

ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT



For

NOVA ENERGY LIMITED

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EXECUTIVE SUMMARY

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of **Nova Energy Limited (Nova)**, to support their application for renewal of certification in accordance with clauses 5 and 7 of schedule 15.1.

The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits V7.1.

Nova operates the TODD, WISE, and HNET (Hunet) participant codes. For TODD an audit period from January 2019 to March 2020 was considered. For WISE and Hunet an audit period from June 2019 to March 2020 was considered, starting immediately after Nova's material change audit to include these codes. Unless otherwise specified, the processes and non-compliances described in the report apply to all codes.

TODD

TODD has continued to make progress in resolving non-compliance issues during the audit period, and there continues to be a strong focus on compliance. The positive highlights from this audit are as follows:

- a high level of compliance for the timeliness and accuracy of registry updates and switching,
- overall data accuracy is high with robust discrepancy reporting in place to identify and correct errors, and all corrections reviewed were processed accurately, and
- TODD continues to provide a high degree of submission accuracy, with generally low variation between revisions and between temporary HHR estimates and actual data.

The key areas requiring improvement are:

- the NHH read attainment process, which is currently under review to improve efficiency and compliance,
- validation of customer and photo readings requires improvement to ensure that only readings which have been validated against a set of validated actual readings not provided by the customer are used in the reconciliation process, and
- some ICPs billed in AXOS were double counted in the AV120 submissions, because the billed data is held within Orion and AXOS, TODD is aware of this issue and is working to resolve it.

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 very poor. Unfortunately for TODD, this means the HHR data derived from ARC meters is not considered to be accurate in accordance with Clause 15.2.

As found in previous audits, inactive ICP days are included in the ICP days submissions, but this process ensures that any consumption that occurs during the inactive period will be reported.

WISE

Registry updates were generally found to be timely and accurate, and corrections were processed promptly and as required. Disconnected ICPs are not changed to inactive status unless they are disconnected for more than three days, which has a minor impact on the correct use of the inactive status.

For switching, there were a small number of late files and some inaccurate file content. Improvements have recently been made to consider the latest readings when creating CS files, which should improve the accuracy of switch event reads.

Readings are well managed, and read attainment is generally high. No submission accuracy issues were identified.

Hunet

Registry updates were generally found to be timely and accurate, and corrections were processed promptly and as required.

For switching, there were a small number of late files and some inaccurate file content.

Readings are well managed, and read attainment is generally high. In some instances, the revision three historic estimate thresholds were not met.

Two large meter reading errors resulted in significant over submission of 465,000 kWh and 50,000 kWh in April and October 2019, which were washed up in the next revision. It is recommended that validation processes are improved to identify unusually high consumption to prevent recurrence of this issue.

Conclusion

The audit found 30 non-compliances, and five recommendations were raised. The audit risk rating is 46, which results in an indicative audit frequency of six months. This is an increase from an audit risk rating score of 34 and 24 in the previous audit. The increase has largely been caused by an increase in the number of non-compliances, with most affecting small numbers of ICPs or events, and all having a low audit risk rating. Controls were strong for 17 non-compliances and moderate for 11 non-compliances. One minor non-compliance relating to application of AN codes was assessed to have weak controls, and a disputed non-compliance relating to rounding of reads was assessed to have no controls. I have considered this result in conjunction with Nova's responses, which indicate clear remedial actions and resolution dates. My recommendation for the next audit date is in at least 18 months on 15 November 2022.

The matters identified are shown in the tables below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Relevant information	2.1	15.2	<p>TODD</p> <p>Some inaccurate data was not corrected as soon as practicable.</p> <p>Profile discrepancy on the day of meter change for upgrades and downgrades.</p> <p>Inaccurate submission for ARC Innovations HHR metering.</p> <p>Hunet</p> <p>Over submission of 465,000 kWh in April 19 and 50,000 kWh in October 19 due to inadequate validation.</p>	Strong	Low	1	Identified
Electrical Connection of Point of Connection	2.11	10.33A	<p>TODD</p> <p>13 late certifications for new connections</p> <p>101 late certifications for reconnections.</p>	Strong	Low	1	Identified
Changes to registry information	3.3	10 Schedule 11.1	<p>TODD, Hunet and WISE</p> <p>Some registry information was not updated within 5 business days of the event.</p>	Strong	Low	1	Identified
Provision of information to the registry manager	3.5	9 Schedule 11.1	<p>TODD</p> <p>34 late updates to active status for new connections.</p> <p>ICP 0006053840ALA07 has active status recorded from 08/08/19 but should have active status recorded from 06/08/19.</p> <p>ICP 1002063909LC22F has active status recorded from 17/07/19 but should have active status recorded from 15/07/19.</p> <p>Hunet</p> <p>Late registry update for one new connection.</p>	Strong	Low	1	Identified
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	<p>TODD</p> <p>Nine ICPs had incorrect ANZSIC codes applied, and eight were corrected during the audit. ICP 0000012956WE988's customer is a meat processor and wholesaler, but the H440000 (accommodation) ANZSIC code is still applied on the registry.</p> <p>ICPs 0000551085NR750 and 1000012524BP6C4 have incorrect trader event dates applied on the registry.</p>	Strong	Low	1	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	<p>TODD</p> <p>The trader daily unmetered kWh was incorrect on the registry for ICP 0000540556TU6C9. A correction was processed during the audit.</p> <p>The readings recorded against the unmetered register for 0000540556TU6C9 do not start from the switch in date, and do not include all expected unmetered load.</p> <p>An incorrect trader event date was recorded for the addition of unmetered load on the registry for 0014603340ELCF7. 01/07/16 was recorded instead of 17/09/19.</p>	Moderate	Low	2	Identified
Management of “active” status	3.8	17 Schedule 11.1	<p>TODD</p> <p>ICP 0000050781CPF0C was active against two customer accounts for 05/12/19 to 06/12/19. The ICP later switched out effective from 06/12/19.</p> <p>ICP 0006053840ALA07 has active status recorded from 08/08/19 but should have active status recorded from 06/08/19.</p> <p>ICP 1002063909LC22F has active status recorded from 17/07/19 but should have active status recorded from 15/07/19.</p>	Strong	Low	1	Identified
Management of “inactive” status	3.9	19 Schedule 11.1	<p>TODD</p> <p>ICP 1000021444BP3FC incorrectly had inactive status recorded between 12/02/19 and 27/02/19. Consumption occurred between the 12/02/19 and 28/02/19 reads. Because the date that consumption began cannot be pinpointed, the status should be corrected from the earliest date that consumption could have occurred from, which is 12/02/19.</p> <p>WISE</p> <p>Disconnected ICPs not changed to inactive status unless they are disconnected for more than three days.</p>	Moderate	Low	2	Identified
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	<p>TODD</p> <p>One late CS file.</p> <p>CS average daily consumption is based on the average daily consumption over the previous year, not the last actual read to read period. At least ten CS files were confirmed to have incorrect average daily consumption recorded.</p>	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>Two transfer CS files were issued with CS premises lines only.</p> <p>WISE</p> <p>5 late CS files.</p> <p>2 incorrect switch event meter readings.</p> <p>Incorrect calculation of average daily consumption.</p>				
Retailers must use same reading - standard switch	4.4	6(1) and 6A Schedule 11.3	<p>TODD</p> <p>Two late RR files for transfer switches.</p>	Strong	Low	1	Identified
Gaining trader informs registry of switch request - switch move	4.7	9 Schedule 11.3	<p>Hunet</p> <p>9 late NT files.</p>	Strong	Low	1	Identified
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	<p>WISE</p> <p>One AN file with a date greater than 10 business days from NT data.</p> <p>Two AN files with event dates earlier than the proposed date.</p>	Strong	Low	1	Identified
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	<p>TODD</p> <p>CS average daily consumption is based on the average daily consumption over the previous year, not the last actual read to read period. At least ten CS files were confirmed to have incorrect average daily consumption recorded.</p> <p>An incorrect last actual read date was recorded for 0000559123NRAC4 (07/01/19).</p> <p>An incorrect last actual read date and read were recorded for ICP 0000050781CPF0C (06/12/19).</p> <p>20 switch move CS files were issued with CS premises lines only.</p> <p>WISE</p> <p>Calculation methodology for average daily consumption not compliant.</p> <p>WISE's CS process does not always ensure that the switch read reflects the actual reading on their last day of responsibility.</p> <p>Hunet</p> <p>Incorrect date of last read for one ICP.</p>	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	TODD Eight late RR files for switch moves.	Strong	Low	1	Identified
Gaining trader informs registry of switch request - gaining trader switch	4.12	14 Schedule 11.3	Hunet Five backdated NT files.	Strong	Low	1	Identified
Losing trader provision of information - gaining trader switch	4.13	15 Schedule 11.3	TODD Nine ICPs had response code AD (advanced metering) invalidly applied. None of the ICPs had the AMI flag selected at the time of the switch.	Weak	Low	3	Identified
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	TODD 95 late NW files. NWs for ICPs 0000003082EN188 (17/05/17), 0000011522CPBE1 (19/04/17) and 0000015046EAA2A (02/12/17) were issued in error. When the new customer cancelled their application the ICPs should have been moved back to the previous TODD customer account instead of the switches being withdrawn. WISE 1 incorrect NW reason. Hunet 1 incorrect NW reason and 1 late NW.	Strong	Low	1	Identified
Metering information	4.16	21 Schedule 11.3	TODD For one CS file the switch event reads did not reflect the actual reading or best estimate of an actual reading on the event date. WISE 3 inaccurate switch event meter readings.	Strong	Low	1	Identified
Maintaining shared unmetered load	5.1	11.14	TODD The trader daily unmetered kWh was incorrect on the registry for ICP 0000540556TU6C9. A correction was processed during the audit. The readings recorded against the unmetered register for 0000540556TU6C9 do not start from the	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			switch in date, and do not include all expected unmetered load.				
Electricity conveyed & notification by embedded generators	6.1	10.13, Clause 10.24 and 15.13	<p>TODD</p> <p>While meters were bridged, energy was not metered and quantified according to the code for 12 ICPs.</p> <p>ICP 0000710336WP2BE temporarily had an incorrect event date for its generation profile recorded on the registry and was corrected during the audit.</p> <p>WISE</p> <p>While meters were bridged, energy was not metered and quantified according to the code for 4 ICPs.</p>	Strong	Low	1	Identified
Derivation of meter readings	6.6	3(1), 3(2) and 5 Schedule 15.2	<p>TODD</p> <p>Customer and photo readings are not specifically validated against at least two readings not provided by the customer.</p> <p>One customer reading for ICP 0000017604CP1F8 was recorded as a customer reading, but had not been validated against a set of readings from another source</p>	Moderate	Low	2	Identified
NHH meter reading application	6.7	6 Schedule 15.2	<p>TODD</p> <p>In a CS file for ICP 0000050781CPF0C, the switch event reads did not reflect the actual reading or best estimate of an actual reading on the event date.</p> <p>WISE</p> <p>Incorrect readings provided for three ICPs.</p>	Moderate	Low	2	Identified
Interrogate meters once	0	7(1) and (2) Schedule 15.2	<p>TODD</p> <p>Exceptional circumstances were not proven for at least four ICPs not read during the period of supply.</p> <p>WISE</p> <p>Exceptional circumstances were not proven for one ICP not read during the period of supply.</p> <p>Hunet</p> <p>Exceptional circumstances were not proven for one ICP not read during the period of supply.</p>	Moderate	Low	2	Identified
NHH meters interrogated annually	0	8(1) and (2) Schedule 15.2	<p>TODD</p> <p>Exceptional circumstances were not proven for at least two ICPs unread in the 12 months ending 31/10/19.</p>	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Meter data used to derive volume information	9.2	3(5) Schedule 15.2	TODD Raw meter data is rounded upon receipt and not when volume information is created. WISE Raw meter data is rounded upon receipt and not when volume information is created.	None	Low	5	Disputed
Electricity supplied information provision to the reconciliation manager	11.3	15.7	TODD Some ICPs billed in AXOS were double counted in the AV120 submissions.	Moderate	Low	2	Identified
HHR aggregates information provision to the reconciliation manager	11.4	15.8	TODD and Hunet HHR aggregates file does not contain electricity supplied information.	Strong	Low	1	Identified
Accuracy of submission information	12.7	15.12	TODD The readings recorded against the unmetered register for 0000540556TU6C9 do not start from the switch in date, and do not include all expected unmetered load.	Strong	Low	1	Identified
Forward estimate process	12.12	6 Schedule 15.3	TODD The accuracy threshold was not met due to FE being estimated too high in relation to balancing area DUNEDINDUNEG (December 18 r1).	Strong	Low	1	Identified
Historical estimate reporting to RM	13.3	10 Schedule 15.3	Hunet Historic estimate thresholds were not met for R3 for a small number of months and revisions.	Strong	Low	1	Identified
Future Risk Rating						46	

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	Description	Recommendation
Changes to unmetered load	3.7	TODD Event dates for unmetered load corrections on the registry	TODD Adjust the process for unmetered load corrections to ensure that they are applied from the correct event date on the registry.
Losing trader must provide final information - standard switch	4.3	TODD TR and MI CS files with missing lines	TODD Investigate to determine why CSMETERCHANNEL, CSMETERCOMP and CSMETERINSTALL lines were missing for some TR and MI CS files.
Losing trader must provide final information - switch move	4.10	TODD Check ICP 0000015111CPA58 (CS event 18/11/19) average daily kWh	TODD Investigate ICP 0000015111CPA58 (CS event 18/11/19) to determine why the average daily kWh generated by Orion was much higher than expected.
Derivation of meter readings	6.6	TODD Customer and photo read validation	TODD If customer and photo readings cannot be validated against at least two readings which were not provided by the customer, they should be recorded as misreads so that they are not treated as actual readings by the reconciliation process.
NHH metering information data validation	9.4	Hunet Regarding Clause 16 Schedule 15.2	Hunet Re-introduce a threshold for checking NHH ICP high consumption.

ISSUES

Subject	Section	Clause	Description
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

The Electricity Authority website was checked to identify any exemptions currently in place for Nova.

Audit commentary

There are no exemptions relevant to the scope of this audit in place for TODD, WISE or Hunet.

1.2. Structure of Organisation

The organisational charts were provided for the audit.

Persons involved in this audit

Auditors:

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

Personnel assisting with this audit:

Title	Organisation
Switching Team Leader	Nova Energy
Billing Service Manager	Nova Energy
Billing co-ordinator x 2	Nova Energy
Metering and New Connections Team Leader	Nova Energy
Retail Operations Business Analyst	Nova Energy
Retail Operations Manager	Nova Energy
Team Leader Reconciliation	Nova Energy
Energy Analyst x 2	Nova Energy
Operations Manager	Hunet
Programming & Operations Manager	WISE

Agent personnel assisting with this audit:

Name	Role	Company
Craig Simpson	Operations Manager Service Hub	Wells
Rahul Upadhyay	MSC Data Team Supervisor	Wells
Josh Wairau	Grid Metering Specialist	EMS

Name	Role	Company
Laura Ferrier	Senior Data Analyst	Vector Metering
Peter MacKenzie	Sales & Development Manager	ADRI Insights
Steven Graham	Solution Delivery & Support Team	EDMI NZ Limited

1.3. 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

The agents used by Nova were identified and their agent reports assessed as a part of this audit.

Audit commentary

All agents have been audited in accordance with the Guidelines for Reconciliation Participant Audits. The audits were completed more than seven months before this audit report's due date. Additional checks were conducted to confirm whether there have been any changes to procedures, or any events which could affect meter accuracy had occurred. The agent audit reports are expected to be submitted along with this report.

TODD

EMS, EDM I and AMS provide HHR data, and EMS also provides information to the pricing manager and submission services for grid connected generators. Wells and MRS provide NHH meter reading services.

WISE

WISE receives AMI data from AMS, Metrix, and WEL Networks as MEPs. There are no agents involved in the process

Hunet

Hunet uses Wells to provide NHH meter readings and MEPs to provide AMI data. AMS provides HHR data for HHR C&I ICPs.

1.4. Hardware and Software

TODD

The key infrastructure for audited processes comprises of:

- Orion is used for NHH billing, and to generate NHH reading information which is exported to EnergyMarket.

- Stark is used to retrieve HHR generation and customer volumes obtained by TODD. HHR billing occurs within Stark's Kinetiq module. HHR volumes are exported to EnergyMarket to produce reconciliation submissions.
- AXOS is used to create invoice data for time of day (TOD) customers.
- EnergyMarket is used to produce NHH and HHR reconciliation submissions.

Systems are backed up, and access to systems is restricted through logins and passwords.

WISE

WISE uses the Pre Pay Energy Billing System (PEBS) platform which is owned by Energy Billing System Limited. PEBS is a bespoke MySQL database on a Linux operating system. Daily backups are performed to a remotely hosted server.

Hunet

Hunet continues to use a bespoke MySQL database on a Linux operating system. Daily backups are performed to a remotely hosted server.

1.5. Breaches or Breach Allegations

TODD

The authority confirmed one minor breach relating to reconciliation participant activities occurred during the audit period (1905NOVE1). The alleged breach related to replacement of AMI meters, under clauses not specifically covered in the reconciliation participant audit (10.12, 10.22, and 11.4(3)). The breach was closed and no action was taken because there was no impact, and TODD had taken steps to prevent recurrence and resolve the issue.

WISE

There were no breach allegations during the audit period.

Hunet

There were no breach allegations during the audit period.

1.6. ICP Data

TODD

The quantity of ICPs by status is shown below:

Status	Number of ICPs 2020	Number of ICPs 2018	Number of ICPs 2017	Number of ICPs 2016	Number of ICPs 2015
Active (2,0)	91,298	78,861	76,477	82,245	81,657
Inactive – new connection in progress (1,12)	154	20	42	25	38
Inactive – electrically disconnected vacant property (1,4)	220	256	377	488	518
Inactive – electrically disconnected remotely by AMI meter (1,7)	168	94	35	16	0
Inactive – electrically disconnected at pole fuse (1,8)	155	110	104	14	9

Inactive – electrically disconnected due to meter disconnected (1,9)	28	32	27	23	18
Inactive – electrically disconnected at meter box fuse (1,10)	136	117	27	1	5
Inactive – electrically disconnected at meter box switch (1,11)	65	25	25	0	2
Inactive – electrically disconnected ready for decommissioning (1,6)	73	71	80	88	98
Inactive – reconciled elsewhere (1,5)	0	1	1	1	1
Decommissioned (3)	1,590	1,328	1,022	736	2,515

The active ICPs on the list file were summarised by meter category in the table below.

Metering Category	2020	2018	2017	2016	2015
1	88,735	76,751	75,511	80,130	79,557
2	2,344	1,972	1,830	1,977	1,911
3	130	100	92	85	89
4	43	29	33	29	27
5	4	4	4	5	6
9	11	2	3	12	42
Blank	31	3	4	7	25

The active ICPs with a metering category of 9 or blank were checked. 21 ICPs were unmetered, and 21 active ICPs with metering category 9, null, or zero did not have unmetered load indicated. 20 ICPs had MEP nominations made and accepted, or were timing differences and the ICPs were decommissioned, made ready for decommissioning, or had meter details populated on the registry prior to the audit. ICP 0001681263PCCEC was confirmed to be metered, and it appears the MEP's records are incorrect.

WISE

WISE provided a list file as at January 2020. The active ICPs from the list file are summarised by meter category in the table below:

Metering Category	2020	2019	2018 (November 2018)	2018 (February 2018)
1	3,062	2,321	1,688	1,840
2	-	-	-	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
9	-	-	-	-

ICPs in the list file are summarised by meter status in the table below.

Status	2020	Number of ICPs (2019)	Number of ICPs 2018 (current audit)	Number of ICPs 2018 (Feb 2018 audit)
Active (2,0)	3,062	2,321	1,688	1,840
Inactive – new connection in progress (1,12)	-	-	-	-
Inactive – electrically disconnected vacant property (1,4)	6	10	8	11
Inactive – electrically disconnected remotely by AMI meter (1,7)	68	53	38	62
Inactive – electrically disconnected at pole fuse (1,8)	1	1	-	1
Inactive – electrically disconnected due to meter disconnected (1,9)	1	1	-	-
Inactive – electrically disconnected at meter box fuse (1,10)	-	-	-	-
Inactive – electrically disconnected at meter box switch (1,11)	-	-	-	-
Inactive – electrically disconnected ready for decommissioning (1,6)	-	1	1	2
Inactive – reconciled elsewhere (1,5)	-	-	-	-
Decommissioned (3)	47	40	30	16

Hunet

Hunet provided a list file as at January 2020. The active ICPs from the list file are summarised by meter category in the table below:

Metering Category	2020	2019	2018	2017
1	5,440	5,347	5,179	4,828
2	45	18	15	15
3	4	-	-	-
4	-	-	-	-
5	-	-	-	-
9	-	-	-	-

ICPs in the list file are summarised by meter status in the table below.

Status	Number of ICPs 2020	Number of ICPs 2019	Number of ICPs 2018	Number of ICPs 2017
Active (2,0)	5,489	5,365	5,194	4,897
Inactive – new connection in progress (1,12)	2	1	-	-
Inactive – electrically disconnected vacant property (1,4)	19	19	18	12
Inactive – electrically disconnected remotely by AMI meter (1,7)	63	37	37	32
Inactive – electrically disconnected at pole fuse (1,8)	1	1	-	-
Inactive – electrically disconnected due to meter disconnected (1,9)	2	3	12	12
Inactive – electrically disconnected at meter box fuse (1,10)		1	-	-
Inactive – electrically disconnected at meter box switch (1,11)	1	-	2	2
Inactive – electrically disconnected ready for decommissioning (1,6)	3	4	-	1
Inactive – reconciled elsewhere (1,5)	-	-	-	-
Decommissioned (3)	77	54	32	16

1.7. Authorisation Received

Nova provided email authorisation to collect information in relation to this audit.

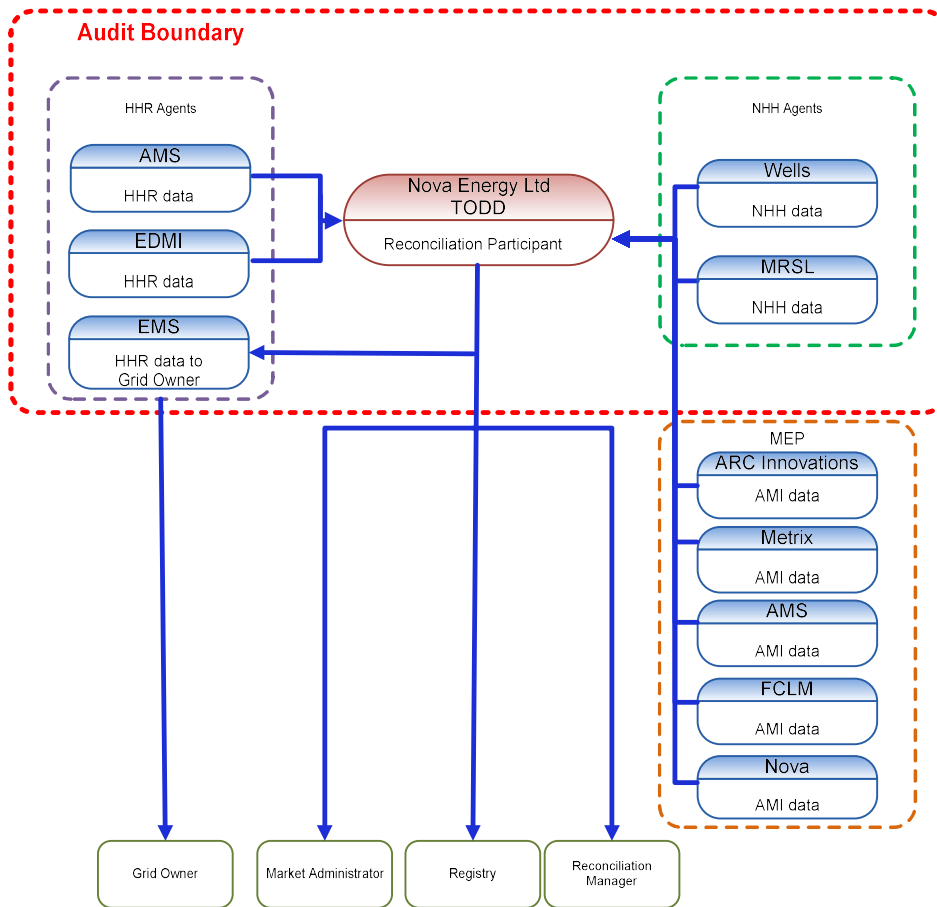
1.8. Scope of Audit

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

TODD

The audit was carried out via zoom on 23/03/20, 30/03/20 and 31/03/20. The scope of the audit 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 TODD requires certification. This table also lists any agents who assist with these tasks:

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks		MEPs providing data
	HHR	NHH	
(a) Maintaining registry information and performing switching			
(b) Gathering and storing raw meter data	AMS EMS EDMI	Wells MRS	AMS Arc Metrix Nova FCLM
(c)(iii) Creation and management of HHR & NHH volume information			

(d)(i) Calculation of ICP days			
(d)(ii) - delivery of electricity supplied information under clause 15.7			
(d)(iii) - delivery of information from retailer and direct purchaser half hourly metered ICPs under clause 15.8			
(e) – Provision of submission information for reconciliation			
(f) – Provision of metering information to the Grid Owner	EMS		

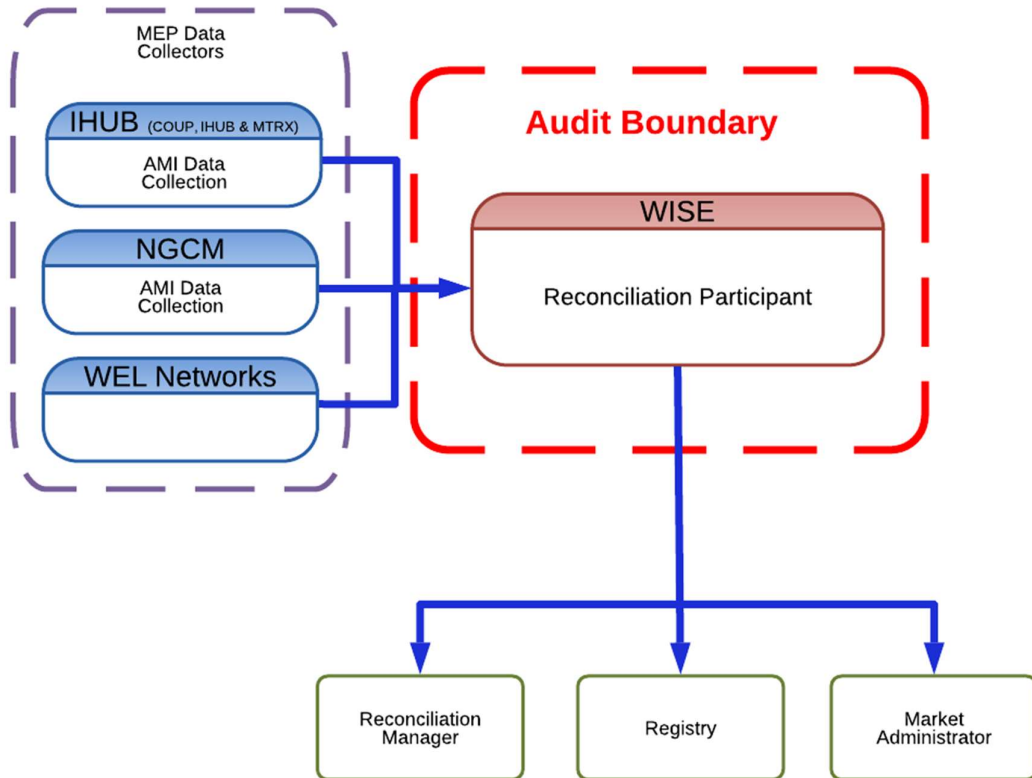
EMS provides data collection and submission services for grid connected generators, plus provision of metering information to the pricing manager. AMS and EDMl are agents for data collection only. Wells and MRS provide NHH meter reading services.

All agents have been audited in accordance with the Guidelines for Reconciliation Participant Audits and were completed more than seven months before this audit report's due date. The agent audit reports are expected to be submitted along with this report, and the agents confirmed that there have been no changes to their processes which could have a negative impact on TODD's compliance.

WISE

The audit was carried out by video conference on 01/04/2020.

The scope of the audit 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 Hunet requires certification. This table lists the agents and MEPs who assist with these tasks:

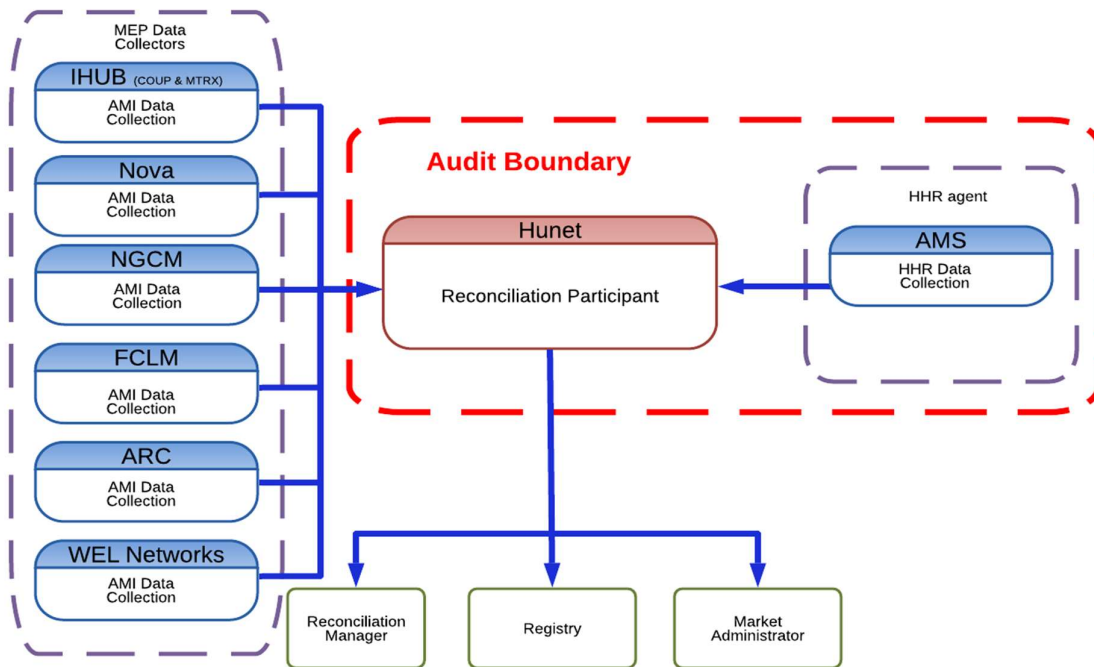
Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs
(a) - Maintaining registry information and performing customer and embedded generator switching	None	
(b) – Gathering and storing raw meter data	None	NGCM – NHH Intellihub (COUP) – NHH Intellihub (MTRX) – NHH Intellihub (IHUB) - NHH WASN – NHH

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs
(c)(ii) - Creation and management of NHH volume information	None	
(d) – Calculation of ICP days	None	
(da) - delivery of electricity supplied information under clause 15.7	None	
(e) – Provision of submission information for reconciliation	None	

Hunet

The audit was carried out at Hunet’s premises in Auckland on 24-25 March 2020.

The scope of the audit 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 Hunet requires certification. This table lists the agents and MEPs who assist with these tasks:

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

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs
		IHUB (COUP) – NHH IHUB (MTRX) - NHH FCLM- NHH WASN – NHH Nova - NHH
(c)(ii) - Creation and management of NHH volume information		
(d) – Calculation of ICP days		
(da) - delivery of electricity supplied information under clause 15.7		
(e) – Provision of submission information for reconciliation		

The Wells and AMS audit reports are attached and confirm compliance with the Code. Both reports are more than seven months old, therefore additional checks were conducted.

1.9. Summary of previous audit

Nova provided a copy of the report from the previous audit for the TODD participant code completed in December 2018 by Tara Gannon (lead auditor). The current status of the non-compliances is recorded in the table below. No recommendations or issues were raised. Further comment is made in the relevant sections of this report.

Subject	Section	Clause	Non-compliance	Status
Relevant information	2.1	10.6, 11.2, 15.2	Some errors found in registry data.	Still existing
Audit trails	2.4	21 Schedule 15.2	Stark audit trails do not record the operator identifier for the person who completed the activity; there is only one operator identifier for Stark.	Still existing
Electrical Connection of Point of Connection for an ICP that is not an NSP	2.11	10.33A	Two ICPs were not certified within 5 business days of electrical connection. 54 reconnected ICPs with no certified metering in place. Two ICPs were not recertified when their meters were unbridged.	Still existing
Changes to registry information	3.3	10 Schedule 11.1	Registry information not updated within 5 business days of the event.	Still existing

Subject	Section	Clause	Non-compliance	Status
Management of “active” status	3.8	17 Schedule 11.1	Some ICPs with active status discrepancies.	Still existing
Management of “inactive” status	3.9	19 Schedule 11.1	Ten ICPs had inactive status during a period where consumption occurred.	Still existing
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	One late transfer CS file.	Still existing
Retailers must use same reading - standard switch	4.4	6(1) and 6A Schedule 11.3	One late RR file sent.	Still existing
Non-half hour switch event meter reading - standard switch	4.5	6(2) and (3) Schedule 11.3	One RR issued under clause 6(2) and (3) of Schedule 11.3 was invalidly rejected.	Cleared
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	Five late RR files sent.	Still existing
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 Schedule 11.3	One late CS file.	Cleared
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	47 late switch withdrawals.	Still existing

Subject	Section	Clause	Non-compliance	Status
Electricity conveyed & notification by embedded generators	6.1	10.13, Clause 10.24 and 15.13	While meters were bridged, energy was not metered and quantified according to the code for four ICPs.	Still existing
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	Some ICPs were not read during the period of supply.	Still existing
Buying and selling notifications	11.1	15.3	No trading notification was provided when Nova ceased using the N8N and N8D profiles at KMO0331, TMI0331, WVV0111 and ROS0221.	Cleared
Calculation of ICP days	11.2	15.6	Incorrect NHH ICP days were reported for two upgraded ICPs, and correct information will be provided for revision submissions. ICP days are reported for active and inactive metered ICPs. According to the code ICP days should only be reported for active ICPs.	Cleared
Electricity supplied information provision to the reconciliation manager	11.3	15.7	Some ICPs billed in AXOS were temporarily excluded from the AV120 submissions.	Still existing
HHR aggregates information provision to the reconciliation manager	11.4	15.8	HHR aggregates file does not contain electricity supplied information.	Still existing
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 Schedule 15.3	Historic estimate thresholds were not met for one revision.	Still existing

Nova provided a copy of the report from the material change audit to include the Hunet and WISE participant codes completed in August 2019 by Rebecca Elliot (lead auditor). The current status of the non-compliances and issues is recorded in the table below. Further comment is made in the relevant sections of this report.

