contact the customer for certain administrative reasons and may make a counteroffer only if the customer initiated contacted with the losing retailer and invited the losing retailer to make a counteroffer.

The losing retailer must not use the customer contact details to enable any other retailer (other than the gaining retailer) to contact the customer.

Audit observation

Win-back processes were discussed. The event detail report was analysed to identify all withdrawn switches with a CX code applied within 180 days of switch completion post 31 March 2020. A sample were checked to determine compliance.

Audit commentary

MEEN

When an incoming NT is received, MEEN issues an email or SMS message to the customer advising that they have received a switch request and asking the customer to contact MEEN if the switch is not expected. Mercury's retention process commences once the 180-day period has passed.

Review of the event detail report identified 495 NWs with a CX withdrawal reason code issued within 180 days of CS completion where Mercury was the losing trader, and 14 of these were rejected by the other trader. I reviewed all 14 rejected NWs and found that the customer had initiated contact and requested to come back to Mercury due to a variety of reasons.

Mercury alleged a self breach of clause 11.15AA. In April 2022 a customer contacted MEEN to advise that they intended to switch out. The MEEN agent offered an enticement for the customer to stay with MEEN which was accepted. MEEN has apologised to the other trader and offered a credit to them as a one off goodwill gesture, and has provided further training to the agent who offered the enticement, as well as reminding all agents of their obligation not to offer enticements within 180 days of switch completion.

Breach ref	Clause breached	Status	Comment
2205MERC1	Part 11 clause 11.15AA	Early closure	Mercury contacted a customer during the switch protected period and offered an enticement to remain with Mercury.

TRUS

Trustpower have a retention team. If a switch has associated exit fees or the customer receives other services from Trustpower (e.g., gas, phone or broadband) a task will be created to make a courtesy call to the customer which is allowed under the code. No enticements are offered.

Review of the event detail report identified 709 NWs with a CX withdrawal reason code issued within 180 days of CS completion where Trustpower was the losing trader, and 53 of these were rejected by the other trader. I reviewed a sample of 20 rejected NWs and found:

- 19 confirmed that the customer had requested the switch to be withdrawn either of their own volition or via the off-boarding team contacting them, and
- a switch withdrawal was sent for ICP 0000564565WTCBC as Trustpower had not been able to contact the customer and they didn't want to breach for not completing the switch; in this instance the customer hadn't requested the switch to be cancelled so the incorrect code was applied, which caused the switch to be delayed and this is recorded as non-compliance in **section 4.15**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.17 With: Clause 11.15AA to 11.15AB From: 08-Apr-22 To: 08-Apr-22	**MEEN** Alleged breach 2205MER1 for contacting a customer during the switch protected period and offering an enticement. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are strong. All agents are trained on when enticements may be offered and this appears to be an isolated occurrence. The impact is assessed to be low, and MEEN has taken action to prevent recurrence and compensated the other trader.

Actions taken to resolve the issue	Completion date	Remedial action status

On the morning of 8 April 2022, a Mercury customer signed up with Power Edge Limited. On the same morning, the customer contacted Mercury to advise that they were switching out. This was unprompted by Mercury; the customer assumed that they needed to inform Mercury as part of the process of switching out. Without clear invitation from the customer, the Mercury agent offered the customer an enticement to stay with Mercury which the customer accepted. Power Edge Limited accepted Mercury's withdrawal notice and the customer has remained with Mercury. We acknowledge that under the circumstances Power Edge Limited had little choice as it would be extremely difficult for them to re-win the customer. We have apologised to Power Edge Limited and have agreed on a credit as a one-off goodwill gesture to resolve.	May 2022	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Mercury has robust processes and training programmes in place to ensure that all staff are aware of our requirements under the Code. Human error has occurred in this instance; we have spoken to the agent in question and provided them with additional training. We have reviewed internally and have reminded all our agents of the rules around win-backs and the Switch Protected Period and are confident that we will not see a recurrence of this issue.	May 2022	

5. MAINTENANCE OF UNMETERED LOAD

5.1. Maintaining shared unmetered load (Clause 11.14)

Code reference

Clause 11.14

Code related audit information

The trader must adhere to the process for maintaining shared unmetered load as outlined in clause 11.14:

> *11.14(2) - The distributor must give written notice to the traders responsible for the ICPs across which the unmetered load is shared, of the ICP identifiers of the ICPs.*
>
> *11.14(3) - A trader who receives such a notification from a distributor must give written notice to the distributor if it wishes to add or omit any ICP from the ICPs across which unmetered load is to be shared.*
>
> *11.14(4) - A distributor who receives such a notification of changes from the trader under (3) must give written notice to the registry manager and each trader responsible for any of the ICPs across which the unmetered load is shared.*
>
> *11.14(5) - If a distributor becomes aware of any change to the capacity of a shared unmetered load ICP or if a shared unmetered load ICP is decommissioned, it must give written notice to all traders affected by that change as soon as practicable after that change or decommissioning.*
>
> *11.14(6) - Each trader who receives such a notification must, as soon as practicable after receiving the notification, adjust the unmetered load information for each ICP in the list for which it is responsible to ensure that the entire shared unmetered load is shared equally across each ICP.*
>
> *11.14(7) - A trader must take responsibility for shared unmetered load assigned to an ICP for which the trader becomes responsible as a result of a switch in accordance with Part 11.*
>
> *11.14(8) - A trader must not relinquish responsibility for shared unmetered load assigned to an ICP if there would then be no ICPs left across which that load could be shared.*
>
> *11.14(9) - A trader can change the status of an ICP across which the unmetered load is shared to inactive status, as referred to in clause 19 of Schedule 11.1. In that case, the trader is not required to give written notice to the distributor of the change. The amount of electricity attributable to that ICP becomes UFE.*

Audit observation

The processes to identify and monitor shared unmetered load were discussed. The registry lists and AC020 reports were reviewed to identify all ICPs with shared unmetered load and assess compliance.

Audit commentary

MEEN

When there is a change to shared unmetered load, MEEN normally receives confirmation of the changes from the relevant network, including the load and the date that the change came into effect. MEEN uses this information to update their records and the registry. Validation of unmetered load and monitoring of unmetered load changes has decreased during the audit period and recommendations for improvement are made in **section 3.7**.

Mercury supplies 84 ICPs with shared unmetered load.

81 have the shared unmetered load flag set to Y and a non-zero unmetered daily kWh, and matched the calculation based on the distributor's values within 0.1 kWh.

Three ICPs missed having shared unmetered load re-added when users processed meter changes, and were corrected during the audit.

TRUS

As detailed in **section 3.7**, the ongoing management of unmetered load has moved through several areas in Trustpower during the audit period. This has resulted in a loss of knowledge, corrections to unmetered loads being slow to be processed and an increase in unmetered load discrepancies.

There is a daily discrepancy report that identifies differences between the trader and distributor unmetered load fields in both GTV and the registry, but this report isn't being monitored as regularly as previously due to resource constraints and training being needed.

TRUS supplies 106 ICPs with shared unmetered load.

103 have the shared unmetered load flag set to Y and a non-zero unmetered daily kWh. All matched the calculation based on the distributor's values within 0.1 kWh.

The three ICPs where shared unmetered load is indicated but there is no value recorded were examined and found:

- for two ICPs, the unmetered load was correctly loaded in GTV and but is incorrect on the registry and isn't being reconciled; the volume impact was assessed for December 2022 as 16.6 kWh of under submission as detailed in **section 3.7**, Trustpower are investigating this, and
- ICP 0006786537RNFBD was corrected as part of BAU after the audit reporting was provided.

Exceptions identified in the previous audit have been corrected.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.1 With: Clause 11.14 From: 19-Jun-21 To: 01-Mar-23	**MEEN** Three ICPs missed having shared unmetered load re-added when users processed meter changes and were corrected during the audit. **TRUS** Two ICPs with shared unmetered load indicated but no value recorded on the registry. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**

Low	The controls are recorded as weak: • for MEEN the validation processes require improvement to ensure that unmetered load information is consistently accurate, and • for TRUS there have been changes of staff, and training is planned to bring the new team up to speed. The impact on settlement and participants is minor, as the discrepancies are small.

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN The unmetered section isn't brought across if the meter is replaced in SAP using the B2B system, so this would normally be picked up and added as required during our validation checks. This is a training issue due to a loss of our main resource in this space and not able to do a full handover with their replacement. **TRUS** **Two ICPs with shared unmetered load indicated but no value recorded on the registry.** We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	May 2023 June 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN Further training has been provided to ensure the validation checks are being done correctly to pick up when areas are unable to be updated using B2B. **TRUS** Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	May 2023 June 2023	

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 reports were 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

36 ICPs have unmetered annual loads between 3,000 kWh and 6,000 kWh. 34 are on the DUML register and are compliant. The remaining two ICPs which have loads between 3,000 and 6,000 kWh were confirmed to be under verandah or street lighting, so are of a predictable load.

TRUS

There are three ICPs with standard unmetered load of between 3,000 and 6,000 kWh per annum and all have predictable loads.

There are no ICPs with annual unmetered load over 6,000 kWh.

Audit outcome

Compliant

5.3. Unmetered threshold exceeded (Clause 10.14 (5))

Code reference

Clause 10.14 (5)

Code related audit information

If the unmetered load limit is exceeded the retailer must:

- *within 20 business days, commence corrective measure to ensure it complies with Part 10*
- *within 20 business days of commencing the corrective measure, complete the corrective measures*
- *no later than 10 business days after it becomes aware of the limit having been exceeded, advise each participant who is or would be expected to be affected of:*
    - *the date the limit was calculated or estimated to have been exceeded*
    - *the details of the corrective measures that the retailer proposes to take or is taking to reduce the unmetered load.*

Audit observation

The AC020 reports were examined to identify all unmetered load over 3,000 kWh per annum. Any ICPs with unmetered load greater than 6,000 kWh per annum were examined.

Audit commentary

MEEN

All ICPs with unmetered load over 6,000 kWh are included on the DUML audit register.

TRUS

As mentioned in **section 5.2**, there are no ICPs with standard unmetered load over 6,000 kWh per annum.

Audit outcome

Compliant

5.4. Distributed unmetered load (Clause 11 Schedule 15.3, Clause 15.37B)

Code reference

Clause 11 Schedule 15.3, Clause 15.37B

Code related audit information

An up-to-date database must be maintained for each type of distributed unmetered load for which the retailer is responsible. The information in the database must be maintained in a manner that the resulting submission information meets the accuracy requirements of clause 15.2.

A separate audit is required for distributed unmetered load data bases.

The database must satisfy the requirements of Schedule 15.5 with regard to the methodology for deriving submission information.

Audit observation

Mercury has 17 distributed unmetered load databases.

Audit commentary

MEEN

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, and Mercury is planning to request an extension and if that is unsuccessful will apply for a new profile.

I have included the submission variance in the last column of the main DUML table on the next page. Additionally, I have included in the table below the two databases with submission related issues where the variance is greater than 50,000 kWh per annum:

Database	Main issues	Potential kWh impact (per annum)
Carterton DC	The Waka Kotahi lights were being submitted by both Waka Kotahi and Carterton District Council. The Waka Kotahi lights need to be excluded from revision submissions from June 2021 onwards. Wash ups are still to be completed.	Over submission of 56,394 kWh
Palmerston North CC	Potential under submission was identified due to the use of dimmed wattages being applied. The latest audit which has recently been submitted for review found that most wattages have been corrected to the expected values and a process is in place to account for dimming using golden meter usage.	Under submission of either 22,000 or 95,000

The table below shows that 16 DUML databases have had their audits completed within the required timeframe and one DUML audit outstanding for Kaikoura DC.

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)	Database indicative kWh variance PA +=over - = under
Rotorua Lakes DC	20 February 2022	20 August 2024	No	Yes	No	Yes	No	Yes	Yes	Yes	No	Minor
Avondale Business Association	5 April 2023	Under review	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Accurate
Ardmore Airport	25 May 2022	25 May 2023	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	+10,779
Acacia Cove	1 June 2022	1 June 2024	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Accurate
IntelliHUB Gatekeeper ICPs	31 May 2021	25 May 2024	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Accurate
Masterton DC	1 March 2022	1 June 2023	No	Yes	Yes	No	No	Yes	Yes	No	No	+49,000
Carterton DC	1 December 2022	1 June 2023	No	No	Yes	No	No	Yes	No	No	No	+56,394
South Wairarapa DC	1 July 2022	1 October 2023	No	Yes	Yes	No	No	Yes	Yes	No	No	Minor
Selwyn DC	17 August 2022	17 August 2024	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Accurate
Invercargill CC	12 August 2022	11 August 2023	No	Yes	Yes	Yes	No	Yes	Yes	No	No	-39,000
Vodafone	10 August 2021	20 April 2023	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	-40,000
Western Bay of Plenty DC Parks & Reserves	1 June 2021	28 May 2023	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Accurate
Stratford DC	27 January 2023	27 October 2023	No	No	Yes	No	No	Yes	Yes	No	No	-24,096
Palmerston North CC	26 May 2021	Under review	No	No	Yes	Yes	No	Yes	Yes	No	No	between-22,000 to -95,000

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)	Database indicative kWh variance PA +=over - = under
Tararua DC	1 March 2023	1 September 2024	No	Yes	Yes	Yes	No	Yes	Yes	No	No	-9,700
Kaikoura DC	1 June 2021	1 December 2022	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Very Minor
Dunedin CC	1 February 2023	1 February 2025	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Minor

TRUS

Trustpower is not responsible for any DUML databases. These have all switched to the CNIR participant code.

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-Mar-22 To: 31-Mar-23	**MEEN** Inaccurate submission information for several databases. One database audit report outstanding. 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 DUML audits.

Actions taken to resolve the issue	Completion date	Remedial action status
Regular DUML audits are carried out and we continue to work with customers to ensure that the DUML databases are accurate. For the two databases highlighted in the table above: Carterton DC - we are awaiting the outcome of the most recent audit (due 1 June 2023) but the feedback we have received is that the field audit was accurate and no major issues have been identified. We will work with CDC to correct the database and carry out a washup. Palmerston North CC - The most recent DUML audit (completed March 2023) found that the majority of wattages have been corrected and a process is in place to account for dimming using golden meter usage.	Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above	N/A	

6. GATHERING RAW METER DATA

6.1. Electricity conveyed & notification by embedded generators (Clause 10.13, Clause 10.24 and 15.13)

Code reference

Clause 10.13, Clause 10.24 and Clause 15.13

Code related audit information

A participant must use the quantity of electricity measured by a metering installation as the raw meter data for the quantity of electricity conveyed through the point of connection.

This does not apply if data is estimated or gifted in the case of embedded generation under clause 15.13.

A trader must, for each electrically connected ICP that is not also an NSP, and for which it is recorded in the registry as being responsible, ensure that:

- *there is one or more metering installations*
- *all electricity conveyed is quantified in accordance with the Code*
- *it does not use subtraction to determine submission information for the purposes of Part 15.*

An embedded generator must give notification to the reconciliation manager for an embedded generating station, if the intention is that the embedded generator will not be receiving payment from the clearing manager or any other person through the point of connection to which the notification relates.

Audit observation

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

Audit commentary

MEEN

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. The design of the new connections process does not allow ICPs to be connected without authorisation by Mercury, or an arrangement with an MEP if the ICP is to be metered.

The audit compliance report recorded 62 "active" ICPs where the metering category was 9 or blank, and the unmetered flag was set to no:

Comment	Count
The ICP became inactive, became decommissioned, had metering added, or unmetered load added after the report was run.	52
MEP nomination accepted and asset meter data is to be populated.	7
DUML ICP 0000043663HR00F has its UNM flag set to N but should have its UNM flag set to Y.	1
No MEP nominations were raised for ICPs 0006050069RNDB1 and 0001426079UN6E1, which are "active" with metering category 9.	2
Total	62

Submission by subtraction

Exemption 307 exempts Mercury from complying with the obligation in clause 10.24(c) of the Electricity Industry Participation Code 2010 ("Code") to not to use subtraction to determine submission information. This exemption applies only to ICP 0003133903AA777.

The exemption expires on the earlier of 1 December 2030, the date when Mercury is no longer recorded in the registry as being the trader for ICP 0003133903AA777, the date when Accucal is no longer recorded on the registry as the MEP, the date on which the meter programming, metering or distribution configuration is changed, the date on which any other consumer is connected to the same 11kV distribution substation as ICP 0003133903AA777, and the date on which any other consumer is connected to the same 11kV distribution substation as ICP 0003133903AA777.

There are no other examples of submission by subtraction.

Distributed generation

A report is run monthly to compare the distributor's generation fields against Mercury's records. The report identifies:

- ICPs with installation type B in SAP but not the registry,
- ICPs with installation type B in the registry but not SAP, and
- ICPs with an EG meter register without installation type B.

There is no check for ICPs with installation type B or G but no EG register, and I recommend this is added.

Description	Recommendation	Audited party comment	Remedial action
Distributed generation exception reporting	Add an exception for ICPs with installation type B or G and no settled EG register.	I have confirmed that there is already a report that identifies this in GTV and this is scalable for the current MEEN ICPs.	Identified

Any exceptions found are investigated. If generation is present, the customer is asked whether they wish to gift the generated energy or have EG metering installed. 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 4,179 "active" ICPs with distributed generation capacity recorded by the distributor. Of those:

- 4,054 ICPs are NHH settled; unmetered ICP 0000001000MR7FD (Atiamuri Generation SW ICP) is an SB ICP and has the DFP profile assigned, all other ICPs have the RPS profile assigned on the registry, and
- 125 ICPs are HH settled and have the HHM or HHR profile assigned.

The AC020 report recorded 3,987 ICPs with RPS profile which have distributed generation recorded and import/export metering. Submission data for a sample of 15 of these ICPs was checked, including at least five (or all) with each fuel type listed by the distributor and I found the PV1 profile was applied in the AV080 NHH submissions for all NHH ICPs with generation irrespective of the fuel type of the generation installed meaning some non-solar generation is being incorrectly labelled as PV1. The PV1/EG1 profiles were also 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**.

The registry list showed that 90 NHH settled ICPs and 71 HHR settled ICPs with distributed generation capacity recorded by the distributor do not have settled I flow registers installed. 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. All 161 ICPs were reviewed to determine whether distributed generation was present and found:

Type	Qty	Comment
HHR	71	Generation kWh were appropriately quantified or gifted for 56 of the ICPs: • 27 ICPs are on the gifting register, • four ICPs had EG metering installed after the report was run, • 14 ICPs have I flow volumes recorded by the meter and submitted, and the MEP has an incorrect settlement indicator recorded, • eight ICPs were confirmed not to be exporting energy to the grid, and • three ICPs were confirmed not to have generation present at all. ICP 0005003215TU75A has a job to install EG metering underway, and energy will be appropriately quantified once this is complete. 14 ICPs need to be investigated to determine whether generation is present and if so, arrange for compliant metering to be installed or notification of gifting to be provided. A recommendation is made below.
NHH	90	Generation kWh were appropriately quantified or gifted for 55 of the ICPs: • 24 ICPs had EG metering installed after the report was run, • 26 ICPs are on the gifting register, • three ICPs were confirmed not to be exporting energy to the grid, and • two ICPs were confirmed not to have generation present at all. Four ICPs switched out after the report was run. ICPs 0000648490HB0FD, 0879163805LC318, 0006682995RN9C7 and 0000053053HB1B5 have jobs to install EG metering underway, and MEEN is working with the customers to arrange EG meter installs for ICPs 0385939981LC85F, 0000045433CP1F9 and 0000048274WEA62. Energy will be appropriately quantified once this is complete. 24 ICPs need to be investigated to determine whether generation is present and if so, arrange for compliant metering to be installed or notification of gifting to be provided. A recommendation is made below.

The previous audit recommended MEEN liaise with Orion and the customer to confirm what generation is present for ICP 0007130338RNA72. The customer has confirmed that generation is present and MEEN is working with them to arrange for EG metering to be installed.

Description	Recommendation	Audited party comment	Remedial action
ICPs to investigate to confirm whether generation is present	Confirm whether generation is present and if so, arrange for compliant metering to be installed or notification of gifting to be provided: 1001252773UNA63, 1001116111UN2B1, 1001159194UN841, 0491137168LC906, 0000223388UN94E, 0000162782UN15F, 0000466087UN841, 0007178455RN34E, 1002041538LCF13, 0220523875LC32A, 0030530186PCA23, 1001142826LCE6A, 1002158415LC434, 0400404060LC46C, 0038640800PC434, 0000039113CP890, 0000610616UNA44, 0076383388WE5A3, 1001270361LCCD3, 0344418987LC7DD, 0378418698LCD01, 0000524551HB73F,	I have reviewed these ICPs and confirmed they are either being investigated or have been resolved by offering gifting or getting an IMP/EXP meter installed. We have a good process for monitoring these sites through a spreadsheet and	Identified

Description	Recommendation	Audited party comment	Remedial action
	0000461116HBC88, 0085704601PCD4D, 0000181478WAB2B, 0000100353UND41, 0006983448RN10C, 1001262525LC2DB, 1002036226LC7FE, 1000584124PC1E2, 0000806302HB9DE, 0013561418ELD65, 0346767024LC814, 0000610977TU415, 0000304593HB8FF, 0000312560TE948, 0000275815HB647, 0000381548TUB88.	will continue this after the move to GTV.	

No ICPs have generation profiles recorded by MEEN with no generation details recorded by the distributor.

Bridged meters

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

TRUS

Metering installations installed.