Subject	Section	Clause	Non-compliance	Status
Material Change Audit	1.11	16A.11(1)	Material change audit not completed five business days prior.	Cleared
Relevant information	2.1	10.6, 11.2, 15.2	<u>Hunet</u> ICP incorrect status recorded on the registry one Hunet ICP. Incorrect profile recorded for one Hunet ICP with distributed generation.	Still existing
Changes to registry information	3.3	10 Schedule 11.1	<u>Hunet and WISE</u> Registry information not updated within 5 business days of the event for 74 events.	Still existing
Management of “inactive” status	3.9	19 Schedule 11.1	<u>Hunet</u> ICP 0000100686UN849 incorrectly had the inactive status applied from 16/01/2018 to 15/01/2019. <u>WISE</u> The registry does not reflect the correct ICP status for ICPs which have been disconnected for credit for five days or less.	Cleared for Hunet Still existing for WISE
Losing trader response to switch request and event dates - standard switch	4.2	3 and 4 Schedule 11.3	<u>WISE</u> Three incorrect AN codes applied.	Cleared
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	<u>WISE</u> Calculation methodology for average daily consumption not compliant. WISE’s CS process does not always ensure that the switch read reflects the actual reading on their last day of responsibility.	Still existing

Subject	Section	Clause	Non-compliance	Status
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	<u>Hunet</u> 18 late CS files sent <u>WISE</u> One proposed event date earlier than the NT requested date.	Still existing for WISE
Losing trader determines a different date - switch move	4.9	10(2) Schedule 11.3	<u>WISE</u> One proposed event date earlier than the NT requested date.	Cleared
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	<u>WISE</u> Calculation methodology for average daily consumption not compliant. WISE's CS process does not always ensure that the switch read reflects the actual reading on their last day of responsibility.	Still existing
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	<u>Hunet</u> One switch withdrawal not sent within two months of the event date. <u>WISE</u> One switch withdrawal not sent within two months of the event date. One switch withdrawal incorrectly rejected. One late AW file.	Still existing
Metering information	4.16	21 Schedule 11.3	<u>WISE</u> Readings in two CS files (post change) were inconsistent with the AMI read for the switch date or were not a reasonable estimate of the reading on the event date.	Still existing
Electricity conveyed & notification by embedded generators	6.1	10.13, 10.24 and 15.13	<u>Hunet</u> While meters were bridged, energy was not metered and quantified according to the code for two ICPs. <u>WISE</u> While meters were bridged, energy was not metered and quantified according to the code for two ICPs.	Cleared for Hunet Still existing for WISE

Subject	Section	Clause	Non-compliance	Status
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	<u>WISE</u> Three ICPs did not have an actual read recorded during the period of supply, and exceptional circumstances did not exist.	Still existing
Correction of NHH meter readings	8.1	19(1) Schedule 15.2	<u>WISE</u> Two bridged meters have not had corrections for the correct period.	Cleared
Meter data used to derive volume information	9.3	3(5) Schedule 15.2	<u>WISE</u> Raw meter data is rounded upon receipt and not when volume information is created.	Still existing
Accuracy of submission information	12.7	15.12	<u>WISE</u> Consumption during periods where a meter is bridged was not reported for the correct period for the two examples checked. Where the active period continues after a customer account is terminated, historic estimate may not include all consumption.	Cleared
Historical estimate reporting to RM	13.3	10 Schedule 15.3	<u>Hunet</u> Historic estimate thresholds were not met for some revisions.	Still existing

2. OPERATIONAL INFRASTRUCTURE

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

Code reference

Clause 10.6, 11.2, 15.2

Code related audit information

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

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

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

Audit observation

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

Audit commentary

TODD

Status and trader updates are processed manually using the registry web interface, and Orion is updated at the same time. As part of this process, the user checks that the update was successful.

Registry acknowledgements are not specifically reviewed. Any failed or rejected updates are expected to be identified on screen at the time the manual update is attempted, or through the daily registry data validation process. Rejected MEP nominations are expected to be identified through emails received from the MEP.

TODD's registry validation and management processes continue to be robust. A suite of daily data discrepancy reports are used to ensure information is accurate and consistent, including:

- the load check report, which compares Orion and registry unmetered load details and identifies any discrepancies or changes,
- the new UML report, which identifies any new connections or switch ins with unmetered load so that the unmetered load can be validated and updated as necessary,
- the metering details check and meter and channel count mismatches reports, which identify meter information discrepancies or changes,
- distributed generation indicated by the distributor where TODD does not have a generation profile recorded,
- uncertified meters, and
- status discrepancies.

The reconciliation team conducts pre submission checks to ensure that submission information is accurate and consistent with the aggregation factors recorded on the registry. These checks are discussed further in **section 12.3**.

The registry list file as at 06/01/20 and AC020 report for 01/01/19 to 31/12/19 were examined to confirm that information was correct and not misleading. The analysis returned the following findings:

Item No.	Issue	2019 Qty	2018 Qty	2017 Qty	2016 Qty	2015 Qty	Comments
1	Status mismatch between registry and Orion	3	10	-	-	1	ICPs 0006053840ALA07, 1002063909LC22F and 1000021444BP3FC were found to have incorrect status event dates applied which were not corrected through TODD's validation processes prior to the audit. See sections 3.8 and 3.9 .
2	ICP at status "inactive new connection in progress" (1,12) with an initial electrical connection date populated by the Distributor	1	3	-	-	12	This was a timing difference. The registry was updated to active from the initial electrical connection date prior to the audit.
3	Active date variance with Initial Electrical connection Date	472	12	16	10	56	ICPs 0006053840ALA07 and 1002063909LC22F were found to have incorrect status event dates applied which were not corrected through TODD's validation processes prior to the audit. The other 470 ICPs were timing differences, or TODD's active date was confirmed to be correct. See section 3.8 .
4	Incorrect submission flag	-	-	-	-	-	Compliant.
5	Incorrect profiles	-	-	-	-	-	Compliant.
6	Distributor indicates embedded generation present with RPS profile	5	-	12	16	19	Four were timing differences, and the other ICP was confirmed not to be generating yet. See section 6.1 .
7	Active ICP with cat 9 and UML="N"	21	1	1	2	-	For 20 ICPs an MEP nomination was processed, metering details were updated, or the ICP status was changed to decommissioned prior to the audit. ICP 0001681263PCCEC was confirmed to be metered, and it appears the MEP's records are incorrect. See section 3.4 .

Item No.	Issue	2019 Qty	2018 Qty	2017 Qty	2016 Qty	2015 Qty	Comments
8	Active ICP with no MEP recorded and UML="N"	14	1	2	-	-	In all cases an MEP nomination had been made and accepted. For 12 ICPs the registry had been populated by the MEP, and for two ICPs the registry is still to be updated.
9	Active with blank ANZSIC codes	-	-	-	-	1	Compliant.
10	Meter cat 3 with residential ANZSIC code	1	-	-	-	3	The code was incorrect and was updated during the audit. See section 3.6 .
11	Active with ANZSIC "T999" not stated	-	-	-	-	994	Compliant.
12	Active with ANZSIC "T994" don't know	-	-	-	-	299	Compliant.
13	Incorrect ANZSIC code applied	6	-	2	-	-	Six ICPs had incorrect ANZSIC codes applied, and five were corrected during the audit. ICP 0000012956WE988's customer is a meat processor and wholesaler, but the H440000 (accommodation) ANZSIC code is still applied on the registry. See section 3.6 .
14	ICPs with Distributor unmetered load populated but retail unmetered load is blank	-	-	5	6	4	Compliant.
15	ICPs with standard unmetered load flag Y but load is recorded as zero	-	-	-	-	1	Compliant.
16	ICPs with incorrect shared unmetered load	1	-	-	6	7	ICP 0014603340ELCF7 had incorrect trader unmetered load information recorded in Orion and the registry. See sections 3.7 and 5.1 .
17	ICPs have UML flag N and no shared unmetered load but Distributor field	-	-	-	-	1	Compliant.

Item No.	Issue	2019 Qty	2018 Qty	2017 Qty	2016 Qty	2015 Qty	Comments
	shows shared unmetered load.						
18	Arc category 2 meters submitted as HHR, with compensation factors of 100 or greater	2	-	-	-		Arc only provides data with one decimal place, which can cause non-compliance with Clause 4 of schedule 10.7 once the multiplier is applied. See section 12.7 .

Processes for correction of NHH meter readings are reviewed in **section 8.1**. I reviewed correction processes where volumes were incorrect but the readings recorded matched the meter register (if metered) including multiplier corrections, defective and faulty meters, inactive consumption, and unmetered load corrections.

Defective meters	<p>Defective meters are typically identified through meter read validation, or through the faults process. Where a defective meter is identified a field services job is raised, and the meter is usually replaced.</p> <p>An excel template is used to calculate consumption for the faulty period based on either the consumption prior to the fault, or consumption on the replacement meter. If necessary, consumption history may also be requested from the previous retailer. The calculations are peer reviewed to ensure that they are for the correct period, and that the consumption estimate is reasonable.</p> <p>An estimated closing read is applied to the faulty meter to capture consumption that occurred during the faulty period. Correction calculation and fault information is copied into an Orion activity for future reference.</p> <p>I reviewed ten examples of corrections for stopped or faulty meters and confirmed that corrections were processed according to the process described above and flowed through to reconciliation submissions.</p>
Multiplier corrections	<p>A daily discrepancy report is used to identify ICPs where the multiplier recorded in Orion differs from the multiplier recorded on the registry. Investigation is carried out with the MEP to determine the correct multiplier.</p> <p>If the multiplier is incorrect, the invoices for the customer are reversed and then the multiplier is corrected, and the invoices are reissued. Corrections flow through to revision submissions.</p> <p>Three examples of multiplier discrepancies were provided. No corrections were required, because the multiplier was correctly recorded in Orion and the discrepancy related to incorrect data recorded on the registry by the MEP.</p>
Bridged meter corrections	<p>Bridged meters are identified on receipt of reconnection paperwork, through the review of ICPs with zero consumption, or when meter faults are reported by customers, MEPs, or distributors.</p> <p>An excel template is used to calculate consumption for the bridged period based on either the consumption prior to bridging, or consumption after the meter is unbridged. If necessary, consumption history may also be requested from the previous retailer. The calculations are peer reviewed to ensure that they are for the correct period, and that the consumption estimate is reasonable.</p> <p>If the bridged consumption is to be billed to the customer, a closing estimate read is recorded on the affected meter which captures the consumption during the bridged period. A new</p>

	<p>meter is created and opens on the day the meter is unbridged with the recorded meter reading.</p> <p>If the bridged consumption is not to be billed to the customer, a new meter register is created with opening and closing readings which capture the estimated consumption during the bridged period. There are no charges to the customer associated with this meter register.</p> <p>Regardless of the method applied, correction calculation and fault information is copied into an Orion activity for future reference.</p> <p>I reviewed 12 examples of corrections for bridged meters and confirmed that corrections were processed according to the process described above and flowed through to reconciliation submissions.</p>
Inactive ICPs with consumption	<p>All consumption is reported for reconciliation, regardless of the ICP status at the time the consumption occurred. I confirmed that consumption during disconnected periods is reported by checking the historic estimate scenarios in section 12.11.</p> <p>TODD produces a discrepancy report which identifies consumption for ICPs with inactive status. Each ICP is reviewed to determine whether the consumption is genuine (i.e. based on the difference between validated actual readings). If the consumption is genuine, TODD determines when the consumption began and updates the registry status to “active” from that date and raises a new disconnection service order for the ICP.</p> <p>A list of 46 ICPs where consumption while inactive had been identified by TODD was checked to confirm whether the correct statuses were applied. 34 ICPs had less than one unit of consumption per register during the inactive period, suggesting that the meters may have been between digits. The nine ICPs with consumption of 2 or more units per register were checked.</p> <ul style="list-style-type: none"> • Seven ICPs had their statuses corrected to active for the entire period with inactive consumption. • ICP 1000021444BP3FC was disconnected on 12/02/19, and there was movement between the disconnection read on 12/02/19 (5573) and next actual read on 28/02/19 (5642). The ICP was returned to active status effective from 28/02/19, although it is possible that some of the consumption may have occurred between 12/02/19 and 27/02/19. Because the date that consumption began cannot be pinpointed, the status should be corrected from the earliest date that consumption could have occurred from, which is 12/02/19. The reconciliation process ensures that consumption is captured and reported during inactive periods, but the incorrect status is recorded as non-compliance below and in section 3.9. • ICP 1000024116BP954 was disconnected on 31/10/19 (589) and switched out on 21/11/19. The switch event reading on 20/11/19 (593) was provided by Wells, and AMI readings provided between the disconnection on 21/10/19 and Wells reading on 20/11/19 were consistently 594. Noting that AMI readings are rounded on import, and Wells truncates readings to only record digits before the decimal place, it appears that the ICP was genuinely disconnected during the period, but the disconnection read was incorrectly recorded. The status is correct during TODD’s period of supply, and the reconciliation process ensures that all consumption is captured and reported.
Unmetered load corrections	<p>An UML register records “readings” for ICPs with unmetered load. The readings are calculated as the previous reading + (daily unmetered kWh x the number of days between readings).</p> <p>When an unmetered load correction is required, the customer’s invoices are reversed, and the readings for the unmetered load register are adjusted to reflect the correct values and the customer is rebilled. The correction then flows through to reconciliation.</p>

The following data discrepancies were identified, but not resolved as soon as practicable:

Report section	Non-compliance
3.5/3.8	<p>ICP 0006053840ALA07 has active status recorded from 08/08/19 but should have active status recorded from 06/08/19.</p> <p>ICP 1002063909LC22F has active status recorded from 17/07/19 but should have active status recorded from 15/07/19.</p> <p>The status dates were not corrected because the ICPs have switched out.</p>
3.6	<p>ICP 0000012956WE988's customer is a meat processor and wholesaler, but the H440000 (accommodation) ANZSIC code is still applied on the registry.</p> <p>ICPs 0000551085NR750 and 1000012524BP6C4 have incorrect trader event dates applied on the registry.</p>
3.7/5.1	<p>An incorrect trader event date was recorded for the addition of unmetered load on the registry for 0014603340ELCF7. 01/07/16 was recorded instead of 17/09/19.</p> <p>ICP 0000540556TU6C9 has some incorrect unmetered load information recorded in Orion, which led to incorrect submission information. The unmetered load register started on 27/11/19 with an opening read of 0 and the latest reading on 03/03/20 was 235. The unmetered load register was expected to start on 18/10/19¹ with a read of 0 and the reading on 03/03/20 was expected to be 328 (137 days x 2.392 kWh), a difference of +93 kWh. Nova intends to process a correction, and provide revised submission data to the reconciliation manager.</p>
3.9	<p>ICP 1000021444BP3FC has an incorrect active status date recorded. A correction for inactive consumption returned the ICP to active status from 28/02/19. Because the date that consumption began cannot be pinpointed, the status should be corrected from the earliest date that consumption could have occurred from, which is 12/02/19.</p>

Examination of the NHH to HHR and HHR to NHH meter changes, discussed in **section 6.7**, found that whilst the NHH meter reading is applied correctly, the registry cannot reflect that an ICP is both HHR and NHH on the same day, therefore causing a discrepancy between the profile recorded on the day of meter change. This has no material impact on reconciliation.

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 trading period is very poor. Unfortunately for TODD, 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, TODD may not be charged at the wholesale rate that applied during the trading period when the electricity was consumed. More detail is provided in **section 12.7**.

WISE

WISE ensures that the data contained in PEBS matches the registry by importing registry data on switch in, and importing any changes received in notification files.

¹ At 11.59.59pm on the last day of responsibility for the previous retailer, to ensure that all unmetered consumption was captured.

WISE has processes in place to identify and correct any misleading or incorrect information, including:

- a three times weekly match between the status recorded in PEBS and on the registry for each ICP,
- a weekly match between ICP and metering component information recorded in PEBS and on the registry, and
- a weekly check for distributed unmetered load details and distributor generation details.

Any discrepancies are investigated and resolved.

The analysis of the list file returned the following findings:

Item No.	Issue	2020	2019	2018 (November)	2018 (February)	Comments
1	Status mismatch between registry and WISE	-	-	1	11	Compliant
2	Active with no MEP	-	-	-	-	Compliant
3	Incorrect submission flag	-	-	-	-	Compliant, all ICPs have submission type NHH.
4	Blank ANZSIC codes	-	-	-	-	Compliant
5	ANZSIC "T999" not stated	-	-	-	-	Compliant
6	ANZSIC "T994" don't know	-	-	-	-	Compliant
7	Incorrect ANZSIC code	-	-	1	-	Compliant
7	Category 9 but Active with MEP and UML "N"	-	-	-	-	Compliant
8	ICPs with Distributor unmetered load populated but retail unmetered load is blank	-	-	-	-	Compliant, no unmetered load was identified.
9	ICPs with unmetered load flag Y but load is recorded as zero	-	-	-	-	Compliant, no unmetered load was identified.
10	ICPs with incorrect shared unmetered load	-	-	-	-	Compliant, no unmetered load was identified.
11	ICPs with Distributed Generation indicated but no DG profile	2	2	1	-	Compliant- both ICPs were confirmed to have had the distributed generation removed.

No registry data discrepancies were identified during the audit.

Processes for correction of NHH meter readings are reviewed in **section 8.1**. I reviewed correction processes where volumes were incorrect but the readings recorded matched the meter register (if metered) including multiplier corrections, defective and faulty meters and inactive consumption corrections.

<u>Defective meters</u>	<p>Where a defective meter is identified a field services job is raised, and the meter is usually replaced.</p> <p>I reviewed six examples of possible defective meters. Five had meters replaced and one had a modem replaced. In five of the six examples a final read from the register was obtained from the field visit. In one case, the meter had a blank screen and data could not be recovered. The correction was correctly processed using estimated data from historic consumption.</p>
<u>Bridged meters</u>	<p>Bridged meters are typically identified through consumption validations, or if the MEP notifies WISE of load side voltage. WISE rarely completes manual disconnections, bridging only occurs where an ICP cannot be remotely reconnected.</p> <p>WISE manually estimate consumption based on the average daily consumption (if known) or a daily value agreed with the customer. This is expected to be multiplied across the bridged period. WISE provided four examples of bridged meters and in all four cases, the meter was “removed” with an estimated reading to cater for the consumption during the bridged period. It was then “re-installed” at the reading it actually recorded to ensure the consumption was continuous.</p>
<u>Multipliers</u>	<p>No WISE ICPs have meter multipliers, and no ICPs requiring multiplier corrections were identified.</p>
<u>Inactive ICPs with consumption</u>	<p>For consumption to be included in historic estimate calculations, the following must occur:</p> <ol style="list-style-type: none"> 1. the ICP status must be active for at least part of the read to read period, and 2. the readings must be recorded against the customer account. <p>ICPs are usually disconnected and moved to inactive status when the customer account is terminated, or soon after. The status is updated to inactive on the registry effective from the first full day that the ICP is inactive.</p> <p>Previously the disconnection read was not entered onto the customer account if the disconnection read occurred after the date the account was terminated. Therefore, because only reads recorded on a customer account were used by the reconciliation process, this resulted in under reporting of consumption where disconnection occurred after the account termination date. In June 2019, WISE changed their process and now apply the disconnected read for the switch event meter reading date when the ICP switches away.</p> <p>Weekly, WISE reports on ICPs where there is a difference between the final read recorded on the customer account and the latest read received by the MEP. The ICPs are individually reviewed to determine whether the consumption is genuine. If the consumption is genuine, a job is raised to re-disconnect, unless the ICP is in the process of switching out. Once the customer has made contact to reconnect the ICP, the status is returned to active and the reads during the affected period are loaded on the customer’s account so that they are available for billing and reconciliation.</p> <p>WISE provided a list of five ICPs with inactive status and consumption after the final reading on the customer’s account. All examples had either one or two kWh recorded and in all cases the consumption was submitted.</p> <p>Compliance is recorded in this section because the ICPs with genuine consumption while disconnected had been appropriately corrected.</p>

Hunet

Hunet monitors the registry notification files to update their database when registry information changes. The ICP management report is run weekly and this identifies any consumption on active vacant or disconnected vacant, status mismatches, any meter mismatches, blank or “T9” coded ANZSIC codes. Hunet continues to use the robotic tool called the “Disco Reco Manager” which automatically updates the ICPs status once the service request is returned. This process is described in **section 3.3**. The operations

manager checks that all jobs processed in the “Disco Reco Manager” have been processed as expected and this is achievable with the current volumes of jobs being processed.

The analysis of the list file returned the following findings:

Item No.	Issue	Jan 2020	May 2019	January 2019	March 2018	Comments
1	ICP not managed in Hunet’s system	-	-	-	-	Compliant
2	Status mismatch between registry and Hunet	-	1	-	-	Compliant
3	Active with no MEP	-	-	-	-	Compliant
4	Incorrect submission flag	-	-	-	-	All ICPs have submission type NHH and RPS profile
5	Active with blank ANZSIC codes	-	-	-	-	Compliant
6	Active with ANZSIC “T9..” coded	-	-	-	-	Compliant
7	Active with meter category 9 but MEP and UML “N”	-		-	-	Compliant
8	ICPs with Distributor unmetered load populated but retail unmetered load is blank	-	-	-	-	Compliance confirmed - Hunet do not accept ICPs with unmetered load
9	ICPs with unmetered load flag Y but load is recorded as zero	-	-	-	-	Compliance confirmed - Hunet do not accept ICPs with unmetered load
10	ICPs with incorrect shared unmetered load	-	-	-	-	Compliance confirmed - Hunet do not accept ICPs with unmetered load
11	ICPs with Distributed Generation indicated but no DG profile	-	1	5	4	Compliant

The management of the registry information continues to achieve a high level of compliance.

High consumption used to be a checked for ICPs over 3,000 units. Since Hunet began dealing with HHR ICPs this setting is not used, instead the 50 ICPs with the highest consumption are checked manually, which can allow errors to inadvertently slip through. As recorded in **section 12.12**, there were two large meter reading errors resulting in over submission of 465,000 kWh and 50,000 kWh in April and October 2019.

Processes for correction of NHH meter readings are reviewed in **section 8.1**. I reviewed correction processes where volumes were incorrect but the readings recorded matched the meter register (if

metered) including multiplier corrections, defective and faulty meters and inactive consumption corrections.

<u>Defective meters</u>	I reviewed ten examples of stopped or defective meters. All were confirmed to have been calculated and submitted correctly.
<u>Inactive and vacant ICPs with consumption</u>	<p>As recorded in section 2.1, the ICP management report is run monthly and this identifies any consumption on active vacant or disconnected vacant and any ICPs identified are investigated and corrections are processed as described above.</p> <p>As described in section 3.3, the status is managed through the “Disco Reco Manager”.</p> <p>Hunet provided a list of five ICPs with consumption while disconnected, which were reviewed. In all cases, the consumption occurred after the ICPs had switched out due to reconnection by the gaining trader.</p> <p>Hunet provided a list of four ICPs with vacant consumption, which were reviewed and confirmed that the volume has been submitted correctly.</p>
<u>Bridged meter corrections</u>	Hunet did not have any bridged meters during the audit period.
<u>Multiplier corrections</u>	Hunet advised that no multiplier corrections occurred during the audit period. Review of historic estimate calculations in section 12.11 confirmed that multipliers are correctly applied.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 2.1</p> <p>With: Clause 10.6, 11.2, 15.2</p> <p>From: 01-Jul-16</p> <p>To: 31-Mar-20</p>	<p>TODD</p> <p>Some inaccurate data was not corrected as soon as practicable.</p> <p>Profile discrepancy on the day of meter change for upgrades and downgrades.</p> <p>Inaccurate submission for ARC Innovations HHR metering.</p> <p>Hunet</p> <p>Over submission of 465,000 kWh in April 19 and 50,000 kWh in October 19 due to inadequate validation.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>		
Audit risk rating	Rationale for audit risk rating		
<p>Low</p>	<p>Controls are rated as strong as they are sufficient to mitigate risk most of the time. The Hunet validation controls require strengthening.</p> <p>The audit risk rating is low as the overall volume of ICPs affected is low. Where statuses are incorrect, the reconciliation process ensures that all consumption is reported. Status inaccuracies can have a minor impact on ICP days submissions.</p> <p>The Hunet validation issue resulted in over submission until the next revision.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Item 1. ICPs 0006053840ALA07, 1002063909LC22F and 1000021444BP3FC incorrect status event dates</p> <p>Action:</p> <ul style="list-style-type: none"> Refer 3.8 & 3.9 <p>Item 2. 1 ICP at status “inactive new connection in progress” (1,12) with an initial electrical connection date populated by the Distributor</p> <p>Actions:</p> <ul style="list-style-type: none"> Resolved <p>Item 3. Active date variance with Initial Electrical connection date</p> <p>Actions:</p> <ul style="list-style-type: none"> ICPs 0006053840ALA07 and 1002063909LC22F were found to have incorrect status event dates applied which were not corrected through TODD’s validation processes prior to the audit. 		<p>TODD on-going</p>	<p>Identified</p>

<ul style="list-style-type: none"> • Refer 3.8 & 3.9 <p>Item 6. Distributor indicates embedded generation present with RPS profile</p> <p>Actions:</p> <ul style="list-style-type: none"> • Four ICPs were timing differences, and one ICP 0000710336WP2BE was confirmed not to be generating yet. • Refer 6.1 <p>Item 7. Active ICP with cat 9 and UML="N"</p> <p>Actions:</p> <ul style="list-style-type: none"> • ICP 0001681263PCCEC was confirmed to be metered, and it appears the MEP's records are incorrect. • Refer 3.4 • Nova have identified an opportunity to create reporting and add to the existing data integrity daily reporting suite to support CAT9, Null & zero ICPs. Implemented 30 May 2020 <p>Item 8. Active ICP with no MEP recorded and UML="N"</p> <p>Actions:</p> <ul style="list-style-type: none"> • 14 ICPs MEP nominated & accepted. <ul style="list-style-type: none"> ○ 12 ICPs registry populated by MEP, ○ 2 ICPs updated and completed. NGCM have now updated registry. <p>Item 10. Meter cat 3 with residential ANZSIC code</p> <p>Actions:</p> <ul style="list-style-type: none"> • 1 ICP the code was incorrect and updated during audit. • Refer 3.6 <p>Item 13. Incorrect ANZSIC code applied</p> <p>Actions:</p> <ul style="list-style-type: none"> • 9 ICPs had incorrect ANZSIC codes, 8 were corrected during audit. • ICP 0000012956WE988 customer is a meat processor and wholesaler, but the H440000 (accommodation) ANZSIC code is still applied on the registry. Refer 3.6 correction completed <p>Item 16. ICPs with incorrect shared unmetered load</p> <p>Actions:</p> <ul style="list-style-type: none"> • ICP 0014603340ELCF7 had incorrect trader unmetered load information recorded in Orion and the registry. Refer 3.7 & 5.1 		
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<p>Item 18. Arc category 2 meters submitted as HHR, with compensation factors of 100 or greater</p> <p>Actions:</p> <ul style="list-style-type: none"> • 2 ICPs with ARC metering, with compensation factors of 100 or greater. • Nova has recently become aware that low usage on HHR reconciled Arc meters may have the potential to shift time periods if certain usage thresholds aren't met. • Nova supports an industry wide approach that considers the costs and benefits of the most appropriate response to this situation • Refer 12.7 • Nova seek EA clarification and guidance on this issue <p>Profile Discrepancy. Profile discrepancy on the day of meter change for upgrades/downgrades</p> <ul style="list-style-type: none"> • Nova will continue current submission processes around upgrades/downgrades. This is a technical non-compliance that arises due to the registry being unable to reflect an ICP being NHH & HHR on the same day. • As noted by the auditor there is no material impact on reconciliation. <p>Hunet</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> • Hunet amended large meter reading error report cycle from daily to monthly basis since Hunet began dealing with HHR ICPs. <p>Actions:</p> <ul style="list-style-type: none"> • Hunet had 2 cases where actual reads from Wells were used in initial report and corrected in R01 as it turned out to be a misreading upon investigation. It took less than 20 days to correct the readings. 	<p>Hunet 30 May 2020</p>	
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Preventative actions taken to ensure no further issues will occur	Completion date	
<p>TODD</p> <ul style="list-style-type: none"> Detailed outcomes are covered in the applicable sections of the audit document 	TODD on-going	
<p>Hunet</p> <ul style="list-style-type: none"> Hunet will implement a new validation tool that detects potential mis-readings as soon as readings from Wells arrive 	Hunet 30 May 2020	

2.2. Provision of information (Clause 15.35)

Code reference

Clause 15.35

Code related audit information

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

2.3. Data transmission (Clause 20 Schedule 15.2)

Code reference

Clause 20 Schedule 15.2

Code related audit information

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

Audit observation

I reviewed the method to receive meter reading information.

TODD

HHR data received from agents

HHR data is collected by AMS and EDMI and provided to TODD via SFTP. Data transmission was reviewed as part of AMS and EDMI's agent audits. HHR data is loaded into EnergyMarket for reconciliation and Stark's Kinetiq module is used for billing.

HHR and generation data obtained by TODD

The Stark system retrieves meter information from the generation meters every half hour, and customer meters weekly. I reviewed the processes to ensure that HHR data received by Stark is complete and accurate.

AMI readings for NHH billed sites

NHH AMI data is provided by ARC, Metrix (for Metrix and Counties Power meters), and AMS (for AMS and Smartco meters), FCLM, and Nova via SFTP. All other AMI meters are read manually by Wells or MRS.

AMI data is loaded into EnergyMarket, and a daily read file is exported from EnergyMarket to Orion containing ICPs scheduled to be read on that date. I traced a diverse sample of reads for seven NHH ICPs read by MEPs from the source files to Orion.

Manual readings

Manual NHH data is provided by Wells and MRS via SFTP. I traced a diverse sample of reads for 19 NHH ICPs read by MRS and Wells from the source files to Orion.

WISE

All MEPs transfer meter reading information to WISE via SFTP. MEP data transmission processes were reviewed as part of their MEP audits.

I traced a diverse sample of reads for five NHH ICPs from the source files to Hunet's system covering all MEPs.

Hunet

I reviewed the method to receive meter reading information and confirmed no changes have been made to the processes since the previous audit. Manual NHH data is provided by Wells via SFTP.

NHH AMI data is provided by MEPs via SFTP.

The AMI reads are collected twice daily from AMS and Metrix, and on a daily basis from FCLM. These reads are imported into a separate meter reading database.

I traced a diverse sample of reads for five NHH ICPs from the source files to Hunet's system.

Audit commentary

TODD

HHR data received from agents

HHR data transmission was reviewed as part of AMS and EDM's agent audits and found to be compliant.

HHR and generation data obtained by TODD

I reviewed controls in place to ensure that data retrieved from HHR and generation meters is complete and accurate, including checks for failed downloads, missing channels, and trading periods. Data validation is discussed further in **section 9.6**.

AMI readings for NHH billed sites

I confirmed that the correct readings and read dates were recorded against each meter register for the sample checked.

Manual readings

I confirmed that the correct readings and read dates were recorded against each meter register for the sample checked.

WISE

AMI readings for NHH billed sites

All the reads matched the source files.

Hunet

AMI readings for NHH billed sites

All the reads matched the source files.

Manual readings

All the reads matched the source files.

HHR data received from agents

HHR data transmission was reviewed as part of AMS's agent audit and found to be compliant.

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.

Audit commentary

TODD

Stark

Data within Stark may be edited through Stark's front end, or by importing a replacement data file. Raw data remains in Stark even if it is later edited.

In the last audit, the audit trail did not correspond to a person as there was only one operator ID for Stark. Nova have created individual log ins which identify the operator. Compliance is confirmed.

Orion

A complete audit trail was viewed in Orion. The logs include the activity identifier, date and time, and an operator identifier.

EnergyMarket

Users do not edit meter reading and volume data in EnergyMarket. Data may only be cleared and reimported. This process occurs prior to completing each revision and can also be run manually where updated data is required.

Agents

The agent audit reports record compliance with this clause, except for EDM I. Non-compliance was recorded in EDM I's agent audit relating to manual downloads for FCLM meters read using MV90, because meter event logs were not obtained and checks for time differences were not conducted. This non-compliance has been cleared. FCLM now provide meter event files for manual downloads, which include any time differences. The files are manually reviewed by EDM I agents.

Hunet and WISE

The logs for the following activities were reviewed:

- **meter readings** - an audit trail is available for all meter readings,
- **registry notifications** - a compliant audit trail is recorded within the registry and within Hunet's system and WISE's PEBS system
- **switching files** - a compliant audit trail is recorded within the registry, and within Hunet's system and WISE's PEBS system, and
- **reconciliation reports** - a compliant audit trail is recorded within the allocation portal.

Audit outcome

Compliant

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

Code reference

Clause 10.4

Code related audit information

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

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

Audit observation

I reviewed the current terms and conditions.

Audit commentary

TODD

TODD's terms and conditions include arrangements for meter access and shutdowns and these clauses are mirrored in agreements with MEPs. Nova is also an ATH and the arrangements are also included in the instructions supplied to field personnel.

Hunet and WISE

Both Hunet and WISE'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

TODD

TODD's terms and conditions include arrangements for meter access and shutdowns and these clauses are mirrored in agreements with MEPs. Nova is also an ATH and the arrangements are also included in the instructions supplied to field personnel.

Hunet and WISE

Both Hunet and WISE's current terms and conditions with their customers includes consent to access for authorised parties for the duration of the contract.

Audit outcome

Compliant

2.7. 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.

Nova was requested to provide details of any installations with loss compensation.

Audit commentary

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

There are currently no error or loss compensation arrangements in place for TODD, Hunet or WISE.

Audit outcome

Compliant

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

Code reference

Clause 11.15B

Code related audit information

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

- the Authority to assign the rights and obligations of the trader under the contract to another trader if the trader commits an event of default under paragraph (a) or (b) or (f) or (h) of clause 14.41 (clause 11.15B(1)(a)); and*

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

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

Audit observation

I reviewed the current terms and conditions.

Audit commentary

The terms and conditions include this requirement for TODD, Hunet and WISE.

Audit outcome

Compliant

2.9. Connection of an ICP (Clause 10.32)

Code reference

Clause 10.32

Code related audit information

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

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

Audit observation

The new connection process was examined in detail to evaluate the strength of controls for TODD and Hunet. WISE does not deal with new connections.

Audit commentary

TODD

TODD's new connection application process varies by distributor. In most cases, the customer or the customer's agent requests a new connection from TODD, 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 TODD that a new ICP is to be created and seeks their approval.

Once the distributor has provided an ICP, it is entered into Orion and the registry is updated to 1,12 ("inactive new connection in progress") status. At the same time, a meter installation service request is

issued through the Salesforce JIT (Job Issue Tracking) system, a MEP nomination is processed on the registry, and an activity is recorded on the customer account in Orion.

New connections are monitored using:

1. The daily JIT open jobs report. The report includes date opened and date required fields and is used to identify open service requests which require follow up to determine whether they have been completed and/or obtain paperwork.
2. Orion activities, which allow follow up dates to be scheduled. When initially raised, the follow up date is set for two business days after the service order is raised.
3. The initial energisation data report shows ICPs which are at “new”, “ready” or “inactive new connection in progress” status and the current values recorded against each field. The report is checked daily to determine whether initial electrical connection dates have been populated for any of the ICPs, which are then investigated to confirm whether electrical connection has occurred so that the registry and Orion can be updated.
4. The Orion vs Registry awaiting meter install report shows ICPs where metering is recorded on the registry but not in Orion, and vice versa. The ICPs are investigated and Orion is updated as necessary.
5. The IECF vs certification date vs active date report identifies potential active date discrepancies which require investigation.
6. The electricity new connections report shows all ICPs at “new”, “ready” or “inactive new connection in progress status”. It is a snapshot of all registry and Orion information for the ICPs and is checked on an ad hoc basis to identify ICPs which remain at these statuses for extended periods.
7. Job progress reports provided by MEPs are reviewed. AMS provides daily process report on jobs raised, and Metrix provides weekly progress reports.

HHR new connections follow the process as NHH new connections. When determining the correct active date for HHR new connections, Nova reviews the HHR volume information to determine when consumption started.

Hunet

Hunet has very few new connections and do not actively pursue these. Due to the small volume, the new connection process is manual. Once the ICP has been created they claim the ICP and move it to the “inactive-new connection in progress” status and the MEP is nominated at the same time. They then await notification by way of the metering paperwork being returned from the MEP to then change the status to “active”. There is no automated interface between Hunet’s system and the registry. All changes are loaded directly to the registry by the operator. This process is discussed in more detail in **section 3.5**. Whilst the process is manual, due to the small volume handled, the process works.

There were three new connections during the audit period. In all cases there was an arrangement with the MEP. The “inactive-new connection in progress” status was applied, and the MEP was nominated at the same time for all ICPs.

Audit outcome

Compliant

2.10. Temporary Electrical Connection of an ICP that is not an NSP (Clause 10.33(1))

Code reference

Clause 10.33(1)

Code related audit information

A reconciliation participant may temporarily electrically connect a point of connection, or authorise 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 reconciliation participant is recorded in the registry as the trader responsible for the ICP*
- *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 temporary electrical connection.*

Audit observation

The new connection process was examined in detail for TODD and Hunet. WISE does not deal with new connections.

Audit commentary

TODD and Hunet's new connection processes ensure that all ICPs are claimed and taken to the "inactive new connection in progress" status. The MEP is decided at this point and nominated in the registry.