Trustpower's new connection process includes a check that metering is installed before electrical connection occurs, and that any unmetered load is quantified.

All active, metered ICPs have an MEP, and at least one meter channel. The audit compliance report recorded 67 "active" ICPs where the metering category was 9 or blank, and the unmetered flag was set to no:

Comment	Count
The ICP had metering installed after the report was run.	66
MEP nomination accepted and asset meter data is to be populated.	1
Total	67

No load is determined by subtraction.

Distributed generation

Trustpower receives distributed generation applications from a number of sources:

- direct from the customer or the solar installer on the customers behalf, and
- from distributors who provide copies of the network applications to the retailer as part of their network approval process.

Additionally, Trustpower's has a daily discrepancy report that identifies ICPs with installation type B which do not have import/export metering and PV1 profile. ICPs are investigated to confirm whether generation is present, and service orders to install import/export metering are raised as required. For new switch gained ICPs this process does not start until the onboarding process is completed.

The discrepancy report includes references to jobs raised in Jobtrack for the ICP and notes from the last review. Users can push out where customers advise solar is not scheduled to installed for several months to reduce the size of this report to ones requiring immediate attention. I saw evidence that exceptions were being reviewed and progressed.

In some cases, the customer wishes to gift their generation rather than have import/export metering installed or the customer. Where this occurs, a letter is provided to the Reconciliation Manager, and appended to the customer account. Where a customer does not engage with Trustpower regarding making arrangements for import/export metering, Trustpower will make multiple attempts to contact the customer before notifying the customer via a letter that they have been placed on the gifting register in the absence of a formal response from the customer.

The new connection team is also notified where a distributed generation application is received to ensure the appropriate metering is installed as part of the permanent connection to reduce additional meter changes.

Trustpower supplies 5,659 "active" ICPs with distributed generation recorded by the distributor.

The AC020 report recorded 20 ICPs where the distributor recorded generation and the MEP recorded an I flow register:

- 16 have since been updated to the correct profile,
- three have switched away, and
- for ICP 0000326385HBF56, the I flow register still has the settlement indicator set to N in the metering event as Trustpower is awaiting a ROI for this ICP before IntelliHUB will complete the necessary meter configuration tasks that will update the settlement indicator on the registry to enable Trustpower to receive I flow volumes and readings for this ICP.

I reviewed the registry list and meter installation details report and identified 82 ICPs where the distributor recorded generation, but the MEP did not record an I flow register and found:

- 42 ICPs were timing issues arranging for I flow metering to be installed and PV1 profile is now present on the registry,
- 18 ICPs have been added to the gifting register,
- five were registry update errors by the distributor and the installation type, fuel type and generation capacity registry fields have now been updated by the distributor,
- nine have work orders in progress to upgrade the metering to import/export,
- four ICPs do not have solar currently installed and the distributor population of the distributed generation information on the registry was triggered from the approval of the respective DG network application; solar is still planned to be installed at each of these ICPs and Trustpower is monitoring these so that a work order for the installation of the import/export meters can be initiated at the appropriate time,
- three ICPs have switched away from Trustpower prior to Trustpower being able to arrange for import/export metering to be installed, and
- ICP 0000158209UN0A8 has non-compliant legacy metering which also has the meter reads recording negative consumption where the export volumes exceed the import load; because of this Trustpower cannot consider placing this ICP on the gifting register and the customer is not engaging with Trustpower to address the meter compliance issues.

101 "active" ICPs have PV1 profile where there is no generation capacity recorded by the distributor and found:

- 72 have since had a meter change and the profile has been updated accordingly,
- 13 have confirmed that no solar is present at the ICP and work requests have been raised with the MEPs to have the I flow register removed,
- for nine ICPs, Trustpower is awaiting ROI/COC from the solar installer before informing the distributor that the DG installation is completed,
- five ICPs are waiting for the distributor to update the registry, three have now been updated, and

- two ICPs are currently associated with deceased estates where progress to complete the inspection of the solar installation is on hold.

I checked that where generation profiles were recorded, they were consistent with the fuel type. I found:

- 163 ICPs with fuel type other,
    - 161 have either solar installed or solar plus battery installed,
    - two have no distributed generation currently installed,
- one ICP (1000026428BPB72) with fuel type fresh water; Trustpower have confirmed with the customer that the correct fuel type is solar and the distributor has now corrected the registry to reflect this, and
- all other generation profiles were consistent with the generation fuel type.

The meter configuration for ICP 0000901755WW6EB was also reviewed as I flow volumes were being reported in submission information for periods prior to the profile reflecting that distributed generation is present and also that metering was recorded as having an I flow register configured. Trustpower identified that the IHUB meter was installed in March 2021 as part of a new connection with an I flow register as part of the meter configuration. However this generation register had the settlement indicator flag set to N. This meter was set up in Trustpower's systems as having both import and export registers available for submission in error. IHUB does not provide meter reads for registers not flagged for inclusion in the settlement process, so Trustpower did not receive reads for the I flow register until IHUB updated the settlement indication flag on 12 February 2022. Once Trustpower received the first scheduled meter read for this I flow register, the submission process apportioned the volume back to the initial installation read resulting in some generation volumes being recorded for periods where generation is not present for this ICP. Non-compliance is recorded here and in **sections 2.1** and **12.7.**

Bridged meters

A list of 58 bridged meters was provided. When a meter is bridged, Trustpower is not compliant with the requirement to ensure all electricity conveyed is quantified in accordance with the Code.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.1 With: Clause 10.13 From: 01-Jan-22 To: 31-Mar-23	**MEEN** While meters were bridged, energy was not metered and quantified according to the code for five ICPs. Some ICPs with distributed generation not quantified. **TRUS** While meters were bridged, energy was not metered and quantified according to the code for 58 ICPs. ICP 0000901755WW6EB had generation kWh apportioned to a period where generation was not present. 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 reduce the risk most of the time. Submission information is estimated for the bridged period in most cases, so the impact on submission accuracy is considered low and the volume of unaccounted for distributed generation is expected to be low.

Actions taken to resolve the issue	Completion date	Remedial action status

MEEN **While meters were bridged, energy was not metered and quantified according to the code for five ICPs.** Investigating, according to our records all bridged meter corrections were correct. **Some ICPs with distributed generation not quantified.** We have a running report of any sites that have suspected generation, these come from MEPs with reverse power and Installation type being changed to B. This is reviewed on a infrequent basis. The process is to do an internal investigation to see if we can confirm solar, if not arrange contact with customer to discuss the process to get an IMP/EXP meter on site. Some limitation of customers not responding. **TRUS** **While meters were bridged, energy was not metered and quantified according to the code for 58 ICPs.** We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve. **ICP 0000901755WW6EB had generation kWh apportioned to a period where generation was not present.** This has been corrected. ICP had invoices reversed so an install read and install date could be correctly updated. ICP has been correctly rebilled.	Ongoing Ongoing June 2023 May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN **While meters were bridged, energy was not metered and quantified according to the code for five ICPs.** As above.	N/A	
Some ICPs with distributed generation not quantified. Base process is working well but requires more resource to monitor this on a more regular basis. Also some support from networks and MEPs to help with the more difficult cases.	Ongoing	
TRUS **While meters were bridged, energy was not metered and quantified according to the code for 58 ICPs.** Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	June 2023	
ICP 0000901755WW6EB had generation kWh apportioned to a period where generation was not present. A review of all TRUS ICPs with EG found this is the only instance of this occurring. Updating of billable flags is usually done automatically through metering validations but this was adjusted manually causing the error. Additional training has been completed to minimise this but as it was the only instance we believe current controls minimise risk of this occurring.	May 2023	

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

Code reference

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

Code related audit information

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

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

The participant responsible for the metering installation must:

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

Audit observation

The NSP table was reviewed to confirm 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

MEEN

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 Generation team conduct the required updates, which involve sending an AV180 report detailing the NSP changes and submit it to the Reconciliation Manager.

Mercury is responsible for the GIPs shown in the table below as of 10 February 2023. NSPs with certification date changes since the last audit are highlighted in blue, and NSPs with expired meter certification are highlighted in red.

NSP	Description	Recon Type	MEP	Certification expiry date (last audit)	Certification expiry date (this audit)
ARA2201MRPLGG	ARATIATIA	GG	MRPL	23 July 2022	12 May 2023
ARI1101MRPLGG	ARAPUNI	GG	MRPL	16 December 2022	16 December 2022
ARI1102MRPLGG	ARAPUNI	GG	MRPL	16 December 2022	16 December 2022
ATI0111LINENP	ATIAMURI	NP	MRPL	16 August 2022	16 August 2022
ATI0111MRPDNP	ATIAMURI	NP	MRPL	16 August 2022	16 August 2022
ATI0112HAWKNP	ATIAMURI	NP	MRPL	26 July 2023	26 July 2023
ATI0112MRPDNP	ATIAMURI	NP	MRPL	26 July 2023	26 July 2023
ATI2201MRPLGN	ATIAMURI	GN	MRPL	26 August 2022	16 January 2023
KAW1101KRGLGG	KAWERAU GEOTHERMAL	GG	MRPL	23 August 2022	23 August 2022
KPO1101MRPLGG	KARAPIRO	GG	MRPL	16 August 2022	15 January 2024
LTN2201MRPLGG	TURITEA	GG	MRPL	27 December 2022	27 December 2022
MTI2201MRPLGG	MARAETAI	GG	MRPL	19 March 2022	12 November 2022
NAP2202MRPLGG	NGATAMARIKI	GG	MRPL	27 November 2022	27 November 2022
OHK2201MRPLGG	OHAKURI	GG	MRPL	24 June 2023	24 June 2023
SWN2201MRPLGG	SOUTHDOWN	GG	MRPL	19 February 2023	19 February 2023
WKM2201MRPLGG	WHAKAMARU	GG	MRPL	14 August 2023	14 August 2023
WKM2201TUARGN	WHAKAMARU	GN	MRPL	30 May 2023	30 May 2023
WPA2201MRPLGG	WAIPAPA	GG	MRPL	17 February 2024	17 February 2024

The ten late updates are recorded as non-compliance below.

TRUS

Trustpower is not responsible for any grid connected metering installations.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.2 With: Clause 10.26 (6), (7) and (8) From: 16-Aug-22 To: 07-Apr-23	**MEEN** Ten 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**
Low	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
For each NSP there is only 1 expiry date in the table. We take the earliest expiry date of all applicable certification and inspection across the 3 revenue metering systems on site, one for each generating unit. Typical recertification period for a revenue meter / metering system is 3 years. Typical recertification period for a current or a voltage transformer is 10 years. We perform re-certification on the one due at the earliest and update NSP table with the next earliest expiry date. We usually re-certify a few days/weeks prior to the expiry date, but ATH may only provide us the certificate more than 1 month after the re-certification was performed. That also contributes towards delays in updating the NSP table.	Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We continue to look for ways that are within our control to reduce the number of late updates to the NSP table.	Ongoing	

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

Code reference

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

Code related audit information

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

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

Audit observation

The AC020 report and registry list were reviewed to confirm the profiles used.

Audit commentary

MEEN

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.

TRUS

TRUS has applied the EG1, GXP, HHR, PV1, STL, T07, T08, T23, T24, TOC, TON and UML profiles during the period.

Review of the AC020 report confirmed that all ICPs on profiles requiring a certified control device had AMI or HHR metering, or a certified control device.

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

MEEN

Defective meters are typically identified through the meter reading validation process, or from information provided by the meter reader, agent, the MEP, Service request notes from FSPs, or the

customer. Upon identifying a possible defective meter, a field services job is raised to investigate and resolve the defect.

I checked the process for ten defective NHH meters, five defective HHR meters and six NHH bridged meters. In all cases a field services job was raised, and the MEP advised.

Corrections are discussed in **section 2.1** for NHH meters and **8.2** for HHR meters.

TRUS

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

A sample of ten stopped or faulty meters and a list of 58 bridged meters identified during the audit period were provided. The MEP was notified in all instances and the meter was replaced for faulty meters and unbridged for 48 of the 58 bridged meters identified. The remaining ten bridged meters either switched away before the meter could be unbridged or have an open work order to unbridge the meter.

Three of the sample of ten faulty meters had affected periods between 400 days and 700 days:

- ICP 1001163926UN517 (400 days) was initially identified with a blank screen by MRS in June 2021 however a work order was not raised until it was escalated by the billing team in June 2022,
- ICP 1000000962BP243 (700 days) was escalated from a customer enquiry to the Trustpower call centre, and
- ICP 0001414919UN274 (570 days) was escalated from a customer enquiry to the Trustpower call centre.

The delays in identification of faulty meters from the various validation processes is attributed to previous resourcing issues with the Revenue Assurance team.

I checked the meter condition reports from MRS and checked a sample of 10 ICPs where MRS had reported potentially defective meters.

I checked the meter condition reports from MRS and checked a sample of 11 meter condition codes across six different meter condition codes to confirm what actions were undertaken. In all cases the meter condition was reviewed by Trustpower and follow up actions were undertaken where required.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.4 With: Clause 10.43(2) and (3) From: 26-Jun-19 To: 21-Feb-22	**TRUS** MEP not notified in a timely manner for three ICPs where metering installations could be inaccurate, defective, or not fit for purpose. Potential impact: Medium Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**

Low	TRUS 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 acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	June 2023	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	June 2023	

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

Code reference

Clause 2 Schedule 15.2

Code related audit information

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

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

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

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

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

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

2(6) – The interrogation systems must record:

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

Audit observation

MEEN

The data collection process was examined.

- AMS and EDMI collect HHR information as agents.
- MEPs collect NHH AMI data as MEPs.
- MRS 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.

TRUS

Trustpower, their 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.

Trustpower collects generation data, using MV90. I walked through the clock synchronisation process.

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.

MEEN

Data collected by agents and MEPs

Compliance with this clause has been demonstrated by Mercury's agents and MEPs as part of their agent audits, apart from four ICPs which were not read within the maximum interrogation cycle:

Agent	ICP	Last collected interval	Comment
AMS	0000033002TC7DD	16 April 2019 18:00	This ICP is currently inactive on the registry and the meter is attached to a generator which is only switched on during power outages, and cannot be read during outages. AMS is working to resolve the communications issues.
AMS	0033300936PC31C	5 December 2021 12:00	Resolved 16 June 2022 – Meter Replacement.
AMS	0000360675EN65F	15 November 2021 2:00	Comms Issues resolved 1 August 2022.
EDMI	0419700048LC0FD	March 2022	Unable to be read in the previous three months at the time of the audit (June 2022), and the MEP (FCLM) was also unable to manually download the meter. Influx was continuing to investigate this issue.

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.

Data collected by Mercury

Mercury's generation engineers monitor generation consumption and metering in real time and notify Energy Services if any issues are identified. Time sync function for grid generation meters is performed

between AMS and Accucal where AMS identifies a meter requiring a time correction and requests Accucal to undertake this task on behalf of Mercury.

TRUS

Data collected by agents and MEPs

Agents and MEPs monitor clock synchronisation, and this is covered as part of their audits.

The agents and MEPs notify Trustpower when clock synchronisation events occur for AMI meters. Each of the MEPs advises Trustpower of clock synchronisation events, and no action is usually required.

As Trustpower only submits NHH volumes the likelihood of a clock sync issue impacting submission volume accuracy is low. However, as Trustpower uses time-of-day profiles (T07/T23, T08/T24, TOC/TON) there is a risk that some volumes can be reported using an incorrect profile code due to a meter time clock issue.

Trustpower usually relies on the MEP review of impact in determining if further action, such as a work order for meter replacement, is required. No independent review of the AMI data is undertaken by Trustpower.

The time difference reports provided by the AMI MEPs as part of AMI meter interrogations are not downloaded or reviewed by Trustpower. I recommend that Trustpower develops a process to automatically retrieve these reports and identify any exceptions that might impact submission volume accuracy where time-of-day profiles are used.

Recommendation	Description	Audited party comment	Remedial action
Independently review AMI MEPs time difference reports	Trustpower to develop a process to automatically retrieve these reports and identify any exceptions that might impact submission volume accuracy where time-of-day profiles are used.	Trustpower only submits NHH volumes and the submission volume for time-of-day profiles is minimal. The use of time-of-day will be phased out post integration.	Identified

Data collected by Powerco/Influx

Data is provided by way of photos for some substations in the The Lines Company/Powerco areas by personnel engaged by these distributors where meter readers are not allowed to enter such facilities due to the health and safety requirements. I consider these parties have been engaged by Trustpower as agents and Trustpower has deemed them to be competent to conduct meter readings, therefore these readings are in effect conducted by a "certified reconciliation participant".

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.5 With: Clause 2 Schedule 15.2 From: 16-Apr-19 To: 02-Sep-22	**MEEN** Four ICPs were not read within the maximum interrogation cycle. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong. Four ICPs were not read during the maximum interrogation cycle and remedial actions were started as soon as practicable. The impact is assessed to be low, because only four meters were affected.

Actions taken to resolve the issue	Completion date	Remedial action status
0000033002TC7DD - On 17/01/2023 the meter at this site was replaced with a 4-channel IMP/EXP meter (213316774). The Accucal tech that completed the job confirmed that when the Generator is ON (supplying power to the building) the output from the Generator shows up in the kWh IMP channel, and the kvarhs show up in the kvarh EXP channel. The new meter is reading every day, ie, there is no longer a comms issue at this site. 0033300936PC31C - Resolved 16 June 2022 – Meter Replacement. 0000360675EN65F - Comms Issues resolved 1 August 2022.15.2 0419700048LC0FD - ICP is under RPS profile from 01.05.2019, updated in Registry on 2.09.2022. Actual read received 30.07.2022	May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will continue with our strong controls in this area.	Ongoing	

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

Code reference

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

Code related audit information

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

All validated meter readings must be derived from meter readings.

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

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

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

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

Audit observation

The data collection process was examined.

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

Processes for customer and photo reads were reviewed.

Audit commentary

MEEN

Manual readings

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.

MRS meter condition information

MRS monitors meter condition examples, as required by schedule 15.2 and provides information on meter condition. 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. 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 where required. However, any issues noted where a reading is obtained, are not imported into SAP and therefore not actioned. The only issues imported are where a reading was not obtained. There is no longer a separate monthly summary meter condition report being provided to the Premise and Metering team by MRS. This change to the provision of a separate meter condition report in addition to the daily meter read file including meter condition information has meant not all meter condition issues have been reviewed in a timely manner.

No phase failure issues have been reported by MRS 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 five readings provided by MRS 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) before going through the same suite of system meter read validations to ensure the read is reasonable and in line with the ICPs previous consumption pattern. Estimated reads become permanent estimates, which

are labelled as validated reads, therefore subsequent estimated reads are being validated against earlier estimates. I reviewed ten examples of customer readings and found that while these customer reads had undergone reasonable tests and validation against a customer's previous consumption pattern, that not all had been appropriately validated against actual readings from other sources.

The customer reading for ICP 0000712872HBF96 taken on 8 April 2022 was incorrectly labelled as an actual read.

Because not all customer reads have been validated against actual readings from other sources but are then made permanent estimate reads after six months for the purpose of calculating historic estimate volumes, their use in the HE calculation process described in **section 12.11** is non-compliant.

Description	Recommendation	Audited party comment	Remedial action
Reinstate separate monthly summary meter condition report between MRS and Mercury	Reinstate separate monthly non-critical meter condition report (broken seals, different meter number, suspect tamper) between MRS and Mercury's Premise and Metering team to enable timely investigation and resolution of issues identified.	Recommendation accepted and in progress.	Identified

Description	Recommendation	Audited party comment	Remedial action
Photos of Category 2 installations	Require MRS to provide a photo of all manually read Category 2 meters to check for phase failure.	Recommendation accepted and in progress.	Identified

Description	Recommendation	Audited party comment	Remedial action
Check for phase failure reporting over the last 12 months	Request phase failure examples from MRS for the last 12-month period to ensure there are none overlooked.	Recommendation accepted and in progress.	Identified

TRUS

I checked a sample of 13 readings and confirmed that they are loaded into GTV as actual readings and are validated.

MRS data validation

During interrogation, the meter register value is collected and entered into a hand-held device. This reading enters Trustpower's GTV system and is labelled "R" which denotes that it is a meter reading collected and validated by a meter reader.

MRS monitor meter condition, as required by schedule 15.2 and provide information on meter condition along with the daily reads, and monthly summary report containing missing seal and broken seal events.

A sample of 11 meter condition codes across six different meter condition codes were reviewed to confirm what actions were undertaken. In all cases the meter condition was reviewed by Trustpower and follow up actions were undertaken where required.

Influx data validation

Influx had processes in place to identify and report on tampering, damage, broken and missing seals, phase failure and unsafe situations. The details were sent in the same file as the meter readings.

Powerco data validation

The meters read by Powerco are read by engineers and any issues found with the meter would be flagged to Trustpower to action with the relevant MEP. None have occurred during the audit period.

Customer and photo readings

The management of customer and photo readings was examined, and all customer and photo reads are treated as estimates. MRS do not accept or provide customer readings.

Customer and photo readings received from customers pass though the billing validation process to ensure they are correct. I checked ten examples to confirm compliance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.6 With: Clause 3(2) Schedule 15.2 From: 01-Jan-22 To: 07-Apr-23	**MEEN** If readings are obtained the meter condition information is not imported and actioned, therefore the following checks are not conducted: • ensure seals are present and intact, • check for phase failure (if supported by the meter), • check for signs of tampering and damage, and • check for electrically unsafe situations. The customer reading for ICP 0000712872HBF96 taken on 8 April 2022 was incorrectly labelled as an actual read. Customer reads are not being validated against another set of validated meter reads before being considered permanent estimates after six months. Potential impact: Medium Actual impact: Low Audit history: Three times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**

Low	The controls are recorded as moderate because improvements are required to ensure all meter condition examples are reviewed and actioned. Improvement is also required to the process to validate customer reads against other validated reads. The risk is rated as low for the customer read issue, as number of customers reads used is small relative to the total number of reads. The risk rating may be higher for meter condition processing but this will not be known until they start to be reviewed and actioned.