No examples of temporarily electrical connections were identified.

Audit outcome

Compliant

2.11. Electrical Connection of Point of Connection for an ICP that is not an NSP (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 reconciliation participant is recorded in the registry as the trader responsible for the ICP*
- *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. The registry list file and AC020 report were examined to confirm process compliance.

Audit commentary

TODD

The registry list file as at 06/01/20 and AC020 report for 01/01/19 to 31/12/19 were examined to confirm process compliance.

Metering information for active ICPs

The AC020 report recorded 22 active ICPs with metering category 9, null, or zero which did not have unmetered load indicated:

- 17 ICPs had timing differences, and the ICPs were decommissioned, made ready for decommissioning, or had meter details populated on the registry prior to the audit,
- MEP nominations were made and accepted by the MEP for three ICPs, and the registry is awaiting meter details, and
- ICP 0001681263PCCEC was confirmed to be metered, and it appears the MEP's records are incorrect (the MEP cannot locate any records on this but according to TODD and the previous retailer's records there is a meter present) so a site visit to confirm the meter details will be raised with the MEP following the COVID-19 lock down.

Meter certification for status changes to active

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

The new connection process ensures that an MEP is nominated, and meter certification is checked for all ICPs being reconnected. If an uncertified reconnected meter is already programmed to be replaced or recertified by the MEP no job is issued. Otherwise a service request is issued to arrange for the meters to be certified.

All 13 late certifications for new connections on the AC020 report were checked, and found to be timing differences which occurred due to late registry updates rather than late certification:

- ten ICPs had meter certification details added on the registry after the AC020 report was run, and
- three ICPs had backdated corrections to their active date processed, and the active date is now consistent with the meter certification date.

There were 101 late certifications for ICPs which moved from "inactive" to "active" status on the AC020 report. A sample of 20 late certifications for reconnections were checked:

- 11 ICPs had their meters replaced with fully certified metering at Nova's request following reconnection,
- three ICPs did not have their meters replaced because they switched out before this could be completed,
- three meter replacements are still in progress after being delayed by difficulty obtaining the customer's consent or other work being required before the meter can be replaced, and
- three reconnections were status corrections following discovery of consumption during a period with inactive status.

Meter recertification for unbridged meters

TODD provided a list of 12 ICPs which had bridged meters at some time during the audit period, and all were recertified on the date that they were unbridged.

WISE

Reconnected ICPs

Meter certification details were checked for all 238 ICPs reconnected during the audit period. All reconnected ICPs had full meter certification on their reconnection date.

Bridged meters

WISE provided a list of six ICPs which had bridged meters at some time during the audit period. All were appropriately recertified by the MEP when they were unbridged.

Hunet

New Connections

The new connection process ensures that an MEP is nominated.

Three new connections were completed during the audit period, all were certified within five business days of electrical connection.

Reconnected ICPs

Meter certification details were checked for all 119 ICPs reconnected during the audit period. All reconnected ICPs had full meter certification on their reconnection date.

Bridged meters

Hunet confirmed there were no bridged meters during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.11 With: 10.33A From: 14-May-19 To: 19-Dec-19	TODD 13 late certifications for new connections 101 late certifications for reconnections. 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 moderate. Processes are in place to identify metering certification issues and replace affected meters. The impact on settlement is recorded as minor because installations with expired or interim certification may be less accurate than certified metering installations.		
Actions taken to resolve the issue		Completion date	Remedial action status
TODD Response: Non-Compliance accepted. Comments: <ul style="list-style-type: none">13 late certifications for new connections<ul style="list-style-type: none">All 13 occurrences of late certifications are due to late registry updates not late certifications.Nova have processes in place to identify, instigate and monitor actions across		On-going	Identified

<p>certification and recertification on TODD traded ICPs.</p> <ul style="list-style-type: none"> • 101 late certifications for reconnections <ul style="list-style-type: none"> ○ Nova continue to work with MEPs on deployment programmes, BAU field jobs, turn downs due to additional electrical work required and consumer contact challenges etc ○ These challenges are on-going across the industry 		
Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> • Non-compliance will continue to occur until all uncertified metering across the industry has been certified. • Nova updated our service request template in 2019 to capture if uncertified metering was identified which results in a request to the MEP to attend and recertify • Nova will continue to reinforce with our MEPs through service level agreements and on-going performance reviews, certification of ICPs moving to active or changing to active is a critical and improved timeline(s) with registry updates to be focused on • Nova have implemented further data integrity controls across CAT9, null or zero sites to improve review and resolution outcomes • ICP 0001681263PCCEC will be addressed as and when COVID-19 restrictions allow 	On-going & May 2020	

2.12. Arrangements for line function services (Clause 11.16)

Code reference

Clause 11.16

Code related audit information

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

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

Audit observation

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

Audit commentary

TODD

TODD has arrangements for line function services with all relevant distributors. GXP is a mandatory ICP field in Orion and cannot be entered unless there is a matching value in the Orion maintenance table.

WISE

WISE trades on the Counties, Wellington Electricity, Unison, WEL Networks and Vector networks.

WISE has current use of system agreements in place with Counties, Vector, Unison, WEL Networks, Centralines, Wellington Electricity, and Orion.

The online application process specifies the areas where WISE can supply ICPs. When a customer application is received, WISE staff check the ICP on the registry to confirm the network is valid prior to acceptance.

Hunet

The process has not changed since the March 2019 audit. That audit findings are detailed below:

Hunet trade on 25 networks. A UoSA was signed before trading commenced on all additional networks. New networks are added to Hunet's system once an arrangement is in place, and there is a network validation check for all new connection applications and ICP switches to ensure arrangements are in place before trading.

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

TODD

TODD has appropriate arrangements with all relevant MEPs. An MEP cannot be entered against an ICP in Orion unless there is a matching value in the Orion maintenance table.

WISE

WISE ensures there is an arrangement in place for all MEPs whose meters they use. Staff check the ICP on the registry to confirm AMS, Metrix, or WEL Networks is the MEP, and that AMI metering is installed, prior to accepting a customer application.

Hunet

Hunet ensures there is an arrangement in place for all MEPs whose meters they use. New MEPs are added to Hunet's system once an arrangement is in place. There is an MEP validation in place for all ICPs switching in that ensures there is an arrangement in place before trading.

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

The requirements of this clause are understood and managed by TODD and Hunet. WISE does not deal with new connections.

Audit outcome

Compliant

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

Code reference

Clause 11.7(2)

Code related audit information

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

Audit observation

The new connection process was examined in detail. Findings on the timeliness of updates are listed in **section 3.5**. The registry list file and AC020 report were examined to confirm process compliance.

Audit commentary

The new connection process is detailed in **sections 2.9**. The processes in place ensure that the trader required information is populated as required by this clause.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 11.1

Code related audit information

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

Audit observation

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

The registry list file and AC020 report were examined, and a sample of late updates were checked as described in the audit commentary.

Audit commentary

TODD

Status and trader updates are processed manually using the registry web interface, and Orion is updated at the same time. TODD continue to have a culture where compliance is an integral part of how they do business, and there is a strong focus on ensuring that information updates are timely and accurate. A high level of compliance was demonstrated.

Status updates to “active”

TODD’s reconnection process is robust and is described in **section 3.8**. The timeliness of status updates to active (for reconnections) from the AC020 report for 01/01/19 to 31/12/19 is set out on the table below.

Status	Review period end	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Active	2015	419	73%	9.91
	2016	455	91%	3.4
	2017	652	80%	5
	2018	784	95%	3
	2020	165	89.20%	4.19

There were 24 reconnected ICPs where the notification date was more than 30 business days after the event date. The 15 latest updates were reviewed to determine the reason for the late update:

- 13 late updates were corrections, which were delayed while revenue assurance investigations confirmed that consumption on the disconnected ICPs was genuine, the corrections to active status were backdated to the date consumption commenced,
- two updates were delayed by late processing of reconnection paperwork, the user had missed updating the registry when they processed the paperwork, the issue was identified and corrected through TODD's daily discrepancy reporting.

The late updates were accurately processed from the correct event date.

Status updates to "inactive"

TODD's disconnection process is described in **section 3.9**. The timeliness of status updates to inactive from the AC020 report for 01/01/19 to 31/12/19 is set out on the table below.

Status	Review period end	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Inactive	2015	260	77.47%	7.53
	2016	118	90.67%	8.62
	2017	283	83.58%	12.73
	2018	87	96.28%	3.00
	2020	39	98.34%	3.95

There were 16 disconnected ICPs where the notification date was more than 30 business days after the event date. A sample of the ten latest (or all late) updates to each inactive status reason code were checked. Overall, I found that the late updates were predominantly caused by late receipt of paperwork and corrections.

1,4 Electrically disconnected vacant property	<p>All three late updates to 1,4 status were checked, and found to be caused by:</p> <ul style="list-style-type: none"> • data corrections, where there was a delay in confirming that the ICP was disconnected, and • a user missed updating Orion and the registry with the results of disconnection paperwork, which was detected and corrected through TODD's data validation processes.
1,5 Reconciled elsewhere	<p>There was one late status update to 1,5 status for 0000000001BECB2, caused by a backdated correction and switch event to transfer of ownership of Aniwhenua.</p>
1,6 Electrically disconnected ready for Decommissioning	<p>The 11 latest of the 12 late updates to 1,6 status were checked and found to be caused by late advice that decommissioning had been completed. For one ICP the paperwork initially provided by the distributor contained the wrong ICP, which caused a further delay while the issue was investigated.</p>
1,7 Electrically disconnected remotely by AMI meter	<p>The two late updates to 1,7 status were checked:</p> <ul style="list-style-type: none"> • one was a correction to reinstate an inactive status record, and • one was delayed because the service provider had sent paperwork to an individual's email address instead of the metering inbox. Late and missing disconnection paperwork is followed up using the JIT open jobs report, discussed further in section 3.9. <p>A sample of eight ICPs which did not have the AMI flag set to yes on the registry at the time of a 1,7 status event were checked. In all cases the AMI flag was updated to no by the MEP because meter communications were sometimes unreliable, and the MEP confirmed that all the affected meters were disconnected remotely by AMI meter.</p>
1,8 Electrically disconnected at pole fuse	<p>The ten latest updates to 1,8 status were checked:</p> <ul style="list-style-type: none"> • for nine ICPs, the network had disconnected the ICP, but had not notified the retailer promptly and/or paperwork was sent paperwork to an individual's email address instead of the metering inbox, and • one late update was part of a correction for inactive consumption.
1,9 Electrically disconnected due to meter disconnected	<p>All three late updates to 1,9 status were checked and found to be caused by late confirmation that the ICP was disconnected.</p>
1,10 Electrically disconnected at meter box fuse	<p>All three late updates to 1,10 status were checked, and found to be corrections because incorrect information on the ICP's status had previously been provided by the field services provider, the previous retailer had recorded an incorrect status, or an inactive date correction was required.</p>
1,12 Inactive new connection in progress	<p>Updates to 1,12 status are only considered to be late if they occur after the initial electrical connection date. There were no genuine late updates to 1,12 status because all three updates which were indicated to be late occurred prior to the initial electrical connection date.</p>

The late updates were accurately processed from the correct event date.

Trader updates

The timeliness of trader updates from the AC020 report for 01/01/19 to 31/12/19 is set out on 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
2018	393	91.59%	15.37
2020	430	96.04%	6.56

A sample of 30 late trader updates were checked:

ANZSIC updates - changes	The five latest updates were checked and confirmed to be ANZSIC code corrections. Non-compliance is recorded in section 3.6 because one of the updates was to an incorrect ANZSIC code which was later corrected, and two of the updates had incorrect event dates applied.
ANZSIC updates – new connections and switch ins	The ten latest updates were checked and found to be caused by backdated switch ins. Non-compliance is recorded in section 3.6 because four of the updates were to incorrect ANZSIC codes, which were later corrected.
UNM updates	A sample of five late updates made more than 17 business days after the event date were checked and found to be corrections to existing unmetered load and additions of new unmetered load. The updates were processed after investigation of unmetered load discrepancies identified during validation, or receipt of unmetered load details. Some of the updates were delayed by investigation and/or the staff member who normally completed the updates being away on leave. Further training has now been provided to other team members to prevent recurrence of this issue. Unmetered load details updates are processed by the billing team. The billing team advised that they do not normally adjust the trader event date when processing unmetered load corrections, and the update is automatically applied from the event date of the last trader record. I found that ICPs 0014603340ELCF7 and 0000540556TU6C9 had updates applied from incorrect dates, and this is recorded as non-compliance in section 3.7 .
Profile updates	A sample of five late updates were checked and found to be backdated corrections to move from NOD/NON or N8D/N8N profiles to RPS profile. The updates were processed correctly.
Submission type updates	A sample of five late updates were checked and found to be backdated corrections to HHR submission type for category 1 HHR meters. The updates were processed correctly.

The MEP nomination process is well managed. The MEP is nominated at the time the service order is raised, and files are prepared to perform bulk registry updates for AMI rollouts rather than updating each ICP individually on the registry. Orion does not store the proposed MEP, so no changes are made to Orion data when an MEP nomination is processed.

I checked the ten latest MEP nominations and found they were not genuine. All related to backdated corrections, where the previous trader event was reversed and replaced with a new event containing the corrected profile and the same values for all the other attributes (including the proposed MEP). Once the previous event was reversed, the new event falsely appeared to be a proposed MEP change, because it differed to the active record prior to it.

I checked a further five genuine late MEP updates, which were not associated with profile changes. All of the late updates were processed between one and five business days late because the meter replacement and change of MEP had been raised by the previous trader, or there was a delay in TODD receiving notification that the job was to be completed. The late nominations were completed at the request of

the MEP or once paperwork was received, and in all cases the correct MEP was nominated, and the correct dates were applied.

WISE

The timeliness of registry updates is shown in the table below.

Event	Year	Total ICPs	ICPs Notified Within 5 Days	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
Status updates						
Changes to active - reconnections	May 2019	176	150	26	3.6	85%
	Jan 2020	238	213	25	3.0	89.5%
Change to electrically disconnected	May 2019	338	368	19	3.6	95%
	Jan 2020	385	379	6	2.94	98.44%
Trader updates						
Trader updates	May 2019	84	73	13	2.9	87%
	Jan 2020	68	67	1	1.35	98.53%

Status updates to “active”

Reconnections typically occur when an inactive ICP switches in, or once payment has been received following a credit disconnection. Reconnection data is provided via FTP by Metrix, WEL Networks and AMS. The reconnection data is imported into PEBS and updates automatically.

The registry is updated manually for all reconnections. Any ICPs updated in PEBS, but not on the registry will be identified through the twice weekly match to the registry as discussed in **section 2.1**.

The timeliness of reconnection updates has improved from 85% to 89.5%, and it took an average of 3.0 business day to update the registry compared with 3.6 business days during the previous audit period. 25 of the 238 reconnection updates were late. Two of these were updated more than 15 business days after the event.

I checked 13 updates over six days and found:

- 12 of the ICPs were backdated switches and the status was updated soon after switch completion, and
- for one ICP, the previous trader updated the status for a prior period and WISE had to correct it from their switch in date.

Status updates to “inactive”

Disconnections are usually remote and are not processed if a switch is in progress. These tasks are processed in the same way as the reconnected ICPs. Status management is part of the business as usual processes including status misalignments. 98.44% of inactive updates occurred within five business days.

Six of the 385 updates were late, and three of these were more than 30 business days late. All late updates were examined, and I found:

- five were changes of reason code to “ready for decommissioning”, and
- one was due to a processing error.

Trader updates

One trader update was late. It was an MEP nomination correcting an incorrect MEP caused by the losing trader.

WISE nominates the MEP on the registry as part of the ICP switching in as required. No MEP rejections were received during the audit period. The registry notification files are monitored so if any were received these would be managed. Meter mismatches are also identified through the registry discrepancy process.

Hunet

The timeliness of registry updates is shown in the table below.

Event	Year	Total ICPs	ICPs Notified Within 5 Days	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
Status updates						
Changes to active - reconnections	Mar 2018	143	125	18	4.7	83%
	Jan 2019	160	150	8	3	94%
	May 2019	81	78	3	4.9	96%
	Jan 2020	119	115	4	3.5	96.64%
Change to electrically disconnected	May 2019	212	201	11	6.34	95%
	Jan 2020	207	204	3	1.83	98.55%
Trader updates						
Trader updates	May 2019	35	33	2	3	94.29%
	Jan 2020	26	16	10	221.35	61.54%

As detailed in **section 2.1**, Hunet have robust processes in place to manage the ICPs they are responsible for and overall, there was a high level of compliance found.

Status updates to “active”

Hunet issues service requests to the field and the service provider returns the completed service request to Hunet via email. These are then updated in their system and onto the registry. The “Disco Reco” tool automates the status updates and identifies outstanding jobs, which are followed up with the service provider.

The timeliness of reconnection updates has remained at a high level of over 96%, and it took an average of 3.5 business days for the updates. Only four of the 119 reconnection updates were late, and only one of those was more than 30 business days late.

These were checked and I found:

- two were due to backdated switches, in both instances Hunet updated the status as soon as the switch completed,
- one had an incorrect event date (2018 instead of 2019), which has now been corrected, and
- one was changed to inactive by the losing trader after the switch completed and Hunet then had to correct this.

Status updates to “inactive”

Three of the 204 updates were late, and three of these were more than 30 business days late. All late updates were examined, and I found:

- two were inadvertent status reversals, which were immediately corrected, and
- one was a change to 1,12 where the field notification was late.

There were no backdated changes to “ready for decommissioning”.

Trader updates

There were 10 late trader updates. I checked all of them and found:

- six were due to a review of all business ANZSIC codes in September 2019, resulting in some corrections being backdated several years,
- one was an inadvertent reversal then reinstatement,
- one was a meter change conducted from an MEP nomination before the ICP switched to Hunet, it was discovered two days late,
- one was a HHR ICP in a new region (Northpower), where processes had not been established, and
- one was an update to the PV1 profile where the presence of generation was unknown because it was not notified by the distributed generator.

When an MEP change is required, Hunet nominates the MEP on the registry and logs a service request for meter replacement at the same time. All meter change requests are tracked through the WIP file. All jobs in progress are recorded and tracked through to completion. This will capture any MEP rejections received. There have been none received during the audit period. Meter mismatches are also identified through the registry discrepancy process.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.3 With: Clause 10 Schedule 11.1 From: 22-Jan-19 To: 18-Dec-19	TODD, Hunet and WISE Some registry information was not updated within 5 business days of the event. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Strong Breach risk rating: 1

Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls over the timeliness and accuracy of status and trader updates are strong. The late updates were mainly caused by delays in receiving paperwork, or corrections where Nova had confirmed the initial update was incorrect.</p> <p>Hunet and WISE controls are robust and errors are identified and corrected by both Hunet and WISE as soon as possible.</p> <p>The audit risk rating is low as the vast majority of updates to the registry occur within the required timeframe.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>TODD – Hunet - WISE</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none">TODD, Hunet & Wise continue to display on-going commitment to timely status updates which is reflected in the compliance results.In instances where backdated corrections are made, we elect to provide complete and accurate information and acknowledge this creates contention with Clause 10 Schedule 11.1.		On-going	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>TODD, Hunet & WISE</p> <ul style="list-style-type: none">On-going work with our industry stakeholders to improve compliance time frames and where required we elect to provide complete and accurate information over timeliness.The focus will continue to be on accuracy of event dates and complete and accurate information.		On-going	

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

Retailers Responsibility to Nominate and Record MEP in the Registry

The AC020 trader compliance report was examined to confirm whether all active ICPs have an MEP recorded, and MEP nominations were accepted.

ICP decommissioning

The process for the decommissioning of ICPs was examined. The event detail report was reviewed to identify all ICPs decommissioned during the period. A diverse sample of ten decommissioned ICPs were checked to prove the process and confirm controls are in place.

Audit commentary

TODD

Retailers Responsibility to Nominate and Record MEP in the Registry

The new connection process is discussed in detail in **sections 2.9**. MEP nomination occurs when the ICP is at “inactive new connection in progress” (1,12) status as part of the service request process. All new connections have an MEP nominated.

The AC020 report for 01/01/19 to 31/12/19 recorded 21 active ICPs with metering category 9, null, or zero which did not have unmetered load indicated:

- 17 ICPs had timing differences, and the ICPs were decommissioned, made ready for decommissioning, or had meter details populated on the registry prior to the audit,
- MEP nominations were made and accepted by the MEP for three ICPs, and the registry is awaiting meter details, and
- ICP 0001681263PCCEC was confirmed to be metered, and it appears the MEP’s records are incorrect (the MEP cannot locate any records on this but according to TODD and the previous retailer’s records there is a meter present) so a site visit to confirm the meter details will be raised with the MEP following the COVID-19 lock down.

ICP Decommissioning

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

When an ICP is decommissioned, 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. TODD also advises the MEP responsible that the site is to be decommissioned, or has been decommissioned, dependent on the distributor’s process.

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

WISE

ICP Decommissioning

The process is detailed in **section 3.8**. WISE continues with their obligations under this clause. ICPs that are vacant and active, or inactive are still maintained in the database. WISE makes an attempt to read the meter at the time of removal and if this is not possible then the last actual meter reading is used. The MEP responsible is made aware that the site is to be decommissioned. A check of the eight ICPs decommissioned during the audit period confirmed compliance.

Retailers Responsibility to Nominate and Record MEP in the Registry

A check of the list file and found all active ICPs had an MEP recorded.

Hunet

ICP Decommissioning

The process is detailed in **section 3.8**. Hunet continues with their obligations under this clause. ICPs that are vacant and active, or inactive are still maintained in the database. Hunet makes an attempt to read the meter at the time of removal and if this is not possible then the last actual meter reading is used. The MEP responsible is made aware that the site is to be decommissioned. The sample confirmed compliance.

Retailers Responsibility to Nominate and Record MEP in the Registry

The new connection process ensures that all ICPs are taken to “inactive - new connection in progress” and the MEP nomination is sent at the same time. A check of the list file and found all active ICPs had an MEP recorded.

Audit outcome

Compliant

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

Code reference

Clause 9 Schedule 11.1

Code related audit information

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

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

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

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

Audit observation

The new connection process was examined in detail. The AC020 trader compliance report was reviewed, and a sample of late updates were examined.

The accuracy of all status event dates for new connections was checked by comparing the earliest active date, meter certification date (if available) and initial electrical connection date (if available) using the AC020 report. A sample of discrepancies were checked against supporting information to confirm the correct status date.

Audit commentary

TODD

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” (1,12) status as part of the service request process.

The timeliness of status updates to inactive new connection in progress status is set out on the table below. All three ICPs with the “inactive new connection in progress” status entered more than five business days after the event date had their status updated prior to electrical connection.

Review period end	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
2015	49	72%	6.71
2016	8	94%	
2017	0	100%	2
2018	3	99%	0
2019	3	100%	-

The timeliness of status updates to active (for new connections) is set out on 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	183	11%	21.7
2016	6	94%	2.3
2017	7	97%	2.0
2018	7	97%	2.3
2020	34	96.21%	2.18

There were two ICPs where the notification date was more than 30 business days after the event date. The 15 latest updates were reviewed to determine the reason for the late update. Six late updates were corrections, and nine late updates were delayed by late receipt of connection information.

Two of the updates were processed from an incorrect date, and the discrepancies were detected and corrected through TODD's validation processes.

New connection information accuracy

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 472 ICPs with date discrepancies, and 457 were confirmed not to be genuine at the time of the audit:

- 423 ICPs had a meter certification date which matched the active status date, but the initial electrical connection date was not populated by the distributor,
- 16 ICPs were unmetered or were metered but the MEP had not updated certification details on the registry, in all cases the initial electrical connection date and active date matched,
- 15 ICPs were timing differences, and the missing information causing the discrepancy was populated prior to the audit, and
- three ICPs were connected as unmetered builders' temporary supplies prior to having meter certification, and the initial electrical connection date and active date matched.

The remaining 15 ICPs were checked. I confirmed that TODD's active status dates were correct except:

ICP Identifier	Applied active status event date	Correct active status event date
0006053840ALA07	08/08/2019	6/08/2019
1002063909LC22F	17/07/2019	15/07/2019

The status dates were not corrected because the ICPs have now switched to other retailers.

WISE

WISE did not have any new connections during the audit period, and they do not intend to deal with any in the future.

Hunet

As detailed in **sections 2.9, 2.11 and 3.2**, Hunet's new connection process is that they will only take an ICP to "active" once they receive the metering paperwork from the MEP confirming metering has been certified and energised.

Analysis of the event detail report showed two of three new connections had status updates processed on time:

Event	Year	Total ICPs	ICPs Notified Within 5 Days	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
Changes to active - new connections	Oct 17	5	5	0	3.5	100%
	Mar 18	2	1	1	24	50%
	Jan 19	2	2	0	4	100%
	Jan 20	3	2	1	8.33	66.67%

The one late update was due to late notification of electrical connection by the MEP.

The registry was accurately populated for all new connections.

Audit outcome

Non-compliant

Non-compliance	Description	
<p>Audit Ref: 3.5</p> <p>With: Clause 9 of schedule 11.1</p> <p>From: 31-Jan-19</p> <p>To: 02-Dec-19</p>	<p>TODD</p> <p>34 late updates to active status for new connections.</p> <p>ICP 0006053840ALA07 has active status recorded from 08/08/19 but should have active status recorded from 06/08/19.</p> <p>ICP 1002063909LC22F has active status recorded from 17/07/19 but should have active status recorded from 15/07/19.</p> <p>Hunet</p> <p>Late registry update for one new connection.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>	
Audit risk rating	Rationale for audit risk rating	
Low	<p>The controls over the timeliness and accuracy of new connection status updates are strong.</p> <ul style="list-style-type: none"> The late updates were caused by delays in receiving paperwork, or corrections where TODD had confirmed the initial update was incorrect. The inaccurate updates appear to be isolated and caused by manual data entry errors, which were not corrected because the ICPs later switched out to another trader. <p>The impact on settlement and participants is minor based on the number of genuine exceptions identified; therefore, the audit risk rating is low.</p>	
Actions taken to resolve the issue		Completion date
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> 34 late updated to active status for new connections <ul style="list-style-type: none"> Timely updates to the registry continue to remain a focus. Nova focus on achieving a high level of compliance with timely updates and on- 		<p>On-going</p> <p>Identified</p>

<p>going strong relationships with stakeholders to influence improved outcomes.</p> <ul style="list-style-type: none"> ICP 0006053840ALA07 & ICP 1002063909LC22F incorrect status recorded <ul style="list-style-type: none"> Both instances were human error. The ICPs switched before the incorrect updates could be corrected. <p>Hunet</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> 1 new connection late registry update due to delays receiving paperwork from the MEP. Hunet actively monitor and engage with our stakeholders to gain complete and accurate information in a timely manner. <p>Actions:</p> <ul style="list-style-type: none"> 1 new connection late registry update <ul style="list-style-type: none"> Update was made as soon as paperwork received from the MEP. 		
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>TODD</p> <ul style="list-style-type: none"> Data integrity reporting will be reviewed and updated to retain focus on ICPs that are updated incorrectly, if the discrepancy continues to exist it will continue to be visible until resolved Nova will continue to actively work on updating status' in a timely manner. Refresher training was provided to the wider team May 2020 and continues to be a team discussion and focus area on-going. <p>Hunet</p> <ul style="list-style-type: none"> We will continue to actively work on updating status in registry at the earliest timeframe possible 	<p>TODD on-going & May 2020, 30 June 2020</p> <p>Hunet On-going</p>	

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

Code reference

Clause 9 (1(k) of Schedule 11.1

Code related audit information

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

Audit observation

The process to capture and manage ANZSIC codes was examined.

TODD

The registry list file as at 06/01/20 and AC020 trader compliance report for 01/01/19 to 31/12/19 were examined to check ANZSIC codes, including active ICPs with codes in the T99 series, and ICPs with meter category 2 or 3 and domestic ANZSIC codes.

To confirm the validity of the ANZSIC codes selected I checked a diverse sample of 100 active ICPs across the 20 most popular ANZSIC codes. Each code checked was applied to at least 0.2% of the total ICPs.

WISE

I checked the list file and the audit compliance report as at 17/01/20 to identify ANZSIC codes that were missing, unknown and residential on Category 2 or above installations. I also checked a random sample of 32 ICPs against google streetview.

Hunet

I checked the list file and the audit compliance report as at 17/01/20 to identify ANZSIC codes that were missing, unknown and residential on Category 2 or above installations. I also checked a random sample of 73 ICPs against google streetview.

Audit commentary

TODD

TODD ensure that all new customers are assigned an ANZSIC code. A daily exception report for ANZSIC codes is used to identify missing codes, T99 series codes, short codes (where three digits follow the letter prefix instead of six), and instances where the customer type or ICP price category code is inconsistent with the ANZSIC code. Codes are checked and updated as required.

The validity of ANZSIC codes was checked, and I found:

- no ICPs with blank or T99 series ANZSIC codes,
- one ICP with meter category three or higher and a residential ANZSIC code, the code was incorrect, and was updated during the audit, and
- ten ICPs with meter category two and residential ANZSIC codes, eight ICPs had the correct code applied, and two ICPs had incorrect codes, which were updated during the audit.

I checked a diverse sample of 100 active ICPs across the 20 most popular ANZSIC codes, and a sample of 15 ANZSIC code updates made during the audit period. The following exceptions were identified:

- Six ICPs had incorrect ANZSIC codes applied, and five were corrected during the audit. ICP 0000012956WE988's customer is a meat processor and wholesaler, but the H440000 (accommodation) ANZSIC code is still applied on the registry.
- Two ICPs have incorrect trader event dates applied on the registry:

ICP	Applied trader event date	Correct trader event date
0000551085NR750	18/02/2016	6/11/2019
1000012524BP6C4	02/07/2016	2/06/2016

WISE

No errors were identified and no ICPs had missing or unknown ANZSIC codes.

Hunet

No errors were identified and no ICPs had missing or unknown ANZSIC codes.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.6</p> <p>With: 9 (1(k) Schedule 11.1</p> <p>From: 19-Dec-19</p> <p>To: 03-Apr-20</p>	<p>TODD</p> <p>Nine ICPs had incorrect ANZSIC codes applied, and eight were corrected during the audit. ICP 0000012956WE988's customer is a meat processor and wholesaler, but the H440000 (accommodation) ANZSIC code is still applied on the registry.</p> <p>ICPs 0000551085NR750 and 1000012524BP6C4 have incorrect trader event dates applied on the registry.</p> <p>Potential impact: None</p> <p>Actual impact: None</p> <p>Audit history: None</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls are strong. There are preventative controls are in place to ensure that ANZSIC codes are initially recorded accurately, and monitoring controls to detect invalid ANZSIC codes and discrepancies.</p> <p>The audit risk rating is low this has no direct impact on submission accuracy.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> Due to a task changeover within the team during the audit period this has contributed to an increase in incorrect ANZSIC codes being applied and associated trader event date misalignment. 9 ICPs had incorrect ANZSIC codes, 8 were corrected <ul style="list-style-type: none"> Incorrect ANZSIC codes applied due to human error. ICP 0000012956WE988 incorrect <ul style="list-style-type: none"> Incorrect ANZSIC code applied due to human error 		April 2020	Identified

<ul style="list-style-type: none"> ICPs 0000551085NR750 and 1000012524BP6C4 incorrect trader event dates <ul style="list-style-type: none"> Incorrect trader event dates occurred due to human error <p>Actions:</p> <ul style="list-style-type: none"> All corrections have been completed April 2020 		
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>TODD</p> <ul style="list-style-type: none"> Nova recognises the importance on ensuring correct and accurate ANZSIC codes are applied and reviewed regularly Refresher training provided to the wider team and process updated to revisit the need for correct and accurate ANZSIC codes and associated event date updates. 	30 May 2020	

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 report were examined to identify:

- any ICPs where unmetered load is recorded by the distributor but not the trader, and
- any ICPs where the trader's unmetered load is not within ± 1 kWh of the distributor's figure (where it is possible to calculate this if the Distributor is using the recommended format).

Audit commentary

TODD

The registry list file as at 06/01/20 and AC020 trader compliance report for 01/01/19 to 31/12/19 were examined. TODD supplies 326 active ICPs with unmetered load indicated. 91 ICPs have shared unmetered load and 235 ICPs have standard unmetered load. No ICPs with distributed unmetered load are supplied.

Unmetered load is validated using:

- the load check report, which compares Orion and registry unmetered load details and identifies any discrepancies or changes, and

- the new UML report, which identifies any new connections or switch ins with unmetered load so that the unmetered load can be validated and updated as necessary.

Review of the AC020 report found:

- all unmetered ICPs have daily unmetered kWh recorded,
- no ICPs where the distributor had unmetered load recorded, but TODD did not, and
- one ICP with shared unmetered load where the shared unmetered load was more than ± 0.01 kWh different to the recalculation based on the distributor's unmetered load.

ICP Identifier	Unmetered Load Details - Trader	Unmetered Load Details - Distributor	Trader daily kWh	Distributor daily kWh
0000540556TU6C9	1196;12;6 x Shared ICPs	1196;12;6 x Shared ICPs	2.628	2.392

ICP 0000540556TU6C9 switched in on 19/10/19. There was a delay in identifying the discrepancy and updating the registry because the staff member responsible had been away on leave. Some errors were made when processing the correction in April 2020:

- when the daily unmetered kWh value was updated on the registry, it was corrected from the previous trader event date (13/03/20) instead of the switch in date (19/10/19), and
- when Orion was corrected, the unmetered load register started on 27/11/19 with an opening read of 0 and the latest reading on 03/03/20 was 235. The unmetered load register was expected to start on 18/10/19² with a read of 0 and the reading on 03/03/20 was expected to be 328 (137 days x 2.392 kWh), a difference of +93 kWh.

During the audit a correction was processed on the registry and on the meters tab in Orion, but Orion's reading and submission information for the UML register remains incorrect. Nova intends to process a correction, and provide revised submission data to the reconciliation manager.

The billing team advised that they do not normally adjust the trader event date when processing unmetered load corrections, and the event date of the last trader record is automatically applied. In addition to ICP 0000540556TU6C9 which was incorrectly updated from the previous event date above, review of late trader updates found ICP 0014603340ELCF7 had unmetered load details populated effective from 01/07/16 (the date of the last trader update) instead of 17/09/19.

Description	Recommendation	Audited party comment	Remedial action
Event dates for unmetered load corrections on the registry	Adjust the process for unmetered load corrections to ensure that they are applied from the correct event date on the registry.	<p>TODD</p> <p>Response:</p> <p>Recommendation accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> Adjust process for unmetered load corrections re correct event date on registry Updated data to be added to integrity reporting to include event dates to 	Identified

² At 11.59.59pm on the last day of responsibility for the previous retailer, to ensure that all unmetered consumption was captured.

Description	Recommendation	Audited party comment	Remedial action
		<p>enable swift identification if event date misalignment needs correcting.</p> <p>Actions:</p> <ul style="list-style-type: none"> Integrity reporting to be updated to include event dates from registry. Update to be completed by 30 May 2020 <ul style="list-style-type: none"> Correction to ICP 0014603340ELCF7 completed April 2020. 	

WISE

Wise does not have any unmetered load and they do not intend to deal with unmetered load. Validation is in place to prevent ICPs switching in with unmetered load or having unmetered load added.

Hunet

Hunet does not have any unmetered load and they do not intend to deal with unmetered load. Validation is in place to prevent ICPs switching in with unmetered load or having unmetered load added.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 3.7</p> <p>With: Clause 9(1)(f) of Schedule 11.1</p> <p>From: 01-Jul-16</p> <p>To: 03-Mar-20</p>	<p>TODD</p> <p>The trader daily unmetered kWh was incorrect on the registry for ICP 0000540556TU6C9. A correction was processed during the audit.</p> <p>The readings recorded against the unmetered register for 0000540556TU6C9 do not start from the switch in date, and do not include all expected unmetered load.</p> <p>An incorrect trader event date was recorded for the addition of unmetered load on the registry for 0014603340ELCF7. 01/07/16 was recorded instead of 17/09/19.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>Controls are rated as moderate. They are usually sufficient to ensure that unmetered load discrepancies are identified and resolved.</p> <p>The audit risk rating is low. The data for 0000540556TU6C9 has been partially corrected and the impact on submission is 93 kWh.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> Billing team processes currently only check for load variance between Orion and Registry Process and knowledge gap within the team have caused the inaccuracies <p>Actions:</p> <ul style="list-style-type: none"> ICP 0000540556TU6C9 error with switch in date and expected unmetered load corrected April 2020 <ul style="list-style-type: none"> Invoicing has been reversed and corrected ICP 0014603340ELCF7 incorrect trader event date corrected April 2020 	April 2020	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> Billing team process checks for load variance between Orion and Registry and has been updated to also include event date errors. Process update implemented April 2020 	April 2020	

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

Code reference

Clause 17 Schedule 11.1

Code related audit information

The ICP status of “active” is managed by the relevant trader and indicates that:

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

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

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

Audit observation

The new connection process was examined in detail, and:

- the timeliness and accuracy of data for new connections is assessed in **section 3.5**, and

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

TODD

The registry list file as at 06/01/20 and AC020 trader compliance report for 01/01/19 to 31/12/19 were reviewed to determine compliance.

WISE and Hunet

The registry list file as at 17/01/20 and AC020 trader compliance report for 01/06/19 to 17/01/20 were reviewed to determine compliance.

Audit commentary

TODD

Requirements for active ICPs

Orion requires at least one meter to be created for each ICP. If an ICP is unmetered, a “dummy” meter is created.

TODD’s policy is only to allow one customer account per ICP on a particular date. It is possible to create overlaps where more than one customer is responsible for an ICP on a single day in Orion, and I saw evidence of this in **section 4.10** for ICP 0000050781CPF0C which was active against two customer accounts for 05/12/19 to 06/12/19. The overlap was created because an error was made when transferring the ICP between the two accounts. The reconciliation team has processes in place to identify and correct these overlapping accounts.

Reconnections

Reconnection service requests are issued through the Salesforce JIT (Job Issue Tracking) system, and a note is recorded on the customer account in Orion. A JIT open jobs report is run daily, and includes date opened and date required fields which are used to identify open service requests which require follow up to determine whether they have been completed and/or obtain paperwork.

All jobs raised request paperwork be returned to the metering team’s shared email inbox. The metering team receive the paperwork and process the status update in the registry and Orion (including readings where available) and close the job in JIT. Daily discrepancy reporting identifies ICPs which have different statuses recorded in Orion and the registry, which are investigated and resolved.

Where a late update is required a “metering compliance” activity is recorded against the customer account in Orion. This explains the non-compliance, why it occurred, who was responsible and any actions which could have been taken to prevent the breach. These metering compliance activities are discussed at the metering team’s fortnightly meetings, and reviewed to identify common themes and issues, and changes that could be made to prevent further breaches.

The accuracy of updates for reconnections were checked by reviewing a sample of 15 updates to confirm that the correct status and dates were applied. All were confirmed to be correct.

New connections

The new connection process is described in detail in **section 2.9**. The status is updated to active once paperwork is received confirming that the ICP has been connected. Validation is in place to identify ICPs where the distributor or MEP has indicated that the ICP is connected, but trader details have not been updated, and new connections are closely monitored.

The AC020 report identified one ICP with an initial electrical connection date populated which had not been made active. The difference related to timing, and the status was updated on the registry prior to the audit.

As described in **section 3.5**, 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 472 ICPs with date discrepancies, and 457 were confirmed not to be genuine at the time of the audit. The remaining 15 ICPs were checked, and I confirmed that TODD's active status dates were correct except:

ICP Identifier	Applied active status event date	Correct active status event date
0006053840ALA07	08/08/2019	6/08/2019
1002063909LC22F	17/07/2019	15/07/2019

The status dates were not corrected because the ICPs have now switched to other retailers.

Two of the late updates checked in **section 3.5** were initially processed from an incorrect date. Compliance is recorded because the discrepancies were detected and corrected through TODD's validation processes.

WISE

Reconnections

Reconnections typically occur when an inactive ICP switches in, or once payment has been received following a credit disconnection. Reconnection data is provided via FTP by IntelliHUB, WEL Networks, and AMS. The reconnection data is imported into PEBS and updates automatically.

The registry is updated manually for all reconnections. Any ICPs updated in PEBS, but not on the registry will be identified through the twice weekly match to the registry as discussed in **section 2.1**.

As recorded in the last audit, if an ICP is reconnected within three business days (it was five days during the last audit) of disconnection it will not be updated to inactive on the registry, so a registry update to active may not be required on reconnection. This is discussed further in **section 3.9**.

A typical sample of five status changes to active were checked, all had the correct status and date applied.

Hunet

New connections

Hunet's system will not allow more than one party per ICP, nor will it allow an ICP to be set up without both a meter and Metering Equipment Provider. Hunet's processes ensure that there is only one customer associated with any ICP and that there is a method of quantification.

Three new connections were checked, and the active date was consistent with the meter certification date and the initial electrical connection date.

Reconnections

As discussed in **section 3.3**, Hunet use a robotic tool called the "Disco Reco Manager" which automatically updates the ICPs status once the service request is returned. The operator raises a work request via the excel form provided by MEPs to reconnect or disconnect an ICP. This lodges a task in the "Disco Reco" management file. Once the job is complete the robot completes the task updating both Hunet's system and the registry overnight. The operations manager checks that all jobs have been processed as expected.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.8</p> <p>With: 17 Schedule 11.1</p> <p>From: 05-Dec-19</p> <p>To: 06-Dec-19</p>	<p>TODD</p> <p>ICP 0000050781CPF0C was active against two customer accounts for 05/12/19 to 06/12/19. The ICP later switched out effective from 06/12/19.</p> <p>ICP 0006053840ALA07 has active status recorded from 08/08/19 but should have active status recorded from 06/08/19.</p> <p>ICP 1002063909LC22F has active status recorded from 17/07/19 but should have active status recorded from 15/07/19.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are rated as strong, because there are good preventative and detective monitoring controls in place. The inaccurate updates appear to be isolated and caused by manual data entry errors. Two were not corrected because the ICPs later switched out to another trader.</p> <p>The audit risk rating is low based on the number and nature of the discrepancies found.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> ICP 0000050781CPF0C active status recorded incorrectly & switched out <ul style="list-style-type: none"> The issue is both a timing issue and human error. The ICP was mid switch when the account was closed and ICP moved to vacant process. When the switch out process completed the incorrect date/read was used. Had the setting 		May 2020	Identified

<p>up of the vacant process not occurred, the incorrect date/read would not have been used.</p> <ul style="list-style-type: none"> ○ The switching process flow was interrupted by the vacant process being completed. ○ The impacts of this are seen across 4.10 & 4.16 • ICP 0006053840ALA07 active status recorded incorrectly <ul style="list-style-type: none"> ○ Refer 3.5 • ICP 1002063909LC22F active status recorded incorrectly <ul style="list-style-type: none"> ○ Refer 3.5 <p>Actions:</p> <ul style="list-style-type: none"> • ICP 0000050781CPF0C corrections completed May 2020 		
Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> • Review of data integrity reporting will be undertaken, and improvements implemented 	Q3	

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 process to manage ICPs at inactive statuses was examined, including:

- ICPs at “inactive new connection in progress status” for over 24 months,
- ICPs with an initial electrical connection date populated which did not have an active status record, and
- ICPs where consumption had been identified during a period with inactive status.

The findings in relation to the timeliness of updates to registry are recorded in **section 3.3**.

TODD

The registry list file as at 06/01/20 and AC020 trader compliance report for 01/01/19 to 31/12/19 were reviewed to determine compliance.

WISE

The process to manage ICPs at the other inactive statuses was examined. A sample of at least five active updates to each inactive status (or all if less than five were available) were checked using the typical characteristics methodology. The findings in relation to the timeliness of updates to registry are recorded in **section 3.3**.

Hunet

The inactive status of “new connections in progress” is used for all new connections. The list file was examined to identify any ICPs that had been at the “Inactive - new connection in progress” with an initial electrical connection date populated and for any of these ICPs that had been at this status for greater than 24 months. None were found.

The process to manage ICPs at the other inactive statuses was examined. A sample of at least five updates to each inactive status (or all if less than five were available) were checked using the typical characteristics methodology. The findings in relation to the timeliness of updates to registry are recorded in **section 3.3**.

Audit commentary

TODD

Inactive new connection in progress

The status “inactive new connection in progress” is used by TODD to claim new ICPs as soon as they become “ready”. No genuinely late updates to “inactive new connection in progress” status were identified.

The AC020 report identified one ICP with an initial electrical connection date populated which had not been made active. The difference related to timing, and the status was updated on the registry prior to the audit.

Review of the registry list confirmed that no ICPs have been at “inactive new connection in progress” status for more than 24 months.

Inactive Status (excluding new connection in progress)

Disconnection service requests are issued through the Salesforce JIT (Job Issue Tracking) system, and a note is recorded on the customer account in Orion. A JIT open jobs report is run daily, and includes date opened and date required fields which are used to identify open service requests which require follow up to determine whether they have been completed and/or obtain paperwork.

As discussed in **section 3.8**, all jobs raised request paperwork be returned to the metering team’s shared email inbox. The metering team receive the paperwork and process the status update in the registry and Orion (including readings where available) and close the job in JIT. Daily discrepancy reporting identifies ICPs which have different statuses recorded in Orion and the registry, which are investigated and resolved.

Where a late update is required a “metering compliance” activity is recorded against the customer account in Orion. These activities are discussed at the metering team’s fortnightly meetings, and reviewed to identify common themes and issues, and changes that could be made to prevent further breaches.

A diverse sample of 43 updates to disconnected status were checked, and I confirmed that the updates were applied from the correct date, and that the correct status reason codes were applied.

A list of 46 ICPs where consumption while inactive had been identified by TODD was checked to confirm whether the correct statuses were applied. 34 ICPs had less than one unit of consumption per register during the inactive period, suggesting that the meters may have been between digits. The nine ICPs with consumption of two or more units per register were checked.

- Seven ICPs had their statuses corrected to active for the entire period with inactive consumption.
- ICP 1000021444BP3FC was disconnected on 12/02/19, and there was movement between the disconnection read on 12/02/19 (5573) and next actual read on 28/02/19 (5642). The ICP was returned to active status effective from 28/02/19, although it is possible that some of the

consumption may have occurred between 12/02/19 and 27/02/19. Because the date that consumption began cannot be pinpointed, the status should be corrected from the earliest date that consumption could have occurred from, which is 12/02/19. The reconciliation process ensures that consumption is captured and reported during inactive periods, but the incorrect status is recorded as non-compliance below and in **section 2.1**.

- ICP 1000024116BP954 was disconnected on 31/10/19 (589) and switched out on 21/11/19. The switch event reading on 20/11/19 (593) was provided by Wells, and AMI readings provided between the disconnection on 21/10/19 and Wells reading on 20/11/19 were consistently 594. Noting that AMI readings are rounded on import, and Wells truncates readings to only record digits before the decimal place it appears that the ICP was genuinely disconnected during the period, but the disconnection read was incorrectly recorded. The status is correct during TODD's period of supply, and the reconciliation process ensures that all consumption is captured and reported.

The consumption for these ICPs has been submitted as TODD submits volumes regardless of the ICPs status. This will affect the accuracy of ICP days and this is discussed in **section 11.2**.

ICPs which had some consumption during an inactive period during the 2018 audit were re-checked. I found one had its status corrected to active for the entire period with consumption. The other nine ICPs did not have their statuses corrected because they had switched out.

WISE

Disconnections are usually remote and are not processed if a switch is in progress. These tasks are processed in the same way as the reconnected ICPs.

Disconnection data is provided via FTP by IntelliHUB, WEL Networks, and AMS. The reconnection data is imported into PEBS and updates automatically.

If disconnected for credit, the registry is not updated immediately. WISE maintains a list of customers sent to the MEPS for disconnection, with the disconnection date. Each day they compare the list of customers disconnected for credit, to an updated list with the reconnected customers removed.

- If the ICP is reconnected, the customer is taken off the disconnected list and the site is left as "active" on the registry.
- If the customer remains on the disconnected list for a period of three business days or more, the registry is updated to "inactive" effective from the first day the ICP was disconnected, and the customer account is closed in PEBS. Late updates to inactive status are recorded as non-compliance in **section 3.3**.

WISE apply the correct disconnection date to the account. Previously the disconnection read was not entered onto the customer account if the disconnection read occurred after the date the account was terminated. Therefore, because only reads recorded on a customer account were used by the reconciliation process, this resulted in under reporting of consumption where disconnection occurred after the account termination date. In June 2019, WISE changed their process and now apply the disconnected read for the switch event meter reading date when the ICP switches away. In these cases, the active vacant consumption is reconciled.

To identify ICPs with incorrect statuses, WISE completes the following check twice weekly:

- a match between the statuses recorded in PEBS and on the registry as described in **section 2.1**, and
- review of a report of vacant and inactive ICPs with consumption after the final read date on the customer account.

WISE provided a list of five ICPs with inactive status and consumption after the final reading on the customer's account. All examples had either one or two kWh recorded and in all cases the consumption was submitted.

I reviewed the reason codes and disconnection dates for a diverse sample of 10 disconnections and found all had the correct status date and code applied.

Hunet

Inactive - New Connection in progress

No ICPs were found at the status "Inactive - new connection in progress" with an initial electrical connection date populated, and none have been at this status for more than 24 months.

Inactive Status (excluding new connection in progress)

The status of "Inactive" is only used once Hunet's approved contractor has confirmed that the ICP has been disconnected. As discussed in **section 3.3**, Hunet use a robotic tool called the "Disco Reco Manager" which automatically updates the ICPs status once the service request is returned. The operator raises a work request via the excel form provided by MEPS to reconnect or disconnect an ICP. This lodges a task in the "Disco Reco" management file. Once the job is complete the robot completes the task updating both Hunet's system and the registry overnight. The operations manager checks that all jobs have been processed as expected.

The sample of 10 ICPs with "inactive" statuses checked confirmed the statuses aligned between the registry and Hunet's database. Examination of the late inactive updates checked in **section 3.3**, found all ICPs had correct statuses, it was just that the updates were late.

Hunet provided a list of five ICPs with consumption while disconnected, which were reviewed. In all cases, the consumption occurred after the ICPs had switched out due to reconnection by the gaining trader.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 3.9</p> <p>With: Clause 19 Schedule 11.1</p> <p>From: 12-Feb-19 To: 12-Apr-20</p>	<p>TODD</p> <p>ICP 1000021444BP3FC incorrectly had inactive status recorded between 12/02/19 and 27/02/19. Consumption occurred between the 12/02/19 and 28/02/19 reads. Because the date that consumption began cannot be pinpointed, the status should be corrected from the earliest date that consumption could have occurred from, which is 12/02/19.</p> <p>WISE</p> <p>Disconnected ICPs not changed to inactive status unless they are disconnected for more than three days.</p> <p>Potential impact: Low</p> <p>Actual impact: None</p> <p>Audit history: Once</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>

Preventative actions taken to ensure no further issues will occur	Completion date	
<p>TODD</p> <ul style="list-style-type: none"> Our focus will continue to be on accuracy of event dates and complete and accurate information. Our data integrity reporting remains a focus area reviewed regularly to identify opportunities for refinement. <p>WISE</p> <ul style="list-style-type: none"> Our focus will continue to be on accuracy of event dates and complete and accurate information. We will monitor disconnected ICPs on an on-going basis and where required, look for opportunities for improvements. 	<p>TODD on-going</p> <p>WISE on-going</p>	

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

Code reference

Clause 15 Schedule 11.1

Code related audit information

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

Audit observation

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

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

Audit commentary

TODD

Once the distributor has provided an ICP at "ready" status, it is entered into Orion and the registry is updated to "inactive new connection in progress" status.

The electricity new connections report shows all ICPs at "new", "ready" and "inactive new connection in progress status". It is a snapshot of all registry and Orion information for the ICPs and is checked on an ad hoc basis to identify ICPs which remain at these statuses for extended periods. In addition to this, Orion activities and the suite of reports described in **section 2.9** are used to monitor new connections.

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, and none have been received during the audit period.

Inactive new connection in progress status

Review of the registry list for 06/01/20 confirmed that no ICPs have been at "inactive new connection in progress" status for more than 24 months.

New status

One ICP had been at “new” for more than 24 months and had been decommissioned by the time the audit was completed.

Ready status

Four ICPs had been at “ready” status for more than 24 months. One ICP was decommissioned by the time the audit was completed, the other three ICPs are part of a deconsolidation project where multiple connections had been combined into single ICPs to reduce fixed daily charges for the customer. TODD is continuing to work with Counties Power to resolve the issues around these ICPs.

WISE and Hunet

No ICPs were found at the status “Inactive - new connection in progress” with an initial electrical connection date populated, and none have been at this status for more than 24 months.

Audit outcome

Compliant

4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

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

Code reference

Clause 2 Schedule 11.3

Code related audit information

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

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

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

Audit observation

TODD

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

WISE

The switch gain process was examined to determine when WISE deem all conditions to be met. A typical sample of 12 ICPs were checked to confirm that these were notified to the registry within two business days, and that the correct switch type was selected.

Hunet

The switch gain process was examined to determine when Hunet deem all conditions to be met. A typical sample of 20 ICPs were checked to confirm that these were notified to the registry within two business days, and that the correct switch type was selected.

Audit commentary

TODD

TODD's processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. An NT is raised from Orion once an agreement is reached and credit approval is received, and the withdrawal process is used if the customer changes their mind.

TODD uses several reports to ensure that NT files are issued on time, which are reviewed daily:

1. The **Preswitch Error Report** identifies NT files held by Orion where an NW process is underway, or if an NT needs to be held until closer to the switch date to prevent an event date breach from occurring.
2. The **Held Switches Report** identifies NT files which are held for credit approval or further application information. Orion normally automatically releases the NT when the required

information is provided. The report is reviewed to identify ICPs which have continued to be held after all information is received, so that they can be manually released.

3. The **Switch Tab Issues Report** identifies ICPs where Orion information is incomplete or inconsistent and will prevent the NT file from being sent to the registry, such as a blank MARIA ID.

Switch type is selected based on information provided by the customer on application. Transfer switch type is applied where a customer is transferring between retailers at an address.

Review of the event detail report found 18,701 transfer NTs were issued. Meter certification details were checked for the 10,116 ICPs with transfer NTs which were also included on the PR255 report. All the ICPs checked had a highest metering category of 1 or 2.

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

WISE

WISE'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 for those customers that either call in or apply online. For those that are sold through the door to door channel, the switch is held for five business days before it is sent to the registry. Three of 12 NT files checked were not sent within two days of the event date, but this was because all conditions had not been met. As soon as the conditions were met the NT files were sent.

Hunet

Hunet'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 (including a credit check) and the withdrawal process is used if the customer changes their mind.

Switch type is selected based on information provided by the customer on application.

The 20 NT files checked were sent within two business days of pre-conditions being cleared, and the correct switch type was selected.

Audit outcome

Compliant

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

Code reference

Clauses 3 and 4 Schedule 11.3

Code related audit information

Within 3 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 5 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 Nova during the audit period,
- assess compliance with the requirement to meet the setting of event dates requirement, and
- a diverse sample ANs were checked for each trader code to determine whether the codes had been correctly applied.

The switch breach report was examined for the audit period.

Audit commentary

TODD

Orion imports NT files and automatically generates an AN.

Proposed event dates are reviewed and set by importing the NT files received from the registry into an Excel template. The template checks the proposed event date requested by the losing trader for transfer switches, and adjusts it to be within three business days of the NT receipt date if the gaining trader's requested date is likely to cause a breach of the event date requirements. A very small number of ICPs usually require adjustment, and in most cases the gaining trader's requested date is applied. A copy of the original NT file which contains the revised proposed event dates is imported into Orion. Orion generates the AN response code according to a system hierarchy and applies the proposed event date in the file copy.

- The event detail report for 01/01/19 to 06/01/20 was reviewed for all 7,674 transfer ANs to assess compliance with the setting of event dates requirements. All ANs had proposed event dates within five business days of the NT receipt date.
- A sample of ten AN files were checked, and found to contain correct AN response codes.

AN files generated by Orion are manually transferred to the registry. TODD monitors the switch breach report twice daily, to ensure that the required files are generated from Orion and sent to the registry. The switch breach report did not record any late AN files.

WISE

AN codes are applied by the operator. I reviewed a sample of five ANs for each AN response code used. No errors were identified.

All transfer AN files were examined on the event detail report. All proposed event dates were within 10 business days of NT receipt, and 99% were within five business days.

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

Hunet

AN codes are determined by a hierarchy and these are updated to the registry via Hunet's switching module. The check of the AN codes found all were correct.

The event detail report was reviewed for all 419 transfer ANs to assess compliance with the setting of event dates requirements. 96% were within five business days and none were over 10 business days.

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

Audit outcome

Compliant

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

Code reference

Clause 5 Schedule 11.3

Code related audit information

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

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

Audit observation

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

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

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

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

TODD

CS timeliness

CS files generated by Orion are manually transferred to the registry. TODD uses several reports to monitor the timeliness of switching files:

- the switch breach report is monitored twice daily, to ensure that the required files are generated from Orion and sent to the registry, and
- the Switch Out Issue to Fix report identifies any data that is incomplete or inconsistent in Orion which prevents the CS file from being generated, such as missing switch event readings or withdrawals in progress, the exceptions are worked through daily.

The switch breach report for the audit period recorded two late CS files for transfer switches. Only one of the files was genuinely late, which occurred during a period where a new team member was being trained.

CS content

TODD has a daily suite of reports which are used to ensure that information provided in CS files is accurate, including:

- inactive ICPs with missing closing reads - identifies ICPs which are no longer supplied by TODD,

- active with other/inactive with TODD - identifies ICPs supplied by another retailer on the registry which are still recorded as active in Orion - these are usually timing differences,
- switched out twice but not switched in - identifies ICPs with two consecutive losing CS files and no gaining CS or withdrawal in between, and
- switched in twice but not out - identifies ICPs with two consecutive gaining CS files and no losing CS or withdrawal in between.

The registry functional specification requires average daily kWh to be based on the average daily consumption for the last read to read period. The average daily kWh provided in TODD's CS files is based on the average daily kWh recorded on Orion's meter tab, which reflects the average daily consumption over the previous year for each meter register. While this is not technically consumption for the last read to read period, it provides a reasonable indication of the average daily consumption.

Analysis estimated daily kWh on the event detail report for 01/01/19 to 06/01/20 identified:

Estimated daily kWh	Count of transfer files	Comment
Negative	-	Compliant.
Zero	85	A typical sample of five files were checked and confirmed to have zero consumption between their last two actual readings.
More than 200 kWh	366	An extreme case sample of the five highest values were checked and found not to be based on the consumption between the last two actual readings. In all cases the consumption was a reasonable reflection of the daily average consumption over the previous year.

The CS file content for five CS files was checked and found to be correct, apart from the average daily kWh which reflected the daily average recorded on the meters tab instead of the last read to read period.

Analysis of the event detail report found two transfer CS files were issued with CSPREMISES lines only:

ICP	Event date	Update date	NT event switch type	Meter type HHR	AMI flag	Sub type HHR	Comment
1001145295LCE72	6/03/2019	6/03/2019	TR	Y	N	Y	Switch withdrawn
0139860002LC3BC	21/08/2019	21/08/2019	TR	Y	N	Y	Switch withdrawn

I recommend these exceptions are investigated to determine why only a CSPREMISES line was provided.

Description	Recommendation	Audited party comment	Remedial action
TR and MI CS files with missing lines	Investigate to determine why CSMETERCHANNEL, CSMETERCOMP and CSMETERINSTALL lines were missing for some TR and MI CS files.	TODD Response: Recommendation accepted. Comments:	Identified

Description	Recommendation	Audited party comment	Remedial action
		<ul style="list-style-type: none"> Our initial review has not isolated a cause and will require further in-depth review with a wider stakeholder audience. The two TR ICPs were switched following clause 13 of Schedule 11.3 in error due to misunderstanding of the application of clause 13 <p>Actions:</p> <ul style="list-style-type: none"> Post investigation outcomes a solution will be identified and implemented regarding CS files with missing lines Q4 outcome 	

WISE

CS content

Estimated daily kWh is calculated based on the daily average consumption as an average of the last six validated meter readings. The registry functional specification requires estimated daily kWh to be based on the average daily consumption for the last read to read period. For WISE this will often be the last day of supply, because daily reading occurs. WISE's current process is likely to produce a more accurate indication of the average daily consumption especially where the read to read period is for only one day, especially when the ICP is vacant for that day, but as it does not meet the codes requirements the current methodology is recorded as non-compliant.

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

Count of transfer CS files	Estimated daily kWh
Negative	0
Zero	10
More than 200 kWh	0
More than 60 kWh	5

I checked five ICPs sent with an average daily consumption of zero and they were all compliant. I checked all five ICPs where the average daily consumption was over 60 kWh and found these were all accurate.

The accuracy of the content of a sample of five CS files was checked and I found two examples of the same issue from the last audit where the final reading recorded on the customer account is applied for the CS. ICP 0378605518LC151 switched on 17/06/19 with a reading of 51596 from midnight on the 15th but there was a read of 51979 on midnight of the 16th that should have been used. The read on the 16th wasn't available when the CS file was sent. WISE is now waiting for the more recent readings before sending CS files. The same issue was present for ICP 0005303454TU308 which switched in August 2019.

CS timeliness

I identified five late CS files by analysing the switch breach history detail report. They were all late due to difficulty contacting the customer to confirm the final bill date.

Hunet

CS content

Estimated daily kWh is calculated based on the daily average consumption for the last actual read to read period. Analysis estimated daily kWh on the event detail report identified:

Count of transfer CS files	Estimated daily kWh
Negative	0
Zero	4
More than 200 kWh	1
More than 100 kWh	6

I checked all ICPs with zero consumption and over 100 kWh per day. They were all correct.

The accuracy of the content of a sample of five CS files was checked and all were correct.

CS timeliness

Hunet's switch management console provides staff with good visibility of switch file due dates. The switch breach report did not record any late files for transfer switches.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 4.3</p> <p>With: Clause 5 Schedule 11.3</p> <p>From: 06-Mar-19</p> <p>To: 06-Jan-20</p>	<p>TODD</p> <p>One late CS file.</p> <p>CS average daily consumption is based on the average daily consumption over the previous year, not the last actual read to read period. At least ten CS files were confirmed to have incorrect average daily consumption recorded.</p> <p>Two transfer CS files were issued with CS premises lines only.</p> <p>WISE</p> <p>5 late CS files.</p> <p>2 incorrect switch event meter readings.</p> <p>Incorrect calculation of average daily consumption</p>

	<p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls are rated as moderate:</p> <ul style="list-style-type: none"> The process to determine average daily kWh is not consistent with the Registry Functional Specification but does provide a reasonable estimate of average daily consumption. A small number of CS files contained missing information, and TODD will investigate to determine why. There were only a small number of late files. The incorrect reading issue for WISE is now resolved. <p>The audit risk rating is low:</p> <ul style="list-style-type: none"> The average daily consumption values applied in the CS files give a reasonable estimate of the average daily consumption for the ICP. Both switches where the CS file contained missing information were later withdrawn, and the incorrect reading issue for WISE is now resolved. 		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> One late CS file <ul style="list-style-type: none"> ICP 0000051576TR73DCS was removed from our systems automated processes to administer additional steps. This is similar error that was identified in 2018 audit. CS files – incorrect daily consumption <ul style="list-style-type: none"> Memo dated 18 June 2019 received regarding Average Daily Consumption On review of memo and the outcomes to the 2018 audit we believed we were compliant. This is incorrect. Requirements will be developed to align with the industry specifications. This was an oversight on our behalf. Anticipated resolution Q4 Two Transfer CS files with premise lines only 		TODD on-going & Q4	Identified

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

6A Gaining trader disputes reading

(1) If a gaining trader disputes a switch event meter reading under clause 6(1)(b), the gaining trader must, no later than four months after the event date, provide to the losing trader a revised switch event meter reading supported by two validated meter readings.

(2) On receipt of a revised switch event meter reading from the gaining trader under subclause (1), the losing trader must either—

(a) if the losing trader accepts the revised switch event meter reading, or does not respond to the gaining trader, use the revised switch event meter reading; or

(b) if the losing trader does not accept the revised switch event meter reading, advise the gaining trader (giving all relevant details) no later than five business days after receiving the revised switch event meter reading.

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 Nova's systems reflected the outcome of the RR process.

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

The switch breach report for the audit period was reviewed.

Audit commentary

TODD

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, Orion is automatically updated to reflect the outcome of the RR process through a system interface.

TODD issued 295 RR files for transfer switches. 259 were accepted and 36 were rejected. A sample of five rejected files and five accepted files were checked. In all cases there was a genuine reason for TODD's RR, the file content was accurate and supported by two actual reads obtained by TODD (or was as requested by the other trader), and the reads recorded in TODD's system reflected the outcome of the RR process.

All RR requests received from other traders are evaluated and validated against the ICP information. If the request is within validation requirements these are accepted.

TODD issued 661 AC files for transfer switches. 606 were accepted and 55 were rejected. A sample of five AC rejections and five acceptances were checked. All were rejected for valid reasons and a subsequent RR was received and accepted in four instances with corrected data. The system reflected the outcome of the RR process.

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

The switch breach report recorded four late RR files for transfer switches and no late AC files. Two of the late RR files were genuinely late due to delays in receiving actual reads to support the RR files.

WISE

When a high or low read is identified through the read validation process for a new switch in, the ICP is investigated to determine whether a read change is required. If the difference is small, WISE waits to see if the AMI readings will “catch up” and exceed the switch read before issuing an RR. This process is discussed further in **section 9.5**.

WISE issued read change requests for six transfer switch ICPs. All were supported by two actual readings and PEBS reflected the outcome of the read change process.

WISE issued two AC files for transfer switches. They were both rejections because WISE had actual meter readings. No RR files for transfer switches were rejected by other traders.

No late read change requests or acknowledgements were identified for transfer switches.

Hunet

When a high or low read is identified through the read validation process for a new ICP switched in, the ICP is investigated to determine whether a read change is required. There was only one RR file sent and this was checked. It had a genuine reason for Hunet’s RR, the file content was accurate and supported by two actual reads obtained by Hunet (or was as requested by the other trader).

Hunet issued two AC files for transfer switches, both rejected the other trader’s RR. Both were rejected for valid reasons.

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

The switch breach report did not identify any late RR or AC files.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 4.4</p> <p>With: 6(1) and 6A Schedule 11.3</p> <p>From: 22-May-19</p> <p>To: 23-Sep-19</p>	<p>TODD</p> <p>Two late RR files for transfer switches.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Twice</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>The controls over the read renegotiation process are strong.</p> <p>The audit risk rating is low. The late RR files are expected to improve data accuracy, and revised reconciliation data is washed up once the RR process is completed.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> Two late RR files for Transfer switches <ul style="list-style-type: none"> ICP 0000230355WED17 customer was unable to provide key access due to being off shore ICP 0008812169MLB32 gaining access due to water taxi availability Historical access issues both with Nova and previous provider contributed to an extended length of time to identify the gaining reads were incorrect and gain 2 validated meter readings. 	N/A	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> Nova will continue with on-going refresher training, review processes and where possible look for opportunities for improvement. 	On-going	

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

Code reference

Clause 6(2) and (3) Schedule 11.3

Code related audit information

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

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

Audit observation

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

Audit commentary

TODD

These RR requests are processed in the same way as those received for greater than 200 kWh except that emails are not normally exchanged in advance for these. Each request is evaluated and validated against the ICP information. If the request is within validation requirements these are accepted.

Review of the event detail report for 01/01/19 to 06/01/20 found 263 RR files were issued to TODD within five business days of switch completion, by traders using a half hour profile. Of those, 262 files were accepted. One file was validly rejected so the switch could be withdrawn on the same day.

TODD did not issue any RR requests under clause 6(2) and (3) of Schedule 11.3.

WISE

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.

Review of the event detail report found two transfer RR files were issued to WISE within five business days of switch completion by traders using a half hour profile. Both were rejected because WISE provided actual AMI readings, which were correct.

WISE is a NHH trader and did not issue any RR requests under clause 6(2) and (3) of Schedule 11.3.

Hunet

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.

A review of the event detail report found two transfer RR files were issued to Hunet within five business days of switch completion by traders using a half hour profile. Both were checked, and I confirmed that none met the requirements of clause 6(2) and (3) of Schedule 11.3 because the CS event reads were actual readings from AMI meters. Both files were validly rejected.

Hunet is a NHH trader and did not issue any RR requests under clause 6(2) and (3) of Schedule 11.3.

Audit outcome

Compliant

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

Code reference

Clause 7 Schedule 11.3

Code related audit information

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

Audit observation

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

Audit commentary

There were no examples of disputes that needed to be resolved under this clause for TODD, Hunet or WISE.

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

Audit commentary

TODD

TODD's processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. An NT is raised from Orion once an agreement is reached and credit approval is received, and the withdrawal process is used if the customer changes their mind.

Nova uses several reports to ensure that NT files are issued on time, which are reviewed daily:

1. The **Preswitch Error Report** identifies NT files held by Orion where an NW process is underway, or if an NT needs to be held until closer to the switch date to prevent an event date breach from occurring.
2. The **Held Switches Report** identifies NT files which are held for credit approval or further application information. Orion normally automatically releases the NT when the required information is provided. The report is reviewed to identify ICPs which have continued to be held after all information is received, so that they can be manually released.
3. The **Switch Tab Issues Report** identifies ICPs where Orion information is incomplete or inconsistent and will prevent the NT file from being sent to the registry, such as a blank MARIA ID.

Switch type is selected based on information provided by the customer on application. A switch move is selected where a customer has moved into an address.

Review of the event detail report found 12,025 switch move NTs were issued. Meter certification details were checked for the 7,880 ICPs with switch move NTs which were also included on the PR255 report. All the ICPs checked had a highest metering category of 1 or 2, except one ICP which currently has metering category 3 and one ICP which currently has metering category 4. In both cases the MEP had made a backdated update to the metering details after the NT was issued, and the switch type was correctly selected based on the information available at the time.

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

WISE

WISE'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 (including a credit check) and the withdrawal process is used if the customer changes their mind.

Switch type is selected based on information provided by the customer on application.

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

Hunet

Hunet'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 (including a credit check) and the withdrawal process is used if the customer changes their mind.

Switch type is selected based on information provided by the customer on application.

I checked 14 backdated NT files and found there were nine sent on 04/07/19 for a switch date of 01/04/19. These were originally switched to TODD, but it was determined they should be switched to Hunet, so withdrawals were made. The withdrawals were completed on 28/06/19 but Hunet did not send NT files within two business days of the completed withdrawals, they were sent within four business days.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 4.7</p> <p>With: Clause 9 Schedule 11.3</p> <p>From: 02-Jul-19</p> <p>To: 04-Jul-19</p>	<p>Hunet</p> <p>9 late NT files.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>The controls are rated a strong in normal circumstances. The events surrounding this group of ICPs were an exception.</p> <p>The impact on settlement and participants is minor; therefore, the audit risk rating is low.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p>Hunet</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> 9 late NT files <ul style="list-style-type: none"> When implementing processes to support setting up TOU accounts in the billing system a small technical issue presented which caused the late NT files <p>Actions:</p> <ul style="list-style-type: none"> 9 late NT files <ul style="list-style-type: none"> The billing system TOU set up issue was resolved 1 July 2019 	July 2019	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> Hunet will continue focusing on optimizing its standards by identifying and monitoring its performance and opportunities for improvements. 	On-going	

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

Code reference

Clause 10(1) Schedule 11.3

Code related audit information

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

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

Audit observation

The event detail report was reviewed to:

- identify AN files issued by Nova during the audit period,

- assess compliance with the requirement to meet the setting of event dates requirement, and
- a diverse sample ANs were checked for each trader code to determine whether the codes had been correctly applied.

The switch breach report was examined for the audit period.

Audit commentary

TODD

Orion imports NT files and automatically generates an AN. Orion generates the response code according to a system hierarchy and applies the gaining trader's requested date as the proposed switch event date. Proposed event dates for switch moves are not adjusted; the date requested by the gaining trader is consistently applied.

The event detail report for 01/01/19 to 06/01/20 was reviewed for all 9,299 switch move ANs to assess compliance with the setting of event dates requirements:

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

A sample of ten switch move AN files were checked, and found to contain the correct AN response codes.