Actions taken to resolve the issue	Completion date	Remedial action status
We asked our meter reading provider, A D Riley to provide us with 12 months worth of condition codes that they have not previously provided. This includes all conditions mentioned in the compliance item. 2 x phase failures, 3 x missing seals and 18 suspected tamperings and a number of suspected faulty meters. We are now investigating all of these. Service requests will be raised where required. Regarding customer reads are not being validated against another set of validated meter reads before being considered permanent estimates after six months: Currently, in SAP a meter read is regarded as actual if one of the following applies: actual in ISU, switch in read, switch out read, followed by an actual read, estimated read billed more than 6 months prior. We will be reviewing our process on permanent estimates and our treatment of customer and estimated reads, however currently improvement process postponed till further integration with TRUS.	May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We have requested A D Riley to continue to supply all condition codes at least in a monthly file until integration with TPW systems occurs.	May 2023	

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.

Readings relating to status event changes ("active" to "inactive" and vice versa) need to apply from the beginning of the day the status event change relates to.

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

MEEN

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 because a NHH and HHR meter cannot be "present" on the same day in the registry.

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

I checked 10 meter changes from HHR to NHH and 10 changes from NHH to HHR and in all cases the changes were conducted as described above.

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

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. I found that one transfer switch and two switch move CS files contained incorrect event readings and were later withdrawn.

ICP	CS file	CS update date	Issue
0008025835HB568	CS-4515493	14 October 2022	Manually created with an incorrect event read and event read type and later withdrawn.
1002075064LC6AC	CS-4445519	18 August 2022	The ICP switched out before the most recent switch in was processed in SAP. The CS details for when MEEN last supplied the ICP in 2020 were applied, and the switch was later withdrawn.
0492516952LC67B	CS-4517569	17 October 2022	The ICP switched out before the most recent switch in was processed in SAP. The CS details for when MEEN last supplied the ICP in 2016 were applied, and the switch was later withdrawn.

TRUS

NHH reading application

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 time stamping. Manual readings taken by MRS and Influx are applied correctly.

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

Switching file content

The content of CS and RR files was examined in **sections 4.3**, **4.4**, **4.10** and **4.11.**

As detailed in section **4.10** 43 CS files had a last actual read date on the last day of supply. I checked a sample of three and found the last actual read date on the event date was incorrectly sent as an estimate. The midnight read from the day prior should be sent as an actual. Trustpower are reviewing the logic for this scenario.

This is recorded as non-compliance below and in **sections 4.10, 4.16** and **9.1.**

Upgrades and downgrades

I walked through the process for NHH to HHR and HHR to NHH meter changes, including viewing examples where possible. The industry has adopted a process that achieves accuracy in relation to submission information and ICP days.

- For upgrades, the process is to "remove" the NHH meter from the registry and GTV 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. I checked three examples that were undertaken during the audit period but were historical corrections to enable the ICPs to be correctly switched to CNIR. Compliance is confirmed because the NHH reading is correctly applied to the end of the day prior to the physical meter change and the trading periods up until the meter change being populated with zeros for the new HHR meter.
- The reverse applies for downgrades, with the ICP treated as HHR all day on the date of the removal, with zeros populated until the end of the day and the NHH meter installed the following day. There were no examples to examine during the audit period. I checked the event detail report to confirm this.

Both a NHH and HHR meter cannot be "present" on the same day in the registry. This matter is also relevant to decommissioned ICPs, where the disconnection readings are applied to the day before the disconnection to ensure submission does not occur for an "inactive" day. Three examples were checked to confirm this.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.7 With: Clause 6 Schedule 15.2 From: 03-Dec-21 To: 17-Nov-22	**MEEN** Three CS files contained readings which did not reflect an actual or reasonable estimate reading effective from the last day of supply. All of the switches were later withdrawn and there is no impact on reconciliation. **TRUS** All three sampled of a possible 43 MI CS files sent with an actual read from the event date incorrectly labelled as an estimated read. Disconnection reads applied to the day before the disconnection. Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate and will mitigate risk most of the time but there is room for improvement. The audit risk rating is low as the number of CS files affected is still relatively low in relation to the volume of switches processed.

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN SAP system calculates on the basis of readings available in the system. Hence, they were outside the period of supply. MEEN is accountable to adhere to the code and would ensure it is being dealt with on GTV. **TRUS** **All three sampled of a possible 43 MI CS files sent with an actual read from the event date incorrectly labelled as an estimated read.** Investigation being undertaken to confirm if human error or system error. (sections 4.10, 4.16, 6.7 and 9.1) **Disconnection reads applied to the day before the disconnection.** Will be reviewed as part of general review as per comments for recommendation under section 3.9.	May 2023 May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN As above. **TRUS** **All three sampled of a possible 43 MI CS files sent with an actual read from the event date incorrectly labelled as an estimated read.** Confirming the logic to ensure correct read is picked up and used in CS file. **Disconnection reads applied to the day before the disconnection.** As above.	N/A July 2023	

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 and reporting on ICPs unread during the period of supply was examined.

Audit commentary

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

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

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

MEEN

The no reads process is managed by the 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's ADR system contains all AMI meter readings delivered by AMI MEPs. 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, and the scheduled read/billed date is also amended to reflect the date the read relates to. This process maximises the quantity of readings available for use.

The sending of letters and txt messages to customers is automated for some no read codes, such as "gate locked' and "no key". These letters are sent after two readings are missed in a row.

There is now an automated report for ICPs needing to change from a "smart" to a "manual" round, but the changes are conducted manually.

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 128 ICPs unread during the period of supply, where the period of supply ended between 1 January and 31 October 2022. I checked an extreme case example of the 20 ICPs supplied for the longest periods and found that exceptional circumstances were proven for 11 examples checked. Due to the time needed to complete, exceptional circumstances cannot be proven for the 152 ICPs with a supply period of less than 90 days.

TRUS

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

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

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

Trustpower uses best endeavours to get at least one read during the period of supply even if the period of supply is short. The process was confirmed by a "walk through" of the following steps:

- a "queue" is created when a NT file is received, and a validated reading has not been obtained during the period of supply, and
- an attempt is then made to get a reading by booking a special reading or by calling the customer or landlord to get a customer reading if the customer is new to Trustpower and has no history.

If a reading cannot be obtained from the steps above, then the winning retailer is contacted to see if they have an actual start reading and this is used.

I reviewed Trustpower's meter reading processes. All manual meter readings are carried out by MRS. The process to obtain reads is described in their agent report which will be submitted with this audit. Skipped read messages are reviewed and actioned based on the issue identified. Trustpower makes contact with the customer to arrange an appointment or obtain keys etc. This is by phone in the first instance where at least two attempts are made. If this is unsuccessful then a letter is sent. Text is also used but the current service has a restriction in the number of characters available, so this is only used where possible.

Trustpower provided a list of 230 metered ICPs which were unread during the period of supply where the period of supply ended between January and October 2022:

Period of supply	Count of ICPs
Within 30 Days	129
31 to 90 Days	48
91 to 365 Days	52
365 Days +	1
Grand Total	230

I checked ten ICPs supplied for over 90 days to determine whether exceptional circumstances existed and found:

- exceptional circumstances were present for four ICPs,
- three were AMI non communicating ICPs which had been moved to a manual meter reading sequence and were being investigated by the AMI MEP at the time of the switch,
- ICP 0000039963TR38B was disconnected as vacant in November 2021 prior to switching away in October 2022,
- ICP 0010342148EL1E9 was identified as vacant with no access to meter, and
- ICP 0000226795UN799 had an attempted AMI meter installation but was turned down due to wiring issues.

Non compliance is recorded for the three AMI non communicating ICPs as best endeavours was not shown in attempting to gain a read once the AMI meter was found to be non-communicating.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.8 With: Clause 7(1) and (2) Schedule 15.2 From: 01-Jan-22 To: 31-Dec-22	**MEEN** The best endeavours requirement was not met for 163 ICPs not read during the period of supply. **TRUS** Exceptional circumstances not proven for three of a sample of ten ICPs not read during the period of supply. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	MEEN The controls are recorded as strong because reasonable steps are in place to obtain meter readings in most cases. The risk is rated as low, as number of customers not read during the period of supply is small relative to the customer base. TRUS The controls are recorded as strong, as Trustpower have robust processes in place including attempting to get reads as customers switch away. The audit risk rating is low as the number of ICPs not read during the period of supply is low.

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN Our records show that there was only 128 ICP's unread during the period of supply in spite of our best endeavour to read them. These have all since switched out. Access was difficult during pandemic conditions. They are unable to be resolved. **TRUS** We currently have reports in place to help guide our team to gain reads - we continue to gain reads for all sites that are with us during period supply, whether that is by AMI reads, manual readings, or customer read (call, text. Email or letter) our current procedures we have in place are robust.	May 2023 May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN We will review the switching process to identify any opportunity to catch switch-out ICPs but this is difficult due to the short period, volume and switching KPIs. Attempts are made to obtain a read but there needs to be a reasonable period of time to establish master data and meter reading protocols. We think this should be 3 months. **TRUS** As above.	September 2023 N/A	

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. A sample of monthly reports were provided and reviewed to determine whether they met the requirements of clauses 8 and 9 of schedule 15.2.

A sample of 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

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

MEEN

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-22	341	161	1,899	98.44%
Apr-22	342	159	1,919	98.44%
May-22	347	160	1,889	98.46%
Jun-22	347	162	1,891	98.46%
Jul-22	348	154	1,876	98.48%
Aug-22	349	152	1,778	98.55%

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
Sep-22	354	156	1,685	98.63%
Oct-22	354	157	1,639	98.61%

The read attainment percentage has decreased by around 0.5% since the last audit. 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:

- one ICP is permanently estimated because it is a Vodafone installation, and they will not provide access; this is considered an exceptional circumstance,
- one ICP was unread due to being on a smart meter round, which means letters and messages are not sent, and
- nine 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 October 2022 and confirmed that they met the meter reading frequency report requirements and that the reports were submitted by the 20th business day of the month following the report period.

TRUS

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-22	255	96	340	99.84%
Apr-22	255	103	379	99.82%
May-22	257	98	368	99.83%
Jun-22	257	98	375	99.82%
Jul-22	259	97	403	99.81%
Aug-22	259	101	405	99.81%
Sep-22	258	103	403	99.81%
Oct-22	258	104	399	99.81%

As discussed in **section 6.8**, there are processes in place to monitor read attainment, and attempt to resolve issues preventing read attainment. The meter reading attainment level has improved slightly during the audit period.

The sample of ten ICPs checked from the October 2022 report confirmed exceptional circumstances in nine cases. A reading was successfully obtained for ICP 0038640378PC073 in November 2022.

I reviewed meter reading reports for January to October 2022 and confirmed that they met the meter reading frequency report requirements and were submitted in the required timeframe.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.9 With: Clause 8(1) and (2) Schedule 15.2 From: 01-Jan-22 To: 31-Dec-22	**MEEN** ICP 0000020823EAE94 not read within 12 months and there was no correspondence with the customer because the ICP was on a smart round. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because they mitigate risk to an acceptable level, and ICPs on smart rounds are now changed after one month. 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
This ICP is a smart meter that was moved to a manual meter reading round in July 2022 to ensure actual reads were achieved. The customer refused access to the meter. The communication problem was resolved 5 months later and smart reads have continued to be received since.	January 2023	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Mercury has a process to move non-communicating smart meters to manual meter reading rounds until comms are resolved.	May 2023	

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

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

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

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

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

Audit observation

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

A sample of 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

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

MEEN

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-22	354	9	6,300	95.77%
Apr-22	357	8	6,667	95.54%
May-22	359	7	5,942	95.99%
Jun-22	359	8	4,946	96.63%
Jul-22	360	4	4,448	96.98%
Aug-22	360	3	3,991	97.29%
Sep-22	364	3	3,749	97.45%
Oct-22	368	3	3,840	97.29%

There has been an approximately 1% decline in read attainment since the previous audit. I reviewed all ICPs connected to NSPs where less than 90% of ICPs had reads within the previous four months to determine whether exceptional circumstances exist, and if Mercury had used their best endeavours to obtain readings, and in all cases multiple attempts had been made to obtain readings.

TRUS

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-22	269	13	3,179	98.66%
Apr-22	272	18	3,620	98.48%
May-22	273	11	2,377	99.00%
Jun-22	274	9	1,782	99.25%
Jul-22	275	7	1,628	99.32%

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	Total ICPs unread for 4 months	Overall percentage read
Aug-22	277	6	1,574	99.34%
Sep-22	277	7	2,345	99.02%
Oct-22	277	9	2,222	99.07%

As discussed in **section 6.8**, there are processes in place to monitor read attainment, and attempt to resolve issues preventing read attainment. The meter reading attainment level has improved slightly during the audit period.

All five unread ICPs on the NSPs where less than 90% read attainment was achieved for October 2022 were reviewed to determine whether exceptional circumstances existed. In all instances these were NSPs with a small number of ICPs recorded, therefore one missed ICP will cause the threshold requirement not to be met. Exceptional circumstances were proven for all five ICPs.

ICPs where the AMI meter becomes non communicating are transitioned to a manual meter reading sequence after two failed scheduled meter reads (approximately 60 days). However, the AMI MEP may have completed their communications investigation and updated the registry to reflect that the AMI meter is now non communicating prior to 60 days. Any delay in transitioning ICPs to manual meter read sequences has the potential to result in the ICP missing the next scheduled read attempt as the route may have been manually read. I recommend that Trustpower also uses the trigger of the AMI communicating flag on the registry to update the meter read sequence to ensure the earliest possible attempt to complete a manual read is undertaken.

Description	Recommendation	Audited party comment	Remedial action
Transition to manual read sequence for non communicating AMI meters	Recommend that Trustpower also uses the trigger of the registry AMI communicating flag to update the meter read sequence to ensure the earliest possible attempt to complete a manual read is undertaken.	Ticket raised on our Jira board to review our non comm process to reduce the time on when we can get a manual read.	Identified

I reviewed meter reading reports for January to October 2022 to confirmed that they met the meter reading frequency report requirements and were submitted in the required timeframe. I compared the Registry LISHIST data for "active" ICPs with Trustpower for longer than four months and identified a difference between the four-month ICP count in the October 2022 meter read frequency report (239,542 "active" ICPs) and the count from the Registry LIS report (243,592 "active" ICPs). Trustpower were unsure of the selection criteria for the meter read frequency report to ensure the report is accurately reporting the read attainment levels to the authority. I recommend that Trustpower reviews the selection criteria of the meter read frequency report and confirms that the report is accurately presenting Trustpower's read attainment levels and to ensure this is understood by the relevant operations teams.

Description	Recommendation	Audited party comment	Remedial action
Meter read frequency reporting accuracy	Trustpower reviews the selection criteria of the meter read frequency report and confirms that the report is accurately presenting Trustpower's read attainment levels and to ensure this is understood by the relevant operations teams.	We have a job raised with our analytics team to look into this report urgently to see why our attainment was low.	Identified

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

MEEN NHH data is collected by MEPs and MRS, and TRUS NHH data is collected by MEPs, MRS and Powerco. The data interrogation log requirements were reviewed as part of their agent and MEP audits, and data interrogation for Powerco was reviewed as part of this audit.

Audit commentary

MEEN

Compliance with this clause has been demonstrated by Mercury's agents and MEPs as part of their own audits. I confirmed with MRS that there were no changes to their processes or systems since their 2022 audit that could have a negative impact on Mercury's compliance.

TRUS

Compliance with this clause has been demonstrated by MRS and MEPs as part of their own audits.

Trustpower's agents confirmed that there were no changes to their processes or systems since their most recent audit that could have a negative impact on Trustpower's compliance.

The read process undertaken by Influx and Powerco for the substations read by them was examined and compliance was confirmed.

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

MEEN

HHR data is collected by EDMI and AMS, generation data is collected by AMS, and HHR AMI data is collected by MEPs. Data interrogation requirements were reviewed as part of their agent and MEP audits.

Audit commentary

MEEN

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

TRUS

Review of a registry list for the audit period confirmed that TRUS has not supplied any ICPs with submission type HHR during the audit period.

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

MEEN

HHR data is collected by EDMI and AMS, generation data is collected by AMS, and HHR AMI data is collected by MEPs. Data interrogation requirements were reviewed as part of their agent and MEP audits.

Audit commentary

MEEN

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

TRUS

Review of a registry list for the audit period confirmed that TRUS has not supplied any ICPs with submission type HHR during the audit period.

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

MEEN

HHR data is collected by EDMI and AMS, generation data is collected by AMS, and HHR AMI data is collected by MEPs. Data interrogation requirements were reviewed as part of their agent and MEP audits.

Audit commentary

MEEN

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

Generation data is monitored by Mercury's generation engineers and any events that may affect accuracy are reported to the Energy Services team.

TRUS

Review of a registry list for the audit period confirmed that TRUS has not supplied any ICPs with submission type HHR during the audit period.

Audit outcome

Compliant

7. STORING RAW METER DATA

7.1. Trading period duration (Clause 13 Schedule 15.2)

Code reference

Clause 13 Schedule 15.2

Code related audit information

The trading period duration, normally 30 minutes, must be within ±0.1% (±2 seconds).

Audit observation

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 ± 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.

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

Compliance with this clause has been demonstrated by Mercury's agents and MEPs as part of their agent and MEP audits.

MEEN

Metering, Billing, Energy Services and Risk Control staff have access to modify meter reading information in SAP. 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**.

I reviewed raw NHH meter data from January 2019, and HHR and generation meter data from January 2019 recorded in SAP, confirming that meter reading data is retained for at least 48 months.

TRUS

Data collected by MEPs and agents

Compliance with this clause has been demonstrated by Trustpower's agents and MEPs as part of their agent and MEP audits.

All data is archived for a period well in excess of the 48 months required by the code. Password protection is in place to ensure unauthorised personnel cannot access raw meter data. I reviewed raw NHH meter data for TRUS confirming that meter reading data is retained for at least 48 months.

AMI data is stored in a separate database with appropriate controls in place. The data is archived in accordance with clause 10.7 of part 10.

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

MEEN

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

TRUS

TRUS does not deal with any non-metering information.

Audit outcome

Compliant

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

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

Code reference

Clause 19(1) Schedule 15.2

Code related audit information

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

> *19(1)(a) - confirm the original meter reading by carrying out another meter reading*
>
> *19(1)(b) – replace the original meter reading the second meter reading (even if the second meter reading is at a different date)*
>
> *19(1A) if a reconciliation participant detects errors while validating non half hour meter readings, but the reconciliation participant cannot confirm the original meter reading or replace it with a meter reading from another interrogation, the reconciliation participant must:*
>
> - *substitute the original meter reading with an estimated reading that is marked as an estimate; and*
> - *subsequently replace the estimated reading in accordance with clause 4(2).*

Audit observation

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

Audit commentary

MEEN

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.

TRUS

Where errors are detected during validation of non-half hour meter readings a check reading will be performed for manually read meters, or AMI readings for surrounding days will be checked. If an original meter reading cannot be confirmed from review of other actual readings, an estimated reading is used and is appropriately labelled. If readings are replaced, the original reading is labelled as a "misread" and the new reading is then entered as either an estimate or actual reading.

I reviewed examples of corrections to determine whether they had been processed correctly and flowed through to revision submissions. The findings are listed in **section 2.1**.

Transposed meters

Where a meter reading is found to be transposed, Trustpower reverses invoices for the affected period upto 14 months back and swaps the readings between registers and the corrected readings are recorded as actuals. I checked two examples to confirm this including adjustments performed as both exceptions occurred for periods exceeding 14 months.

Audit outcome

Compliant

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

Code reference

Clause 19(2) Schedule 15.2

Code related audit information

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

> *19(2)(a) - if the relevant metering installation has a check meter or data storage device, substitute the original meter reading with data from the check meter or data storage device; or*
>
> *19(2)(b) - if the relevant metering installation does not have a check meter or data storage device, substitute the original meter reading with data from another period provided:*
>
> *I. The total of all substituted intervals matches the total consumption recorded on a meter, if available; and*
> *II. The reconciliation participant considers the pattern of consumption to be materially similar to the period in error.*

Audit observation

Processes for the correction of HHR meter readings and a sample of corrections were reviewed.

Audit commentary

MEEN

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 either the "attachment list" in SAP or found in an email archive.

During the previous audit, Mercury was advised by EDMI that a 160x multiplier had not been applied to the import and export streams between 19 December 2017 and May 2021 when a new meter was installed. Mercury's submission data was incorrect from December 2017 to May 2021. HHR corrections are not able to be applied across all affection consumption periods. Compliance was recorded for the correction process, but non-compliance was recorded in **section 12.9** because the compensation factor in the registry was not used. This matter was the subject of a breach investigation, which is now resolved.