AN and CS files generated by Orion are manually transferred to the registry. TODD uses several reports to monitor the timeliness of switching files:

- the switch breach report is monitored twice daily, to ensure that the required files are generated from Orion and sent to the registry, and
- the Switch Out Issue to Fix report identifies any data that is incomplete or inconsistent in Orion which prevents the CS file from being generated, such as missing switch event readings or withdrawals in progress, the exceptions are worked through daily.

TODD monitors the switch breach report twice daily, to ensure that the required files are generated from Orion and sent to the registry. The switch breach report for the audit period recorded 26 late CS files and no late AN files for switch moves. None of the files were genuinely late.

WISE

AN codes are applied by the operator. The check of the AN codes found all were correct.

The event detail report was reviewed for all 330 switch move ANs to assess compliance with the setting of event dates requirements.

- One AN file had a proposed event date later than ten business days after the NT receipt date. The CS was sent for the requested date.
- Two AN files had event dates earlier than the proposed dates. AN files are created manually. One CS was sent for the requested event date and the other was one day earlier than requested.

Hunet

AN codes are determined by a hierarchy and these are updated to the registry via Hunet's switching module. The check of the AN codes found all were correct.

The event detail report was reviewed for all 419 switch move ANs to assess compliance with the setting of event dates requirements.

- All 419 ANs had proposed event dates no later than ten business days after the NT receipt date.
- No ANs had proposed event dates before the NT proposed event date.

Hunet add three business days to all move switch requests.

Hunet's switch management console provides staff with good visibility of switch file due dates.

The switch breach report had no late AN files.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.8 With: 10(1) Schedule 11.3 From: 05-Jun-19 To: 02-Sep-19	WISE One AN file with a date greater than 10 business days from NT data Two AN files with event dates earlier than the proposed date 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. Two of the ICPs switched on the date proposed in the NT file but one ICP switched on the date sent in the AN file.		
Actions taken to resolve the issue		Completion date	Remedial action status
WISE Response: Non-Compliance not accepted. Comments: <ul style="list-style-type: none"> One AN file with date > 10 BD from NT data <ul style="list-style-type: none"> Issues identified pre material change audit. The process was updated in September 2019 to resolve this. Two AN files with event dates earlier than proposed date <ul style="list-style-type: none"> Issues identified pre material change audit. The process was updated in September 2019 to resolve this 		September 2019	Identified WISE confirmed that the issue has been resolved.

Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> The updates made in September 2019 have corrected occurrences of this moving forward WISE system automation implemented to source and add event date 	September 2019	

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 event date under subclause (1)(b), the losing trader must, no later than 10 business days after receiving the notice referred to in subclause (1), also complete the switch by providing to the registry manager the information described in subclause (1)(a), but in that case the event date is the event date determined by the losing trader.

Audit observation

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

Audit commentary

TODD

The event detail report for 01/01/19 to 06/01/20 was reviewed for all 9,299 switch move ANs. The ANs had a valid switch response code and compliant proposed event dates. No ANs had proposed event dates earlier than the gaining trader's proposed date.

WISE

None of the late CS files related to switches with different event dates to the proposed event dates.

Hunet

None of the late CS files related to switches with different event dates to the proposed event dates.

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 Nova during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of five records per trader code. The content checked included:

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

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

Audit commentary

TODD

TODD has a daily suite of reports which are used to ensure that information provided in CS files is accurate, including:

- inactive ICPs with missing closing reads - identifies ICPs which are no longer supplied by TODD,
- active with other/inactive with TODD - identifies ICPs supplied by another retailer on the registry which are still recorded as active in Orion - these are usually timing differences,
- switched out twice but not switched in - identifies ICPs with two consecutive losing CS files and no gaining CS or withdrawal in between, and
- switched in twice but not out - identifies ICPs with two consecutive gaining CS files and no losing CS or withdrawal in between.

The registry functional specification requires average daily kWh to be based on the average daily consumption for the last read to read period. The average daily kWh provided in TODD's CS files is based on the average daily kWh recorded on Orion's meter tab, which reflects the average daily consumption over the previous year for each meter register. When a site becomes vacant, TODD manually resets the average daily consumption to zero because no further consumption is expected. While Orion's average daily consumption is not technically consumption for the last read to read period, it provides a reasonable indication of the average daily consumption.

Analysis estimated daily kWh on the event detail report for 01/01/19 to 06/01/20 identified:

Estimated daily kWh	Count of switch move CS files	Comment
Negative	-	Compliant.
Zero	437	A typical sample of five files were checked and confirmed to have zero average daily consumption.
More than 200 kWh	107	<p>An extreme case sample of the five highest values were checked and found not to be based on the consumption between the last two actual readings.</p> <p>In four cases the consumption was a reasonable reflection of the daily average consumption over the previous year.</p> <p>For ICP 0000015111CPA58, 4,355 kWh was recorded but the ICP was a vacant site and consumption for the last read to read period was 7 kWh.</p>

Estimated daily kWh	Count of switch move CS files	Comment
		I recommend that this ICP is investigated to determine why the consumption was so high.

Description	Recommendation	Audited party comment	Remedial action
Check ICP 0000015111CPA58 (CS event 18/11/19) average daily kWh	Investigate ICP 0000015111CPA58 (CS event 18/11/19) to determine why the average daily kWh generated by Orion was much higher than expected.	<p>TODD</p> <p>Response:</p> <p>Recommendation accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> On investigation the ICP was moved into a vacant process 7 days prior to the ICP switching. During the vacant process reads were moved and mis keyed (933940 correct, 93940 keyed) which caused the over inflated average daily kWh This was corrected after the ICP had been switched out. <p>Actions:</p> <ul style="list-style-type: none"> Identify and implement validation process across average daily kWh <ul style="list-style-type: none"> Q4 	Identified

The CS file content for five CS files was checked and found to be correct, apart from the following exceptions:

- The average daily kWh reflected the daily average recorded on the meters tab instead of the last read to read period for all five files.
- An incorrect last actual reading was recorded for ICP 0000559123NRAC4 (07/01/19). Reads outside of the period of supply are normally made misreads so that they are ignored, and this read was missed due to a manual data processing error.
- An incorrect last actual read date and read were recorded for ICP 0000050781CPF0C (06/12/19). The ICP had been moved from a customer account to an occupier account part way through the switching process. Accounts are opened and closed using an Orion wizard, and it is expected that the reads will be recorded against one account or the other, and any readings not required on a particular account will be made misreads. The transfer between customers for this ICP was not processed correctly. The ICP was closed on the customer account on 06/12/19 and opened on the occupier the same day using the

06/12/19 reading. When generating the CS, Orion inserted a closing read that matched the 06/12/19 read against 05/12/19, and this was used to populate the CS. The ICP should have switched out from the customer account, and the actual read for 05/12/19 should have been applied as the CS event reading and last actual read date.

The ICP is settled as HHR and there was no impact on reconciliation because HHR volume data is used. If this issue occurred for NHH settled ICP, it would be detected and corrected through TODD's reconciliation exception reporting.

CS field	Correct value	Applied value
Last actual read date	05/12/19	06/12/19
Meter 217007236/1 reading and type	4313 (A)	4315 (A)
Meter 217007236/2 reading and type	2904 (A)	2908 (A)

Analysis of the event detail report found switch move CS files for 20 ICPs were issued with CSPREMISES lines only, when CSMETERCHANNEL, CSMETERCOMP and CSMETERINSTALL lines were also expected.

ICP	Event date	Update date	NT event switch type	Meter type HHR	AMI flag	Sub type HHR	Comment
0436634031LC1D1	1/12/2018	11/01/2019	MI	Y	Y	Y	Switch withdrawn
0000100175UNB9C	18/01/2019	30/01/2019	MI	Y	N	Y	
0000103177TR321	1/03/2019	4/03/2019	MI	Y	N	Y	
1001145295LCE72	1/03/2019	18/03/2019	MI	Y	N	Y	Switch withdrawn
0089203150PC88C	1/04/2019	3/04/2019	MI	Y	N	Y	
0147814030LCF06	15/12/2018	4/04/2019	MI	Y	Y	N	
0000880494WE41F	1/11/2018	24/04/2019	MI	Y	Y	N	
0662594424LC60D	23/04/2019	6/05/2019	MI	Y	N	Y	
1000018109BP68B	15/05/2019	21/05/2019	MI	N	N	N	No metering temporarily recorded on the registry
0662594424LC60D	23/04/2019	31/05/2019	MI	Y	N	Y	
0000488535CE6DA	1/07/2019	23/07/2019	MI	Y	N	Y	
0000840232WEF39	1/08/2019	5/08/2019	MI	Y	N	Y	
0000176630TP6C4	1/08/2019	23/08/2019	MI	Y	N	Y	
0086976400PC32B	12/09/2019	19/09/2019	MI	Y	Y	N	Withdrawal rejected

ICP	Event date	Update date	NT event switch type	Meter type HHR	AMI flag	Sub type HHR	Comment
0000936818TUF48	1/09/2019	2/10/2019	MI	Y	N	Y	
1000008877BP1A5	9/10/2019	4/11/2019	MI	N	N	N	No metering on the registry at the time of the switch
0128717653LC566	26/08/2019	21/11/2019	MI	Y	N	Y	
0160665485LC1C3	27/11/2019	11/12/2019	MI	Y	Y	Y	
0000042642DE01A	1/12/2019	11/12/2019	MI	Y	N	Y	
0132302837LC1C6	1/12/2019	17/12/2019	MI	Y	Y	Y	

I recommend these exceptions are investigated to determine why only a CSPREMISES line was provided. A recommendation is raised in **section 4.3**.

WISE

Estimated daily kWh is calculated based on the daily average consumption for as an average of the last six validated meter readings. The registry functional specification requires estimated daily kWh to be based on the average daily consumption for the last read to read period. For WISE this will often be the last day of supply, because daily reading occurs. WISE's current process is likely to produce a more accurate indication of the average daily consumption especially where the read to read period is for only one day, especially when the ICP is vacant for that day, but as it does not meet the codes requirements the current methodology is recorded as non-compliant.

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

Count of transfer CS files	Estimated daily kWh
Negative	0
Zero	93
More than 200 kWh	0
More than 60 kWh	1

I checked 10 of the 93 examples with zero recorded and I found all were calculated accurately. The one example with consumption over 60 kWh was also accurate.

The accuracy of the content of a sample of six CS files was checked and I found one example of the same issue from the last audit where the final reading recorded on the customer account was applied for the CS. If there was any consumption post the customer account closing this was not being submitted. For ICP 0000162005HBCD2, the switch date was 07/06/19 but the reading from 05/06/19 was used in the CS file because the reading from midnight on 06/06/19 had not been received by the time the CS was sent. WISE is now waiting for the most recent read before sending CS files. No other examples were found.

Hunet

Estimated daily kWh is calculated based on the daily average consumption for the last actual read to read period. Analysis estimated daily kWh on the event detail report identified:

Count of transfer CS files	Estimated daily kWh
Negative	0
Zero	18
More than 200 kWh	2
More than 60 kWh	5

I checked all 25 examples of zero or over 60 kWh and found they were all calculated correctly.

The accuracy of the content of a sample of five CS files was checked and all were correct with the exception of one ICP with the incorrect date of the last reading.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 4.10</p> <p>With: Clause 11</p> <p>Schedule 11.3</p> <p>From: 03-Jan-19</p> <p>To: 27-Dec-19</p>	<p>TODD</p> <p>CS average daily consumption is based on the average daily consumption over the previous year, not the last actual read to read period. At least ten CS files were confirmed to have incorrect average daily consumption recorded.</p> <p>An incorrect last actual read date was recorded for 0000559123NRAC4 (07/01/19).</p> <p>An incorrect last actual read date and read were recorded for ICP 0000050781CPF0C (06/12/19).</p> <p>20 switch move CS files were issued with CS premises lines only.</p> <p>WISE</p> <p>Calculation methodology for average daily consumption not compliant.</p> <p>WISE's CS process does not always ensure that the switch read reflects the actual reading on their last day of responsibility.</p> <p>Hunet</p> <p>Incorrect date of last read for one ICP.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>

Audit risk rating	Rationale for audit risk rating		
<p>Low</p>	<p>Controls are rated as moderate overall:</p> <ul style="list-style-type: none"> The TODD CS creation process is automated, and the incorrect CS content was caused by inaccurate data being recorded on the reads tab in Orion, not the CS creation process itself. The process to determine average daily kWh is not consistent with the Registry Functional Specification but does provide a reasonable estimate of average daily consumption. A small number of TODD CS files contained missing information, and TODD will investigate to determine why. WISE's CS process has now changed to include more recent actual readings, and the controls are strong. One minor exception was identified for Hunet. <p>The audit risk rating is low:</p> <ul style="list-style-type: none"> The average daily consumption values applied in the CS files give a reasonable estimate of the average daily consumption for the ICP. Only one CS file was found to have incorrect read information, and the difference is small. Some of the switches where the CS file contained missing information were later withdrawn. 		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> Incorrect average daily consumption <ul style="list-style-type: none"> Refer 4.3 ICP 0000559123NRAC4 incorrect last actual read <ul style="list-style-type: none"> Combination of timing and human error has caused this issue. A change was made the day prior the ICP switch to ensure accurate consumption was invoiced. The process was not followed accurately which has caused the non-compliance. ICP 0000050781CPF0C incorrect last actual read and date <ul style="list-style-type: none"> Refer 3.8 20 switch moves CS files with premise line only <ul style="list-style-type: none"> Refer point 3 @ 4.3 		<p>TODD Refer 4.3, 3.8</p>	<p>Identified</p>

<ul style="list-style-type: none"> Hunet has updated the switching file generation system to retrieve the correct read date of last read <ul style="list-style-type: none"> Update implemented April 2020 <p>Wise</p> <ul style="list-style-type: none"> Updated switching process to ensure most recent reads are used in CS file implemented September 2019 	WISE September 2019	
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4.11. Gaining trader changes to switch meter reading - switch move (Clause 12 Schedule 11.3)

Code reference

Clause 12 Schedule 11.3

Code related audit information

- (1) *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.*
- (2) *If the gaining trader elects to use the new switch event meter reading, the gaining trader must advise the losing trader of the new switch event meter reading and the event date to which it refers as follows:*
- (a) *if the switch event 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, or*
- (b) *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 event meter reading.*
- (2A) *Despite sub-clauses (1) and (2), subclause (2B) applies if—*
- (a) *the losing trader trades electricity at the ICP through a metering installation with a submission type of non half hour in the registry; and*
- (b) *the gaining trader will trade electricity at the ICP through a metering installation with a submission type of half hour in the registry, as a result of the gaining trader's arrangement with the customer or embedded generator; and*
- (c) *a switch event meter reading provided by the losing trader under subclause (1) has not been obtained from an interrogation of a certified metering installation with an AMI flag of Y in the registry.*
- (2B) *No later than five business days after receiving final information from the registry manager under clause 22(d)—*
- (a) *the gaining trader may provide the losing trader with a switch event meter reading obtained from an interrogation of a certified metering installation with an AMI flag of Y in the registry; and*
- (b) *the losing trader must use that switch event meter reading*
- (3) *If the gaining trader disputes a switch event meter reading under subclause (2)(b), the gaining trader must, no later than four months after the actual event date, provide to the losing trader a changed validated meter reading or a permanent estimate supported by two validated meter readings, and the losing trader must either,—*
- (a) *no later than five business days after receiving the switch event meter reading from the gaining trader, the losing trader, if it does not accept the switch event meter reading, must advise the gaining trader (giving all relevant details), and the losing trader and the gaining trader*

must use reasonable endeavours to resolve the dispute in accordance with the disputes procedure contained in clause 15.29 (with all necessary amendments); or
(b) if the losing trader advises its acceptance of the switch event meter reading received from the gaining trader, or does not provide any response, the losing trader must use the switch event meter reading supplied by the gaining trader.

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 Nova's systems reflected the outcome of the RR process.

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

The switch breach report for the audit period was reviewed.

Audit commentary

TODD

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, Orion is automatically updated to reflect the outcome of the RR process through a system interface.

TODD issued 501 RR files for switch moves. 415 were accepted and 86 were rejected. A sample of five rejected files and five accepted files were checked. In all cases there was a genuine reason for TODD's RR, the file content was accurate and supported by two actual reads obtained by TODD (or was as requested by the other trader), and the reads recorded in TODD's system reflected the outcome of the RR process.

All RR requests received from other traders are evaluated and validated against the ICP information. If the request is within validation requirements these are accepted.

TODD issued 684 AC files for switch moves. 598 were accepted and 86 were rejected. A sample of five AC rejections and five acceptances were checked. All were rejected for valid reasons and a subsequent RR was received and accepted in four instances with corrected data. The system reflected the outcome of the RR process.

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

The switch breach report recorded 15 late RR files and no late AC files. Eight files were genuinely late due to delays in receiving actual reads to support the RR files.

WISE

When a high or low read is identified through the read validation process for a new switch in, the ICP is investigated to determine whether a read change is required. If the difference is small, WISE waits to see if the AMI readings will "catch up" and exceed the switch read before issuing an RR. This process is discussed further in **section 9.5**.

WISE issued 13 read change requests for move switches. The sample checked found all were supported by two actual readings and PEBS reflected the outcome of the read change process.

A review of five move switch CS files with estimated reads where no RR was issued confirmed that the correct readings were recorded in PEB's system. Five RR files were rejected by other traders. One was

eventually withdrawn; one was accepted when the RR was sent a second time. Three were rejected because the losing trader provided actual reads, and WISE was unable to provide tenancy agreements to prove their customer did not move in immediately after the previous customer moved out. WISE used the CS reads as their start read.

WISE did not issue any AC files for move switches.

No late read change requests or acknowledgements were identified for move switches.

Hunet

When a high or low read is identified through the read validation process for a new ICP switched in, the ICP is investigated to determine whether a read change is required.

Hunet issued 10 RR files for switch moves. Three were rejected. All seven accepted files were checked. In all cases there was a genuine reason for Hunet's RR, the file content was accurate and supported by two actual reads obtained by Hunet (or was as requested by the other trader), and the reads recorded in Hunet's system reflected the outcome of the RR process. The three rejected RRs resulted in agreement with the other trader and another RR was sent.

Hunet issued six AC files for switch moves. Three were rejected and three were accepted. Hunet had genuine reasons for the rejections because their read was an actual from AMI.

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

The switch breach report did not identify any late RR or AC files.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 4.11</p> <p>With: Clause 12 Schedule 11.3</p> <p>From: 04-Mar-19</p> <p>To: 29-Nov-19</p>	<p>TODD</p> <p>Eight late RR files for switch moves.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Twice</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>The controls over the read renegotiation process are strong.</p> <p>The audit risk rating is low. The late RR files are expected to improve data accuracy, and revised reconciliation data is washed up once the RR process is completed.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> 8 late RR files for switch moves <ul style="list-style-type: none"> 6 late RR files were due to access issues and inside meters 3 ICPs vacant sites 3 ICPs with no one home during business hours <p>Actions:</p> <ul style="list-style-type: none"> Nova maintains following best practices and only sends files outside of timeframe as required to correct invoicing for customers. Attempts are made to gain actual reads as quickly as possible upon switch in. 0.16% of the RR files sent on NTMI switches during the audit period were sent past compliance timeframes. 	On-going	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> As above 	On-going	

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

Code reference

Clause 13 Schedule 11.3

Code related audit information

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

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

If the uninvited direct sale agreement applies to an arrangement described above, the gaining trader must identify the period within which the customer or embedded generator may cancel the arrangement

in accordance with section 36M of the Fair Trading Act 1986. The arrangement is deemed to come into effect on the day after the expiry of that period.

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

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

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

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

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

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

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

Audit observation

The switch gain process was examined to determine when Nova deem all conditions to be met. A typical sample of HH NTs were checked to confirm whether they were notified to the registry within three business days.

HH NTs on the event detail report were matched to the metering information on the meter event details report to confirm whether the correct switch type was selected.

Audit commentary

TODD

TODD's commercial and industrial team provide customer contracts to the switching team once agreement with the customer has been reached. The switching team runs a manual credit check and escalates any credit check failures to the credit team. An NT is raised from Orion once credit approval is received.

65 HH NT files were issued during the period. The five NT files checked were sent within three business days of pre-conditions being cleared, and the correct switch type was selected.

Meter certification details were checked for the 10,116 ICPs with transfer NTs and 7,880 ICPs with switch move NTs which were also included on the PR255 report. All the ICPs checked had a highest metering category of 1 or 2, except one ICP which currently has metering category 3 and one ICP which currently has metering category 4. In both cases the MEP had made a backdated update to the metering details after the NT was issued, and the switch type was correctly selected based on the information available at the time.

WISE

Review of the event detail reports for WISE confirmed that they did not complete any half hour switches during the audit period, and no ICPs with meter category 3 or higher were supplied.

Hunet

Hunet switched in six HHR ICPs. Five were backdated from 04/07/19 to 01/04/19, which is 94 days and the Code only allows backdating of 90 days.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.12 With: Clause 14 Schedule 11.3 From: 01-Jul-19 To: 04-Jul-19	Hunet Five backdated NT files. Potential impact: Low Actual impact: None 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 these switches were originally to TODD, then they were withdrawn in order that Hunet could become the trader. There was no impact because all parties agreed to the trader change.		
Actions taken to resolve the issue		Completion date	Remedial action status
Hunet Response: Non-Compliance accepted. Comments: <ul style="list-style-type: none"> 5 backdated NT files were impacted by the same issue described in section 4.7 		July 2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<ul style="list-style-type: none"> Hunet will continue focusing on optimizing its standards by identifying and monitoring its performance and ways for improvement. 		On-going	

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 Nova during the audit period, and a sample of two (or all) ANs per response code were reviewed to determine whether the codes had been correctly applied.

The switch breach report was examined for the audit period.

Audit commentary

TODD

Orion imports HH NT files and automatically generates an AN. Orion generates the response code according to a system hierarchy and applies the gaining trader's requested date as the proposed switch event date.

I checked all 11 HH AN files on the event detail report for 01/01/19 to 06/01/20:

- ICP 0000004330CP80E had response code CO (contracted customer) correctly applied, the ICP was under contract until after the requested switch event date,
- ICP 1000023002BPF97 had response code AA (acknowledge and accept) correctly applied, and the AN was created manually for this switch of a generation asset, and
- ICPs 0012165351EL715, 0000186250TP0A9, 0000938657TUCF8, 0000880494WE41F, 0000938657TUCF8, 0007173313RN086, 0381738027LC19B, 0000041441WEA73 and 1000016038BPCF2 had response code AD (advanced metering) invalidly applied as none of the ICPs had the AMI flag selected at the time of the switch.

It appears that Orion's hierarchy may apply the AD response code to HHR meters as well as meters with the AMI flag set to yes. TODD intends to raise a job for this issue to be investigated.

There were no late AN files recorded in the switch breach report.

WISE

Wise did not complete any HHR switches.

Hunet

There were no late AN files sent by Hunet.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.13 With: Clause 15 Schedule 11.3 From: 14-Mar-19 To: 13-Dec-19	TODD Nine ICPs had response code AD (advanced metering) invalidly applied. None of the ICPs had the AMI flag selected at the time of the switch. Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3

Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are recorded as weak, because the AN response codes are automatically assigned by Orion and most HH ANs were issued with an incorrect response code.</p> <p>The impact on settlement and participants is minor, metering details can be confirmed from other information recorded on the registry.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none">9 ICPs response code AD invalidly applied<ul style="list-style-type: none">All 9 ICPs had an incorrect AN response code due to the logic used to determine and apply the code.The logic appears to be restrictive and is not taking a number of additional elements into consideration when determining the AD code in relation to HHR metered sites.		On-going	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<ul style="list-style-type: none">A review of the logic will be undertaken which will result a system change requiredAn interim process will be delivered to review and amend AN response codes by 30 May 2020		30 May 2020 & Q4	

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

TODD

CS content

TODD manually creates HH CS files, as Orion is not configured to complete this task.

The content of all 58 HH CS files not withdrawn before completion was reviewed and found to be compliant.

CS timeliness

TODD uses the daily Switching_TOU timeliness report to identify CS files which are due. The person creating the HH CS files for the day works through the report, and it is independently checked by the person who sends the files to the registry. Typically a mass import/export of switching files is processed each morning, and a smaller run is processed each afternoon for any files which are close to breaching the switch timeliness requirements. In addition, the registry switch breach report is run and reviewed twice daily.

The switch breach report for the audit period recorded two late HH switch CS files, neither were genuinely late.

WISE

Wise did not complete any HHR switches.

Hunet

There were no late CS files sent by Hunet.

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 two calendar months after the event date of the switch.

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

- *for each ICP, the trader withdrawing the switch request must provide the registry manager with (clause 18(c)):*
 - o *the participant identifier of the trader making the withdrawal request (clause 18(c)(i));*
 - and*
 - o *the withdrawal advisory code published by the Authority. (clause 18(c)(ii))*
- *within five business days after receiving notice from the registry manager of a switch, the trader receiving the withdrawal must advise the registry manager that the switch withdrawal request is accepted or rejected. A switch withdrawal request must not become effective until accepted by the trader who received the withdrawal. (clause 18(d))*

- *on receipt of a rejection notice from the registry manager, in accordance with clause 18(d), a trader may re-submit the switch withdrawal request for an ICP in accordance with clause 18(c). All switch withdrawal requests must be resolved within 10 business days after the date of the initial switch withdrawal request (clause 18(e))*
- *if the trader requests that a switch request be withdrawn, and the resolution of that switch withdrawal request results in the switch proceeding, within two business days after receiving notice from the registry manager in accordance with clause 22(b), the losing trader must comply with clauses 3,5,10 and 11 (whichever is appropriate) and the gaining trader must comply with clause 16 (clause 18(f)).*

Audit observation

The event detail report was reviewed to:

- identify all switch withdrawal requests issued by Nova, the content of a sample of at least two ICPs from the event detail report for each withdrawal code (or all if less than two were available) were checked for each trader code using the typical sampling methodology,
- identify all switch withdrawal acknowledgements issued by Nova, a sample of at least two (or all) rejections per NW reason code and trader code were checked, and
- confirm timeliness of switch withdrawal requests, as this is not currently being identified in the switch breach report.

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

Audit commentary

TODD

Withdrawals are managed via Orion. Analysis a sample of switch withdrawal codes confirmed all were correctly coded.

95 (2.7%) of the 3,574 NWs were issued more than 60 business days after the event date. 29 of those used the code for wrong premises, and I note that this issue often does not become apparent for an extended period after a switch completes. A sample of the ten latest files were checked, and I found:

- seven were delayed while investigation was carried out to determine whether a withdrawal was required, and
- the NWs for ICPs 0000003082EN188 (17/05/17), 0000011522CPBE1 (19/04/17) and 0000015046EAA2A (02/12/17) were issued in error as a customer cancelled an application for an ICP which was already held by Nova when the customer application should have been cancelled and the ICP moved back to the previous TODD customer account instead of the switch being withdrawn.

The switch breach report recorded 38 late NW files (NA breaches). I confirmed that all the breaches were invalid, and TODD had not issued late NWs for the affected ICPs.

156 (2.3%) of the 6,709 AWs issued by TODD were rejections. I reviewed a sample of 13 rejections by TODD, and confirmed they were rejected based the information available at the time the response was issued.

WISE

Switch withdrawals are managed manually. The sample of 14 NW files checked found that the withdrawal codes applied were correct for 13 but incorrect for ICP 0000025622WE79C. It should have been WP not CX.

None of the NWs were issued more than 60 business days after the event date.

Wise rejected 23 of 147 withdrawal requests (16%). I checked a sample of 10, which confirmed there were genuine reasons for the withdrawal.

The switch breach report did not record any late files.

Switch withdrawals are managed manually. The sample of 11 NW files checked found that the withdrawal codes applied were correct for 10 examples but incorrect for ICP 0329969021LC441. An NWDF was sent correctly but was rejected so an NWMI was then sent, but this was incorrect.

18 of Hunet's NWs were rejected, I checked all 18 and found that Hunet's information at the time the NW was sent supported the withdrawal. Further information became available leading to the rejections.

Audit outcome

Non-compliance	Description
<p>Audit Ref: 4.15</p> <p>With: 17 and 18 Schedule 11.3</p> <p>From: 19-Mar-19</p> <p>To: 11-Oct-19</p>	<p>TODD</p> <p>95 late NW files.</p> <p>NWs for ICPs 0000003082EN188 (17/05/17), 0000011522CPBE1 (19/04/17) and 0000015046EAA2A (02/12/17) were issued in error. When the new customer cancelled their application the ICPs should have been moved back to the previous TODD customer account instead of the switches being withdrawn.</p> <p>WISE</p> <p>1 incorrect NW reason.</p> <p>Hunet</p> <p>1 incorrect NW reason and 1 late NW.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Three times</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>The controls over the withdrawal process are generally strong.</p> <p>Three TODD NWs were issued in error, because a staff member made a mistake when processing a cancelled customer application. Withdrawals are requested as soon as TODD confirms that they are required.</p> <p>Most NW reasons for Hunet and WISE were correct, and only two were incorrect.</p>

	<p>The impact is low:</p> <ul style="list-style-type: none">• two of the three incorrectly issued NWs were rejected, and the other was accepted and the switch was subsequently re-processed,• most NW codes were correctly selected, and• the late files were processed as soon as possible.		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none">• 95 late NW files<ul style="list-style-type: none">○ Nova considers it is in the best interest of the customer to correct data to accurately invoice and that we comply with Clause 11.2 of part 11 “to provide complete and accurate information”.• 3 ICPs were issued NWs in error<ul style="list-style-type: none">○ A previously employed staff member used the NW process in error and not in alignment with our switching processes and protocols		TODD on-going	Identified
<p>WISE</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none">• WISE accept the non-compliance on one ICPs incorrect NW code used <p>Actions:</p> <ul style="list-style-type: none">• WISE provided refresher training to staff members on the use of correct NW codes May 2020		WISE May 2020	
<p>Hunet</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none">• 1 incorrect NW identified, and training provided to staff member 31 March 2020• 1 late NW due to NTMI and Hunet unable to contact customer at time the switch was processed. Flatting		Hunet March 2020	

situation and ICP was moved to GEOL which resulted in NW being processed late.		
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>TODD</p> <ul style="list-style-type: none"> Review and update process documentation Provider the wider team refresher training <p>WISE</p> <ul style="list-style-type: none"> WISE provided refresher training to staff members on the use of correct NW codes May 2020 <p>Hunet</p> <ul style="list-style-type: none"> Staff training provided 31 March 2020 	<p>TODD 30 May 2020 & on-going</p> <p>WISE May 2020</p> <p>Hunet 31 March 2020</p>	

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

TODD

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

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

As discussed in **section 4.10**, an incorrect switch event read was recorded in the CS file for ICP 0000050781CPF0C (06/12/19):

CS field	Correct value	Applied value
Last actual read date	05/12/19	06/12/19
Meter 217007236/1 reading and type	4313 (A)	4315 (A)
Meter 217007236/2 reading and type	2904 (A)	2908 (A)

WISE

As recorded in **sections 4.3** and **4.10**, three switch event meter readings were incorrect.

The policy regarding the management of meter reading expenses is compliant.

Hunet

Switch event meter readings for Hunet were found to be accurate.

The policy regarding the management of meter reading expenses is compliant.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 4.16</p> <p>With: Clause 21 Schedule 11.3</p> <p>From: 06-Dec-19</p> <p>To: 06-Dec-19</p>	<p>TODD</p> <p>For one CS file the switch event reads did not reflect the actual reading or best estimate of an actual reading on the event date.</p> <p>WISE</p> <p>3 inaccurate switch event meter readings.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>The controls are recorded as strong, this was an isolated exception for TODD which occurred because the ICP had a customer change mid switch and some data was transferred between the customer accounts inaccurately.</p> <p>WISE's CS process has now changed to include more recent actual readings, and the controls are strong.</p> <p>The impact on settlement and participants is minor; the kWh difference in readings was small.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> 1 CS file ICP 0000050781CPF0C switch event reads did not reflect actual reading or best estimate on the event date <ul style="list-style-type: none"> Refer 3.8 <p>Actions:</p> <ul style="list-style-type: none"> 1 CS file switch event reads did not reflect actual reading or best estimate on the event date <ul style="list-style-type: none"> Correction completed May 2020 <p>WISE</p> <p>Response:</p> <p>Non-Compliance not accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> 3 inaccurate switch event meter readings <ul style="list-style-type: none"> WISE have reviewed the process so that the most recent readings will be used in CS files moving forward. Implemented September 2019 refer 4.10 & 4.3 <p>Actions:</p> <ul style="list-style-type: none"> 3 inaccurate switch event meter readings <ul style="list-style-type: none"> See 4.10 & 4.3 	<p>TODD May 2020</p> <p>WISE September 2019</p>	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>TODD</p> <ul style="list-style-type: none"> As above <p>WISE</p> <ul style="list-style-type: none"> WISE implemented an update to the switching process in September 2019. <ul style="list-style-type: none"> Refer 4.10 & 4.3 	<p>TODD May 2020</p> <p>WISE September 2020</p>	

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

Code reference

Clause 11.15AA to 11.15AB

Code related audit information

A trader that buys electricity from the clearing manager may elect to have a switch saving protection by giving notice to the Authority in writing.

If a protected trader enters into an arrangement with a customer of another trader (the losing trader), or a trader enters into an arrangement with a customer of a protected trader, to commence trading electricity with the customer, the losing trader must not, by any means, initiate contact with the customer to attempt to persuade the customer to terminate the arrangement during the period from the receipt of the NT to the event date of the switch including by:

11.15AB(4)(a)- making a counter offer to the customer; or

11.15AB(4)(b)- offering an enticement to the customer.

Audit observation

The Electricity Registry switch save protected retailer list was examined.

Win-back processes were discussed. The event detail report was analysed to identify all withdrawn switches with a CX code applied prior to the switch completion date for any switch save protected retailer.

Audit commentary

TODD

The Orion change control team monitor the list of switch save protected retailers and ensure the correct retailers are identified.

TODD is not a switch save protected retailer. All switch protected retailers are excluded from the retention process until such time as the switch has completed. Calls are made to customers in contract prior to the switch to advise them of the contract termination fee that will be due.

Review of the event detail report identified 11 NWs issued with a CX withdrawal reason code prior to completion of the switch. For nine withdrawals the other trader was not switch save protected at the time of the withdrawal. The other three withdrawals related to two ICPs, and I confirmed that in both cases the customer requested the cancellation and no enticements were offered by TODD.

WISE

WISE contacts the customers for ICPs requested by another retailer only to confirm that the switch request is valid. No win-back activity is initiated with lost customers during the switch.

Hunet

No save activity is undertaken until the switch has completed. Review of the event detail report did not identify any NWs issued with a CX withdrawal reason code prior to completion of the switch.

Audit outcome

Compliant

5. MAINTENANCE OF UNMETERED LOAD

5.1. Maintaining shared unmetered load (Clause 11.14)

Code reference

Clause 11.14

Code related audit information

The trader must adhere to the process for maintaining shared unmetered load as outlined in clause 11.14:

11.14(2) - The distributor must give written notice to the traders responsible for the ICPs across which the unmetered load is shared, of the ICP identifiers of the ICPs.

11.14(3) - A trader who receives such a notification from a distributor must give written notice to the distributor if it wishes to add or omit any ICP from the ICPs across which unmetered load is to be shared.

11.14(4) - A distributor who receives such a notification of changes from the trader under (3) must give written notice to the registry manager and each trader responsible for any of the ICPs across which the unmetered load is shared.

11.14(5) - If a distributor becomes aware of any change to the capacity of a shared unmetered load ICP or if a shared unmetered load ICP is decommissioned, it must give written notice to all traders affected by that change as soon as practicable after that change or decommissioning.

11.14(6) - Each trader who receives such a notification must, as soon as practicable after receiving the notification, adjust the unmetered load information for each ICP in the list for which it is responsible to ensure that the entire shared unmetered load is shared equally across each ICP.

11.14(7) - A trader must take responsibility for shared unmetered load assigned to an ICP for which the trader becomes responsible as a result of a switch in accordance with Part 11.

11.14(8) - A trader must not relinquish responsibility for shared unmetered load assigned to an ICP if there would then be no ICPs left across which that load could be shared.

11.14(9) - A trader can change the status of an ICP across which the unmetered load is shared to inactive status, as referred to in clause 19 of Schedule 11.1. In that case, the trader is not required to give written notice to the distributor of the change. The amount of electricity attributable to that ICP becomes UFE.

Audit observation

I reviewed the processes to identify shared unmetered load. The registry list file and AC020 report were examined to determine compliance.

Audit commentary

TODD

Shared unmetered load is validated using:

- the load check report, which compares Orion and registry unmetered load details and identifies any discrepancies or changes, and
- the new UML report, which identifies any new connections or switch ins with unmetered load so that the unmetered load can be validated and updated as necessary.

The registry list file as at 06/01/20 and AC020 trader compliance report for 01/01/19 to 31/12/19 were examined. 91 active ICPs have shared unmetered load. As discussed in **section 3.7**, review of the AC020

report found ICP 0000540556TU6C9 had shared unmetered load that was more than 0.01 kWh more than the recalculation based on the distributor's unmetered load.

ICP Identifier	Unmetered Load Details - Trader	Unmetered Load Details - Distributor	Trader daily kWh	Distributor daily kWh
0000540556TU6C9	1196;12;6 x Shared ICPs	1196;12;6 x Shared ICPs	2.628	2.392

ICP 0000540556TU6C9 switched in on 19/10/19. There was a delay in identifying the discrepancy and updating the registry because the staff member responsible had been away on leave. Some errors were made when processing the correction in April 2020:

- when the daily unmetered kWh value was updated on the registry, it was corrected from the previous trader event date (13/03/20) instead of the switch in date (19/10/19), and
- when Orion was corrected, the unmetered load register started on 27/11/19 with an opening read of 0 and the latest reading on 03/03/20 was 235. The unmetered load register was expected to start on 18/10/19³ with a read of 0 and the reading on 03/03/20 was expected to be 328 (137 days x 2.392 kWh), a difference of +93 kWh.

During the audit a correction was processed on the registry and on the meters tab in Orion, but Orion's reading and submission information for the UML register remains incorrect. Nova intends to process a correction, and provide revised submission data to the reconciliation manager.

WISE

WISE does not supply any ICPs with shared unmetered load. No ICPs with unmetered load were identified on the registry list.

Processes to prevent ICPs with unmetered load from switching in, and to monitor existing ICPs for addition of unmetered load are discussed in **section 3.7**.

Hunet

Hunet does not supply any ICPs with shared unmetered load. No ICPs with unmetered load were identified on the registry list.

Processes to prevent ICPs with unmetered load from switching in, and to monitor existing ICPs for addition of unmetered load are discussed in **section 3.7**.

Audit outcome

Non-compliant

³ At 11.59.59pm on the last day of responsibility for the previous retailer, to ensure that all unmetered consumption was captured.

Non-compliance	Description		
<p>Audit Ref: 5.1</p> <p>With: Clause 11.14</p> <p>From: 19-Oct-19</p> <p>To: 31-Mar-20</p>	<p>TODD</p> <p>The trader daily unmetered kWh was incorrect on the registry for ICP 0000540556TU6C9. A correction was processed during the audit.</p> <p>The readings recorded against the unmetered register for 0000540556TU6C9 do not start from the switch in date, and do not include all expected unmetered load.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls are rated as moderate. They are usually sufficient to ensure that unmetered load discrepancies are identified and resolved.</p> <p>The audit risk rating is low. The data for 0000540556TU6C9 has been partially corrected and the impact on submission is 93 kWh.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> ICP 0000540556TU6C9 daily unmetered kWh incorrect on registry & readings recorded against the unmetered register do not start from the switch in date or include expected unmetered load <ul style="list-style-type: none"> See response @ 3.7 		April 2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<ul style="list-style-type: none"> Billing team process checks for load variance between Orion and Registry has been updated to also include event date errors. Process update implemented April 2020 		April 2020	

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

Audit commentary

TODD

The registry list file as at 06/01/20 and AC020 trader compliance report for 01/01/19 to 31/12/19 were examined.

TODD supplies 326 active ICPs with unmetered load indicated. Three ICPs have unmetered under verandah lighting with a total unmetered load between 3,000 and 6,000 kWh per annum. Under verandah lighting is an approved load type.

WISE

WISE does not supply any ICPs with shared unmetered load. No ICPs with unmetered load were identified on the registry list.

Processes to prevent ICPs with unmetered load from switching in, and to monitor existing ICPs for addition of unmetered load are discussed in **section 3.7**.

Hunet

Hunet does not supply any ICPs with shared unmetered load. No ICPs with unmetered load were identified on the registry list.

Processes to prevent ICPs with unmetered load from switching in, and to monitor existing ICPs for addition of unmetered load are discussed in **section 3.7**.

Audit outcome

Compliant

5.3. Unmetered threshold exceeded (Clause 10.14 (5))

Code reference

Clause 10.14 (5)

Code related audit information

If the unmetered load limit is exceeded the retailer must:

- *within 20 business days, commence corrective measure to ensure it complies with Part 10*
- *within 20 business days of commencing the corrective measure, complete the corrective measures*
- *no later than 10 business days after it becomes aware of the limit having been exceeded, advise each participant who is or would be expected to be affected of:*
 - o *the date the limit was calculated or estimated to have been exceeded*
 - o *the details of the corrective measures that the retailer proposes to take or is taking to reduce the unmetered load.*

Audit observation

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

Audit commentary

TODD

The AC020 trader compliance report for 01/01/19 to 31/12/19 was examined. No ICPs have annual unmetered load over 6,000 kWh.

WISE

WISE does not supply any ICPs with shared unmetered load. No ICPs with unmetered load were identified on the registry list.

Processes to prevent ICPs with unmetered load from switching in, and to monitor existing ICPs for addition of unmetered load are discussed in **section 3.7**.

Hunet

Hunet does not supply any ICPs with shared unmetered load. No ICPs with unmetered load were identified on the registry list.

Processes to prevent ICPs with unmetered load from switching in, and to monitor existing ICPs for addition of unmetered load are discussed in **section 3.7**.

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

Nova does not wish to trade on DUML ICPs and will not switch any of these ICPs in. The registry list file and AC020 report were examined to determine compliance.

Audit commentary

TODD

Review of the list as at 06/01/20 did not identify any DUML ICPs. TODD does not intend to supply DUML.

WISE

WISE does not supply any ICPs with shared unmetered load. No ICPs with unmetered load were identified on the registry list.

Processes to prevent ICPs with unmetered load from switching in, and to monitor existing ICPs for addition of unmetered load are discussed in **section 3.7**.

Hunet

Hunet does not supply any ICPs with shared unmetered load. No ICPs with unmetered load were identified on the registry list.

Processes to prevent ICPs with unmetered load from switching in, and to monitor existing ICPs for addition of unmetered load are discussed in **section 3.7**.

Audit outcome

Compliant

6. GATHERING RAW METER DATA

6.1. Electricity conveyed & notification by embedded generators (Clause 10.13, Clause 10.24 and 15.13)

Code reference

Clause 10.13, Clause 10.24 and 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 energised 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

TODD

Metering installations installed

TODD's new connection process includes a check that metering is installed before electrical connection occurs, and that any unmetered load is quantified.

The new connection process is discussed in detail in **section 2.9**. Once the distributor has provided an ICP, it is entered into Orion and the registry is updated to 1,12 ("inactive new connection in progress") status. At the same time, a meter installation service request is issued through the Salesforce JIT (Job Issue Tracking) system, a MEP nomination is processed on the registry. All new connections have an MEP nominated.

The AC020 report for 01/01/19 to 31/12/19 recorded 21 active ICPs with metering category 9, null, or zero which did not have unmetered load indicated. 20 ICPs had MEP nominations made and accepted, or were timing differences and the ICPs were decommissioned, made ready for decommissioning, or had meter details populated on the registry prior to the audit. ICP 0001681263PCCEC was confirmed to be metered, and it appears the MEP's records are incorrect.

Distributed generation

Daily discrepancy reporting identifies any ICPs where the distributor indicates there is distributed generation installed but the profile does not indicate this.

TODD's registry list as at 06/01/20 showed 423 active ICPs with generation listed by the distributor. Review of the AC020 report confirmed that there were five ICPs with generation recorded by the distributor where TODD did not record a generation profile.

- Three were timing differences, and the discrepancy was detected and corrected through Nova's validation processes prior to the audit.
- ICP 0000710336WP2BE had generation and generation metering present when the ICP switched in on 30/12/19. The discrepancy was identified and corrected through TODD's validation process on 07/01/20, but an incorrect event date was applied on the registry due to a manual data processing error. The event date was corrected during the audit, and there was no impact on reconciliation because the process ensures that generation consumption is reported with the correct profile.
- For ICP 1000019114BP2DD, the customer's electrician advised that further electrical work is required before generation can commence and a generation meter can be installed. TODD's profile is correct.

Where a generation profile was recorded, I checked that the profile was consistent with the fuel type listed by the distributor and identified four exceptions. In all cases, TODD and/or www.energysafety.govt.nz/energysafety/app/highrisk-db confirmed that TODD's profile was correct.

Bridged meters

TODD does not initiate meter bypass instructions to any MEP or contractor. If they request a remote reconnection, the MEP is expected to either conduct this, or make necessary arrangements for reconnection without bypassing.

TODD provided 12 examples of bridged meters during the audit period. The existence of bridged meters is recorded as non-compliance below. Corrections to capture the bridged consumption are discussed further in **section 2.1**.

WISE

Metering installations installed

WISE does not plan to accept new connections and there have been no new connections during the audit period.

No ICPs have submission information determined by subtraction, and all ICPs have an MEP recorded.

Distributed Generation

WISE's application process rejects any application which has "B" in the installation type field.

Analysis of the registry list found no ICPs with generation capacity recorded by the distributor.

Bridged meters

WISE provided a list of four ICPs where remote disconnection had occurred then the meter had been bridged to reconnect. The existence of bridged meters is recorded as non-compliance below. Consumption was correctly calculated and applied for the bridged period for all four ICPs.

Hunet

Metering installations installed

Hunet's new connection process includes a check that metering is installed before electrical connection occurs.

No ICPs have submission information determined by subtraction, and all ICPs have an MEP recorded.

Distributed generation

Hunet supplies three ICPs with distributed generation. All have generation metering installed and the correct profile. Submission occurs correctly for ICPs with generation.

Bridged meters

There were no bridged meters during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 6.1</p> <p>With: Clause 10.13</p> <p>From: 17-Dec-18</p> <p>To: 30-Mar-20</p>	<p>TODD</p> <p>While meters were bridged, energy was not metered and quantified according to the code for 12 ICPs.</p> <p>ICP 0000710336WP2BE temporarily had an incorrect event date for its generation profile recorded on the registry and was corrected during the audit.</p> <p>WISE</p> <p>While meters were bridged, energy was not metered and quantified according to the code for 4 ICPs.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls to prevent and detect bridged meters are strong. Controls to detect generation, install import/export metering, and update profiles are strong.</p> <p>The impact is low.</p> <ul style="list-style-type: none"> Bridging is avoided wherever possible and corrections are processed to estimate consumption that occurred during bridged periods. The incorrect generation profile date has been corrected, and there is no impact. The reconciliation process ensures that correct profiles are applied for submission. 		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted</p> <p>Comments:</p> <ul style="list-style-type: none"> The existence of bridged meters for 12 ICPs where energy was not metered or quantified during bridge period is acknowledged ICP 0000710336WP2BE had temporary incorrect event date for generation load due to human error. This has been corrected March 2020. 		TODD March 2020 & on-going	Identified

<ul style="list-style-type: none"> In addition, Nova continue to work with the MEP for ICP 0001681263PCCEC, MEP cannot gain access due to COVID-19 restrictions as metering is in a Gym <ul style="list-style-type: none"> Refer improvement identified in 2.1 <p>Actions:</p> <ul style="list-style-type: none"> Refresher training provided to the team member March 2020 re ICP 0000710336WP2BE Nova recognise that the existence of bridged meters is non-compliant. As per our 2017 Audit outcome we adjusted our data integrity reporting to be able to identify potential bridged meters swifter. We also updated a section of our service request template to include requirement of confirmation from our contractors if the existence of a bridged meter is identified. <p>WISE</p> <p>Response:</p> <p>Non-Compliance accepted</p> <p>Comments:</p> <ul style="list-style-type: none"> The existence of bridged meters for 4 ICPs where energy was not metered or quantified during bridge <p>Actions:</p> <ul style="list-style-type: none"> WISE recognise that the existence of bridged meters is non-compliant. WISE does not initiate the bridging of meters except in extremely rare circumstances where energy supply is required for health and safety reasons. WISE agrees that a bridged meter is not a desirable outcome however at times these are also outside our control i.e. as a result of a failed remote reconnection from an alt trader. WISE take measures to act reasonably. WISE has a thorough process in place which describes the actions to be taken if a bridged meter is identified or initiated by Wise. 	WISE on-going	
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>TODD</p> <ul style="list-style-type: none"> Nova will continue to work with MEPs through service level agreements and on-going regular operational meetings to ensure bridging of meters continues to be an undesirable outcome for Nova. 	TODD on-going	

<ul style="list-style-type: none"> Nova has a thorough process in place which describes the actions to be taken if a bridged meter is identified or initiated by Nova. 	WISE on-going	
<p>WISE</p> <ul style="list-style-type: none"> WISE will continue to work with MEPs through service level agreements and on-going regular operational meetings to ensure bridging of meters continues to be an undesirable outcome. 		

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 Nova is responsible for, and the certification expiry date for those GIPs.

Audit commentary

TODD

TODD was responsible for the GIP shown in the table below until 28/02/2019, after which responsibility changed to TGTL (Todd Generation Taranaki Limited).

Responsible party	Description	NSP	MEP	Certification expiry date
TGTL	MCKEE	MKE1101TGTLGG	ACCM	01/04/2021

The GIP has current meter certification, and the certification details have not changed during the audit period.

WISE and Hunet

WISE and Hunet are not responsible for any GIPs.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

Audit observation

The registry list was reviewed to confirm the profiles used.

All active ICPs with profiles requiring control device certification were checked to determine whether AMI metering was installed, or the control device was appropriately certified.

Audit commentary

TODD

TODD does not apply any profiles which require AMI metering or certification of control devices. Only HHR, RPS, EG1 and PV1 profiles are used.

WISE

Examination of the list files found that WISE have only used the RPS profile, and control devices are not used for reconciliation purposes.

Hunet

Examination of the list files found that Hunet have only used the RPS, PV1 and HHR profiles, and control devices are not used for reconciliation purposes.

Audit outcome

Compliant

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

Code reference

Clause 10.43(2) and (3)

Code related audit information

If a participant becomes aware of an event or circumstance that 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.

EMS identify faulty meters for generation. Their processes were reviewed as part of their agent audit.

Audit commentary

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

TODD

NHH meters

A sample of ten defective meters were identified, all had stopped recording usage. The faults were identified by customers, through meter condition information provided by meter readers, or the network notifying TODD that there was no volume on a UN register. The MEP was notified in all instances and the meter was replaced.

A sample of 12 bridged meters were checked. The faults were identified on receipt of reconnection paperwork, through the review of ICPs with zero consumption, or when meter faults were reported by the customer or distributor. The MEP was notified in all instances and the meters were unbridged.

Corrections were appropriately processed for the defective and bridged meters and are discussed further in **section 2.1**.

HHR meters

EMS and EDM I confirmed that no defective meters have been identified since their last agent audit. AMS carried out one correction during the audit period in relation to 0000571117NR8FB. This was reviewed and confirmed to be correct.

Generation meters

Compliance with this clause for generation meters has been demonstrated by EMS as part of their agent audit.

WISE

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

I confirmed that for the six possible defective meter examples provided, the MEP was notified, and appropriate action was taken. Five had meters replaced and one had a modem replaced. In five of the six examples a final read from the register was obtained from the field visit. In one case, the meter had a blank screen and data could not be recovered. The correction was correctly processed using estimated data from historic consumption.

Hunet

Potential defective metering installations are identified using the ICP management tool which identifies any consumption on active vacant or disconnected vacant ICPs and through data validation by identifying missing, high or low reads during the validation process. Upon identifying a possible defective meter, a service request is raised with the MEP to investigate and resolve the defect.

A sample of ten possible defective meters were provided. The MEP was notified in all cases. Corrections in relation to these ICPs are discussed in **section 2.1**.

Audit outcome

Compliant

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

Code reference

Clause 2 Schedule 15.2

Code related audit information

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

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

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

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

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

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

2(6) – The interrogation systems must record:

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

Audit observation

The data collection and clock synchronisation processes were examined.

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

Nova collects some HHR data, and generation data, using Stark. I walked through the clock synchronisation process.

Audit commentary

TODD

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

Data collected by agents and MEPs

Agents monitor clock synchronisation, and this is covered as part of their audits. Non-compliance was recorded in EDMl's agent audit relating to manual downloads for FCLM meters read using MV90, because meter event logs were not obtained and checks for time differences were not conducted. This non-compliance has been cleared. FCLM now provide meter event files for manual downloads, which include any time differences.

MEPs monitor clock synchronisation, and this is covered as part of their audits.

The agents and MEPs notify TODD when clock synchronisation events occur for HHR and AMI meters. TODD's metering team reviews these events to determine whether any corrections or adjustments are required and passes them to the billing and reconciliation teams for action. I viewed examples of clock synchronisation events during the audit period and found none required action by TODD. There is a process in place to estimate data where a clock synchronisation event affects multiple trading periods for a HHR settled meter.

AMS and EMS confirmed that no clock synchronisation events outside acceptable thresholds had occurred since their last agent audits. EDMl advised one clock synchronisation issue for ICP 0335240038LC7A3. A job has been issued to the MEP to change the meter and then corrections will be processed.

Data collected by TODD

The Stark system retrieves meter information from the generation meters every half hour. The frequency of interrogation ensures that the meter is interrogated more than once during each interrogation cycle.

TODD synchronises their server every minute against an internet time source. During each interrogation, the data logger internal clock is compared with the data collection system clock, and any errors less than or equal to 300 seconds are adjusted automatically. Review of the Stark communications logs confirmed there have not been any time errors over 300 seconds during the audit period for meters used for reconciliation. If time errors over 300 seconds occur, TODD determines whether a correction is required after assessing materiality and arranges for the MEP to correct the clock.

Stark's audit trails are discussed in **section 2.4**.

WISE

All information used to determine volume information is collected from the services access interface by the MEP. Compliance is confirmed as part of the MEP audits.

MEPs provide information on clock synchronisation events via email, which are reviewed by WISE to determine whether any action is required. WISE has not received notification of any clock synchronisation events outside the maximum permissible errors during the audit period.

No manual reads are received for non AMI meters. Meter readings are estimated until the meter is upgraded, and a removal reading is obtained. WISE intends to only accept customer applications where the meter is recorded as AMI capable on the registry.

The registry list found no ICPs without AMI metering. Four ICPs without AMI capable metering were temporarily supplied during the audit period. These were all for short periods where comms was not available but was restored within two weeks.

The samples checked for MEPs confirmed the data in WISE's database matched the data in the files.

Hunet

All information used to determine volume information is collected from the services access interface or the metering installation by Hunet, one of their agents, or the MEP. Compliance is confirmed as part of their agents and MEP audits.

The agents and MEPs notify Hunet if and when clock synchronisation events occur. Hunet reviews these events to determine whether any corrections or adjustments are required.

All data is imported into Hunet's system including the meters read by FCLM that were previously being manually entered.

The samples checked for data providers confirmed the data in Hunet's database matched the data in the files.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

All validated meter readings must be derived from meter readings.

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

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

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

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

Audit observation

The data collection process was examined.

Processes to provide meter condition information were reviewed as part of Wells' and MRS' agent audits. Nova's processes to manage meter condition information were reviewed.

Processes for customer and photo reads were reviewed.

Audit commentary

TODD

I traced reads for a sample of 19 manually read ICPs from the source files to Orion. All were recorded and labelled correctly.

Data validation

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

MRS and Wells 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.

The daily meter condition information is automatically loaded onto Orion through the task manager workflow. Activities are raised for action based on the condition type, e.g. potential faulty or stopped meters add an activity for the metering team. Emailed information is reviewed by the metering team. Orion is checked to determine whether action has already been taken, and if not, the information is copied into an activity and assigned to a user for action.

I viewed examples of the following types of meter condition events and noted that they had been appropriately actioned, including:

- meter number mismatch, including a different meter being present or a meter number being recorded incorrectly,
- missing or broken seals, and
- signs of tampering or damage.

No examples of phase failure or potentially unsafe installations were identified.

Meter condition issues can also be identified through TODD's meter read validation process or customer enquiries.

Customer and photo readings

MRS and Wells provide customer readings in the notes field and record a no read. A system estimate is generated for billing, and forward estimate is created for reconciliation.

Customer and photo readings are accepted by TODD and are manually entered into Orion with a read type of "customer". Customer readings are treated as validated actual readings by Orion and are used to calculate historic estimates. Any customer or photo readings which have not been validated against a set of actual readings from another source are expected to be labelled as "misreads" or "estimates" so that they are ignored by the historic estimate process.

I checked a sample of five customer readings and found that they had all been appropriately validated against at least two validated actual readings provided by a source other than the customer.

I checked a sample of five customer photo readings and found four had all been appropriately validated against at least two validated actual readings provided by a source other than the customer. The customer photo reading for ICP 0000017604CP1F8 on 19/11/19 was only validated against one actual reading at the time it was entered; the CS reading from 01/11/19. Further actual readings were obtained on 21/01/20 and 19/02/20 and the customer read is in line with these.

The billing team confirmed that the customer and photo reading validation process focuses on whether the readings are consistent with the start reading, and there is no specific check to ensure that customer readings are validated against at least two readings from another source. I recommend that this check is added.

Description	Recommendation	Audited party comment	Remedial action
Customer and photo read validation	If customer and photo readings cannot be validated against at least two readings which were not provided by the customer, they should be recorded as misreads or estimates so that they are not treated as actual readings by the reconciliation process.	<p>TODD</p> <p>Response: Recommendation accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> Nova has experienced turnover of staff during the last 12-18months. The awareness of the requirement to validate a photo or customer read with 2 actual reads from another source was not understood. The team were assessing the read against consistency with prior validated or customer reads and using the photo reads as actual reads. If there were no reads to check against, they were assessing against the start read. <p>Actions:</p> <ul style="list-style-type: none"> A change will be introduced to cover off validation of customer readings with at least two readings from another source. Change will be implemented by 30 May 2020. 	Identified

WISE

All meter readings are received from the MEP from the services interface, or through the switching process.

WISE does not currently supply any active ICPs with meters which are not AMI capable. If a meter stops communicating WISE estimates readings until the meter starts communicating again or is replaced. Staff check the ICP on the registry to confirm AMS, Metrix, or WEL Networks is the MEP, and that AMI metering is installed, prior to accepting a customer application.

WISE does not complete any manual readings, nor does WISE accept customer readings.

Hunet

For manually collected readings, the meter register value is collected and entered into a hand-held device. This reading enters Hunet's system and is appropriately labelled to denote that it is a meter reading collected and validated by a meter reader. Validated meter readings are derived from meter readings. AMI readings are supplied by AMS, Metrix and FCLM, these are also appropriately labelled. I checked the content of two read files from each provider which confirmed the data in Hunet's database matched the data in the files in all cases.

The customer read process was examined and found that customer reads are not used for reconciliation purposes. If the customer read indicates a potential discrepancy a check read is issued to confirm.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 6.6</p> <p>With: Clause 5 of Schedule 15.2</p> <p>From: 01-Jan-19</p> <p>To: 31-Mar-20</p>	<p>TODD</p> <p>Customer and photo readings are not specifically validated against at least two readings not provided by the customer.</p> <p>One customer reading for ICP 0000017604CP1F8 was recorded as a customer reading but had not been validated against a set of readings from another source.</p> <p>Potential impact: Low</p> <p>Actual impact: Medium</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls are rated as moderate overall. The controls over most of the process are robust, but customer photo readings are consistently treated as validated readings where they have not been validated against at least two validated actual readings provided by a source other than the customer.</p> <p>The audit risk rating is low. Further actual readings were obtained for ICP 0000017604CP1F8, confirming that it should pass validation. Only one of the ten customer and photo reads checked had not been appropriately validated.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> Customer and Photo readings not validated against at least two reading not provided by the customer 		May 2020	Identified

<ul style="list-style-type: none"> ○ See recommendation 6.6 • 1 customer reading ICP 0000017604CP1F8 was recorded as a customer reading but had not been validated against a set of readings from another source ○ See recommendation 6.6 		
Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> • Recommendation accepted and updated process to be completed 30 May 2020 	May 2020	

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. The event detail report was examined to identify ICPs which had undergone upgrades or downgrades, and the upgrade and downgrade process was reviewed.

Audit commentary

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

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

TODD

Application of reads was reviewed as part of the historic estimate checks in **section 12.11** and found to be compliant. The content of CS and RR files was examined in **sections 4.3, 4.4, 4.10** and **4.11**. As discussed in **section 4.10**, an incorrect switch event read was recorded in the CS file for ICP 0000050781CPF0C (06/12/19) because the ICP moved between customers mid switch, and some readings were not transferred between the accounts correctly.

CS field	Correct value	Applied value
Last actual read date	05/12/19	06/12/19
Meter 217007236/1 reading and type	4313 (A)	4315 (A)
Meter 217007236/2 reading and type	2904 (A)	2908 (A)

I walked through the process for NHH to HHR and HHR to NHH meter changes, including viewing examples. Nova ensures that all NHH meter reads are applied at the end of the day for both upgrades and downgrades:

- For upgrades, the process is to treat the ICP as NHH up to and including the day of the meter change, and then the ICP becomes HHR from the next day. This causes a non-compliance with **clause 2.1** as the ICP is recorded as NHH on the day that the meter is changed to HHR but achieves compliance with this clause. Submission occurs correctly for these ICPs as the HHR submission and billing are carried out in Stark so the ICP is effectively NHH and HHR on the same day.
- The reverse applies for a downgrade, the ICP is treated as HHR all day on the date of the removal, with zeros populated until the end of the day. The NHH meter is installed on the meter change date and the read is applied at the end of that day. This causes a non-compliance with **clause 2.1** as the ICP is recorded as HHR on the day that the meter is changed to NHH but achieves compliance with this clause as the NHH meter read is applied at the end of the day.

WISE

NHH meter readings provided by MEPs and agents are applied as at 2400hrs. As recorded in **sections 4.3** and **4.10**, there were three ICPs where the CS readings were provided for the incorrect day.

Application of reads was reviewed as part of the historic estimate checks, discussed in **section 12.11**.

Hunet

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 Wells are applied correctly.

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

The content of CS and RR files was examined in **sections 4.3, 4.4, 4.10** and **4.11**.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 6.7</p> <p>With: Clause 6 Schedule 15.2</p> <p>From: 01-May-19</p> <p>To: 31-Mar-20</p>	<p>TODD</p> <p>In a CS file for ICP 0000050781CPF0C, the switch event reads did not reflect the actual reading or best estimate of an actual reading on the event date.</p> <p>WISE</p> <p>Incorrect readings provided for three ICPs.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>

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

Code reference

Clause 7(1) and (2) Schedule 15.2

Code related audit information

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

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

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

Audit observation

The process to manage missed reads was examined.

Reporting on ICPs not read during the period of supply was examined, and a sample of ICPs were checked.

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”.

TODD

TODD's process to attain reads for non-AMI ICPs has changed since the 2018 audit:

1. Wells or Datacol visit the customer's site to obtain a reading. If a reading cannot be obtained, a “no read” card is left, which asks the customer to call TODD to resolve the issues preventing read attainment and provide a customer reading.
2. If two invoices in a row are based on estimated readings, and all of the following criteria are met, an automated text message is sent to the customer to request access:
 - a. the customer has one site supplied with TODD
 - b. the meter reader code is Wells or MRS
 - c. there are no active special (out of cycle) read requests, and
 - d. the customer has a mobile phone number recorded in Orion.
3. Three different reports of unread ICPs are reviewed to identify:
 - a. any ICPs unread for more than four months are passed to Wells and Datacol, so that read attempts can be made on the weekend, and
 - b. any ICPs unread for more than nine months receive an outbound call from the billing team.

4. If customer reads are consistently provided, the compliance read progress will be triggered to arrange a special reading annually.

The read attainment process is currently under review, and a revised process is expected to be implemented by mid-2020. Automated activities generated in Orion for the billing team are not always used or closed, and three different reports containing similar information are used in the process. TODD has recently found that ICPs which do not have estimated invoices generated, such as vacant ICPs and ICPs where customers consistently provide customer readings are excluded from parts of their read attainment processes, which may prevent them from meeting the endeavours requirements.

If readings cannot be obtained for AMI ICPs they are moved to a Wells or MRS meter reading route.

A report of 28 ICPs not read during the period of supply was provided for the period 1 January 2019 to 31 October 2019. Of these, 18 (64.3%) were supplied for less than 50 days. I reviewed the ten ICPs with the longest periods of supply and found:

- the best endeavours requirements were not met, and exceptional circumstances did not exist for four ICPs (for ICPs 1000007966BP729, 0006506194RN09E and 1000007391BP0FE the period of supply ended within 45-62 days and TODD's attainment processes were not completed within that timeframe, and ICP 0000007855CPB5F was supplied for 194 days, but the customer account was closed before action was taken for consecutive estimates), and
- the best endeavours requirements were met for one ICP, and exceptional circumstances prevented read attainment for the remaining five ICPs.

WISE

ICPs with missing reads are checked twice weekly. If a communications issue is preventing reads from being attained and is not resolved quickly, a fault will be raised with the MEP. I reviewed these checks and saw evidence of issues being resolved and field services jobs being raised through this process.

One ICP where the period of supply ended during the audit period did not receive an actual read. The period of supply was five days, and exceptional circumstances did not exist.

Hunet

Hunet's checks monthly for any ICPs that have not been read within 60 days of joining or have had no read gained for 200 days or more. All ICPs identified are assessed to determine if an AMI meter replacement is possible, or if this is not possible Wells are asked to obtain a special read. If gaining reads is going to be an ongoing issue, then Wells will arrange a special quarterly read process with the customer. This has greatly improved Hunet's read attainment. All customers are contacted using two different forms of communication at least three times. Hunet had one ICP not read during the period of supply. The period was 24 days and exceptional circumstances did not exist.

Audit outcome

Non-compliant

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

Code reference

Clause 8(1) and (2) Schedule 15.2

Code related audit information

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

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

Audit observation

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

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

TODD

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
July 2019	227	33	49	99.91%
August 2019	233	30	48	99.92%
September 2019	240	32	47	99.92%
October 2019	245	29	41	99.93%

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

TODD provided a list of ICPs unread for 12 months as at 31 October 2019. I reviewed ten ICPs not read in the previous 12 months determine whether exceptional circumstances exist, and if TODD had used their best endeavours to obtain readings.

- The best endeavours requirements were not met and exceptional circumstances did not exist for 0000176589TR135 and 0000111604TP60E. The ICPs were excluded from the attainment processes because customer readings were provided, and/or the consecutive estimate process was not triggered.
- The best endeavours requirements were met for two ICPs, and exceptional circumstances prevented read attainment for the remaining six ICPs.

TODD provides monthly reports on meter reading frequency to the Electricity Authority. I reviewed the reports for July to October 2019 and confirmed that they were submitted on time and the content of the reports met the requirements of clauses 8 and 9 of schedule 15.2.

WISE

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
July 2019	31	-	-	100.0%
August 2019	35	-	-	100.0%
September 2019	36	-	-	100.0%
October 2019	36	-	-	100.0%

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

Copies of the reports submitted to the EA from July 2019 to October 2019 were provided. The reports were in the required format and submitted on time.

Hunet

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
July 2019	40	-	-	100.0%
August 2019	40	-	-	100.0%
September 2019	40	-	-	100.0%
October 2019	40	-	-	100.0%

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

Hunet provides monthly reports on meter reading frequency to the Electricity Authority. I reviewed the reports for July to October 2019 and confirmed that they were submitted on time and were in the correct format.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.9 With: Clause 8(1) and (2) Schedule 15.2 From: 01-Nov-18 To: 31-Oct-19	TODD Exceptional circumstances were not proven for at least two ICPs unread in the 12 months ending 31/10/19. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate and expected to improve to strong once the revised process is implemented. The audit risk rating is low as the percentage of ICPs read at 12 months is number of ICPs not read during the period of supply is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
TODD Response: Non-Compliance accepted. Comments: <ul style="list-style-type: none"> Exceptional circumstances were not proven for 2 ICPs unread in 12month period <ul style="list-style-type: none"> Refer 6.8 		Q4	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<ul style="list-style-type: none"> Refer 6.8 		Q4	

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

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

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

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

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

Audit observation

The meter reading process was examined. Monthly reports were reviewed.

A sample of ICPs connected to NSPs that did not meet the threshold were checked to determine if exceptional circumstances existed.

Audit commentary

TODD

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	ICPs unread for 4 months	Overall percentage read
July 2019	255	-	415	99.40%
August 2019	257	-	466	99.33%
September 2019	261	1	528	99.26%
October 2019	263	1	450	99.38%

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

TODD provided a list of ICPs unread for four months as at 31 October 2019. I reviewed the ICPs on the NSP where the threshold wasn't met and confirmed that exceptional circumstances applied.

The content and accuracy of meter reading frequency reports to the Electricity Authority was assessed in **section 6.9** and found to be compliant.

WISE

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	ICPs unread for 4 months	Overall percentage read
July 2019	39	-	-	100%
August 2019	38	-	-	100%
September 2019	38	-	-	100%
October 2019	38	-	-	100%

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

Hunet

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	ICPs unread for 4 months	Overall percentage read
July 2019	55	2	5	99.9%
August 2019	57	1	3	99.9%
September 2019	61	-	3	99.9%
October 2019	64	-	8	99.8%

Exceptional circumstances were proven for the ICPs not read in July and August 2019. There were two ICPs in total.

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

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

TODD

NHH data is collected by

- MRS and Wells for manually read meters, and
- ARC, Metrix, FCLM and AMS for AMI meters.

The data interrogation log requirements were reviewed as part of their agent and MEP audits.

WISE

NHH data is provided by AMS, Metrix, and WEL Networks as MEPs. The data interrogation log requirements were reviewed as part of their agent and MEP audits.

Hunet

NHH data is collected by:

- Wells for manually read meters, and
- MEPs for AMI meters.

The data interrogation log requirements were reviewed as part of their agent and MEP audits.

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 11(1) Schedule 15.2

Code related audit information

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

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

Audit observation

TODD

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

TODD uses Stark to retrieve HHR data from the generation meters and some customer meters. The data collection process was reviewed.

EMS reports generation data to the reconciliation manager as TODD's agent. Their processes for HHR data collection were reviewed as part of their agent audit.

WISE

Review of a registry list for the audit period confirmed that WISE has not supplied any ICPs with submission type HHR.

Hunet

Hunet switched in some HHR installations during the audit period. AMS provides the data and TODD conducts submission for these ICPs.

Audit commentary

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

TODD interrogates generation station and customer meters using Stark, and data is obtained via the services access interface.

Audit outcome

Compliant

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

Code reference

Clause 11(2) Schedule 15.2

Code related audit information

The following information is collected during each interrogation:

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

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

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

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

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

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

Audit observation

TODD

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

TODD uses Stark to retrieve HHR data from generation meters. The interrogation process was discussed, and the interrogation data was viewed.

EMS reports generation data to the reconciliation manager as TODD's agent. HHR interrogation data was reviewed as part of their agent audit.

WISE

Review of a registry list for the audit period confirmed that WISE has not supplied any ICPs with submission type HHR.

Hunet

Hunet switched in some HHR installations during the audit period. AMS provides the data and TODD conducts submission for these ICPs.

Audit commentary

Compliance with this clause has been demonstrated by AMS, EDM I, and EMS as part of their agent audits.

The following information is collected by Stark during each interrogation of HHR metering:

- the unique identifier (device ID) of the meter or data logger,
- the connection time, disconnection time and recorder time,
- the half-hour metering information for each trading period,
- event log, and
- interrogation log.