HHM profile ICPs

The following were conditions put in place by Mercury for the use of the HHM profile for AMI HHR data:

- the half hour data stream is checked and validated by Mercury acting as the trader using a process audited under its reconciliation participant audit and includes:
    - (i) a process for recognising and estimating half hour periods that are in error (high, low, duplicated, negatives or missing)
    - (ii) if there is a discrepancy between the accumulating register and the half hour data stream, the HHR data will be adjusted to match the NHH reads for the same time period
    - (iii) a process to ensure that the half hour data stream is provided to the reconciliation manager in accordance with the reconciliation manager functional specification, including the management of daylight-saving time.

I reviewed ICP 0222736046LC274 with an AMI meter change occurring in November 2022 and found that data from the removed meter on the day of the meter change is not reconciled. The data from the old meter ends at midnight on the day before the meter change. The data from the new meter on the day of the meter change is reconciled. MEEN advised this is the standard process for HHR to HHR meter changes. ICP 0006683509RN892 also had an AMI meter change, but submission is NHH and the removed meter reading was used at the time of the meter change, so consumption was continuous.

I checked what reporting was in place for missing interval data. Reporting is at a summary level and indicates where an ICP has any missing data in a month and the number of months data is missing. The reporting does not show how many intervals are missing and does not show the percentage of estimated data in any given revision. In **section 9.6** I recommend reporting is developed to show the number of intervals estimated per ICP per month for every revision, and this reporting should be split by MEP.

Generation

Corrections to generation data seldom occur and the same process is used.

TRUS

Review of a registry list for the audit period confirmed that TRUS has not supplied any ICPs with submission type HHR during the audit period. Trustpower relies on Manawa Energy to complete any HHR revisions required to be undertaken for historical periods within the revision period as the C&I interval data functionality moved to Manawa as part of the organisational split.

The September 2021 HHRVOLS data had been corrected to resolve a historical daylight saving issue which had affected nine NSP's submission volumes for the daylight saving transition period. However, the generation of the September 2021 R7 HHRAGGS file did not reflect this volume correction. The September 2021 R14 submissions did not align between HHRVOLS and HHRAGGS. This is recorded as non-compliance in **section 12.7**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 8.2 With: Clause 19(2) Schedule 15.2 From: 01-Jan-22 To: 31-Dec-22	**MEEN** Removed meter data not reconciled for the day of the meter change for HHR to HHR AMI meter changes. Potential impact: Medium Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because there is room for improvement for the HHM profiled ICPs. 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
For HHM ICPs currently SAP is working in the way, that can't take into account old meter data and new meter data from a specific timeslice during the day, therefore data from the old meter ends at midnight on the day before the meter change.	May 2023	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Prevention actions and recommended reporting changes will be discussed and analysed once HHM customers migration to TRUS is complete.	Late 2022/ early 2023	

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

Code reference

Clause 19(3) Schedule 15.2

Code related audit information

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

Audit observation

Error and loss compensation arrangements were discussed.

Audit commentary

MEEN

Mercury does not deal with any loss 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.

TRUS

Trustpower confirms that they do not deal with any data where error or loss compensation occurs. The site set-up processes are designed to identify these arrangements for any new sites.

Audit outcome

Compliant

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

Code reference

Clause 19(4) and (5) Schedule 15.2

Code related audit information

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

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

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

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

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

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

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

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

Audit observation

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

Raw meter data retention for MEPs was reviewed as part of their MEP audits.

Audit commentary

MEEN

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

TRUS

Raw meter data cannot be accessed or overwritten by any person or process. The raw data is "locked down" and even if working data is edited, the raw data remains unchanged.

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

MEEN

Readings are clearly identified as required by this clause within SAP. However, after six months all SAP estimated reads and all customer reads are treated as permanent estimate reads for the calculation of historic estimate (HE) volumes. The change of treatment of the read type is not reflected within the SAP system and we cannot see any audit trail relating to this change in treatment of read types after six months in either the SAP or SAS systems.

In **section 4.10** I found that three CS files contained incorrect switch event read types. The switch event read values were correctly recorded.

ICP	CS file	CS update date	Issue
0000079785TR520	CS-4278916	13 April 2022	Read type is A but should be E.
0312933398LCF15	CS-4389420	6 July 2022	Read type is A but should be E.
0359396631LCA0E	CS-4498229	3 October 2022	Read type is A but should be E.

In **sections 4.4** and **4.11** I found that 13 ICPs which had undergone read renegotiations had incorrect read types recorded in SAP. When the readings were manually entered the default read type (actual) was applied in error. There is no impact on submission because all switch event readings are treated as validated readings when calculating historic estimate.

ICP	RR file	RR update date	Issue
0050283001WR3CE	RR-180712	6 April 2022	SAP read type is actual but should be estimated.
0000590803TUAD7	RR-183593	15 June 2022	SAP read type is actual but should be estimated.
0000515228NR706	RR-183821	21 June 2022	SAP read type is actual but should be estimated.
0000039769CP95A	RR-180130	28 March 2022	SAP read type is actual but should be estimated.

ICP	RR file	RR update date	Issue
0000141540TRDC7	RR-181837	4 May 2022	SAP read type is actual but should be estimated.
0005401410RNA1C	RR-188432	10 October 2022	SAP read type is actual but should be estimated.
0000579449UN5D9	RR-188635	13 October 2022	SAP read type is actual but should be estimated.
0000037846TR255	RR-180691	6 April 2022	SAP read type is actual but should be estimated.
0317611038LC4AC	RR-184731	12 July 2022	SAP read type is actual but should be estimated.
0000039689UNE77	RR-184741	12 July 2022	SAP read type is actual but should be estimated.
0000123934TR484	RR-188581	12 October 2022	SAP read type is actual but should be estimated.
0000021866CE4ED	RR-189362	31 October 2022	SAP read type is actual but should be estimated.
0000171845HB47B	RR-189643	4 November 2022	SAP read type is actual but should be estimated.

TRUS

All estimated readings, permanent estimates and actual readings are clearly identified as required by this clause. NHH readings reviewed during the audit were correctly classified apart from, as detailed in section **4.10**, 43 CS files had a last actual read date on the last day of supply. I checked a sample of three and found the last actual read date on the event date was incorrectly sent as an estimate. The midnight read from the day prior should be sent as an actual. Trustpower are reviewing the logic for this scenario.

This is recorded as non-compliance below and in **sections 4.10, 4.16** and **6.7.**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.1 With: Clause 3(3) Schedule 15.2 From: 01-Jan-22 To: 07-Dec-22	**MEEN** Three switch move CS files contained incorrect switch event read types. 13 ICPs which had undergone read renegotiations had incorrect switch event read types recorded in SAP. No visible audit trail present for the change in treatment of estimated and customer reads in the calculation of historic estimate (HE) volumes within SAS or SAP. **TRUS** All three sampled of a possible 43 ICPs sent with the incorrect last read type of "E". Potential impact: Low Actual impact: Low Audit history: Three times previously Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating
Low	For MEEN: • the controls over switch event readings in CS files are strong, most files are produced automatically from SAP with the correct readings applied, • the controls over the manual entry of renegotiated switch event readings are moderate; SAP defaults the read type to actual, and it must be manually changed and checked by the user if it should be estimated, and • the controls over correct classification of estimated and customer readings after six months are weak as the mass treatment of all estimated and customer provided reads as available for use in the calculation of historic estimate volumes once older than six months without an audit trail being present is non-compliant, as users within SAP validating meter reads with periods between reads being greater than six months are not aware of the impact these updates are making to the HE calculations. For TRUS, the controls are recorded as moderate as the controls will mitigate risk to an acceptable level but there is room for improvement. Overall, the controls are assessed to be moderate, and the impact is low. The incorrect read types for switch event readings have no impact on reconciliation as all switch event reads are used to calculate historic estimate regardless of read type. Incorrect CS event read types for transfer switches could have a minor impact on other participants if they wish to renegotiate an event read under Clause 6(2) and (3) Schedule 11.3. The impact of the incorrectly classified customer and estimate readings after six months is rated as low in the absence of any firm data to quantify further.

Actions taken to resolve the issue	Completion date	Remedial action status

MEEN **Three switch move CS files contained incorrect switch event read types.** In the light of integration and Mercury moving to GTV system, we recommend not raising a ticket to address the issue. **13 ICPs which had undergone read renegotiations had incorrect switch event read types recorded in SAP.** This was due to human error, Team has been given a refresher. **No visible audit trail present for the change in treatment of estimated and customer reads in the calculation of historic estimate (HE) volumes within SAS or SAP.** We will be reviewing our process on permanent estimates and our treatment of customer and estimated reads and will review what audit trails need to be put in place, however currently improvement process postponed till further integration with TRUS. **TRUS** **All three sampled of a possible 43 ICPs sent with the incorrect last read type of "E".** Investigation being undertaken to confirm if human error or system error. (sections 4.10, 4.16, 6.7 and 9.1)	N/A May 2023 Late 2022/ early 2023 May 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN As above. **TRUS** **All three sampled of a possible 43 ICPs sent with the incorrect last read type of "E".** Confirming the logic to ensure correct read is picked up and used in CS file.	N/A July 2023	

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

Code reference

Clause 3(4) Schedule 15.2

Code related audit information

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

3(4)(a) - validated meter readings

3(4)(b) - estimated readings

3(4)(c) - permanent estimates.

Audit observation

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 data is collected by MEPs and agents, and HHR and generation data is collected by agents.

Audit commentary

MEEN

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 EDMI and AMS in the PROFVAL format which includes three decimal places.

AMS, Arc, Smartco, IntelliHUB, Counties and FCLM readings are rounded to zero decimal places on import. 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 s**ections 2.1** and **12.7** in relation to submission accuracy.

TRUS

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

AMI data is rounded to zero decimal places upon being uploaded to Gentrack. This is recorded as non-compliance below and in **section 12.7**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.3 With: Clause 3(5) of schedule 15.2 From: 01-Jan-22 To: 31-Dec-22	**MEEN** Raw meter data is rounded upon receipt and not when volume information is created. **TRUS** Raw meter data is rounded upon receipt and not when volume information is created. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: None Breach risk rating: 5
Audit risk rating	**Rationale for audit risk rating**
Low	MEEN 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 impact to the Switch loss process as rounded reads are being provided to gaining retailers who do not round reads in their system therefore will recognise the switch read as requiring correction via the RR process – the increased RR activity is an impact to both Mercury and other participants. The impact is rated as low because most other retailers have implemented a 1 kWh threshold before an RR is sent. TRUS There are no controls to prevent rounding of NHH raw meter data as it relates to a current system limitation as the system is designed to round as soon as the data arrives. Overall, the controls are rated as moderate. There is little impact because no metered consumption information is "missing". In some cases, the lack of decimals can trigger the switching RR process where the other trader is using decimals, but most of these traders are now filtering out differences less than 1 kWh. The audit risk rating is recorded as low.

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN A ticket was raised (#278136) to examine the feasibility and cost of creating a fix for this issue in SAP. However, this was put on hold indefinitely as the amount of resource involved could not be justified in light of the impending Mercury/Trustpower integration and our move to GTV. **TRUS** This is currently on hold until post migration for Mercury.	Late 2022/ early 2023 Late 2022/ early 2023	Investigating

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

9.4. Half hour estimates (Clause 15 Schedule 15.2)

Code reference

Clause 15 Schedule 15.2

Code related audit information

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

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

Audit observation

The HHR estimate process was examined and I checked a sample of HHR estimates for compliance with the requirement to use "reasonable endeavours" to ensure that estimated data is accurate to within 10%.

Audit commentary

MEEN

Where Mercury is advised by a HHR data collector/agent that data is unrecoverable from a HHR meter then estimates are calculated based on check or surrounding readings where possible, or data from a period with a similar expected quantity and profile to the period to be estimated. 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.

During the previous audit it was recorded that when Mercury had not received data prior to the deadline for providing submission information for a C&I new connection or recent switch gain ICP where no consumption history was present in SAP, then a zero-value estimation of data was produced as a placeholder to ensure that the ICP is included in the AV140 and ICP days reporting. This estimation of missing data for high consuming HHR ICPs using zero values did not meet the reasonable endeavours threshold required under this clause. This process has been changed and the new process is to check the annual consumption with the account manager, and to use this as a basis for estimation.

I checked a sample of five ICPs and confirmed that these estimates are a reasonable representation of the ICPs consumption profile.

I also reviewed the audit trails for these HHR estimations and while audit trails were available for a sample of five ICPs I reviewed, they were split across a mix of SAP notes and archived emails which made it challenging to verify these estimations. Mercury has an excellent audit trail template used for their Grid Generation corrections which includes:

- the date of the correction or alteration,
- the time of the correction or alteration,
- the operator ID,
- 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,

- the technique used to arrive at the corrected data,
- the reason for the correction or alteration, and
- approval of the correction

Given the potential impact such C&I estimations could have to Mercury's HHR submission accuracy I recommend that Mercury consider extending this estimation template to include all C&I HHR estimations where this audit trail is captured by this template and saved in the SAP notes function.

Description	Recommendation	Audited party comment	Remedial action
HHR correction audit trail	Extend the use of the grid generation audit trail template for corrections to all C&I interval data corrections.	Reporting to track C&I data corrections and estimations will be reviewed and adopted.	Identified

IntelliHUB estimates

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.

Generation

Corrections to generation data seldom occur and the same process is used.

TRUS

Review of a registry list for the audit period confirmed that TRUS has not supplied any ICPs with submission type HHR during the audit period.

Audit outcome

Compliant

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

Code reference

Clause 16 Schedule 15.2

Code related audit information

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

> *16(2)(a) - confirmation that the meter reading or estimated reading relates to the correct ICP, meter, and register*
>
> *16(2)(b) - checks for invalid dates and times*
>
> *16(2)(c) - confirmation that the meter reading or estimated reading lies within an acceptable range compared with the expected pattern, previous pattern, or trend*
>
> *16(2)(d) - confirmation that there is no obvious corruption of the data, including unexpected 0 values.*

Audit observation

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

Audit commentary

MEEN

Data validation for NHH metering information occurs at multiple levels.

Meter reader validation

For manually read meters, MRS perform a localised validation within their hand-held devices to ensure the reading is within expected high/low parameters. This is described further in the MRS audit report. MRS also provides 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 includes 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 a report that identifies ICPs with zero consumption. This is run on a regular basis and ICPs are investigated. The process identifies any stopped/bridged meters. I confirmed that bridged consumption information is appropriately estimated and flows through to submission files. I reviewed ten examples of volume corrections relating to stopped or faulty meters. Nine were appropriately corrected but ICP 1099569118CN9D3 has been stopped since 2019, but the correction was only conducted for the current customer, which was a five-month period back from 21 March 2022. There was at least 3,600 kWh not accounted for. This is recorded as non-compliance in **sections 2.1** and **12.7.**

I recommend the process is checked to confirm if this was a one-off issue or is more widespread.

Description	Recommendation	Audited party comment	Remedial action
Stopped meter corrections	Confirm whether NHH corrections for stopped or faulty meters is conducted for just the current customer, or for the full period of the error.	It is our normal process to process correction for the full period of the error and not the current customer. This was an oversight and staff have been and training material made more clear.	Cleared

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 118 ICPs (29,042 kWh) on the report, an increase in kWh from 270 ICPs (22,587 kWh) during the last audit. 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.

This report only looks for consumption between actual readings held in the SAP system and assumes that there is an actual read as of the date of disconnection. As the process to remotely reconnect an ICP is manual the application of an actual read to denote the status change is also manual and in a number of cases the disconnection read is applied as an estimate and a reconnection read is not applied if there is already an estimated read present in SAP. The use of estimate reads to denote the beginning of the disconnection period means the reporting cannot detect where consumption is detected on inactive ICP's until two scheduled actual reads are recorded in SAP. For short term periods of disconnection, the absence of actual reads or permanent estimate reads within SAP means not all ICPs are being included in this report.

I reviewed an extreme case sample of the 20 ICPs with the largest quantities of inactive consumption (363 to 3,463 kWh) and found appropriate corrections were made in all cases.

TRUS

Meter reader validation

For meters manually interrogated by MRS, a validation within their hand-held device identifies readings outside specified high/low parameters and prompts the reader to check the reading. This process is discussed further in the agent audit reports.

MRS also check the condition of the meters, to identify issues that could affect meter accuracy or safety. If an issue is identified, the appropriate condition code is entered into the hand-held device and provided to Trustpower. This process is discussed further in **section 6.6**.

AMI validation

For AMI meters, the MEPs have access to meter event and clock synchronisation information that may identify issues with meter accuracy. The process to receive and review this information is discussed in **section 9.6**.

Read import and billing validation

The next two levels of validation occur in GTV, pre-billing and post billing. This validation includes the following checks:

- high consumption,
- no consumption - there is a discrepancy management tool used to identify registers with zero consumption for the last three actual reads, zero consumption on AMI meters following switch in (to detect possible meter bypass), and day/night consumption discrepancies,

- zero consumption on meters with a known high failure rate,
- no reading,
- consumption on vacant connected ICPs - this consumption is not billed until a disconnection occurs or a customer is moved in, but the consumption is included in submission files,
- consumption on disconnected ICPs - this list is dealt with daily; if a customer is not identified the consumption is billed to "Trustpower unbilled" so it is included in submission files,
- credit reads (reading lower than the previous reading or estimate),
- minimum and maximum number of days,
- ICPs not on a meter reading schedule,
- ICPs with no registers,
- multiple reads available,
- transposed registers on two rate meters,
- multipliers of one which should be greater than one,
- embedded generation where GTV has load instead of generation,
- incorrect register content codes, and
- incorrect unit of measure.

Each register that fails validation is manually checked. If it is decided that the reading may be incorrect then billing is delayed, and a check reading is performed. Readings are not edited as part of this process.

The issue of "bridged" metering was reviewed to ensure validation processes are comprehensive enough to identify any meters that have been bypassed. The following checks are conducted which will identify any bridged meters:

- zero consumption on recently switched in ICPs,
- consumption on controlled tariff but zero on the 24-hour tariff, and
- continuous consumption for six months then zero consumption.

Whilst bridged meters are being identified and the consumption information estimated, it is still a matter of non-compliance with clauses 10.12 and 10.24 of part 10, as recorded in **section 6.1**. Compliance is confirmed for the validation processes.

As mentioned in **section 3.9**, resolution of inactive consumption exceptions is being delayed while attempts to identify a potential customer are undertaken, however the code requires that revised submission information if provided at the earliest opportunity.

Reconciliation submissions are also reviewed prior to submission, this process is discussed in **section 12.3**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.5 With: Clause 16 Schedule 15.2 From: 01-Jan-22 To: 31-Dec-22	**MEEN** Not all inactive consumption is being identified and investigated. **TRUS** Not all identified inactive consumption is being resolved in a timely manner where attempts are made to identify a potential customer. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The validation controls are generally strong but could be improved for the management of inactive consumption. SAP Inactive consumption report only calculated consumption between two actual reads and where the disconnection read is estimated the report does not identify these ICPs and any read differences between the estimated disconnection read and the next actual read. The impact is assessed as low. The impact on settlement and participants is minor based on the number of exceptions identified, therefore the audit risk rating is low

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN Reminder to staff that corrections should be for the full faulty meter period. **TRUS** We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	May 2023 June 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN Have updated training material to clearly outline that correction should applied from the time the meter was faulty. **TRUS** Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	May 2023 June 2023	

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

Code reference

Clause 17 Schedule 15.2

Code related audit information

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

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

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

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

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

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

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

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

17(4)(g) – a review of the relevant metering data where there is an event that could have affected the integrity of the metering data

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

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

Audit observation

MEEN

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

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 meter event information from all MEPs and the events are actioned as required. Most MEPs have robust filtering processes and only send relevant events. These metering events are reviewed and actioned, and I saw evidence of field services jobs raised as a result.

The event called "Voltage on the load side of a disconnected meter" is not sent by all AMI MEPs. This event alerts MEPs and traders that a meter is bridged, but not all meters have this capability. I recommend identifying which meters have this event and ensuring it is provided in all cases.

Recommendation	Description	Audited party comment	Remedial action
AMI events	Identify all meter types where "voltage on the load side of the meter" is an event and ensure it is provided in all cases.	We have implemented a process to receive daily metering event files from Intellihub, Vector Metering and Influx. We are now providing the Load Side Voltage reports to the Revenue and Registry team to review these and action as required.	Identified

Clock synchronisation information is sent by all MEPs, but this is not specifically actioned. Errors over 1,800 seconds (one interval) in particular should be reviewed and action taken to ensure data is correct.

HHM

The following were conditions put in place by Mercury for the use of this HHR profile for AMI HHR data:

- the half hour data stream is checked and validated by Mercury acting as the trader using a process audited under its reconciliation participant audit and includes:
    - (i) a process for recognising and estimating half hour periods that are in error (high, low, duplicated, negatives or missing)
    - (ii) if there is a discrepancy between the accumulating register and the half hour data stream, the HHR data will be adjusted to match the NHH reads for the same time period
    - (iii) a process to ensure that the half hour data stream is provided to the reconciliation manager in accordance with the reconciliation manager functional specification, including the management of daylight-saving time.

I checked what reporting was in place for missing interval data. Reporting is at a summary level and indicates where an ICP has any missing data in a month and the number of months data is missing. The reporting does not show how many intervals are missing and does not show the percentage of estimated data in any given revision. I recommend reporting is developed to show the number of intervals estimated per ICP per month for every revision, and this reporting should be split by MEP.