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

TODD

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

TODD uses Stark to retrieve HHR data from the generation meters and some customer meters. The interrogation process was discussed, and the interrogation logs were viewed.

EMS reports generation data to the reconciliation manager as TODD's agent. HHR interrogation logs were reviewed as part of their agent audit.

WISE

Review of a registry list for the audit period confirmed that WISE has not supplied any ICPs with submission type HHR.

Hunet

Hunet switched in some HHR installations during the audit period. AMS provides the data and TODD conducts submission for these ICPs.

Audit commentary

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

An interrogation log is available in Stark and was viewed during the audit. The log contains the following information:

- date,
- time,
- operator ID,
- data logger ID (always the same),
- clock errors, and
- interrogation method (always the same).

Audit outcome

Compliant

7. STORING RAW METER DATA

7.1. Trading period duration (Clause 13 Schedule 15.2)

Code reference

Clause 13 Schedule 15.2

Code related audit information

The trading period duration, normally 30 minutes, must be within $\pm 0.1\%$ (± 2 seconds).

Audit observation

TODD

HHR data is collected by AMS and EDM I as agents. Trading period duration was reviewed as part of their agent audits.

TODD uses Stark to retrieve HHR data from the generation meters every half hour, and customer meters weekly. Evidence of trading period duration checks was reviewed.

WISE

Review of a registry list for the audit period confirmed that WISE has not supplied any ICPs with submission type HHR.

Hunet

Hunet switched in some HHR installations during the audit period. AMS provides the data and Nova conducts submission for these ICPs.

Audit commentary

Compliance with this clause has been demonstrated by EMS, AMS and EDM I as part of their agent audits.

Stark's logs record an event if the number of seconds recorded does not match the expected number for the half hour. Clock synchronisation is discussed further in **section 6.5**.

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

TODD

Processes to archive and store raw meter data were reviewed. Raw meter data from at least 48 months prior was reviewed to ensure that it is retained. TODD's agents retain a copy of the raw meter data, and their compliance with the archiving and storage requirements were reviewed as part of their agent audits.

TODD's own audit trails were reviewed in **section 2.4**.

Hunet and WISE

Processes to archive and store raw meter data were reviewed. Raw meter data from at least 48 months prior was reviewed to ensure that it is retained.

Hunet's agents and the MEPs for both Hunet and WISE retain a copy of the raw meter data, and their compliance with the archiving and storage requirements were reviewed as part of their agent and MEP audits.

Audit trails were reviewed in **section 2.4**.

Audit commentary

Compliance with this clause has been demonstrated by Nova's agents and MEPs as part of their agent audits.

TODD

Password protection is in place to ensure that unauthorised personnel cannot access meter data in Stark, EnergyMarket, or Orion.

NHH

I reviewed raw NHH meter read data from 2014 during the audit. Data is archived for more than 48 months as required by the code.

I traced reads for a sample of 26 ICPs from the source files to Orion for NHH meters. The readings were the same for all ICPs, confirming the security of the process.

Review of audit trails in **section 2.4** confirmed that reads cannot be modified without an audit trail being created. Users are not able to edit actual meter readings, apart from changing the read status to misread.

HHR and Generation

I viewed raw HHR meter data and generation data from 2015 during the audit. Data is archived for more than 48 months as required by the code.

Review of audit trails in **section 2.4** confirmed that HHR reads and volumes reads cannot be modified without an audit trail being created in Stark, and data cannot be edited in EnergyMarket.

WISE

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

WISE intends to retain meter reading data for over 48 months. I viewed the meter readings for WISE's first ICP (0258253088LCBBE) and found that the earliest meter readings from November 2015 had been retained.

I traced readings for one ICP each for all MEPs from the source data to PEBS. All reads matched the source data. This confirmed that the reads had not been modified.

Hunet

When this data reaches Hunet's systems, the level of security is robust, and data cannot be accessed by unauthorised personnel. I viewed meter readings greater than 48 months and confirm these are still retained as required by this clause.

Compliance with clause 18.3 of schedule 15.2 was examined, which requires that ".....meter readings cannot be modified without an audit trail being created." 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. Audit trails are discussed in further detail in **section 2.4**.

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 and archive non-metering information were reviewed.

Audit commentary

TODD

DUML ICPs are not supplied and non-standard profiles are not used. No non-metering information is required to be collected.

WISE

Hunet and WISE do not deal with any non-metering information.

Hunet

Hunet and WISE do 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)& (1A) Schedule 15.2)

Code reference

Clause 19(1)& (1A) Schedule 15.2

Code related audit information

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 with 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 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

TODD

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.

WISE

Where errors are detected during the validation process, WISE reviews AMI readings for surrounding dates. If an original meter reading cannot be confirmed by another reading, the original read is removed from the customer account so it will not be used for billing or reconciliation. An estimated reading is used for billing, and forward estimate is created for reconciliation. The actual reading is retained against the ICP meter and register.

I reviewed examples of corrections to determine whether they had been processed correctly and flowed through to revision submissions.

No ICPs with transposed meter readings were identified during the audit period.

Hunet

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 which is appropriately labelled. The estimated read is calculated based on the average daily consumption.

Hunet advised that there have been no transposed meter corrections during the audit period. These would be managed in the same way as any other correction.

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:

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

Audit observation

Processes for correction of HHR meter readings were reviewed. Examples of HHR corrections were provided for review.

EMS completes corrections to generation data as TODD's agent. Compliance was assessed in their agent audit report.

Audit commentary

TODD

HHR

Where errors or missing data are detected during validation of half-hour metering information, and check metering data is not available, data from a period with a quantity and profile expected to be similar to the estimated period is used.

Three examples of HHR corrections were provided. Two were corrected by TODD and both were due to meter removals, where the meter had been removed without authorisation and final consumption was estimated.

AMS corrected data for ICP 0000571117NR8FB due to the CTs being installed upside down causing reverse polarity. The volume data was able to be retrieved from the export channels. This was submitted as a permanent estimate.

Audit trails were demonstrated and are discussed further in **section 2.4**.

Generation

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

WISE

WISE does not deal with HHR data.

Hunet

No corrections were required for Hunet HHR ICPs.

Audit outcome

Compliant

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

Code reference

Clause 19(3) Schedule 15.2

Code related audit information

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

Audit observation

Error and loss compensation arrangements were discussed.

Audit commentary

There are currently no error or loss compensation arrangements in place for TODD, Hunet or WISE.

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**. Audit trails are discussed in **section 2.4**.

EMS completes corrections to generation data as TODD's agent. Compliance was assessed in their agent audit report.

Audit commentary

TODD

NHH

Raw meter data is held by the MEPs and agents. Compliance was confirmed as part of their agent and MEP audits. An appropriate audit trail is created when NHH meter reading data is modified in Orion. These audit trails are discussed further in **section 2.4**.

HHR

HHR data is collected by EMS, EDM I and AMS as agents, and by TODD using Stark.

Compliance with the requirements to retain raw reading data was assessed as part of EMS, EDM I and AMS' agent audits. TODD retains the raw meter reading data within Stark, and audit trails are created when data is changed. These audit trails were viewed during the audit and are discussed further in **section 2.4**.

Generation

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

WISE

Raw meter data is held by MEPs.

An appropriate audit trail is created when NHH meter reading data is modified. These audit trails are discussed further in **section 2.4**

Hunet

Hunet's agents and MEPs collect and retain raw NHH reading information. Compliance with the requirements to retain raw reading data was assessed as part of their agent and MEP audits.

An appropriate audit trail is created when NHH meter reading data is modified. These audit trails are discussed further in **section 2.4**.

Audit outcome

Compliant

9. ESTIMATING AND VALIDATING VOLUME INFORMATION

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

Code reference

Clause 3(4) Schedule 15.2

Code related audit information

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

3(4)(a) - validated meter readings

3(4)(b) - estimated readings

3(4)(c) - permanent estimates.

Audit observation

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

Audit commentary

Volume information is directly derived from validated meter readings, estimated readings, or permanent estimates.

Audit outcome

Compliant

9.2. 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 for derive volume information must not be rounded or truncated from the stored data from the metering installation.

Audit observation

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

NHH data is collected by MEPs and agents, and most HHR data is collected by AMS and EDM I as agents. TODD uses Stark to retrieve HHR data from the generation meters.

EMS reports generation data to the reconciliation manager as TODD's agent. Their processes for HHR data were reviewed as part of their agent audit.

Audit commentary

TODD

The MEP or agent retains raw, unrounded data. Compliance with this clause has been demonstrated by AMS, EDM I, and EMS as part of their agent audits. Because the AMS, EDM I and EMS agent reports were more than seven months old on the audit due date, I confirmed that there had been no changes to agent systems or processes which could affect TODD's compliance.

AMS, Arc, Metrix, Counties Power, AMS, Smartco, FCLM and Nova NHH AMI readings are rounded to zero decimal places on import. This has previously been recorded as compliant because the MEP has the

unrounded raw meter data, however a recent review of the wording of this clause has led to a revised interpretation, which is that rounding should not occur until volume information is created. Rounding occurs prior to the creation of volume information, therefore non-compliance exists.

I viewed data collected by Nova in Stark, and confirmed it is not rounded or truncated.

WISE

AMI data provided by MEPs is truncated on import, readings are recorded to zero decimal places. The MEP retains the raw, unrounded data. This has previously been recorded as compliant because the MEP has the unrounded raw meter data, however a recent review of the wording of this clause has led to a revised interpretation, which is that rounding should not occur until volume information is created. Rounding occurs prior to the creation of volume information, therefore non-compliance exists.

For the metered installations, there is little impact because all submission is NHH, therefore any minor over or under submissions in a month will be corrected in the next month.

Hunet

The MEP or agent retains raw, unrounded data. Compliance with this clause has been demonstrated by Hunet's MEPs and agents as part of their audits.

NHH Meter readings are not truncated or rounded.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 9.2</p> <p>With: Clause 3(5) of schedule 15.2</p> <p>From: 01-Jan-19</p> <p>To: 31-Mar-20</p>	<p>TODD</p> <p>Raw meter data is rounded upon receipt and not when volume information is created.</p> <p>WISE</p> <p>Raw meter data is rounded upon receipt and not when volume information is created.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: None</p> <p>Breach risk rating: 5</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>There are no controls to prevent rounding of raw meter data, the system is designed to round as soon as the data arrives.</p> <p>There is very little impact because no metered consumption information is "missing", therefore the audit risk rating is low.</p>

Preventative actions taken to ensure no further issues will occur	Completion date	
TODD <ul style="list-style-type: none"> The interpretation of the code needs to be reviewed and clarified by the EA 	TODD N/A	
WISE <ul style="list-style-type: none"> As above 	WISE October 2019	

9.3. 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 data estimate processes were examined, and a sample of estimates were reviewed.

Generation data is reported by EMS as Nova's agent. Estimation was reviewed as part of their agent audit.

Audit commentary

TODD

HHR

If TODD has not received data prior to the deadline for providing submission information, estimated data is provided. Estimates are based on check meter data or readings where available, or data is used from a period with a quantity and profile expected to be similar to the estimated period.

Review of a sample of ten temporary estimates showed that they had been based on periods with a quantity and profile similar to what was expected. I saw evidence of investigation to identify a suitable period to use for estimation, including consultation with the customer where necessary.

There is a requirement to use "reasonable endeavours" to ensure this data is accurate to within 10%. I compared the temporary estimates with the replacement actual values for three ICPs and found each estimate was within $\pm 5\%$ of the actual data. TODD met the reasonable endeavours requirement for the estimates reviewed.

Generation

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

WISE

Wise does not have any HHR ICPs.

Hunet

Estimation has not occurred for any HHR ICPs.

Audit outcome

Compliant

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

Code reference

Clause 16 Schedule 15.2

Code related audit information

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

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

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

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

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

Audit observation

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

Audit commentary

TODD

NHH data is validated by several processes.

Meter reader validation

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

Orion validation

Orion validates readings on import. The read file import is scheduled to run automatically at 7.30am after retrieving the files from the SFTP directory. The billing team receives an email each morning confirming whether the file import has been successful. If the file format or field content is unexpected, the upload will fail, and the file will be checked and re-uploaded.

Orion initially checks that there is an open ICP meter register which matches the ICP meter register which the reading is provided for. If there is no match, an exception will be created.

Orion validates the reading, and generates the following read import exceptions:

1. there is already a read for this meter on this day, with separate exceptions generated where the read is the same or different to the other reading,

2. attempted import of an opening reading from a meter read file (opening readings are only expected as part of the meter exchange process, new connection process, or switching process),
3. meter read is exceptionally high,
4. meter read is exceptionally low,
5. the account is on the no bill cycle,
6. the read is earlier than previously billed reads,
7. there is more than one open account or more than one matching meter,
8. the meter reader is unknown, and
9. the meter read date is in the future.

Exceptions are reviewed on Orion's meter read import exceptions report, and either accepted or rejected (and made misreads). Summary reporting on daily meter read exceptions are monitored to identify trends and/or potential issues which may need to be followed up with the meter readers.

Once read exceptions have been processed, billing information is generated, and the billing exceptions report is produced. The billing exceptions include:

1. credit invoices,
2. large invoices,
3. billing periods of less than 20 days or more than 40 days,
4. consumption which is more than 300% of the previous invoice,
5. ICPs with meters which are missing reads or missing usage transactions, and
6. ICPs which have actual readings for master ICPs and estimated reads for child ICPs.

Invoicing is completed overnight for the ICPs where billing exceptions have been cleared. A sample of invoices are spot checked as part of the daily quality assurance checks. Abnormally high and low invoices are identified using SQL queries, and checked to confirm they are correct.

Vacant consumption

When an ICP becomes vacant, a letter is sent to the new occupier requesting that they sign up for electricity supply. If a customer does not sign up, the disconnection process is initiated. TODD continues to read vacant ICPs, and all vacant consumption is included in reconciliation submissions.

Inactive consumption

TODD produces a discrepancy report which identifies consumption for ICPs with inactive status, which is reviewed by the metering team. Each ICP is reviewed to determine whether the consumption is genuine (i.e. based on the difference between validated actual readings). If the consumption is genuine, TODD determines when the consumption began and updates the registry status to "active" from that date and raises a new disconnection service order for the ICP.

TODD continues to read disconnected ICPs, and all consumption during disconnected periods is included in reconciliation submissions.

Zero consumption

The daily zero usage reports are used to identify ICPs which have three or more consecutive readings indicating zero consumption on one or more of their meters. The reports are reviewed by the metering team. If there is not a known reason for the zero consumption, they will contact the customer to determine why and raise a service order to replace the meter if there is believed to be a fault. Once a fault is confirmed, the correction process described in **section 2.1** is followed.

If a meter register is confirmed to be unused a METZeroUsage activity is added in Orion, to explain why there is zero consumption and whether it is acceptable (e.g. the meter is not utilised but the customer does not wish to remove it, a service request was raised and the meter was confirmed not to be faulty, or the meter is confirmed to be disconnected).

Reconciliation submissions

Processes to review reconciliation submission information are discussed in **section 12.3**.

WISE

All reads received are from AMI meters, from the MEP on meter exchange paperwork, or through the switching process.

Read import validation

I confirmed that the WISE's daily read import process checks:

- readings relate to the correct ICP meter and register - if a match is not found, the information appears on an error log which is reviewed each morning,
- the date and time is valid, and matches the expected date - the process only imports midnight reads, so if there is no midnight read available for the previous day it will be recorded as a missing read,
- the ICP has an active customer account - if there is no active account, the read is imported against the ICP and meter register but not recorded on a customer account until the ICP switches away, and
- whether the read is the same as, higher, or lower than the previous read - if the read is lower, a meter rollover is automatically processed (if a lower reading occurred due to a previous high estimate rather than a genuine meter rollover, it will be detected through the post import validation checks).

Post import validation

Further validations occur after reads are imported:

- any ICPs where the daily consumption is not between 2 kWh and 70 kWh are checked individually to determine whether the consumption is correct and if a read renegotiation is required - these checks will help to identify possible stopped meters, bridged meters, and where reads lower than a previous read have been incorrectly treated as meter rollovers,
- daily credit reviews identify customers with high or low balances, which are investigated, and
- missing reads are checked twice weekly, and if the issue is not resolved quickly, a fault will be raised with the MEP.

In the event that an actual read is genuinely lower than the previous reading, WISE request a read renegotiation if the difference is more than 200 kWh, or will estimate zero consumption until the reads "catch up" to the switch in read if the difference is less than 200 kWh.

Hunet

NHH data is validated by several processes.

Meter reader validation

For those sites read manually by Wells a localised validation occurs at the hand-held device to ensure the reading is within expected high/low parameters. Readings outside these parameters have to be re-entered and acknowledged. A meter cannot be skipped without reading unless a reason is entered.

Hunet system validation

When data is uploaded into Hunet's systems there is an ICP, meter and register check to ensure the data is populated against the correct record. This step also checks dates and times.

A further validation occurs within Hunet's system, which checks:

- High consumption used to be a checked for ICPs over 3,000 units - ICPs were allocated to groups based on consumption, a comparison was made between actual and expected consumption.

Since Hunet began dealing with HHR ICPs this setting is not used, instead the 50 ICPs with the highest consumption are checked manually, which can allow errors to inadvertently slip through. As recorded in **section 12.12**, there were two large meter reading errors resulting in over submission of 465,000 kWh and 50,000 kWh in April and October 2019. I recommend the thresholds are reviewed and changed to ensure errors are identified.

- Readings lower than the previous reading- negative consumption.
- Correct number of dials.
- Zero consumption across a week.

In addition, some individual invoices are checked manually on a monthly basis.

All billing is for a complete calendar month so “short days” and “long days” validation is not required.

Recommendation	Description	Audited party comment	Remedial action
NHH metering information data validation	Re-introduce a threshold for checking NHH ICP high consumption.	<p>Recommendation accepted</p> <p>Response:</p> <ul style="list-style-type: none"> • Hunet will implement a new validation tool that detects potential mis-readings as soon as readings from Wells arrive. • Hunet will continue to focus on optimizing its standards by identifying and monitoring its performance and opportunities for improvements. <p>Action:</p> <p>Completion date as per section 2.1 – 30 May 2020</p>	Identified

Vacant and inactive consumption

As recorded in **section 2.1**, the ICP management report is run monthly and this identifies any active vacant or disconnected consumption. Any ICPs identified are investigated and corrections are processed.

Corrections for inactive and vacant consumption were reviewed in **section 2.1**.

Reconciliation submissions

Processes to review reconciliation submission information are discussed in **section 12.3**.

Audit outcome

Compliant

9.5. 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 Nova'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 2.1, 8.1 and 8.2**.

Audit commentary

TODD

All estimated readings are clearly identified as required by this clause.

Photo and customer readings are identified by the "customer" read type. They are treated as validated readings when calculating reconciliation submissions, unless they have not been validated and are then classified as misreads. Misreads are ignored by the historic estimate calculation process. Non-compliance is recorded in **section 6.6**, because one customer read was treated as a validated reading without being validated against a set of readings from another source.

The sample of reads checked in **section 2.3** were recorded with the correct read types.

WISE

Readings are clearly identified in PEBS, and this was confirmed by reviewing a sample of actual and estimated readings.

I found that read types were recorded correctly.

Hunet

Volume information is directly derived from validated meter readings, estimated readings, or permanent estimates.

I found that read types were recorded correctly.

Audit outcome

Compliant

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

Code reference

Clause 17 Schedule 15.2

Code related audit information

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

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

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

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

17(4)(c) - checks of unexpected 0 values

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

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

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

Audit observation

Review of electronic read validation processes and meter event logs, including checking examples of validations.

Audit commentary

TODD

EnergyMarket validations

All HHR electronic data is validated in EnergyMarket, as well as on receipt. The EnergyMarket validation includes comparison with expected, or previous flow patterns, and checks for missing data and are discussed in further detail in **section 12.3**.

HHR data received from agents

HHR data is collected by AMS and EDM I as agents, and data validation was reviewed as part of their agent audits. Non-compliance was recorded in EDM I's agent audit relating to manual downloads for FCLM meters read using MV90, because meter event logs were not obtained and checks for time differences were not conducted. This non-compliance has been cleared. FCLM now provide meter event files for manual downloads, which include any time differences. The files are manually reviewed by EDM I agents.

AMS and EDM I provide event information to TODD, which is reviewed and acted upon.

- AMS review their event information and email events requiring action to TODD as they are identified. I viewed four examples of these events and found TODD had acted to investigate each event and resolve any issues.
- EDM I emails information on events with their business day one downloads. I viewed the event information provided with three monthly downloads and found TODD had taken action to investigate and resolve issues where required.

HHR and generation data obtained by TODD

Stark retrieves meter information from the generation meters every half hour, and customer meters weekly. I viewed the check data in Stark, which includes checks for:

- missing data,
- invalid data,
- unexpected zero volumes,
- meter data storage device events, and
- clock synchronisation events.

The Stark meter data storage device event reports are reviewed prior to initial submissions each month, and events are investigated and resolved as required.

EMS also directly obtains HHR generation data, which is used to produce generation submissions. As part of this, EMS validates generation volumes and reviews event data. Compliance is recorded in EMS agent audit report.

TODD validates the consumption information created by EMS by comparing it to the accruals TODD has calculated based on the generation volumes. I repeated these checks for June 2019 for two generation stations and noted that the information reported by EMS was consistent with the information held by TODD.

AMI data

TODD demonstrated their validation processes for AMI installations. These ICPs are billed and reconciled as NHH sites so validation is based on end of day reads and not the half hour interval data. Validation checks are the same as for non-AMI meters and meet the requirements of this clause.

NHH AMI data is provided by ARC, Metrix (for Metrix and Counties Power meters), and AMS (for AMS and Smartco meters), FCLM, and Nova via SFTP. All the MEPs provide meter event information to TODD, which is manually reviewed. Action is taken on events at the MEPs request, or where TODD's review has identified that action is required.

I saw examples of events relating to tampering, battery failure, and communications issues and noted that appropriate action had been taken.

Non-communicating AMI sites are notified to TODD after 30 consecutive days of no reads and these are then put in manual read rounds until the issue is resolved. The customer is contacted to determine whether there is a known reason for the issue, and then the MEP is contacted to determine whether any action can be taken to improve communications.

WISE

Submission type is NHH for all ICPs, and data is validated as described in **section 9.5**.

Meter event reports are received and reviewed. I viewed a sample of the reports and found that they typically contain power failure, power up and down events. I did not find any examples where events affecting meter accuracy had occurred.

- AMS and WEL networks provide full meter event reports via FTP and will email any events requiring further investigation. None have been received during the audit period.
- Metrix provides meter events that require a service order to be raised via email, and a monthly summary of meter events via FTP.

Hunet

AMI reads are validated in Hunet's system using the same processes described in **section 9.5**.

Metrix send Hunet notifications via email of meters that require a service request to be raised to investigate. I sighted four such requests received from Metrix and all were actioned. Meter condition reports are also received monthly from Metrix. All ICPs identified from these are tracked in the WIP spreadsheet and a service request is issued to the MEP to resolve accordingly.

Hunet checks for event logs, meter condition reports or notifications as part of BAU and none have been received from AMS or FCLM during the audit period.

Audit outcome

Compliant

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

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

Code reference

Clause 13.136

Code related audit information

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

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

Audit observation

This process is managed by EMS and was assessed as part of their agent audit.

Audit Commentary

Review of the EMS report confirmed that HHR metering information is provided in a compliant manner.

Audit outcome

Compliant

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

This process is managed by EMS and was assessed as part of their agent audit.

Audit Commentary

Review of the EMS report confirmed that HHR metering information is provided in a compliant manner.

Audit outcome

Compliant

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

Code reference

Clause 13.138

Code related audit information

The generator must provide the information required by clauses 13.136 and 13.137,

13.138(1)(a)- adjusted for losses (if any) relative to the grid injection point or, for embedded generators the grid exit point, at which it offered the electricity

13.138(1)(b)- in the manner and form that the pricing manager stipulates

13.138(1)(c)- by 0500 hours on a trading day for each trading period of the previous trading day.

The generator must provide the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of the generator's volume information.

Audit observation

This process is managed by EMS and was assessed as part of their agent audit.

Audit Commentary

Review of the EMS report confirmed that loss adjustment is managed in a compliant manner.

Any loss adjustment relative to the grid injection point is normally made within the metering installation at the time of installation and commissioning.

Audit outcome

Compliant

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

This process is managed by EMS and was assessed as part of their agent audit.

Audit commentary

EMS is the agent to the grid owner and conducts this notification. Compliance is confirmed in the EMS audit report.

Audit outcome

Compliant

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 notify the reconciliation manager if it is to commence or cease trading electricity at a point of connection using a profile with a profile code other than HHR, RPS, UML, EG1, or PV1 at least five business days before commencing or ceasing trader.

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

Audit observation

The registry list was reviewed to confirm the profiles used.

Audit commentary

TODD

Review of the registry list with history for 01/01/19 to 06/01/20 confirmed that TODD has only applied the HHR, RPS, EG1 and PV1 profiles during the audit period. Trading notifications are not required for these profiles.

WISE

Wise only uses the RPS profile, therefore trading notifications are not required.

Hunet

Hunet only uses the HHR, RPS and PV1 profiles, therefore trading notifications are not required.

Audit outcome

Compliant

11.2. Calculation of ICP days (Clause 15.6)

Code reference

Clause 15.6

Code related audit information

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

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

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

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

Audit observation

The process for the calculation of ICP days was examined by checking a sample of NSPs with a small number of ICPs to confirm the AV110 ICP days calculation was correct.

I reviewed the GR100 ICP days comparison reports for the audit period and investigated a sample of variances.

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

Audit commentary

TODD

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 NHH ICP days for 16 NSPs with a small number of ICPs each, and HHR ICP days for 12 NSPs with a small number of ICPs each. The ICP days calculation was confirmed to be correct for the NSPs checked.

The following table shows the ICP days difference between TODD files and the RM return file (GR100) for all available revisions for 15 months. The consistent low negative percentage figures indicate that the TODD ICP days are higher than those on the registry, because inactive ICP days are included in TODD's submissions.

Month	Ri	R1	R3	R7	R8	R14
Aug 2018	-0.69%	-0.70%	-0.71%	-0.72%	-	-0.72%
Sep 2018	-0.70%	-0.73%	-0.74%	-0.74%	-	-0.74%
Oct 2018	-0.74%	-0.74%	-0.77%	-0.77%	-	-0.77%
Nov 2018	-0.72%	-0.74%	-0.75%	-0.75%	-	-
Dec 2018	-0.80%	-0.81%	-0.81%	-0.80%	-0.80%	-
Jan 2019	-0.73%	-0.78%	-0.77%	-0.78%	-	-
Feb 2019	-0.84%	-0.85%	-0.84%	-0.84%	-	-
Mar 2019	-0.83%	-0.84%	-0.85%	-0.85%	-	-
Apr 2019	-0.81%	-0.84%	-0.85%	-0.85%	-	-
May 2019	-0.83%	-0.86%	-0.87%	-0.87%	-	-
Jun 2019	-0.82%	-0.86%	-0.87%	-	-	-
Jul 2019	-0.83%	-0.85%	-0.86%	-	-	-

Month	Ri	R1	R3	R7	R8	R14
Aug 2019	-0.84%	-0.85%	-0.85%	-	-	-
Sep 2019	-0.84%	-0.85%	-0.85%	-	-	-
Oct 2019	-0.84%	-0.85%	-	-	-	-

I reviewed five NHH and five HHR NSP level ICP days differences:

- three were timing differences related to backdated switches, the timeliness of switching files is discussed in **section 4**,
- three were due to inactive days being included in TODD's submission, TODD's ICP days matched the days that submission information provided,
- three issues related to backdated events where the GR100 is reporting incorrectly, and
- one was due to an upgrade where the ICP was both NHH and HHR on the same day resulting in a 1-day difference, in this instance TODD have both NHH and HHR on the same day but the normal practice is described in **section 6.7**.

The event detail report was reviewed to identify upgrades from NHH to HHR, and downgrades from HHR to NHH. Each TOU meter must be manually set up, and the meters are created by the metering or reconciliation team. Submission types are checked against a registry list with history as part of the pre-submission checks described in **section 12.3**, and discrepancies are identified and resolved.

To confirm the upgrade and downgrade process, a sample of five upgrades to HHR and five downgrades to NHH were checked. All followed the process described in **section 6.7**.

I identified a small number of ICPs with incorrect active status dates as discussed in **sections 3.5 ,3.8 and 3.9**, which will have a minor impact on the accuracy of ICP days submissions. The ICP days match the submission information provided.

WISE

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 September 2019 ICP days for five NSPs with a small number of ICPs each. The ICP days calculation was confirmed to be correct for the NSPs checked. I checked some ICP days discrepancies and found that in all cases, the ICP days matched the days that submission information was provided.

The following table shows the ICP days difference between WISE's database and the RM return file (GR100) for all available revisions for 12 months. Negative percentage figures indicate that WISE's ICP days are higher than those contained on the registry, and positive percentage figures indicate that the WISE's ICP days are lower than those contained on the Registry.

Month	Ri	R1	R3	R7	R14
Aug-18	-0.16%	0.01%	0.00%	0.00%	0.00%
Sep-18	-0.13%	-0.01%	0.00%	0.00%	0.00%
Oct-18	-0.03%	0.00%	0.00%	0.01%	0.00%

Month	Ri	R1	R3	R7	R14
Nov-18	-0.03%	0.00%	0.00%	0.00%	-
Dec-18	-0.07%	-0.05%	0.00%	0.00%	-
Jan-19	-0.01%	0.00%	0.00%	0.00%	-
Feb-19	0.00%	-0.01%	-0.04%	-0.01%	-
Mar-19	-0.03%	0.00%	0.00%	0.00%	-
Apr-19	-0.05%	-0.05%	0.00%	0.00%	-
May-19	-0.04%	0.00%	0.00%	0.00%	-
Jun-19	-0.07%	0.00%	0.02%	-	-
Jul-19	0.03%	0.20%	0.15%	-	-
Aug-19	0.28%	0.23%	0.23%		
Sep-19	0.17%	0.18%	0.18%		

Hunet

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 September 2019 ICP days for five NSPs with a small number of ICPs each. The ICP days calculation was confirmed to be correct for the NSPs checked. I checked some ICP days discrepancies and found that in all cases, the ICP days matched the days that submission information was provided.

The following table shows the ICP days difference between Hunet files and the RM return file (GR100) for all available revisions for 12 months.

Month	Ri	R1	R3	R7	R14
Aug-18	-0.01%	0.01%	0.04%	-0.02%	0.00%
Sep-18	0.02%	1.14%	0.04%	-0.02%	0.07%
Oct-18	0.00%	0.00%	-0.02%	-0.02%	
Nov-18	0.00%	0.02%	-0.02%	-0.02%	
Dec-18	-0.03%	-0.02%	-0.02%	-0.02%	

Month	Ri	R1	R3	R7	R14
Jan-19	0.00%	-0.01%	-0.01%	-0.01%	-
Feb-19	-0.01%	0.01%	0.00%	0.00%	-
Mar-19	0.03%	0.03%	0.00%		-
Apr-19	0.05%	0.02%	0.00%		-
May-19	-0.01%	0.00%	0.00%		-
Jun-19	0.02%	0.00%	0.00%		-
Jul-19	0.01%	0.01%	0.00%		-
Aug-19	0.01%	0.03%	0.04%	-	-
Oct-19	0.04%	0.04%		-	-

Audit outcome

Compliant

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

Code reference

Clause 15.7

Code related audit information

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

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

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

Audit observation

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

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

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

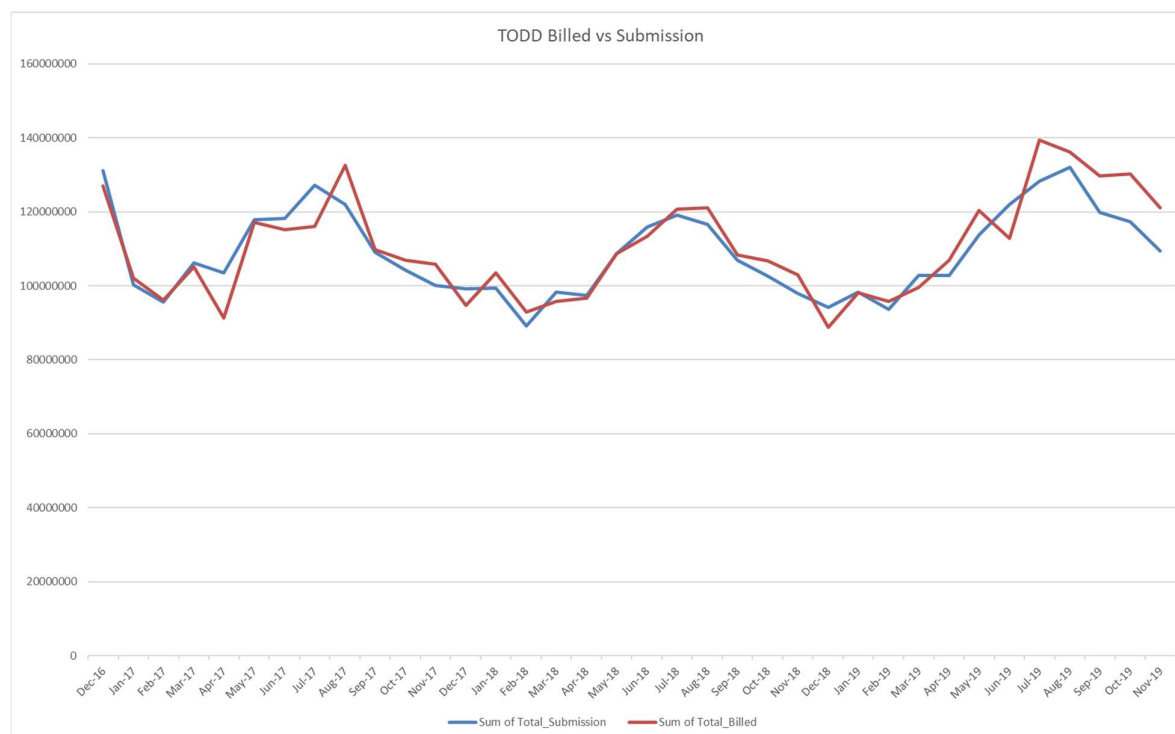
Audit commentary

TODD

The process for calculating and submitting electricity supplied information was reviewed.

The process for the calculation of as billed volumes was examined by checking five NSPs with a small number of ICPs against invoice information. The AV120 billed consumption calculation was confirmed to be correct for the NSPs checked.

I also checked the difference between submission and electricity supplied information for a 3-year period, and the results are shown chart below. The total difference is 2.2% for the two years ended November 2019 and 3.2% for the year ended November 2019 (submission lower than billed).