Recommendation	Description	Audited party comment	Remedial action
HHR estimates for HHM profile	Develop reporting of the quantity of estimated intervals per NSP/MEP/revision to assist with managing MEP performance.	Will be reviewed after integration with TRUS.	Investigating

The issues associated with HHR mass market data (HHM profile) are recorded as non-compliance in **section 8.2.**

Generation

Reads are received via SFTP from AMS. 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 ± 2% are checked with a generation engineer. For Atiamuri, up to 4 MW may be fed into the local network (0000001000MR7FD – SB ICP with DFP as the profile) and is not measured by the check meter system. This is considered when reviewing the differences between the primary and check meter data.

TRUS

AMI data

For AMI data collection (conducted by MEPs), the check for invalid dates and times is conducted at the time the files are loaded. There is an exception if the incorrect file is attempted to be loaded. A check for missing data, unexpected zeros and a comparison with previous flow patterns is conducted as part of the normal validation process.

The Code requires *"…a review of meter and data storage device event log for any event that could have affected the integrity of the metering data."*

These requirements have changed from February 1st, 2021, therefore I checked how each MEP provided event information and what steps were taken by Trustpower once the event information was received. The table below describes the different event management processes.

MEP	Specific notification of critical events	Full event list provided	Full event list downloaded and reviewed by TRUS	Comments
NGCM	Yes	Yes	No	AMS provides ICP specific information to the Revenue Assurance helpdesk if there is a critical event.
SMCO	Yes	Yes	No	AMS provides ICP specific information to the Revenue Assurance helpdesk if there is a critical event.
ARCS	No	Yes	No	ARC events are limited to power down, power up and clock changes, due to the hardware limitations.
MTRX	Yes	Yes	No	MTRX provides ICP specific information to the Revenue Assurance helpdesk if there is a critical event. MTRX is therefore acting as Trustpower's agent.
IHUB	Yes	Yes	No	IHUB provides ICP specific information to the Revenue Assurance helpdesk if there is a critical event. IHUB is therefore acting as Trustpower's agent.
COUP	Yes	Yes	No	COUP provides ICP specific information to the Revenue Assurance helpdesk if there is a

				critical event. COUP is therefore acting as Trustpower's agent.
Influx	Yes	Yes	No	Influx provides ICP specific information to the Revenue Assurance helpdesk if there is a critical event. Influx is therefore acting as Trustpower's agent.

All events sent to the Revenue Assurance helpdesk are acted upon. The full event logs are not independently reviewed due to the size of these reports. Development is in progress for a system where all bulk events can be loaded and analysed.

During previous audits, recommendations have been made for Trustpower to seek the event information explanations for each event and then build a query to extract these events to ensure they are acted upon.

The full event lists often contain a large number of tamper events, and these can be caused by vibration. However, I suggest the tamper event is evaluated in conjunction with the zero-consumption reporting to ensure a higher priority is given to ICPs where there is zero consumption and a tamper event. I've repeated this recommendation to maintain visibility of this issue.

Description	Recommendation	Audited party comment	Remedial action
AMI events	Obtain event information description information from MEPs. Ensure all events, including tamper, are appropriately evaluated.	We acknowledge the recommendation and are reviewing whether to adopt it.	Investigating

The other important event is "voltage on the load side of a meter". This indicates that the meter is bridged, and immediate action is required. This event is present for Elster/Honeywell and Landis + Gyr meters. The Code requires that all events are evaluated, and this event is not reported by all AMI MEPs that use these meter models, therefore non-compliance exists.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.6 With: Clause 17 Schedule 15.2 From: 01-Jan-22 To: 31-Dec-22	**MEEN** Clock synchronisation reports not reviewed for all MEPs. **TRUS** Event information is not analysed and acted upon for all MEPs. Voltage on the load side of the meter should be obtained and evaluated. Potential impact: Medium Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**

Low	MEEN The controls are recorded as moderate because there is room to improve the monitoring of clock synchronisation reports. The impact on settlement and participants is minor because most issues are identified; therefore, the audit risk rating is low. TRUS The controls are recorded as moderate because they mitigate risk for most scenarios but the process has a reliance on an MEPs assessment of a critical event requiring escalation. There is room for improvement around both monitoring of the MEPs performance in monitoring event logs on Trustpower behalf and also around Trustpower's understanding of the impacts to meter accuracy and integrity of each event type. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN Mercury receives clock synchronisation from Vector Metering, Intellihub and Influx via email, these are reviewed to ensure no job is required and then filed. **TRUS** **Event information is not analysed and acted upon for all MEPs.** **Voltage on the load side of the meter should be obtained and evaluated.** We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	May 2023 June 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN As above. **TRUS** **Event information is not analysed and acted upon for all MEPs.** **Voltage on the load side of the meter should be obtained and evaluated.** Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	N/A June 2023	

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

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

Code reference

Clause 13.136

Code related audit information

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

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

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

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 relevant grid owner half-hour metering information for:

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

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

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

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

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)I- 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 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

MEEN

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 12.2**.

TRUS

Trustpower conducts a check each month as part of the process for preparing submission information.

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

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

MEEN

NHH and HHR ICP days are included on the same report. The process for the calculation of ICP days was examined by checking HHR ICP days for 30 NSPs and NHH ICPs for 30 NSPs to confirm the AV110 ICP days calculation for October 2022 R1 was correct.

I reviewed variances for 12 months of GR100 reports and there were no large discrepancies identified, but I investigated some small discrepancies with large percentage differences.

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

TRUS

The process for the calculation of ICP days was examined by checking NSPs with a small number of ICPs to confirm the AV110 ICP days calculation was correct. I reviewed variances for 22 months of GR100 reports.

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

Audit commentary

MEEN

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

The process for the calculation of ICP days was examined by checking HHR ICP days for 30 NSPs and NHH ICPs for 30 NSPs to confirm the AV110 ICP days calculation was correct. The ICP days reported were as expected, except for PHS0011 for October 2022 R1. The investigation showed that the ICP days submitted were correct and the discrepancy was a backdated switch in for one ICP.

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 2021	-0.06%	-0.07%	-0.07%	-0.07%	-0.08%
Feb 2021	-0.06%	-0.07%	-0.08%	-0.08%	-0.08%
Mar 2021	-0.06%	-0.07%	-0.08%	-0.09%	-0.09%
Apr 2021	-0.03%	-0.08%	-0.09%	-0.09%	-0.09%
May 2021	-0.06%	-0.07%	-0.08%	-0.09%	-0.09%
Jun 2021	-0.07%	-0.08%	-0.09%	-0.09%	-0.09%
Jul 2021	-0.07%	-0.10%	-0.10%	-0.09%	-0.09%
Aug 2021	-0.06%	-0.08%	-0.09%	-0.10%	-0.09%

Month	Ri	R1	R3	R7	R14
Sep 2021	-0.05%	-0.09%	-0.10%	-0.10%	-
Oct 2021	-0.07%	-0.08%	-0.09%	-0.10%	-
Nov 2021	-0.05%	-0.07%	-0.08%	-0.10%	-
Dec 2021	-0.06%	-0.09%	-0.09%	-0.09%	-
Jan 2022	-0.06%	-0.07%	-0.09%	-0.10%	-
Feb 2022	-0.05%	-0.08%	-0.10%	-0.09%	-
Mar 2022	-0.08%	-0.10%	-0.11%	-0.09%	-
Apr 2022	-0.06%	-0.09%	-0.12%	-	-
May 2022	-0.06%	-0.10%	-0.11%	-	-
Jun 2022	-0.07%	-0.10%	-0.10%	-	-
Jul 2022	-0.06%	-0.09%	-0.10%	-	-
Aug 2022	-0.05%	-0.08%	-	-	-
Sep 2022	-0.05%	-0.09%	-	-	-
Oct 2022	-0.06%	-	-	-	-

I checked a sample of five HHR differences and five NHH differences present at R7 or later: Findings were as follows:

- NHH ICP days was incorrect for ICP 0130110027PN568 for the R7 and R14 revisions for March and April 2021 due to a missing time slice for another trader from 26 March 2021 to 7 April 2021,
- HHR ICP days was correctly submitted for ICP 0006602600CA167 but showed as a discrepancy because the registry had the incorrect profile of RPS for April and May 2021, and
- HHR ICP days was correctly submitted for ICPs 0000157116CKBC5 and 0000163532CKC37, but submission occurred against the incorrect NSP HAY0331 from 19 October 2021 to 20 October 2021. This is recorded as non-compliance in **section 12.7**.

TRUS

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

The process for the calculation of ICP days was examined by checking 50 NSPs with a small number of ICPs on the October 2022 submission. The ICP days calculation was confirmed to be correct.

The following table shows the ICP days difference between Trustpower files and the RM return file (GR100) for all available revisions for several months at an aggregate level. Positive numbers indicate that the Trustpower ICPs days figures are lower than those contained on the registry. The discrepancies are very small and generally improve over time as expected.

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

Month	Ri	R1	R3	R7	R14
Aug 2022	0.01%	0.01%	-	-	-
Sep 2022	0.01%	0.00%	-	-	-
Oct 2022	0.01%	0.01%	-	-	-

I checked a sample of ten HHR differences and nine NHH differences present at R7 or later and found the following issues:

- four NSPs had ICPs with generation only where retailer ICP days were submitted; the ICP days file should only have records for ICPs with load or both load and generation, not generation only,
- two HHR NSPs had backdated ICP events and the ICP days were corrected in the revisions,
- the ICPCOMP report had an error for EDN0331 for August 2021 R7; HHR ICP days were correctly not submitted by Trustpower but the report shows they did,
- the ICPCOMP report had an error for TAQ0011 for June 2021 R7; HHR ICP days were correctly not submitted by Trustpower but the report shows they did,
- the ICPCOMP report had an error for TKR0331for August 2021 R3, R7 and R14; the HHR ICP days total were correctly submitted by Trustpower compared to a LISHIST report but the report shows a mismatch,
- the ICPCOMP report had an error for ISL0331 May 2021 R7 and R14 and June 2021 R7 and R14; the HHR ICP days total were correctly submitted by Trustpower when compared to a LISHIST report but the report shows a mismatch,
- five NHH NSPs had ICPs with incorrect NSP assignments as the automated GTV updates from registry notifications failed to correctly process,
- two NHH NSPs had backdated ICP events and the ICP days were corrected in the revisions, and
- two NHH ICPs experienced a gap of one or two days in the meter installation timeline due to human error when processing meter changes manually.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.2 With: Clause 15.6 From: 01-Jan-22 To: 31-Dec-22	**MEEN** Minor ICP days discrepancies identified. **TRUS** ICP days submitted for generation only ICPs. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Strong Breach risk rating: 1

Audit risk rating	Rationale for audit risk rating
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN Human errors and late SAP updates led to minor discrepancies in ICP days, which were corrected later. **TRUS** HHR washup files were prepared by Manawa and submitted under TRUS. R14 submission for September 2021 (last HHR submission) were completed in November 2022 and no further issue to be occurred.	March 2023 November 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN Our controls and processes in most instances are strong. Process will be reviewed once integration with TRUST will occur **TRUS** As above.	Ongoing 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

MEEN

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

TRUS

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 2020 to October 2022 were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

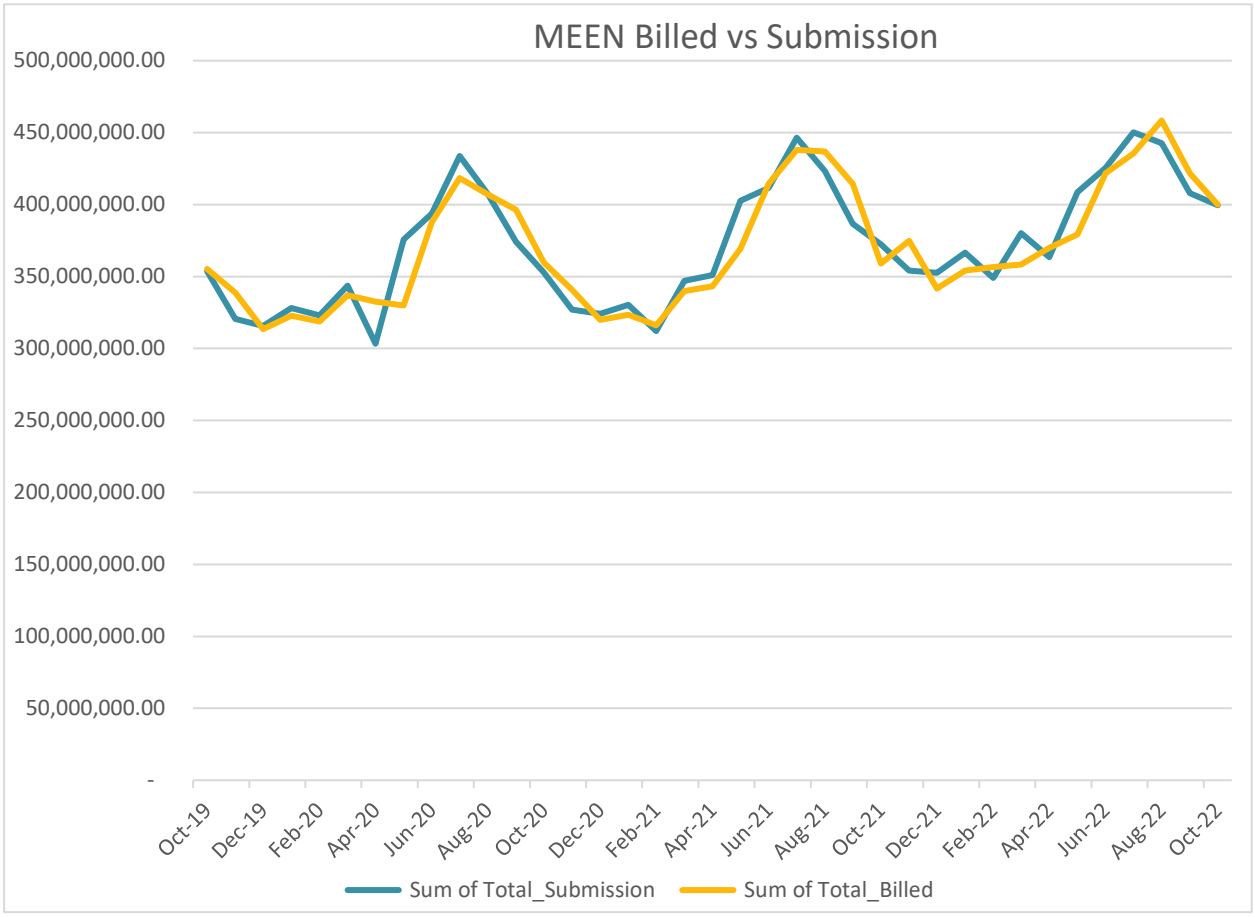
Audit commentary

MEEN

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 0.6% lower than submitted data for the year ended October 2022 and 0.5% lower than submission for the two years ended October 2022.

Comparison between Submitted Volumes and Electricity Supplied



TRUS

The process for the calculation of as billed volumes was examined by checking five NSPs with a small number of ICPs against Trustpower's invoice information for October 2022. This confirmed the accuracy of the electricity supplied information.

Trustpower has robust monitoring and controls in place to identify any possible errors in files.

I checked the difference between submission and electricity supplied information for the period January 2020 to October 2022, and the results are shown in the chart below. The total difference is 1.6% (billed higher than submitted) for the year ended October 2022.

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 ten 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 2021 to October 2022. An extreme case sample of the 30 ICPs missing for the most months were reviewed.

TRUS

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.

The GR090 ICP Missing files were examined for June 2021 to October 2022. An extreme case sample of the five ICPs missing from the most revisions were checked.

Audit commentary

MEEN

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 ten 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.

I traced a sample of data from raw data for three ICPs through to HHR aggregates files and there was a match.

Mercury reviews the GR090 ICP missing files prior to the seven and 14-month revisions, to identify any issues that require correction. The GR090 ICP missing files were examined for all revisions for June 2021 to October 2022. An extreme case sample of the 30 ICPs missing for the most months were reviewed, and found:

- ICP 0001264717UNC3A was missing from the registry for 60 submissions because the submission type was incorrectly set to NHH as this relates to DUML load submitted as HHR under exemption 233,
- three backdated status changes,
- two backdated switches or withdrawals,
- 21 backdated submission type and profile changes,
- ICP 0001405038UN32C was submitted as RPS for the period March to October 2022 but was showing as HHR in the registry; the aggregates file was correct, but the registry was incorrect which is recorded as non-compliance in **section 2.1**, and
- ICP 1001263040LC4C1 switched out on 1 January 2022 but submission continued incorrectly up until May 2022; the aggregates file was correct because it matched the vols file.

The issues of incorrect information are recorded as non-compliance in **sections 2.1** and **12.7**.

TRUS

I checked the process for aggregation of HHR data is correct, by matching HHR aggregates information to the volumes for nine submissions. The volumes and aggregates matched exactly to two decimal places for eight of the nine submissions. For the September 2021 R7 submission there was a difference between the HHRVOLs total volume and the HHRAGGS total volume of 571.43 kWh for the X flow direction. The September 2021 R7 HHR submission data had been prepared by CNIR on behalf of Trustpower as the initial HHR submissions had been undertaken prior to the Trustpower/Manawa Energy split where the C&I HHR function moved to Manawa Energy. The September 2021 HHRVOLS data had been corrected to resolve a historical daylight saving issue which had affected nine NSP's submission volumes for the daylight saving transition period. However, the generation of the September 2021 R7 HHRAGGS file did

not reflect this volume correction. The September 2021 R14 submissions did align between HHRVOLS and HHRAGGS.

The GR090 ICP Missing files were examined for all revisions for June 2021 to October 2022. I checked an extreme case sample of the five ICPs missing from the most revisions and found they related to:

- three ICPs where backdated changes to a NHH submission type and profile occurred,
- one ICP where a backdated correction to the submission type was applied to align with the submission methodology, and
- one ICP where a backdated status change to decommissioned was applied.

Late switching files and updates to the registry are discussed in **sections 3** and **4**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.4 With: Clause 15.8 From: 01-Sep-21 To: 30-Sep-21	**TRUS** The September 2021 revision 7 HHR aggregates file did not reflect the submitted HHR volumes for nine NSPs with a difference of 571 kWh. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong 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
HHR washup files were prepared by Manawa and submitted under TRUS. R14 submission for September 2021 (last HHR submission) were completed in November 2022 and no further issue to be occurred.	November 2022	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above.	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, and daylight savings processes for generation occur automatically.

Audit commentary

Compliance with this clause has been demonstrated by Mercury's agents as part of their agent audits.

MEEN

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 2021 and beginning of daylight savings in September 2021. The correct number of trading periods were recorded for the sample of daylight savings adjustments reviewed.

Daylight savings processes for generation occur automatically.

TRUS

Review of a registry list for the audit period confirmed that TRUS has not supplied any ICPs with submission type HHR during the audit period.

Audit outcome

Compliant

12.2. Creation of submission information (Clause 15.4)

Code reference

Clause 15.4

Code related audit information

By 1600 hours on the 4th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all NSPs for which the reconciliation participant is recorded in the registry as having traded electricity during the consumption period immediately before that reconciliation period (in accordance with Schedule 15.3).

By 1600 hours on the 13th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all points of connection for which the reconciliation participant is recorded in the registry as having traded electricity during any consumption period being reconciled in accordance with clauses 15.27 and 15.28, and in respect of which it has obtained revised submission information (in accordance with Schedule 15.3).

Audit observation

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

MEEN

No breaches had been recorded this audit period for late or inaccurate submission information.

NHH and HHR submission validation

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.

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,
- I reviewed an extreme case sample of the 20 ICPs with the largest quantities of inactive consumption (363 to 3,463 kWh) and found consumption during the disconnected period was reported as required, but there is sometimes a delay in reporting consumption for disconnected ICPs, which is recorded as non-compliance in **section 9.5**; compliance is recorded in this section because clause 15.4 requires submission for ICPs recorded as "active" in the registry, not "inactive",
- a diverse sample of 15 ICPs with distributed generation with import/export metering with different fuel types were checked and the submission was correct however ICPs where the fuel type is not solar are reported against the PV1 profile code rather than EG1 which is recorded as non-compliance in **section 2.1**, and
- a sample of 10 ICPs with unmetered volumes were checked, including standard unmetered and shared unmetered and the submission was correct in all cases.

161 ICPs have generation capacity recorded by the distributor but no settled I flow registers are present. I checked all the affected ICPs and found energy was being exported to the grid but not gifted or quantified by a meter for five ICPs (0005003215TU75A, 0000648490HB0FD, 0879163805LC318, 0006682995RN9C7 and 0000053053HB1B5) where jobs to install EG metering underway, and three ICPs (0385939981LC85F, 0000045433CP1F9 and 0000048274WEA62) where MEEN is working with the customer to arrange EG meter installation. A further 38 ICPs need to be investigated to determine whether generation is present and if so, arrange for compliant metering to be installed or notification of gifting to be provided. A recommendation is made in **section 6.1**.

Further information on calculation of historic estimate is recorded in **section 12.11**, the correction process is documented in **sections 2.1** and **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

Generation data is separately checked prior to submission. Generation data is matched to check meter data, any differences over ± 2% are checked with a generation engineer. The submission checker is now also used for generation data.

A sample of generation NSPs were checked to ensure that volumes were correctly recorded in the AV130 report in **section 12.6.**

TRUS

No breaches had been recorded for late provision of submission information.

HHR

HHR submissions were reviewed in **section 11.4.** I checked that the process for aggregation of HHR data is correct, by matching HHR aggregates information to the volumes for nine submissions. The volumes and aggregates matched exactly to two decimal places for eight of the nine submissions. For the September 2021 R7 submission there was a difference between the HHRVOLs total volume and the HHRAGGS total volume of 571.43 kWh for the X flow direction. The September 2021 R7 HHR submission data had been prepared by CNIR on behalf of Trustpower as the initial HHR submissions had been undertaken prior to the Trustpower/Manawa Energy split where the C&I HHR function moved to Manawa Energy. The September 2021 HHRVOLS data had been corrected to resolve a historical daylight saving issue which had affected nine NSP's submission volumes for the daylight saving transition period. However the generation of the September 2021 R7 HHRAGGS file did not reflect this volume correction. The September 2021 R14 submissions did align between HHRVOLS and HHRAGGS.

The GR090 ICP Missing files were examined for all revisions for June 2021 to October 2022. I checked an extreme case sample of the five ICPs missing from the most revisions and found they related to:

- three ICPs where backdated changes to a NHH submission type and profile occurred,
- one ICP where a backdated correction to the submission type was applied to align with the submission methodology, and
- one ICP where a backdated status change to decommissioned was applied.

NHH

Trustpower prepares NHH submissions using GTV. A sample of NHH ICPs were checked to make sure they are handled correctly, including:

- ten ICPs with injection/export registers were checked and found that generation consumption was correctly submitted,
- ten ICPs with vacant consumption were checked and found that vacant consumption was correctly submitted,
- any consumption while disconnected will be reported, and this was confirmed by checking the historic estimate scenario in **section 12.11**; a sample of 20 with the largest inactive consumption recorded were reviewed and the following was found:
    - ten have been resolved by either updating the status event to "active" status just prior to the detection of the inactive consumption or reversing the "inactive" status event,

    - one ICP (1002069373LC1A9) detected consumption for the day prior to a switch loss and no follow up with the gaining trader to verify if the correct transfer date was requested or no update of the registry status has been applied,
    - one ICP (0005791707RN508) was resolved by reversing the "inactive" status back more than 14 months resulting in 27 kwh of inactive consumption not being included in the submission process through the 14-month revision window,
    - ICP 0000865145NV098 was severely damaged by fire on 20 September 2022; a removed read was estimated up to the date of the fire damage however the "inactive" status event date on the registry is one month earlier (20 August 2022) with an update date of 20 September 2022,
    - seven ICPs remain unresolved where the ICPs remain with an "inactive" status on the registry and consumption is still being recorded by the meters but not included in the submission process with an impact of 6,078 kwh,
- ten ICPs with unmetered volumes were reviewed, including five ICPs with standard unmetered load and five ICPs with shared unmetered load and the following was found:
    - correct consumption was submitted for five ICPs,
    - two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file; the volume impact was assessed for December 2022 as 16.6 kWh under submission,
    - three ICPs where the unmetered load volumes calculated by GTV was incorrect due to a change in daily kWh value being recorded in the registry however GTV appears to be selecting the initial daily kWh value rather than the latest daily kWh value; the volume impact was assessed as 2,095 kWh per annum under submission.

During the checks of ICPs where NHH correction was required, I identified two ICPs from a sample of 13 reviewed with bridged meters where corrections were not conducted prior to the ICPs switching out.

NHH volumes are reviewed prior to submission, these checks are discussed in **section 12.3**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.2 With: Clause 15.4	**MEEN** At least eight ICPs have solar generation but submission is not occurring, and notification of gifting has not been provided. **TRUS** The September 2021 revision 7 HHR aggregates file did not reflect the submitted HHR volumes for nine NSPs with a difference of 571 kWh. Bridged meter corrections not applied for two of a sample of 13 ICPs. Two ICPs from a sample of 20 with inactive consumption where the actions taken did not ensure all consumption was accounted for resulting in 27 kWh of volume not being submitted. Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process.

From: 01-Jan-21 To: 31-Jan-21	Three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission resulting in 2,095 kWh under submission per annum. Two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are moderate, as most data is recorded accurately, and validation processes are in place. The impact on settlement is minor, therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status

MEEN Keep a record of any ICPs that have suspected solar, either due to reverse power being reported from the MEP or the installation type changing to B. Arrange contact with customer to confirm solar and get IMP/EXP meter installed. **TRUS** **The September 2021 revision 7 HHR aggregates file did not reflect the submitted HHR volumes for nine NSPs with a difference of 571 kWh.** HHR washup files were prepared by Manawa and submitted under TRUS. R14 submission for September 2021 (last HHR submission) were completed in November 2022 and no further issue to be occurred. **Bridged meter corrections not applied for two of a sample of 13 ICPs.** **Two ICPs from a sample of 20 with inactive consumption where the actions taken did not ensure all consumption was accounted for resulting in 27 kWh of volume not being submitted.** **Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process.** **Three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission resulting in 2,095 kWh under submission per annum.** **Two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission.** We acknowledge the non-compliances. We are investigating and will take appropriate action to resolve.	May 2023 November 2022 June 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN Monitor this report more regularly and work with the MEPs and networks to support getting a resolution for some of the older cases I am struggling to get resolved. **TRUS** **The September 2021 revision 7 HHR aggregates file did not reflect the submitted HHR volumes for nine NSPs with a difference of 571 kWh.** **Bridged meter corrections not applied for two of a sample of 13 ICPs.** **Two ICPs from a sample of 20 with inactive consumption where the actions taken did not ensure all consumption was accounted for resulting in 27 kWh of volume not being submitted.** **Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process.** **Three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission resulting in 2,095 kWh under submission per annum.** **Two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission.** Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	Ongoing June 2023	

12.3. Allocation of submission information (Clause 15.5)

Code reference

Clause 15.5

Code related audit information

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

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

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**. Submission validation processes are discussed in **section 12.2**.

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

MEEN

HHR submission

AV090 and AV140 aggregation was checked in **section 11.4**.

Where an AMI ICP on the HHM profile code is made "inactive", the ICP continues to be included in the AV-090 submission file ensuring the part day consumption volumes between midnight the previous day and the time of disconnection is included in the relevant submission.

NHH submissions

SAP automatically creates a zero line where a trading notification is open, but no aggregation line is present. GR170 and AV080 files for nine revisions were compared. All NSPs in the GR170 were included in the AV080 for the nine submissions checked, confirming that zeroing is occurring as required.

I checked the process for NHH to HHR upgrades, and HHR to NHH downgrades, and found all consumption was captured and reported for the ten ICPs checked.

The process for aggregating the AV080 was examined by checking data for NSPs TAY0011, PVG0011, RSC0011, and TNV0011. The data matched for all four NSPs.

Generation

Generation submissions are reviewed as discussed in **section 9.6**.

TRUS

I checked the process for NHH to HHR upgrades, and HHR to NHH downgrades, and found all consumption was captured and reported for the ICPs checked.

HHR

AV090 and AV140 aggregation was checked in **section 11.4**.

NHH

The process for the calculation of NHH volumes was examined by checking five NSPs with a small number of ICPs. NHH volume calculation was confirmed to be correct.

The NHH registry validation is robust and includes the NSP. Trustpower has robust monitoring and controls in place to ensure data looks reasonable at an aggregated level.

GR170 and AV080 files for eight revisions were compared. All NSPs in the GR170 were included in the AV080 confirming that zeroing is occurring as required for AV080 submissions.

The check of the AV080 confirmed the correct aggregation factors were present.

Audit outcome

Compliant

12.4. Grid owner volumes information (Clause 15.9)

Code reference

Clause 15.9

Code related audit information

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

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

Audit observation

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

12.5. 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

MEEN

Processes to provide NSP volumes submissions as an agent were reviewed. Alleged breaches during the audit period were reviewed to determine whether any reconciliation submissions were late.

TRUS

Trustpower is not responsible for any NSPs and does not submit NSP volumes submissions.

Audit commentary

Mercury Energy is not an embedded network owner however the configuration of the transmission system at Atiamuri Power station enables some volumes to be calculated by differencing between generation GIPs and Transmission GXPs. Up to 4 MW may be fed into the local network without being explicitly metered. To enable this volume to be measured and accounted for by the Reconciliation Manager Mercury have created a virtual embedded network with a single 'SB' ICP to allow the

Reconciliation Manager to calculate the volume of energy supply the local network (0000001000MR7FD – SB ICP with DFP as the profile).

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

TRUS

Trustpower is not responsible for any NSPs and does not submit NSP volumes submissions.

Audit outcome

Compliant

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

MEEN

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.

TRUS

Trust power is not responsible for any grid connected generation.

Audit commentary

MEEN

Mercury creates AV130 submissions for grid connected generation. No breaches had been recorded for late provision of submission information.

Revision submissions are not provided unless data has changed. Mercury confirmed that there had been no changes since the data was originally submitted.

TRUS

Trust power is not responsible for any grid connected generation.

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

MEEN

The following submission accuracy issues were identified:

- As recorded in previous audits, 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. 502 "active" HHR settled category 1 and two HHR settled 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**.
- ICPs 0000540450TE6E7 and 0007301973NVCDF are believed to have incorrect average daily kWh recorded resulting in a small amount of under submission (0.76 W or 3.2 kWh per annum) as described in **section 3.7**.
- 161 ICPs have generation capacity recorded by the distributor but no settled I flow registers are present. I checked all the affected ICPs and found energy was being exported to the grid but not gifted or quantified by a meter for five ICPs (0005003215TU75A, 0000648490HB0FD, 0879163805LC318, 0006682995RN9C7 and 0000053053HB1B5) where jobs to install EG metering underway, and three ICPs (0385939981LC85F, 0000045433CP1F9 and 0000048274WEA62) where MEEN is working with the customer to arrange EG meter installation. A further 38 ICPs need to be investigated to determine whether generation is present and if so, arrange for compliant metering to be installed or notification of gifting to be provided. A recommendation is made in **section 6.1**. 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.
- Ten new connections "active" status updates and two "inactive" status updates had incorrect event dates recorded. The two "inactive" updates and three of the new connections were corrected during the audit. The other seven new ICPs still have incorrect event dates which have a minor impact on submission. The affected ICPs are: 0000053680HRE94 3 October 2022 should be 2 October 2022; 0000061677NTD07 9 December 2021 should be 8 December 2021; 0077451056WACF7 22 December 2021 should be 21 December 2021, 1002137904UN6F8 18 March 2021 should be 17 March 2021; 0000574282NRE70 16 May 2022 should be 13 May 2022;

1099582983CNA70 20 September 2022 should be 5 September 2022; 1099582303CN530 17 March 2022 should be 9 March 2022.

- Non solar fuel generation volume is being submitted using PV1 profile code as Mercury's system is not able to apply more than one profile code per direction.
- The precision of grid generation volumes for Maraetai generation station is insufficient as volumes are reported in increments of 10 kWh.
- ICP 1099569118CN9D3 has been stopped since 2019, but the correction was only conducted for the current customer, which was a five-month period back from 21 March 2022. There was at least 3,600 kWh not accounted for.
- HHR ICP days was correctly submitted for ICPs 0000157116CKBC5 and 0000163532CKC37, but submission occurred against the incorrect NSP HAY0331 from 19 October 2021 to 20 October 2021.
- ICP 1001263040LC4C1 switched out on 1 January 2022 but submission continued incorrectly up until May 2022.

Recommendation	Description	Audited party comment	Remedial action
Review precision of all grid generation bus metering points.	Review number of decimal places retrieved from all bus level grid generation metering points to ensure AV130 submission volumes are submitted to an accuracy of two decimal places.	We will review the data retrieved from the metering points with the meter providers.	Investigating

Three incorrect switch event reading were identified and are listed in section **4.16**. There was no impact on submission because the switches were withdrawn.

I re-checked submission accuracy issues identified during the previous audit which have not been discussed above and found:

- the ICPs with incorrect statuses or event dates which caused submission accuracy issues have been corrected, and
- category 3 ICP 1002125124LCA15 did not appear in the AV 140 HHRAGGS file so is being submitted as NHH; I confirmed that its submission type has been updated to HHR effective from 6 September 2021 and it has been included in AV090 and AV140 revision submissions.

TRUS

Review of alleged breaches confirmed there were no late revision submissions.

Corrections are discussed in **sections 2.1, 8.1** and **8.2**. I checked the kWh information in GTV before and after the corrections, and I confirmed that the data flowed through to the submission files by checking these at ICP level.

During the checks of ICPs where NHH correction was required, I identified two ICPs from a sample of 13 reviewed with bridged meters where corrections were not conducted prior to the ICPs switching out.

As detailed in **section 3.5**, ICP 0000574440NRF1C was electrically connected on 15 July 2022 but the contractor installed an NGCM meter instead of a MTRX meter. NGCM refused to load the meter to the registry as this was not hung under their test house. Metering is loaded to GTV from the registry, so as the meter was never loaded to the registry the first "active" date was the MTRX meter on 19 August 2022. The volume for the period from 15 July 2022 to 18 August 2022 has not been reconciled which is recorded as non-compliance below and in **sections 2.1**, **3.5** and **3.8.**

As detailed in **section 3.8**, ICP 0001853487ALE7F was reconnected on 31 July 2019 but was incorrectly updated to "active" for 2 August 2019. The "active" date was changed to 1 August 2019 on 10 June

2022, but this is still incorrect and is now outside the 14-month revision cycle. This is recorded as non-compliance below and in **sections 2.1** and **3.8**.

As detailed in **section 4.4**:

- one example of an estimated CS read not being used was identified where the ICP switched away from Trustpower on read 33475 on 16 August 2022 and then switched back to Trustpower on 30 August 2022 with an estimated read of 33713 but Trustpower used the loss read of 33475 as their start read resulting in 238 kWh of over submission for the incorrect period; an RR should have been issued if the CS read was not accepted, and
- one example of a read request for ICP 1000604052PCFA5 that was accepted for a 1 kWh change, but the read was not applied in GTV; this is recorded as non-compliance below and in **sections 2.1** and **4.4.**

Trustpower prepares NHH submissions using GTV. A sample of NHH ICPs were checked to make sure they are handled correctly, including:

- ten ICPs with injection/export registers were checked and found that generation consumption was correctly submitted, and
- ten ICPs with vacant consumption were checked and found that vacant consumption was correctly submitted.

As detailed in **section 3.9** a sample of 20 with the largest inactive consumption recorded were reviewed and the following was found:

- ten have been resolved by either updating the status event to "active" status just prior to the detection of the inactive consumption or reversing the "inactive" status event,
- one ICP (1002069373LC1A9) detected consumption for the day prior to a switch loss and no follow up with the gaining trader to determine verify if the correct transfer date was requested or no update of the registry status has been applied,
- one ICP (0005791707RN508) was resolved by reversing the "inactive" status back more than 14 months resulting in 27 kwh of inactive consumption not being included in the submission process through the 14-month revision window,
- ICP 0000865145NV098 was severely damaged by fire on 20 September 2022. A removed read was estimated upto the date of the fire damage however the "inactive" status event date on the registry is one month earlier (20 August 2022) with an update date of 20 September 2022, and
- seven ICPs remain unresolved where the ICPs remain with an "inactive" status on the registry and consumption is still being recorded by the meters but not included in the submission process with an impact of 6,078 kwh.

As detailed in **section 2.1** ten ICPs with unmetered volumes were reviewed, including five ICPs with standard unmetered load and five ICPs with shared unmetered load and the following was found:

- correct consumption was submitted for five ICPs,
- two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file; the volume impact was assessed for December 2022 as 16.6 kWh under submission, and
- three ICPs where the unmetered load volumes calculated by GTV was incorrect due to a change in daily kWh value being recorded in the registry however GTV appears to be selecting the initial daily kWh value rather than the latest daily kWh value; the volume impact was assessed as 2,095 kWh per annum under submission.

Quantification of distributed generation volumes

The meter configuration for ICP 0000901755WW6EB was reviewed as I flow volumes were being reported in submission information for periods prior to the profile reflecting that distributed generation is present and also that metering was recorded as having an I flow register configured. Trustpower identified that the IHUB meter was installed in March 2021 as part of a new connection with an I flow register as part of the meter configuration. However, this generation register had the settlement indicator flag set to N. This meter was set up in Trustpower's systems as having both import and export registers available for submission in error. IHUB does not provide meter reads for registers not flagged for inclusion in the settlement process, so Trustpower did not receive reads for the I flow register until IHUB updated the settlement indication flag on 12 February 2022. Once Trustpower received the first scheduled meter read for this I flow register, the submission process apportioned the volume back to the initial installation read resulting in some generation volumes being recorded for periods where generation is not present for this ICP. Non-compliance is recorded here and in **sections 2.1 and 6.1.**

As detailed in **section 9.3**, AMI register reads are rounded to zero decimal places upon being uploaded to Gentrack.

HHR submissions were reviewed in **section 11.4.** I checked that the process for aggregation of HHR data is correct, by matching HHR aggregates information to the volumes for nine submissions. The volumes and aggregates matched exactly to two decimal places for eight of the nine submissions. For the September 2021 R7 submission there was a difference between the HHRVOLs total volume and the HHRAGGS total volume of 571.43 kWh for the X flow direction. The September 2021 R7 HHR submission data had been prepared by CNIR on behalf of Trustpower as the initial HHR submissions had been undertaken prior to the Trustpower/Manawa Energy split where the C&I HHR function moved to Manawa Energy. The September 2021 HHRVOLS data had been corrected to resolve a historical daylight saving issue which had affected nine NSP's submission volumes for the daylight saving transition period. However the generation of the September 2021 R7 HHRAGGS file did not reflect this volume correction. The September 2021 R14 submissions did align between HHRVOLS and HHRAGGS.

Accuracy of profiles applied to submission information was also reviewed. A sample of 10 ICPs were reviewed to ensure that the appropriate time-of-day profile was correctly applied:

- ICPs 0001138198MLC9F & 0000379112TU58C had the profile T07 (ripple Switched 23:00 - 07:00) only applied due to incomplete metering details provided by the MEP onto the registry; these have now been corrected as part of the audit,
- ICP 0005753430RNBC9 had profiles GXP (fully metered non controlled) and TOC (ripple and time clock switched 7:00am - 9:00pm) applied for a night/day meter which resulted in the night register being incorrectly assigned the GXP profile and the volume associated with this register being apportioned across the entire day instead of only night operational hours.; this has now been corrected as part of the audit, and
- seven ICPs with the meter configuration of WDD/WED/N had profiles GXP (fully metered non controlled) and TON (ripple and time clock switched 9:00pm - 7:00am) applied which resulted in the WDD (day of weekday)/ WED (day of weekend day) registers being incorrectly assigned the GXP profile and the volume associated with this register being apportioned across the entire day instead of only day operational hours.

GTV assigns profiles to registers as part of the meter installation process based on a mapping of the register content code (RCC) and period of availability (POA) assigned by the MEP on the registry. If a MEP incorrectly updates the registry with either incomplete meter details or incorrect meter details then Trustpower will use this information in determining the profiles. Where the MEP corrects or updates the metering event on the registry the profile code assignment is not always updated in GTV back to the initial event date.

Where a mapping cannot match a profile to the combination of register content code/period of availability then the GXP profile is applied to only the unmatched registers. I recommend that Trustpower monitors profile assignments and looks for invalid combinations to ensure the submission data is accurate and there are no overlaps or gaps in the time-of-day profile codes applied.

Recommendation	Description	Audited party comment	Remedial action
Monitor accuracy of profile assignment to meter register	Develop a process to monitor submission profile assignment to meter registers ensuring the submission data is accurate and there are no overlaps or gaps in the time-of-day profile codes applied.	As part of integration TRUS intends to begin submitting HHR data. This change will result in TRUS no longer using controlled profiling.	Identified

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.7 With: Clause 15.12	**MEEN** Inaccurate submission as follows: • precision of grid generation volumes for Maraetai generation station is insufficient as volumes are reported in increments of 10 kWh, • non-solar distributed generation submitted using PV1 profile code, • ICPs 0000540450TE6E7 and 0007301973NVCDF are believed to have incorrect average daily kWh recorded resulting in a small amount of under submission (0.76 W or 3.2 kWh per annum), and • seven new connections have incorrect "active" status dates causing a minor impact on the accuracy of volume and ICP days submissions. **TRUS** Bridged meter corrections not applied for two of a sample of 13 ICPs. One of 29 new connections sampled with the incorrect "active" date. ICP 0000574440NRF1C was electrically connected on 15 July 2022 but due to metering issues the first "active" date is recorded as 19 August 2022. The volume for the period from 15 July 2022 to 18 August 2022 has not been reconciled. One of 20 reconnections sampled with the incorrect "active" date ICP 0001853487ALE7F was reconnected on 31 July 2019 but was incorrectly updated to "active" for 2 August 2019. The "active" date was changed to 1 August 2019 on 10 June 2022, but this is still incorrect and is now outside the 14-month revision cycle. ICP 1000599753PCDB2 made "active" on 16 April 2021 was found to have an existing electrically connected meter on site and is likely to have been consuming since mid-2018 resulting in under submission. ICP 0151745161LC3F3 was incorrectly backdated to "inactive" on 15 April 2021 for 25 June 2020 due to human error and reversed to "active" during the audit resulting in the volumes for the R14 revisions for the months of July to November 2020 not being submitted.

From: 01-Jan-22 To: 31-Mar-23	Two ICPs not "active" for the correct date as the NT request date was after the reconnection date resulting in consumption being reconciled to the incorrect period. One example of a disconnection read not being entered resulting 10kWh of under submission. Two examples where switch reads were not applied resulting in 237 kWh of over submission for the incorrect period. The September 2021 revision 7 HHR aggregates file did not reflect the submitted HHR volumes for nine NSPs with a difference of 571 kWh. Two ICPs from a sample of 20 with inactive consumption where the actions taken did not ensure all consumption was accounted for resulting in 27 kWh of volume not being submitted. Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process. Three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission resulting in 2,095 kWh under submission per annum. Two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission. ICP 0000901755WW6EB had generation kWh apportioned to a period where generation was not present. 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 because they are effective most of the time. The potential impact is low based on the kWh impact.

Actions taken to resolve the issue	Completion date	Remedial action status

MEEN **Inaccurate submission as follows:**	N/A	Identified
• **precision of grid generation volumes for Maraetai generation station is insufficient as volumes are reported in increments of 10 kWh,** Refer to 2.1.	N/A	
• **non-solar distributed generation submitted using PV1 profile code,** Non-solar distributed generation submitted using PV1 profile code will be reviewed, once integration with TRUST will be completed. ICPs with incorrect average daily kwh recorded were corrected.	Late 2022/ early 2023	
• **ICPs 0000540450TE6E7 and 0007301973NVCDF are believed to have incorrect average daily kWh recorded resulting in a small amount of under submission (0.76 W or 3.2 kWh per annum), and** Refer 3.7.	N/A	
• **seven new connections have incorrect "active" status dates causing a minor impact on the accuracy of volume and ICP days submissions.** Refer 3.5 and 3.8.	N/A	
TRUS		
Bridged meter corrections not applied for two of a sample of 13 ICPs. We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	June 2023	
One of 29 new connections sampled with the incorrect "active" date. ICP 0000574440NRF1C was electrically connected on 15 July 2022 but due to metering issues the first "active" date is recorded as 19 August 2022. The volume for the period from 15 July 2022 to 18 August 2022 has not been reconciled. TRUS has updated the CO status of ICP# 0000574440NRF1C to reflect the IED date and installation of NGCM metering on the 15/07/2022. TRUS continues to work with the livening agent and MEPs to have this metering loaded on the to registry.	Completed/ Ongoing	
One of 20 reconnections sampled with the incorrect "active" date ICP 0001853487ALE7F was reconnected on 31 July 2019 but was incorrectly updated to "active" for 2 August 2019. The "active" date was changed to 1 August 2019 on 10 June 2022, but this is still incorrect and is now outside the 14-month revision cycle. All ICPs with incorrect active status dates identified have been corrected excluding the one ICP identified within the report. This ICP is outside of the submission period so any correction will not impact reconciliation for either retailer.	May 2023	
ICP 1000599753PCDB2 made "active" on 16 April 2021 was found to have an existing electrically connected meter on site and is likely to have been consuming since mid-2018 resulting in under submission.	May 2023	

ICP is outside of 14 month revision window now so any updates made to active date will not impact submission. ICP was connected as of 16/04 as per agreement with Network. **Two examples where switch reads were not applied resulting in 237 kWh of over submission for the incorrect period.** Training was undertaken to prevent agent from making the same error in the future. Documentation was also reviewed to ensure accuracy. **The September 2021 revision 7 HHR aggregates file did not reflect the submitted HHR volumes for nine NSPs with a difference of 571 kWh.** HHR washup files were prepared by Manawa and submitted under TRUS. R14 submission for September 2021 (last HHR submission) were completed in November 2022 and no further issue to be occurred. **Two ICPs from a sample of 20 with inactive consumption where the actions taken did not ensure all consumption was accounted for resulting in 27 kWh of volume not being submitted.** **Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process.** **Three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission resulting in 2,095 kWh under submission per annum.** **Two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission.** We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve. **ICP 0000901755WW6EB had generation kWh apportioned to a period where generation was not present.** This has been corrected. ICP had invoices reversed so an install read and install date could be correctly updated. ICP has been correctly rebilled.	May 2023 November 2022 June 2023 May 2023	
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN As above. **TRUS** **Bridged meter corrections not applied for two of a sample of 13 ICPs.** Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence. **One of 29 new connections sampled with the incorrect "active" date. ICP 0000574440NRF1C was electrically connected on 15 July 2022 but due to metering issues the first "active" date is recorded as 19 August 2022. The volume for the period from 15 July 2022 to 18 August 2022 has not been reconciled.** TRUS continues to utilise exception reporting to identify and resolve any discrepancies that occur between GTV and the registry. Additional reporting has been implemented between Audits that will further reduce any discrepancies in dates between the registry and GTV. **One of 20 reconnections sampled with the incorrect "active" date ICP 0001853487ALE7F was reconnected on 31 July 2019 but was incorrectly updated to "active" for 2 August 2019. The "active" date was changed to 1 August 2019 on 10 June 2022, but this is still incorrect and is now outside the 14-month revision cycle.** Ongoing training is done to ensure all teams responsible for updating statuses to CO including New Connections, Dispatch, and Revenue Assurance are aware of the requirement for statuses to be updated in a timely manner with the correct effective date. TRUS has a number of discrepancy reports around active statuses that support this. **ICP 1000599753PCDB2 made "active" on 16 April 2021 was found to have an existing electrically connected meter on site and is likely to have been consuming since mid-2018 resulting in under submission.** As above: Ongoing training is done to ensure all teams responsible for updating statuses to CO including New Connections, Dispatch, and Revenue Assurance are aware of the requirement for statuses to be updated in a timely manner with the correct effective date. TRUS has a number of discrepancy reports around active statuses that support this. **Two examples where switch reads were not applied resulting in 237 kWh of over submission for the incorrect period.** Full team training session to be held to ensure everyone is processing task correctly. **The September 2021 revision 7 HHR aggregates file did not reflect the submitted HHR volumes for nine NSPs with a difference of 571 kWh.**	N/A June 2023 Completed/ Ongoing Ongoing Ongoing June 2023 N/A	

N/A **Two ICPs from a sample of 20 with inactive consumption where the actions taken did not ensure all consumption was accounted for resulting in 27 kWh of volume not being submitted.** **Seven ICPs with unresolved inactive consumption where attempts to identify a customer are delaying the inclusion of 6,078 kWh of volume in the submission process.** **Three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission resulting in 2,095 kWh under submission per annum.** **Two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission.** Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence. **ICP 0000901755WW6EB had generation kWh apportioned to a period where generation was not present.** A review of all TRUS ICPs with EG found this is the only instance of this occurring. Updating of billable flags is usually done automatically through metering validations but this was adjusted manually causing the error. Additional training has been completed to minimise this but as it was the only instance we believe current controls minimise risk of this occurring.	June 2023 May 2023	

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

Code reference

Clause 4 Schedule 15.2

Code related audit information

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

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

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

Audit observation

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

MEEN

SAP has an automated permanent estimate process which runs each night. If a read is older than six months and has been billed, the SAS system will use all reads for the calculation of historic estimates (HE). This means all interim estimate reads, unvalidated customer reads and move in and out estimates are now flagged as permanent estimates.

This process of treating all estimate reads as permanent estimates after six months is not compliant with this clause as, in most cases there are sufficient validated actual reads available for Mercury to create volume information to enable the historic estimates to be calculated. Also, this clause requires Mercury to use reasonable endeavours for at least 12 months before permanent estimates can be created.

All reads once billed in SAP are locked and cannot be modified unless the invoice is reversed. Any reversed or updated reading (actual or estimate that is reversed in SAP then this change in read is replicated over to the SAS system).

Review of the 14-month revisions showed that some forward estimate remained:

Month	Forward estimate
May-21	541.03
Jun-21	130.67
Jul-21	0
Total	671.7

I reviewed all NSPs with forward estimate remaining and found that these relate to ICPs that switched in on an estimate and no subsequent readings were obtained.

TRUS

Review of the 14-month revisions for May to July 2021 showed no forward estimate remained.

Trustpower has a process to identify all ICPs with FE at 14-month due to the inability to obtain an actual meter read. Trustpower identifies the oldest interim estimate reading that is producing the forward estimate volumes and once this list is checked for accuracy and completeness an update is applied through a batch process to update the read type to be a permanent estimate. The accuracy and completeness checks do not include checks to confirm that reasonable endeavours in obtaining a read have been applied, so there is a risk that some forward estimate volume is recorded as historic estimate volume without reasonable endeavours being applied in attempting to obtain a meter reading. I recommend that the process to check this ICPs with forward estimate volumes at the 14-month revision is checked and validated by the billing team to confirm for each ICP that the reasonable endeavours threshold has been met before the interim estimate reads are converted to permanent estimate read types.

Description	Recommendation	Audited party comment	Auditor comments
Accuracy and completeness	Review the process to check that for the list of	Feasibility of the recommended Permanent Estimate process review is	Identified

Description	Recommendation	Audited party comment	Auditor comments
checks done before amending read types for ICPs without actual reads causing forward estimate volumes in the 14-month revision	ICPs with interim estimate reads causing forward estimate volumes in the 14-month revision that the reasonable endeavours threshold for meter read attainment has been met.	being assessed with the intention of implementation.	

Trustpower updates the read type for the oldest interim estimate read present where this is causing forward estimate volumes in the 14-month revision. The code requires a participant to replace interim estimate reads with permanent estimate reads once the reasonable endeavours read attainment threshold has been met. If the oldest interim estimate read is selected each month then the process to confirm reasonable endeavours will need to be applied for each affected ICP each month, however if a more recent interim estimate read is updated to a permanent estimate read type then the effort to reduces to a smaller number of ICPs to review each month based on a longer anniversary period than one month. This batch process is applied to approximately 400 ICPs each month.

I recommend that Trustpower reviews its processes to only update the oldest interim estimate read that is causing forward estimate volumes at the 14-month revision to a more recent read to make this process more efficient.

Description	Recommendation	Audited party comment	Auditor comments
Review selection criteria for updating interim estimate read type to permanent estimate read type once reasonable endeavours threshold has been met	Review the process to select the interim estimate reads to update the read type to permanent estimate once the reasonable endeavours threshold for meter read attainment has been met.	Feasibility analysis has been completed. Working on applicable ICP selection criteria to assess the reasonable endeavours threshold for meter read attainment has been met - where we try and get 3 different contacts over a 12 month period in 2 different way (i.e. one letter and one phone call). Then the reads will be updated to permanent estimate for qualifying ICPs.	Identified

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.8 With: Clause 4 Schedule 15.2 From: 01-Jan-22 To: 31-Jan-22	**MEEN** All estimated reads treated as permanent estimates after six months, but the Code requires Mercury to use reasonable endeavours to get meter readings for at least 12 months. Some estimates were not replaced by revision 14. Potential impact: Medium Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are recorded as moderate because in trying to the mitigate risk of large amounts of FE still being present in the 14-month revision this process has impacted the prescribed process for calculating historic estimate (HE) volumes. The impact on settlement and other participants is moderate because the treatment of all estimated reads as permanent estimates for historic estimate calculations distorts the NHH submissions between months, impacting the calculation of UFE month to month; therefore, the audit risk rating is medium.

Actions taken to resolve the issue	Completion date	Remedial action status
This will be looked into with the migration to GTV. Some estimates were not replaced by revision 14. Backdated switches paired with Covid-19 lockdowns and restrictions meant we were unable to obtain validated meter readings in all instances before R14 however we believe our controls in this area are strong.	Late 2022/ early 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will be raising this with ICT to make the necessary changes to our process around permanent estimates to become compliant.	Late 2022/ early 2023	

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

Code reference

Clause 2 Schedule 15.3

Code related audit information

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

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

Audit observation

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

Audit observation

MEEN

Compliance with this clause was assessed:

- all "active" ICPs with meter category 3 or higher have HHR profile and submission type,
- unmetered load submissions were checked in **section 3.7,**
- profiles requiring certified load control devices are not used,
- no loss or compensation arrangements are required, and
- aggregation of the AV080, AV110, AV130, AV090 and AV140 submissions are covered in **sections 13.2, 11.2, 12.6** and **11.4** respectively.

During the previous audit, category 3 ICP 1002125124LCA15 did not appear in the AV 140 HHRAGGS file so was being submitted as NHH. I confirmed that its submission type has been updated to HHR effective from 6 September 2021 and it has been included in AV090 and AV140 revision submissions.

ICPs 0000540450TE6E7 and 0007301973NVCDF are believed to have incorrect average daily kWh recorded resulting in a small amount of under submission (0.76 W or 3.2 kWh per annum) as described in **section 3.7**.

TRUS

Aggregation of reconciliation submissions has robust controls in place. Compliance with this clause was assessed:

- ten ICPs with injection/export registers were checked and found that generation consumption was correctly submitted,
- all "active" ICPs had submission types consistent with their profiles,
- unmetered load submissions were checked in **section 12.2,**

- two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file; the volume impact was assessed for December 2022 as 16.6 kWh under submission,
- three ICPs the unmetered load volumes calculated by GTV was incorrect due to a change in daily kWh value being recorded in the registry however GTV appears to be selecting the initial daily kWh value rather than the latest daily kWh value; the volume impact was assessed as 2,095 kWh per annum under submission,

- all ICPs on profiles requiring a certified control device had AMI or HHR metering, or a certified control device,
- the compensation factor in the registry is used for ICPs,
- no loss or error compensation arrangements are required, and
- aggregation of the AV080, AV090 and AV140 reports is compliant.

I checked the process for NHH to HHR upgrades, and HHR to NHH downgrades, to ensure all consumption information was accounted for:

- for upgrades, the process is to end the NHH meter the day before and consider the ICP HHR all day, with the trading periods prior to the meter change populated with zeros, and
- for downgrades the process is to end the HHR meter on the day of the change and begin the NHH meter from the installation read the following day.

I walked through three upgrades to confirm the process. The processes in place ensure all consumption is accounted for.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.9 With: Clause 2 Schedule 15.3 From: 01-Jan-22 To: 31-Mar-23	**MEEN** ICPs 0000540450TE6E7 and 0007301973NVCDF are believed to have incorrect average daily kWh recorded resulting in a small amount of under submission (0.76 W or 3.2 kWh per annum). **TRUS** Three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission resulting in 2,095 kWh under submission per annum. Two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission. Potential impact: Low Actual impact: Low Audit history: Twice 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 the number of errors is low.

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN ICPs with incorrect average daily kwh recorded were corrected. **TRUS** **Three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission resulting in 2,095 kWh under submission per annum.** **Two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission.** We acknowledge the non-compliance. We are investigating and will take appropriate action to resolve.	May 2023 June 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN As above. **TRUS** **Three ICPs with unmetered load changes during the audit period where the initial daily kWh value continues to be applied to calculate consumption for submission resulting in 2,095 kWh under submission per annum.** **Two shared UML ICPs did not have unmetered load included in the submission as the UML profile code was not recorded on the registry to trigger the calculation of volume and inclusion in the AV-080 NHHVOLs file. The volume impact was assessed for December 2022 as 16.6 kWh under submission.** Investigating to confirm what the root cause of the non-compliance is, we will review our process with a view to avoiding recurrence.	N/A June 2023	

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

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

Audit commentary

MEEN

I reviewed nine AV080 submissions for a diverse sample of months and revisions and confirm that forward and historic estimates are included and identified.

TRUS

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 (Clauses 4 and 5 Schedule 15.3)

Code reference

Clauses 4 and 5 Schedule 15.3

Code related audit information

The methodology outlined in clause 4 of Schedule 15.3 must be used when preparing historic estimates of volume information for each ICP when the relevant seasonal adjustment shape is available.

If a seasonal adjustment shape is not available, the methodology for preparing an historical estimate of volume information for each ICP must be the same as in clause 4, except that the relevant quantities kWh_{Px} must be prorated as determined by the reconciliation participant using its own methodology or on a flat shape basis using the relevant number of days that are within the consumption period and within the period covered by kWh_{Px}.

Audit observation

Mercury provided examples of historic estimate calculations, which were reviewed. The check of calculations included confirming that readings and Seasonal Adjusted Daily Shape Values (SADSV) were applied correctly. The table below shows that some scenarios tested are non-compliant.

Audit commentary

MEEN

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.

During the previous audit, it was identified that some scenarios were non-compliant because some readings were treated as being from the end of the day rather than the beginning of the day, specifically for status changes where the reading allocation needs to match the status allocation. Mercury resolved this matter after the last audit, and the relevant scenarios are now compliant.

The historic estimate calculation performed where an estimated read is present between two actual reads that exists less than six months apart are being treated as permanent estimates for the purpose of HE calculations. Mercury's system flags estimated reads as permanent estimates after six months to ensure that no FE volumes are present in the final 14-month wash up. If the estimated read is a customer read, the HE calculation will be more accurate, despite being non-compliant, but if the estimated read is not based on a customer read, the HE calculation may be less accurate. Whilst this issue is not a specific scenario, it is still a non-compliant practice.

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
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 - the customer read was validated against two actual validated readings from another source

Test	Scenario	Test expectation	Result
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

TRUS

The table below shows that all scenarios are calculating as expected and correct SASV (seasonal adjusted shape values) are applied. The historic estimate process spreads consumption for the read-to-read period across the "active" days within that 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 they have been validated against a set of validated readings from another source	Compliant, all customer reads are considered estimates.
n	ICP with a photo read during the month	Photo reads are not used to calculate historic estimate, unless they have been validated against a set of validated readings from another source	Compliant, all photo reads are considered estimates.
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Compliant

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.11 With: Clauses 4 and 5 Schedule 15.3 From: 01-Jan-22 To: 31-Dec-22	**MEEN** Some HE calculations use estimated readings, which have been made permanent after six months rather than at the 14-month point. Potential impact: Medium Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	MEEN The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact is recorded as low overall because there will be a minor impact on the apportionment of volume between months.

Actions taken to resolve the issue	Completion date	Remedial action status
We will be investigating the ICP in this example to determine what changes are required to fix this issue.	June 2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

Our controls and processes in most instances are strong. This issue relates to a very specific circumstance and the impact is low. We will liaise with our ICT team to implement any logic changes required to resolve this issue.	Ongoing	

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

MEEN

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. However, this factoring process is reliant on the seasonal adjustment daily shape values being consistent year on year and the mass transition of ICPs with AMI meters from NHH to HHR submission has meant these SADSV files are no longer consistent as the population of ICPs these files relate to is no longer the same.

During the previous audit, it was observed that where an ICP changes balancing area (for example an ICP transitions from a local network to become part of an embedded network) within this 2-year period the factoring process would apply a historic factor relating to the old balancing areas as opposed to the current balancing area factor. This matter is now resolved by not using shape values for this scenario.

The accuracy of the initial submission, in comparison to each subsequent revision is required to be within ± 15%.

Month	Over ±15%				Over ±15% and ±100,000 kWh				Total Balancing Areas
	Revision 1	Revision 3	Revision 7	Revision 14	Revision 1	Revision 3	Revision 7	Revision 14	
Mar 2021	45	51	47	47	-	-	-	-	331
Apr 2021	91	84	81	81	-	-	-	-	332
May 2021	63	71	78	72	-	2	2	2	332
Jun 2021	47	41	46	46	-	-	-	-	336
Jul 2021	48	53	57	59	-	1	1	1	339
Aug 2021	100	87	86	85	-	-	-	-	342
Sep 2021	114	122	116		-	-	-		346
Oct 2021	114	108	109		1	1	2		347
Nov 2021	86	93	95		-	-	-		347
Dec 2021	84	82	85		2	2	2		347
Jan 2022	76	89	92		-	-	-		348
Feb 2022	71	88	96		3	3	3		351

Month	Over ±15%				Over ±15% and ±100,000 kWh				Total Balancing Areas
	Revision 1	Revision 3	Revision 7	Revision 14	Revision 1	Revision 3	Revision 7	Revision 14	
Mar 2022	62	70	78		-	-	-		351
Apr 2022	79	82			-	-			351
May 2022	66	73			1	-			356
Jun 2022	62	74			1	1			359
Jul 2022	53	61			1	1			367
Aug 2022	53				1				370
Sep 2022	51				-				374

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Mar 2021	-1.45%	-1.41%	-1.44%	-1.48%
Apr 2021	-4.46%	-3.50%	-3.40%	-3.61%
May 2021	-4.69%	-4.44%	-4.29%	-4.27%
Jun 2021	-1.70%	-0.21%	0.27%	0.25%

Month	Revision 1	Revision 3	Revision 7	Revision 14
Jul 2021	-1.94%	-0.47%	0.31%	0.34%
Aug 2021	-0.58%	0.25%	0.58%	0.66%
Sep 2021	0.18%	0.64%	0.70%	
Oct 2021	-0.43%	0.25%	0.25%	
Nov 2021	-0.42%	-0.03%	-0.02%	
Dec 2021	-1.28%	-0.55%	-0.66%	
Jan 2022	-1.63%	-1.29%	-1.20%	
Feb 2022	-1.58%	-1.45%	-1.30%	
Mar 2022	-1.04%	-0.56%	-0.44%	
Apr 2022	-0.79%	-0.47%		
May 2022	0.09%	0.20%		
Jun 2022	-14.52%	-16.10%		
Jul 2022	-0.56%	-0.30%		
Aug 2022	0.54%			

Month	Revision 1	Revision 3	Revision 7	Revision 14
Sep 2022	0.52%			

I checked all differences over the thresholds after December 2021. The differences related to profile shapes provided by the NZRM being different to the profiles used to calculate forward estimate for the initial allocation.

TRUS

Trustpower's forward estimate methodology is based on the following:

- consumption from the same period one year earlier, scaled up using the previous months volume and then adjusted by profile shape data,
- if a read was not conducted in the previous year, then the last read period will be used, and
- where no reading history is available then a daily average figure is used from the CS file for a switch in or manually entered for new connections.

Where profile shape data is not available then the average of the read-to-read period is used.

The accuracy of the initial submission, in comparison to each subsequent revision is required to be within 15%. The table below shows the number of balancing areas where this target was not met.

Quantity of balancing areas with differences over 15%

Month	Over ±15%				Over ±15% and ±100,000 kWh				Total Balancing Areas
	Revision 1	Revision 3	Revision 7	Revision 14	Revision 1	Revision 3	Revision 7	Revision 14	
Jan-21	13	18	17	18	-	1	1	2	216
Feb-21	15	21	21	21	-	-	-	-	218
Mar-21	16	18	20	20	-	-	-	-	215
Apr-21	48	47	47	48	-	-	-	-	214
May-21	14	23	22	23	-	1	-	-	213
Jun-21	37	41	42	44	-	-	-	-	212
Jul-21	8	12	13	15	-	-	-	-	215
Aug-21	21	36	36	35	-	-	-	-	220
Sep-21	20	26	25	22	-	-	-	-	221
Oct-21	23	33	33		-	4	4		193
Nov-21	22	32	32		-	-	-		194

Month	Over ±15%				Over ±15% and ±100,000 kWh				Total Balancing Areas
	Revision 1	Revision 3	Revision 7	Revision 14	Revision 1	Revision 3	Revision 7	Revision 14	
Dec-21	23	35	39		2	5	5		198
Jan-22	11	20	21		-	2	2		199
Feb-22	16	25	28		3	2	2		200
Mar-22	4	18	17		-	-	-		200
Apr-22	9	14	16		-	-	-		203
May-22	13	19			-	-			204
Jun-22	7	14			1	1			204
Jul-22	11	12			-	-			208
Aug-22	14	24			-	-			217
Sep-22	16				-				222
Oct-22	14				-				221

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

Month	Over ±15%				Volume impact Over ±15%			
	Revision 1	Revision 3	Revision 7	Revision 14	Revision 1	Revision 3	Revision 7	Revision 14
Jan-21	1.26%	1.33%	1.45%	0.87%	-	-	-	-
Feb-21	-0.93%	-0.93%	-0.90%	-0.68%	-	-	-	-
Mar-21	-2.59%	-2.90%	-2.85%	-2.90%	-	-	-	-
Apr-21	-3.21%	-3.54%	-3.45%	-3.56%	-	-		-
May-21	-4.34%	-5.39%	-5.49%	-5.48%	-	-	-	-
Jun-21	-1.11%	-1.26%	-1.36%	-1.38%	-	-	-	-
Jul-21	-0.61%	-0.95%	-0.95%	-0.93%	-	-	-	-
Aug-21	-1.15%	-1.49%	-1.57%	-1.52%	-	-	-	-
Sep-21	0.77%	0.89%	0.80%	0.79%	-	-	-	-
Oct-21	1.45%	2.53%	2.61%		-	-	-	
Nov-21	0.54%	0.83%	0.98%		-	-	-	

Month	Over ±15%				Volume impact Over ±15%			
	Revision 1	Revision 3	Revision 7	Revision 14	Revision 1	Revision 3	Revision 7	Revision 14
Dec-21	1.15%	1.50%	1.61%		-	-	-	
Jan-22	-0.54%	-0.70%	-0.83%		-	-	-	
Feb-22	0.68%	0.63%	0.61%		-	-	-	
Mar-22	-0.20%	-0.66%	-0.61%		-	-	-	
Apr-22	-0.16%	-0.63%	-0.64%		-	-	-	
May-22	-0.08%	-1.36%			-	-		
Jun-22	-2.56%	-3.49%			-	-		
Jul-22	0.49%	-0.11%			-	-		
Aug-22	-0.70%	-0.74%			-	-		
Sep-22	0.08%				-			
Oct-22	-0.25%				-			

I checked all differences over the threshold since January 2021 and found the following issues:

- reads replacing estimates at NSPs with a high proportion of seasonal load, and
- reads replacing estimates at NSPs with a high proportion of variable business load.

Trustpower has robust high-level validations in place to ensure the accuracy of submission, including:

- variances between revisions at ICP level,
- all ICPs where corrections have been made with "ADJ" rows,
- consumption over 2,000 kWh at ICP level, and
- credits of more than 500 kWh at ICP level.

Trustpower has a high penetration of communicating AMI meters and also attempts manual meter reading of legacy and non communicating meter on a monthly basis unless there is a health and safety issue relating to an ICP. This effort to ensure sufficient reads are present has improved the submission accuracy performance.

Trustpower does not apply a month end AMI read where this is present into the calculation of submission information as the read has not been validated via the GTV meter read validation process.

Trustpower only uses scheduled meter reads that have been validated by the GTV meter read process. For AMI metered ICPs, the scheduled meter read date is set using the switch gain date as being the monthly anniversary date to request scheduled AMI meter reads. Where communicating AMI metered ICPs with seasonal or variable load are identified the impact of any estimation inaccuracy can be reduced by moving the scheduled meter read date to close to month end as possible. I recommend that Trustpower regularly reviews the NSP level submission accuracy and where the accuracy levels are not being achieved, to review the scheduled AMI meter read dates of any seasonal load at these NSPs to ensure these are close to month end as practicable.

Description	Recommendation	Audited party comment	Auditor comments
Review scheduled meter red dates for seasonal load ICPs with communicating AMI meters	Trustpower to regularly review the NSP level submission accuracy and where the accuracy levels are not being achieved, to review the scheduled AMI meter read dates of any seasonal load at these NSPs to ensure these are close to month end as practicable.	GTV uplift project is in progress and once it is completed GTV will have Half Hourly data and it will be used for market submission which is expected to improve submission accuracy markedly. We will monitor submission accuracy with the above in place and if needed will upload AMI meter reads weekly for Irrigation sites during shoulder months.	Identified

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.12 With: Clause 6 Schedule 15.3 From: 01-Jan-22 To: 31-Dec-22	**MEEN** The accuracy threshold was not met for all months and revisions. **TRUS** The accuracy threshold was not met for all months and revisions. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	MEEN and TRUS Controls are rated as strong, as they are sufficient to ensure data is within an acceptable accuracy. The audit risk rating is low as the Initial data is replaced with revised data and washed up.

Actions taken to resolve the issue	Completion date	Remedial action status
MEEN 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. **TRUS** Impact of COVID-19 restrictions was still present on read attainment and accuracy reduced as a result. This was notable for the sites that were in the inner city commercial premises. Increased AMI rollout and the use of end of month read as well as back into normality will increase read attainment and accuracy.	N/A Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN Mercury uses the industry profile shape as a default however we don't always receive the profile shapes for the new embedded networks. Mercury has recently changed the process where no profile shape is available to use a ratio factoring to ensure data in not over/under reported. **TRUS** AMI rollout combined with the ongoing use of the EOM read process has resulted in a more robust process should similar events happen in the future. Feasibility of the recommended Permanent Estimate process review is being assessed with the intention of implementation which will improve submission accuracy.	Complete June 2023	

12.13. Compulsory meter reading after profile change (Clause 7 Schedule 15.3)

Code reference

Clause 7 Schedule 15.3

Code related audit information

If the reconciliation participant changes the profile associated with a meter, it must, when determining the volume information for that meter and its respective ICP, use a validated meter reading or permanent estimate on the day on which the profile change is to take effect.

The reconciliation participant must use the volume information from that validated meter reading or permanent estimate in calculating the relevant historical estimates of each profile for that meter.

Audit observation

The event detail report was reviewed to identify ICPs with profile changes. All changes identified were upgrades or downgrades.

A sample of ICPs with profile changes were reviewed to confirm that there was an actual reading on the day of the profile change.

Audit commentary

MEEN

The process is that 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 19 profile changes, and 18 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. ICP 1000584371PCEA2 changed profile from RPS to HHR on 19 April 2022 but the reading used was an estimate not an actual or a permanent estimate.

TRUS

In the event of a profile change, Trustpower uses a validated meter reading or a permanent estimate on the day that the change is effective. Trustpower mainly uses the GXP profile for NHH, and a meter change normally occurs at the same time as the profile change.

A sample of six profile changes were checked. All of these had a meter change at the time of the profile change and a meter read was gained.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.13 With: Clause 7 Schedule 15.3 From: 19-Apr-22 To: 19-Apr-22	**MEEN** ICP 1000584371PCEA2 changed profile from RPS to HHR on 19 April 2022 but the reading used was an estimate not an actual. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	MEEN 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 are investigating this issue.	June 2023	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Based on the outcome of the investigation, required checks and improvements will be placed.	June 2023	

13. SUBMISSION FORMAT AND TIMING

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

Code reference

Clause 8 Schedule 15.3

Code related audit information

For each category 3 of higher metering installation, a reconciliation participant must provide half hour submission information to the reconciliation manager.

For each category 1 or category 2 metering installation, a reconciliation participant must provide to the reconciliation manager:

- *Half hour submission information; or*
- *Non half hour submission information; or*
- *A combination of half hour submission information and non-half hour submission information*

However, a reconciliation participant may instead use a profile if:

- *The reconciliation participant is using a profile approved in accordance with clause Schedule 15.5; and*
- *The approved profile allows the reconciliation participant to provide half hour submission information from a non-half hour metering installation; and*
- *The reconciliation participant provides submission information that complies with the requirements set out in the approved profile.*

Half hour submission information provided to the reconciliation manager must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *trading period*

The non-half hour submission information that a reconciliation participant submits must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *consumption period or day*

Audit observation

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

MEEN

No report aggregation discrepancies were identified. Submission information is provided to the reconciliation manager in the appropriate format and is aggregated to the following level:

- NSP code,
- reconciliation type,
- profile,
- loss category code,
- flow direction,
- dedicated NSP, and
- trading period for half hour metered ICPs and consumption period or day for all other ICPs.

The submitted data was also compared to billed data and appeared reasonable.

TRUS

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

- NSP code,
- reconciliation type,
- profile,
- loss category code,
- flow direction,
- dedicated NSP, and
- trading period for half hour metered ICPs and consumption period or day for all other ICPs.

No incorrect aggregation issues were identified.

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 5, the second digit is rounded up, and

If the digit to the right of the second decimal place is less than 5, 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

MEEN

Data is rounded to no more than two decimal places.

TRUS

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

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 15.3

Code related audit information

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

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

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

Audit observation

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

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

Audit commentary

MEEN

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
May 2021	-	-	424	425
Jun 2021	-	-	428	428
Jul 2021	-	-	432	432
Dec 2021	-	433	-	435
Jan 2022	-	438	-	438

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Feb 2022	-	439	-	439
Apr 2022	417	-	-	442
May 2022	429	-	-	445
Jun 2022	433			450

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
May 2021	-	-	99.9995%
Jun 2021	-	-	99.9999%
Jul 2021	-	-	100.0000%
Dec 2021	-	99.98%	-
Jan 2022	-	99.98%	-
Feb 2022	-	100.00%	-
Apr 2022	95.54%	-	-
May 2022	96.05%	-	-
Jun 2022	96.48%	-	-

I checked all NSPs where thresholds were not met, and in all cases it was due to an inability to obtain meter readings for long periods of time.

TRUS

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, and the table below shows that compliance has not been achieved in all instances.

Quantity of NSPs where revision targets were met:

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
May 2021			296	296
Jun 2021			295	295
Jul 2021			300	300
Dec 2021		277		281
Jan 2022		278		282
Feb 2022		279		283
Apr 2022	280			286
May 2022	278			286
Jun 2022	282			288

The table below shows that the percentage HE at a summary level for all NSPs is at or above the required targets for revisions 3 and 7, and 14. I checked seven combinations of NSP month and revision where the 3-month targets were not met, and 11 where the 7-month targets were not met. In all cases, the issues were inability to get meter readings.

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met
May 2021	-	-	100.00%
Jun 2021	-	-	100.00%
Jul 2021	-	-	100.00%
Dec 2021	-	99.67%	-
Jan 2022	-	99.68%	-
Feb 2022	-	99.71%	-
Apr 2022	99.19%	-	-
May 2022	99.08%	-	-

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met
Jun 2022	99.13%	-	-

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 13.3 With: Clause 10 of Schedule 15.3 From: 01-Jan-22 To: 07-Dec-22	**MEEN** Historic estimate thresholds were not met for some revisions. **TRUS** Historic estimate thresholds were not met for some revisions. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	MEEN The controls are rated as strong as the thresholds were met, and processes are in place to make estimated readings permanent. The audit risk rating is low, because Mercury were reasonably close to the target in all cases. TRUS The controls are rated as moderate because Covid-19 restrictions have had a negative impact on reading attainment and these issues are outside Trustpower's control. The audit risk rating is low as overall the meter reading attainment levels are high.
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

MEEN Covid-19 lockdowns and restrictions have had an impact on our read attainment which in turn has affected our revision targets. Our current processes and controls are strong. **TRUS** Overall average HE percentage for R3 is close to 90% and R7 98%, significant increase largely as a result of the AMI rollout. The scenarios that caused the non-compliance (Embedded networks covering inner city commercial, apartments etc.) were impacted by COVID-19 restrictions. Our Billdata team continues to progress on unread /restricted access sites to rectify these scenarios.	Ongoing Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN Our current processes are strong however we are continuously looking at ways to improve read attainment. **TRUS** Monthly review of ICP level submission accuracy for NSPs with lower read attainment. - ICPs that represent high % in NSP's total volume and the volume is forward estimate will be identified. Then reasonable endeavours threshold will be checked for those ICPs. If criteria met, the read type update to permanent estimate. This process will improve HE submission level.	Ongoing May 2023	

14. GLOSSARY

AC breach	AC arrival date is more than five business days after receipt of replace switch reading (RR) where the switch re-read is rejected.
AN breach	AN arrival date is more than three business days after the NT arrival date, where the AN arrives immediately after the NT.
AW breach	AW arrival date is more than five business days after receipt of the NW.
CS breach for transfer switch	CS arrival date is more than three business days after receipt of the NT where the CS arrives immediately after the NT.
E2 breach for switch move	NT Proposed Transfer Date and CS Actual Transfer date do not match; AND CS Actual Transfer Date is a) earlier than the NT Proposed Transfer Date; OR b) more than 10 business days after receipt of the NT.
NA breach	NW arrival date is more than two calendar months after the CS Actual Transfer Date.
NW breach	NW arrival date is more than three business days after receipt of the NT where the NW arrives immediately after the NT
RR breach	RR arrival date is more than four calendar months from the CS Actual Transfer Date.
SR breach	NW arrival date is more than 10 business days after the initial NW for the same trader requesting the withdrawal. The trader sending the corresponding AW (either accepting or rejecting the withdrawal) only receives a breach on the AW if it is sent more than 5 days after the latest NW as in the original rule.
T2 breach for switch move	CS arrival date is more than five business days after receipt of the NT AND, before delivery of the CS No NW notice has been provided, AND (no AN notice has been provided OR an notice is provided, and the NT Proposed Transfer Date matches the AN expected Transfer Date).
WR breach	An or CS arrival date (whichever is applicable, may be one or both) are delivered by the losing Trader more than two business days of the arrival date of the AW rejecting the withdrawal; AND a subsequent NW is not provided before delivery of the AN or CS.

CONCLUSION

MEEN

Switching and registry management

For switching, the late files are decreasing in number over time with better monitoring processes and staff number stability. More staff are being trained to handle switching files.

SAP's logic for calculating average daily kWh, determining AN response codes, and selecting last actual read dates, has continued to cause some low impact data accuracy issues. Switching files are manually created using the registry user interface where SAP cannot issue them, and some switch event information is manually populated in SAP, including renegotiated switch event readings. Some of this manually entered data was found to be incorrect.

A technical non-compliance is recorded because ICPs which switch in from GBUG (GBUG is not included in the scope of this audit) after one day of supply, because GBUG cannot supply them, are treated as switch moves, regardless of whether the customer is moving in.

The sample of customer cancellation withdrawals checked during the audit were compliant. A self-breach where enticements were offered to a customer switching out in April 2022 is recorded as non-compliance.

Registry updates can occur via SAP, or directly on the registry with SAP updated at the same time. The main control to ensure consistency of information is SAP's daily exception reporting which identifies failed registry updates. Some fields do have additional validations performed but the frequency and completeness of the checks varies, and some checks are irregular due to high workloads. There is no full validation between SAP and the registry, and I found some data inaccuracies during the audit which would have been identified and corrected sooner had more thorough validation been in place. Recommendations to improve validation have been made, so that issues can be identified and resolved through normal business processes instead of groups of discrepancies being discovered, investigated, and resolved during audits.

There have continued to be some process and system issues which have led to some late and inaccurate registry updates. Training and improved monitoring processes are helping to improve compliance, and there has been an increase in the percentage of updates completed on time for all update types. Data inaccuracies identified during the audit have been passed to Mercury for investigation and correction, and most have already been resolved.

Data collection and reconciliation

The main data collection and reconciliation related issues are as follows:

- there are still 502 HHR settled ICPs where the interval data from ARC Innovations is inaccurate,
- meter condition information for manually read meters is being imported and analysed where a meter reading is not obtained, but is not imported and analysed when a meter reading is obtained,
- all estimated meter readings and customer meter readings are changed to permanent estimates at the 6-month point, which does not achieve compliance with the Code requirement to use reasonable endeavours to get meter readings for at least 12 months prior to changing estimates to permanent estimates; this can lead to incorrect apportionment of consumption information,
- submission errors were found with eight of the 17 distributed unmetered load databases; Mercury is making sound progress with remedial actions with all of these, and
- at least eight ICPs have distributed generation but submission is not occurring for the generation kWh; in most cases, this is due to the appropriate metering not yet being in place and a further 38 ICPs are being investigated because the distributor has recorded the presence of distributed generation, but submission is not occurring.

TRUS

Switching and registry management

Trustpower has continued to maintain an overall high level of compliance for registry management despite the changes that have occurred and are still ongoing with the sale to Mercury. The new connection process has been strengthened during the audit period resulting in an improved level of accuracy and a continued high percentage of new connections updated within five days of being electrically connected. Two areas of improvement were identified:

- management of standard and shared unmetered load has moved through a number of areas during the audit period and this audit identified some training opportunities, and
- there is no reporting in place to monitor where access cannot be gained for another party so no quantification of how well this process is working.

Switching management was examined and the timeliness of switching continues to be good overall. Some accuracy improvements were identified:

- for correct use of AN and NW codes additional training is planned for the team,
- two examples of the expected read not being applied in GTV were identified; these are likely to be one off instances, but reminded the team of the need to use the correct start reads, and
- some incorrect last read dates being sent; most of these were due to human error but some were automated, so Trustpower is examining these scenarios to ensure the correct information is sent.

Overall, the registry management and switching were found to be of a similar standard to that found in the last audit.

Data collection and reconciliation

Data collection and reconciliation functions are generally well managed. Good reporting is in place for most functions and once an exception is identified these are well tracked through to completion. Four areas of improvement were identified:

- AMI meter event logs and time difference reports are not well understood and are not independently reviewed by Trustpower; there is a reliance on the AMI MEPs assessment of impact to reconciliation in determining the corrective actions which can lead to volume corrections not being applied,
- resolution of inactive consumption exceptions is being delayed while attempts to identify a potential customer are undertaken, however the code requires that revised submission information if provided at the earliest opportunity,
- for a small number of ICPs, some incomplete time-of-day profiles were applied resulting in some volumes being apportioned to incorrect time-of-day submission periods; additional monitoring is required to ensure these time-of-day profiles are being correctly assigned, and
- some changes to UML daily average kWh values are not being reflected in submission volumes are the system appears to being selecting the first daily kWh record and not the latest record.

Conclusion

The audit identified 50 non-compliances and 36 recommendations are made. The increase in the number of non-compliances from 39 to 50 reflects that this is the first time both the TRUS and MEEN codes have been included in the same audit.

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 96, which results in an indicative audit frequency of three months.

I have considered this result in conjunction with Mercury's responses, and I recommend the next audit is conducted in 12 months.

PARTICIPANT RESPONSE

Thank you to Steve, Rebecca, Tara and Bernie for all of their hard work on this audit, a combined Mercury/Trustpower audit which has been highly complex and labour intensive.

Some background: In May 2022 Mercury NZ Limited purchased Trustpower's retail business and while the two retailers (MEEN and TRUS) have continued to operate separately business-as-usual, planning and working on integrating the two businesses began almost immediately. On 19 June 2023 the two brands will officially be integrated under the Mercury retail brand. Bringing together our people, products, and services under one brand will enable us to build better experiences and solutions, providing value for our customers and stakeholders.

Our main focus at this point in time is on integration and by necessity the vast majority of our technical resource has been prioritised on this. The plan at a high level is to migrate our customers from the MEEN code to the TRUS code, hence we will be using the TRUS systems and processes going forward. ICPs will be migrating via normal switches in tranches of 10-15K daily (nationwide) beginning in July/August 2023. For the time being, LCOM ICPs will be remaining on the MEEN code.

For the most part TRUS's existing systems require no change for the purposes of the migration itself. However, one significant change will be the change required so that TRUS can manage HHR data (the required systems went with their LCOM ICPs to Manawa when Trustpower's retail business was sold). We engaged with the auditors early in the planning stage and are in the process of carrying out a material change audit which we will submit to the Authority no later than 5 days prior to go-live as is the requirement.

With the very near future for Mercury being Gentrack (GTV), we have de-prioritised making system changes to SAP. We are fully aware that the technical challenges of integration will require ongoing resource, however post-migration we will start to actively engage on improvements that can be made to GTV for better compliance outcomes. We are fortunate that TRUS has excellent systems, processes and reporting in place which gives us a strong foundation that we are looking forward to continuing to improve and build on.