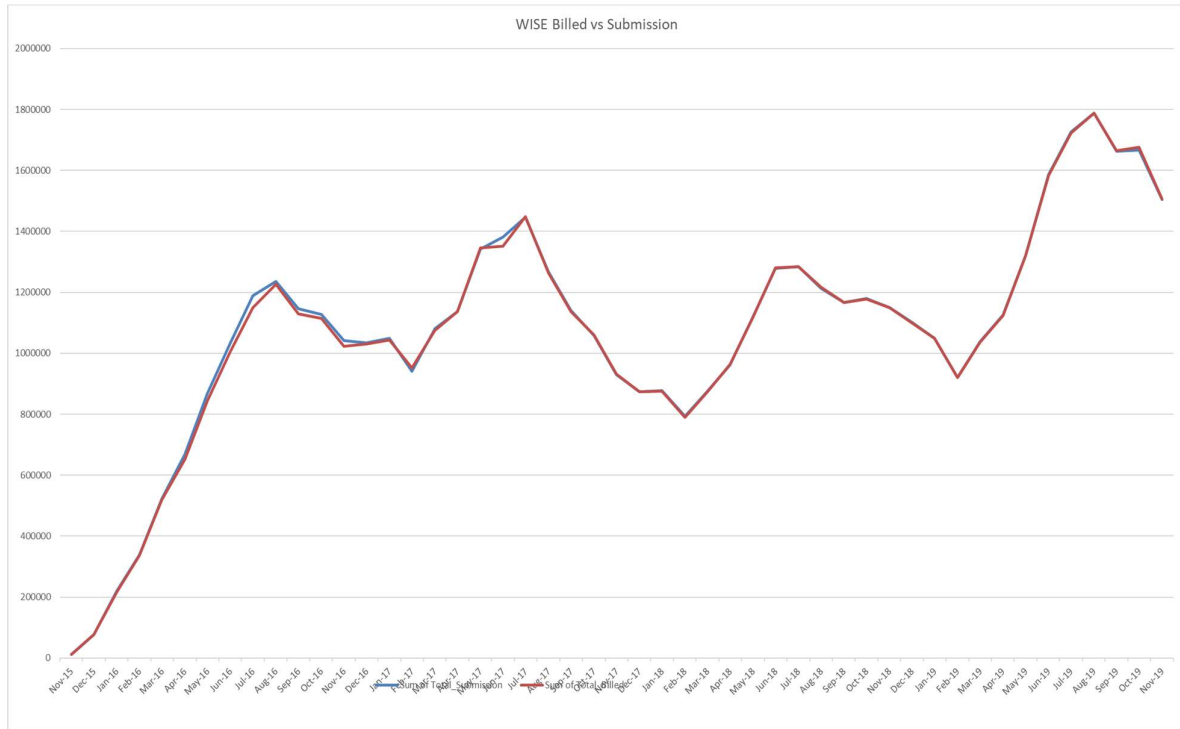
The differences have increased from the previous audit, and largely relate to a group of ICPs with time of day (TOD) billing. EnergyMarket automatically retrieves billed data from Orion and Kinetiq (Stark's billing module). ToD customers are in AXOS, and their billed data is downloaded and imported into EnergyMarket. They are also being imported into Orion resulting in them being reported twice causing the billed volumes appear higher than the submitted volumes. TODD are aware of the issue and are working to resolve this.

Monthly, TODD reviews the GR130 results against historic results to check for reasonableness and identify any anomalies. Prior to submission, NHH data is also checked against billed data for reasonableness as described in **section 12.3**.

WISE

The process for the calculation of as billed volumes was examined by checking five NSPs with a small number of ICPs against invoice information. The AV120 billed consumption calculation was confirmed to be correct for the NSPs checked.

I also checked the difference between submission and electricity supplied information for a 48-month period, and the results are shown chart below. The total difference is 0.4% for the year ended period ending November 2019 (billed lower than submission).



As discussed in **section 2.1**, active vacant consumption is being submitted when the ICP switches away.

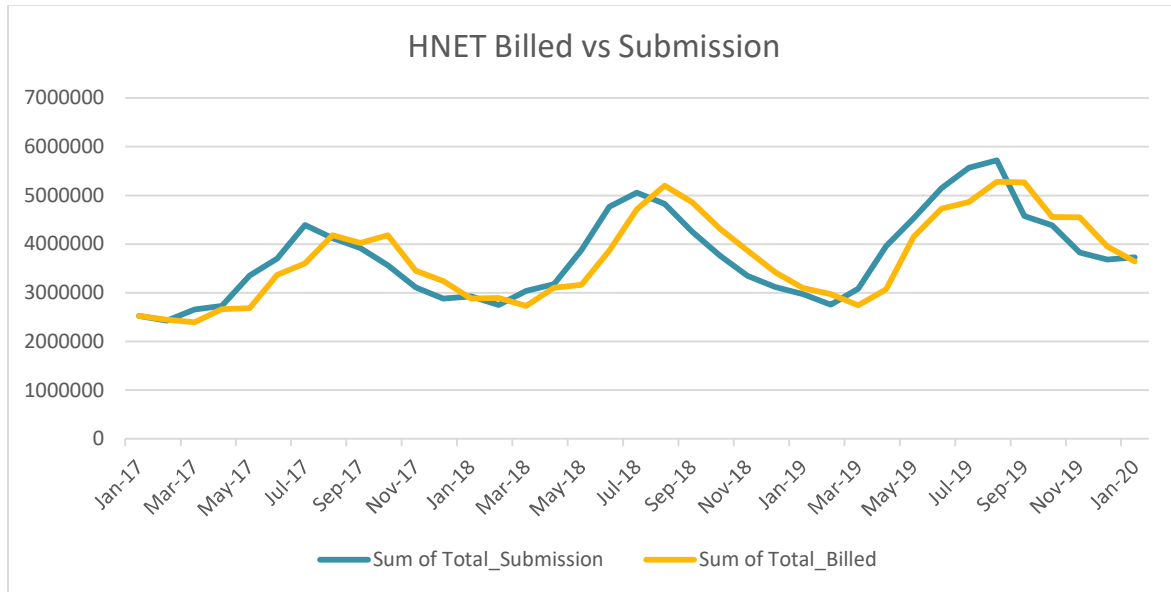
Hunet

No breaches were recorded for late provision of submission information.

The process for the calculation of as billed volumes was examined by checking five NSPs with a small number of ICPs against invoice information. The AV120 billed consumption calculation was confirmed to be correct for the NSPs checked.

I also checked the difference between submission and electricity supplied information for a 45-month period, and the results are shown chart below. The total difference is 0.3% for the period ended February 2020 (billed lower than submission).

The differences appear to relate to timing; once the invoice and reconciliation periods are aligned the difference is very small.



As discussed in **section 2.1**, active vacant consumption is being submitted.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 11.3 With: Clause 15.7 From: Jul-19 To: Nov-19	TODD Some ICPs billed in AXOS were double counted in the AV120 submissions. Potential impact: Low Actual impact: Low Audit history: Once 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 mitigate the risk of incorrect as billed data for most ICPs. The impact is rated as low because there is no impact on market submission, and a small proportion of ICPs were affected.		
Actions taken to resolve the issue		Completion date	Remedial action status
TODD Response: Non-Compliance accepted. Comments:		N/A	Identified

<ul style="list-style-type: none"> The task of invoice xml creation was moved from the time-of-day system to the CRM billing system for this set of time-of-day billed ICPs during 2019. The unintended impact of this was that the billed transactions (containing the volumes) from the time-of-day system did not cease as this system continued to be used for the volume calculation part of invoicing. The result of these transactions not ceasing meant that volumes continued to be reported in the AV-120 from the time-of-day system, as well as being reported in the AV-120 from the CRM billing system where the invoice creation task now resides. If adjusted to remove these double-reported volumes, the variance between billed and submission for the year ending November 2019 is 0.8% (submitted greater than billed). 		
Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> The inclusion of these duplicate volumes from the time-of-day system was ceased in December 2019. Nova will washup AV-120 files to the RM. 	December 2019 & Q3	

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 a sample of submissions.

The GR090 ICP Missing files were examined. An extreme case sample of 15 ICPs missing were checked.

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

Audit commentary

TODD

No breaches had been recorded for late provision of submission information.

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

I checked the process for aggregation of HHR data is correct, by matching HHR aggregates information to the volumes for 11 submissions. One submission was reconciled at NSP and flow direction level and confirmed that the differences related to rounding.

I checked aggregate data for one month for five HHR ICPs against the source volume data. Compliance was confirmed.

The GR090 ICP Missing files were examined for all revisions for August 2019 to October 2019. An extreme case sample of 25 ICPs missing from the largest number of submissions were checked and found to relate to inactive ICPs which are included in submissions with zero consumption but are not expected on the registry. The inactive ICPs ceased to be reported when they switched out or moved to active or decommissioned status.

WISE

WISE does not have any HHR ICPs.

Hunet

The GR090 ICP Missing files were examined for all revisions for September 2019 to March 2020. There were no records in any file, indicating that the HHR aggregates files contained the correct ICPs.

HHR aggregates files are prepared and sent by TODD. As mentioned above, the HHR aggregates file contains submission information, not electricity supplied information as specified under clause 15.8. Although the reports TODD produces are consistent with the Reconciliation Manager Functional Specification.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.4 With: Clause 15.8 From: Dec-18 To: Mar-19	TODD and Hunet HHR aggregates file does not contain electricity supplied information. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Strong Breach risk rating: 1
Audit risk rating	Rationale for audit risk rating
Low	The issue relating to content of the aggregates file is an error in the code, submission data is provided as expected.

Actions taken to resolve the issue	Completion date	Remedial action status
<p>TODD - Hunet</p> <p>Response: Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> • HHR aggregates file doesn't contain electricity supplied information • Nova will continue to prepare the HHR aggregates file at an ICP level based on submission information as required by the Reconciliation Manager. • Nova supports a Code change to allow the aggregate files used in practice within the industry to remain unchanged. 	N/A	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>TODD - Hunet</p> <ul style="list-style-type: none"> • Nova continue to support a code change 	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

TODD

HHR data is collected by AMS and EDMI as agents, and EMS reports generation data to the reconciliation manager as TODD's agent. Daylight savings adjustments were reviewed as part of their agent audits.

HHR data is also received from AMS for AMS and Arc AMI meters billed as HHR.

TODD uses the Stark system to retrieve HHR data from the generation meters every half hour, and customer meters weekly.

WISE

WISE does not have any HHR ICPs.

Hunet

HHR data is supplied by AMS as an agent. Daylight savings adjustments were reviewed as part of their agent audit.

Audit commentary

TODD

AMI data provided is daylight savings adjusted, and HHR and generation data is adjusted for daylight savings in EnergyMarket using the trading period run on technique. I observed this system process and confirmed that it is working correctly for ICPs going into and coming out of daylight savings.

Compliance with this clause has been demonstrated by AMS, EDMI, and EMS as part of their agent audits, and AMS' MEP audit.

WISE

WISE does not have any HHR ICPs.

Hunet

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

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

Processes to ensure that HHR, NHH and generation submissions are accurate were reviewed. A list of breaches was obtained from the Electricity Authority.

Audit commentary

TODD

Generation

Generation data is reported by EMS as TODD's agent. Compliance with this clause has been demonstrated by EMS as part of their agent audit.

TODD validates generation submissions; this process is discussed in **section 12.3**.

HHR

HHR submissions were checked in **section 11.4** and found to be compliant. A sample of corrections were reviewed to ensure that they flowed through to revision submissions in **section 8.2**.

HHR volumes are reviewed prior to submission, these checks are discussed in **section 12.3**.

NHH

TODD prepares NHH submissions in EnergyMarket using reconciliation consumption generated in Orion.

A sample of NHH ICPs were checked to make sure they are handled correctly, including unmetered load, distributed generation, and vacant ICPs with consumption:

- five ICPs with injection/export registers were checked and found that generation consumption was correctly submitted,
- five 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**, and
- ten ICPs with unmetered volumes were reviewed, including five ICPs with standard and five ICPs with shared unmetered and found that the correct consumption was submitted.

A sample of corrections were reviewed to ensure that they flowed through to revision submissions in **sections 2.1** and **8.1**.

NHH volumes are reviewed prior to submission, these checks are discussed in **section 12.3**.

WISE

WISE prepares NHH submissions using their database.

A sample of NHH ICPs were checked to confirm whether they were handled correctly:

- no ICPs with genuine vacant consumption were identified - WISE rarely supplies active-vacant ICPs, their policy is to disconnect as soon as an ICP becomes vacant,
- disconnected ICPs with consumption were reviewed in **section 2.1** - all ICPs with genuine consumption while disconnected were appropriately corrected,
- one ICP had generation capacity added by the distributor during the audit period - as discussed in **section 6.1** the ICP switched out before WISE confirmed whether generation was installed, and
- no ICPs with unmetered load were supplied.

There were no alleged breaches for late provision of information.

Hunet

Detailed meter register level supporting data was provided for five submissions and reviewed to confirm that the AV080 report is correctly aggregated. NHH volume calculation was confirmed to be correct.

The checks carried out of the GR170 and AV080 files for ten revisions were compared to ten revision submissions, and found to contain the same NSPs, confirming that zeroing is occurring as required.

HHR submissions were checked in **section 11.4** and found to be compliant. There were no HHR corrections or estimations during the audit period.

Audit outcome

Compliant

12.3. Allocation of submission information (Clause 15.5)

Code reference

Clause 15.5

Code related audit information

In preparing and submitting submission information, the reconciliation participant must allocate volume information for each ICP to the NSP indicated by the data held by 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**.

Processes to ensure that HHR, NHH, and generation submissions are accurate were reviewed. A sample of GR170 and AV080 files were compared, to confirm zeroing occurs.

Audit commentary

TODD

Generation

TODD validates the consumption information created by EMS by comparing it to the accruals TODD has calculated based on the generation volumes. I repeated these checks for October 2018 for two generation stations and noted that the information reported by EMS was consistent with the information held by TODD.

HHR

Submissions are reviewed to check for unexpected zeros, gaps in data, or consumption differing from expected values over the past 13 months before being submitted. Exceptions are investigated, and field services jobs are raised if there are concerns about the accuracy of the information recorded.

HHR industrial sites are reviewed at ICP level, including a review of consumption history charts.

HHR mass market sites are reviewed at NSP level, with ICP level data checked if potential issues are identified.

Aggregation factors are checked against a registry list with history, to ensure they are correct and that each ICP is included in the right submission.

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.

Zeroing occurs automatically in the EnergyMarket database. A zero line is added if an aggregation factor combination appeared in a previous submission for the period but is not included in the current submission. GR170 and AV080 files for nine revisions were compared, and I found all NSPs included in the GR170 were included in the AV080, confirming that zeroing is occurring as required.

NHH metered and unmetered volumes are reviewed prior to submission. TODD conducts monthly checks using their “node summary” reporting to identify and resolve any discrepancies. This reporting compares the current month vs last month, billed vs submission, and the current revision vs the last revision. Checks are also conducted at ICP level for high consumption and negative consumption; these are individually checked and fixed in Orion prior to submission.

Aggregation factors are checked against a registry list with history, to ensure that aggregation factors are correct and that each ICP is included in the right submission. These checks include profiles, submission types, network nodes, loss codes, inactive ICPs, and consumption while vacant.

Any ICPs which are fully forward estimated at the 7-month revision are checked, to ensure that steps are being taken to obtain actual reads.

WISE

Detailed meter register level supporting data was provided for ten submissions and reviewed to confirm that the AV080 report is correctly aggregated. NHH volume calculation was confirmed to be correct.

GR170 and AV080 files were compared for seven months and revisions, and found to contain the same NSPs, confirming that zeroing is occurring as required.

Hunet

Detailed meter register level supporting data was provided for ten submissions and reviewed to confirm that the AV080 report is correctly aggregated. NHH volume calculation was confirmed to be correct.

The checks carried out of the GR170 and AV080 files for ten revisions were compared to ten revision submissions, and found to contain the same NSPs, confirming that zeroing is occurring as required.

Audit outcome

Compliant

12.4. Grid owner volumes information (Clause 15.9)

Code reference

Clause 15.9

Code related audit information

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

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

Audit observation

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

Audit commentary

Nova is not a grid owner.

Audit outcome

Not applicable

12.5. Provision of NSP submission information (Clause 15.10)

Code reference

Clause 15.10

Code related audit information

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

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

Audit observation

The registry list and NSP table were reviewed.

Audit commentary

Nova does not own any local or embedded networks and is not required to provide NSP submission information.

Audit outcome

Not applicable

12.6. Grid connected generation (Clause 15.11)

Code reference

Clause 15.11

Code related audit information

The participant (if a grid connected generator) must deliver to the reconciliation manager for each of its points of connection, the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.11(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period (clause 15.11(b)).*

Audit observation

TODD

Generation data is reported by EMS as TODD's agent. Creation of generation submissions was reviewed as part of their agent audit.

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

Registry lists for Hunet and WISE and the NSP table were reviewed.

Audit commentary

TODD

No breaches had been recorded for late provision of submission information.

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

Hunet and WISE

Hunet and WISE are not a grid connected generator; compliance was not assessed.

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

TODD

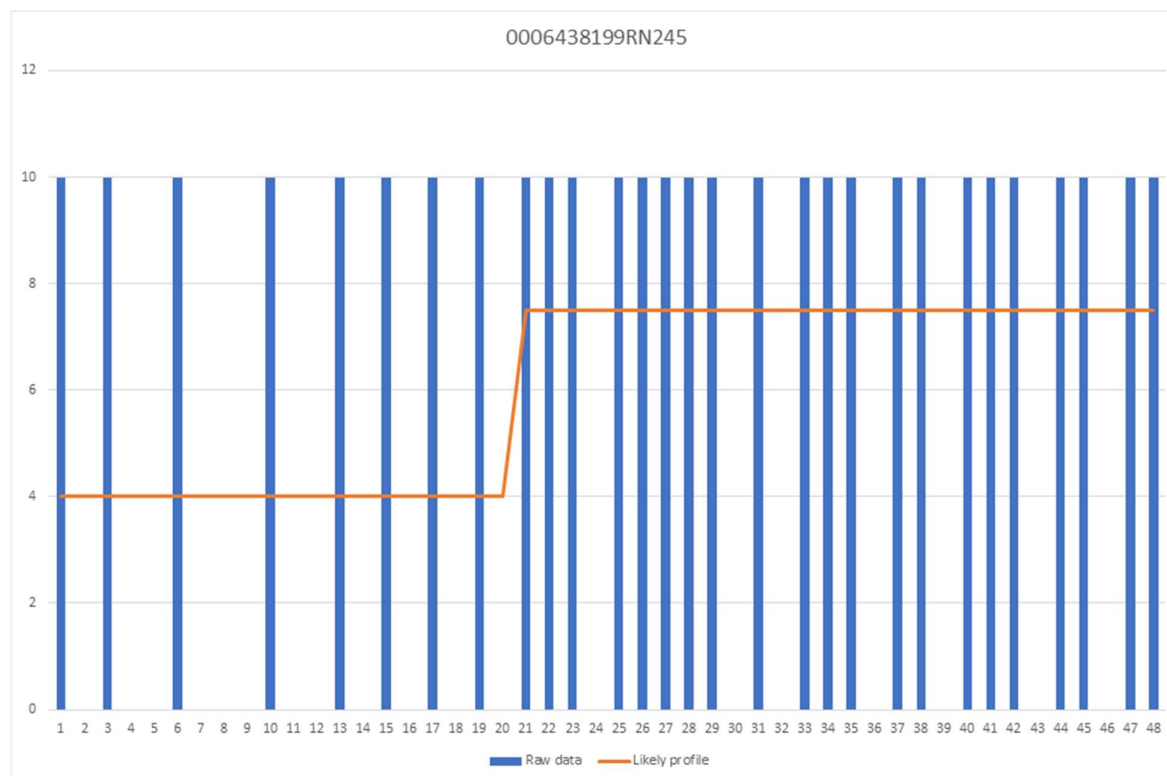
Review of alleged breaches confirmed that no reconciliation submissions were made late.

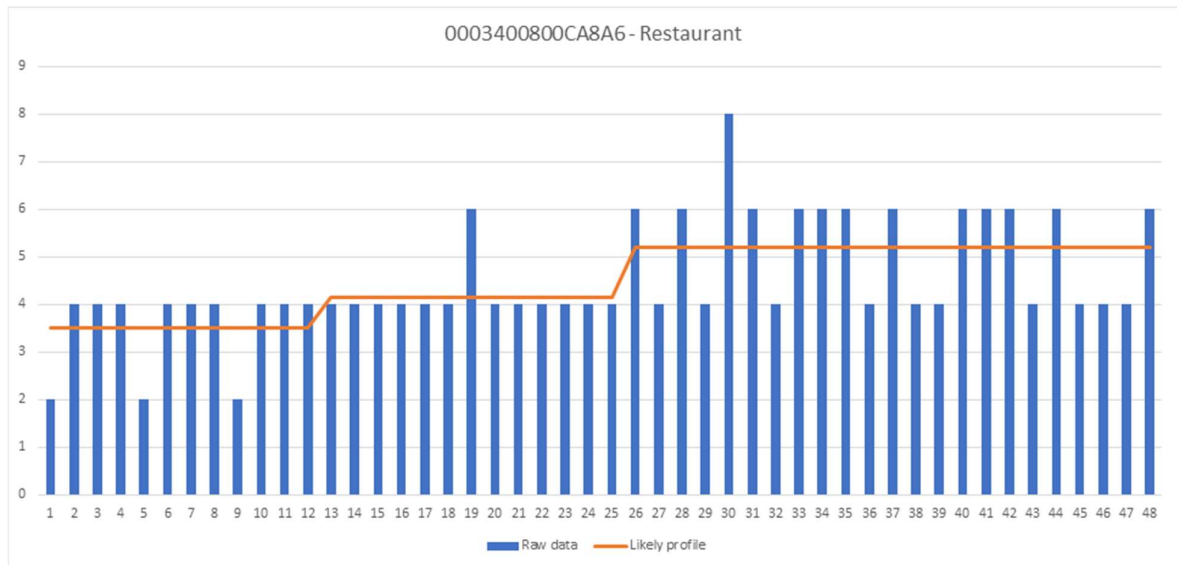
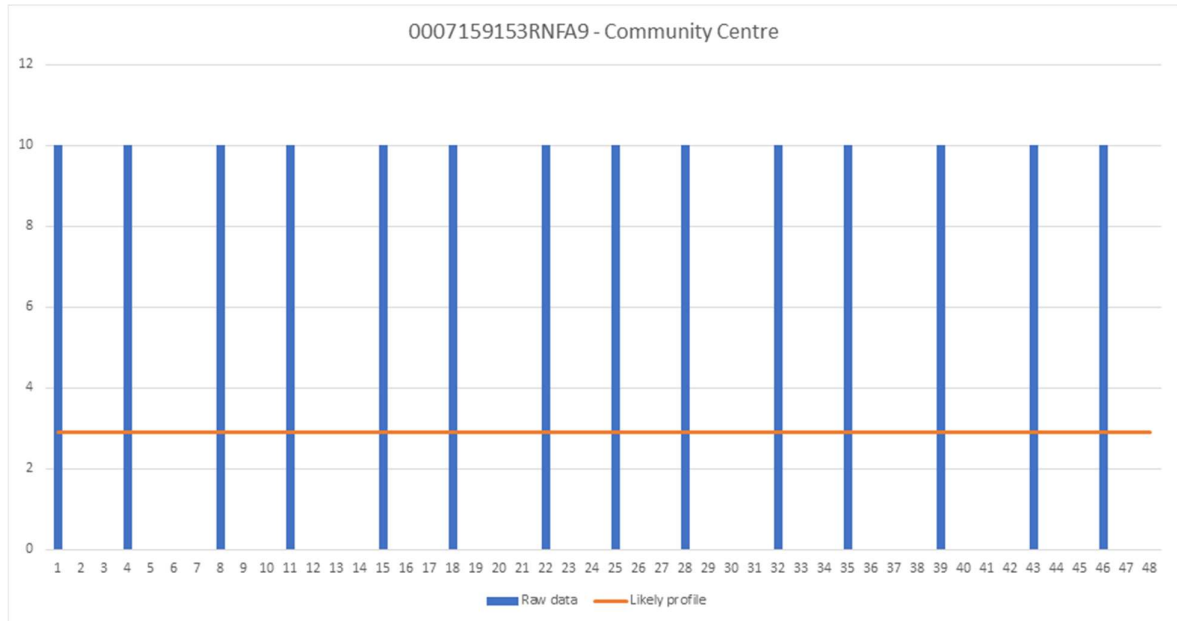
The following submission accuracy issues were identified:

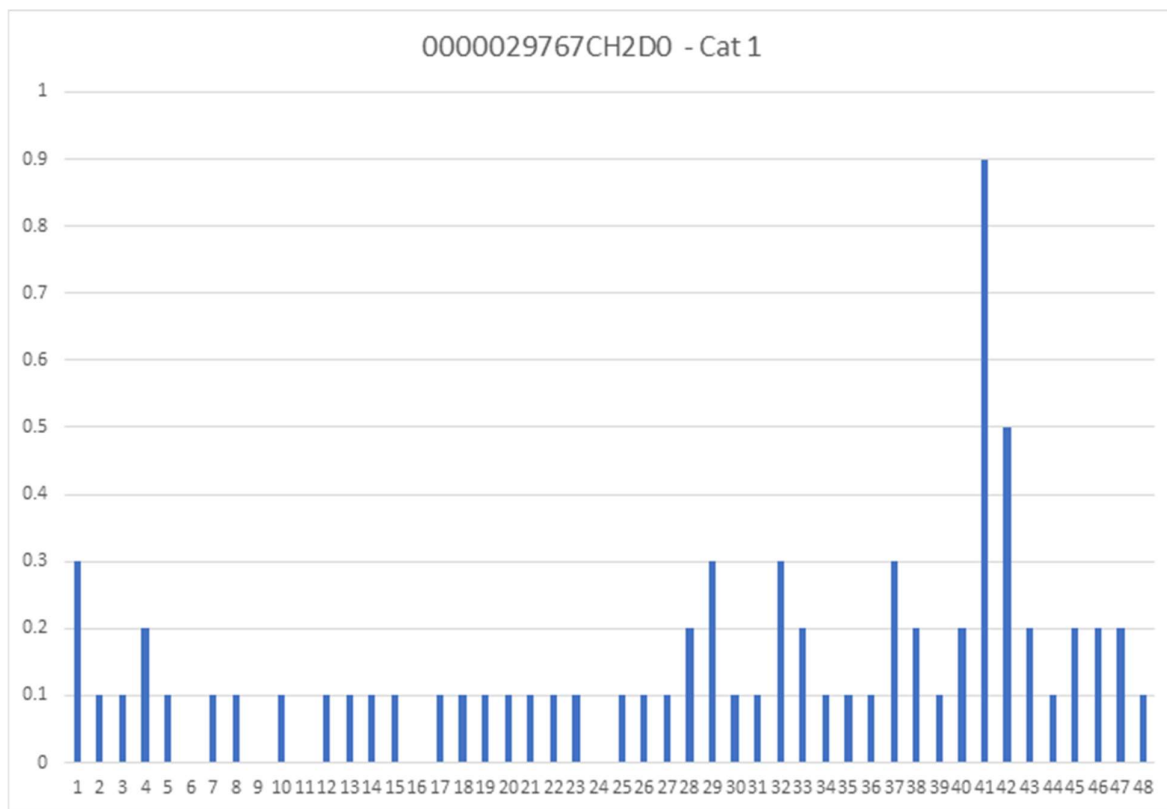
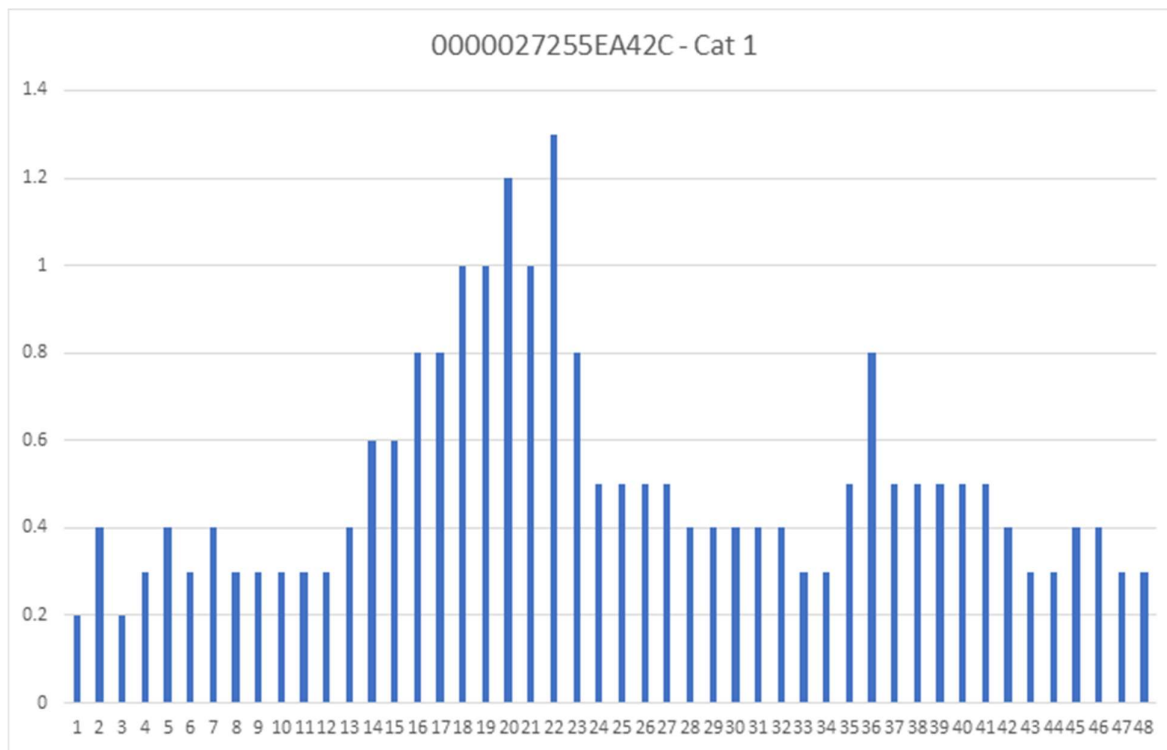
Arc Innovations meters settled as HHR

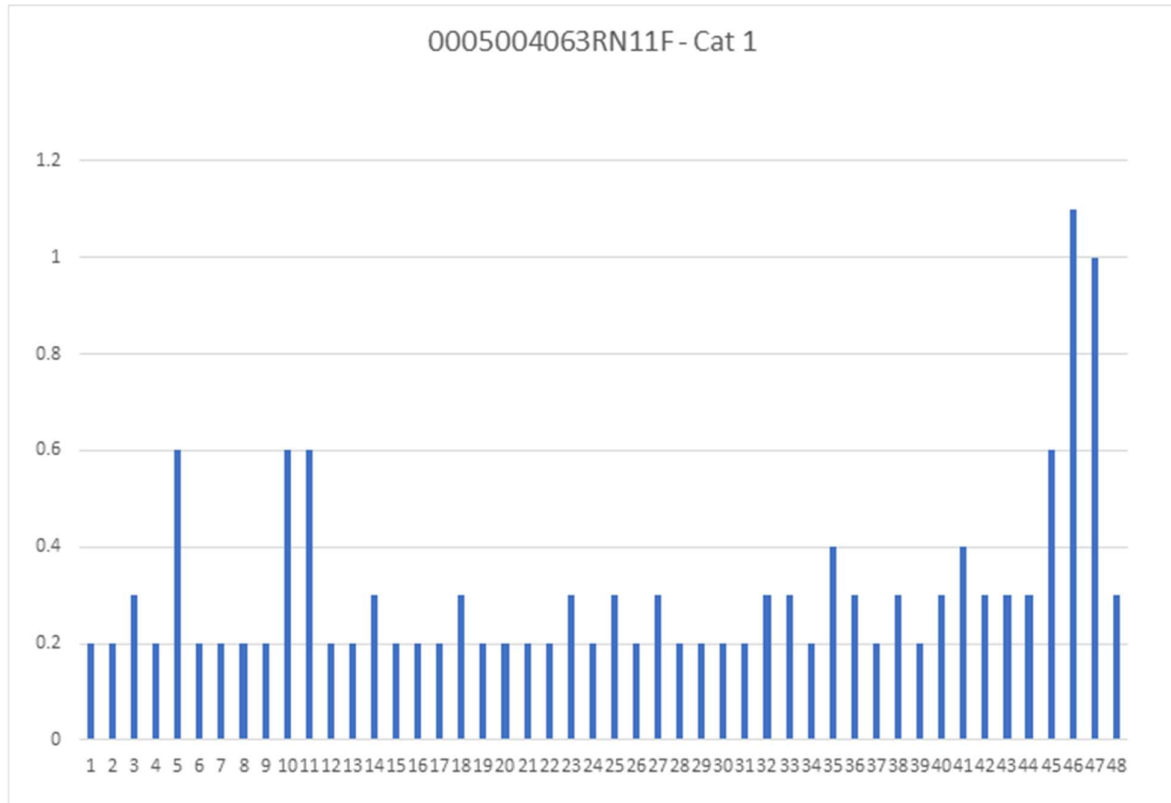
There is an issue with ARC Innovations meters when used for HHR settlement. The on-site setup is that a meter pulses into a data storage device, which counts the pulses and “stores” them every 200 pulses which equals 0.1 kWh. There is only one decimal place, so the smallest increment of consumption is 0.1. The issue is made worse for installations with a multiplier, for example if the multiplier is 100, the smallest increment per trading period is 10 kWh, which means the accuracy per interval is very poor. Unfortunately for TODD, 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, TODD may not be charged at the wholesale rate that applied during the trading period when the electricity was consumed. Non-compliance is recorded in **section 2.1** due to information not being complete and accurate. Compliance is recorded in this section, because TODD is unable to obtain more accurate information.

The first three graphs below are Category 2 with multipliers. The red line is my estimate of likely profile. The next three are Category 1 where it is shown that every interval is a multiple of 0.1 or is zero where there are insufficient pulses to reach 0.1. If an interval has 100 pulses for example, the interval will show zero and the 100 pulses will be allocated to the next interval.









Unmetered load for ICP 0000540556TU6C9

ICP 0000540556TU6C9 has some incorrect unmetered load information recorded in Orion, which led to incorrect submission information. The unmetered load register started on 27/11/19 with an opening read of 0 and the latest reading on 03/03/20 was 235. The unmetered load register was expected to start on 18/10/19⁴ with a read of 0 and the reading on 03/03/20 was expected to be 328 (137 days x 2.392 kWh), a difference of +93 kWh. This issue is discussed further in **section 3.7**. Nova intends to process a correction, and provide revised submission data to the reconciliation manager.

WISE

No breaches were recorded for late provision of submission information.

Submission accuracy issues identified in the previous audit were followed up:

- consumption for bridged meters is now accurately corrected for the right period,
- readings used to calculate historic estimates are now applied correctly; even if a final invoice has been provided, if there is consumption during the period of supply it is submitted,
- vacant and disconnected consumption is submitted in all cases, and
- historic estimates are now calculated correctly.

Hunet

No breaches were recorded for late provision of submission information.

⁴ At 11.59.59pm on the last day of responsibility for the previous retailer, to ensure that all unmetered consumption was captured.

Submission accuracy issues identified in the 2019 audit were followed up. As recorded in the previous audit, there was some corrected consumption outside the 14-month revision period which was not submitted. None of the previous issues were present during this audit.

The submission accuracy was checked for ten months and confirmed to be correct.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 12.7</p> <p>With: Clause 15.12</p> <p>From: 19-Oct-19</p> <p>To: 31-Mar-20</p>	<p>TODD</p> <p>The readings recorded against the unmetered register for 0000540556TU6C9 do not start from the switch in date, and do not include all expected unmetered load.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls over accuracy of submission data are strong, only one exception was identified.</p> <p>The audit risk rating is low. The data for 0000540556TU6C9 has been partially corrected and the impact on submission is 93 kWh.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> ICP 0000540556TU6C9 <ul style="list-style-type: none"> Refer 3.7 Arc Innovations meters settled as HHR <ul style="list-style-type: none"> Refer 2.1 		N/A	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> ICP 0000540556TU6C9 <ul style="list-style-type: none"> Refer 3.7 Arc Innovations meters settled as HHR <ul style="list-style-type: none"> Refer 2.1 	N/A	

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

Code reference

Clause 4 Schedule 15.2

Code related audit information

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

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

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

Audit observation

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

Audit commentary

TODD

Review of 14-month revision files for July to September 2018 confirmed that historic estimate was 100% of the total estimate. This is achieved by manually changing estimates to permanent estimates in Orion prior to the 14-month revision files being prepared. Meters requiring permanent estimates are identified through review of the meter read frequency reports.

WISE

The 14-month revisions for May to September 2018 were all 100% HE.

Hunet

The 14-month revisions for May to September 2018 were all 100% HE.

Audit outcome

Compliant

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

Audit observation

Aggregation and content of reconciliation submissions was reviewed, and the registry list and AC020 reports were reviewed.

Audit commentary

TODD

Compliance with this clause was assessed:

- HHR volume is reported for all ICPs with a meter category 3 or higher,
- unmetered load submissions were checked in **section 12.2**,
- no profiles requiring a certified control device are used,
- no loss or compensation arrangements are required, and
- aggregation of the AV080, AV090 and AV140 reports is compliant.

The registry list as at 06/01/20 and AC020 report for 01/01/19 to 31/12/19 were reviewed. All discrepancies identified were checked and confirmed to either be timing differences that were resolved prior to the audit, or valid exceptions where both HHR and NHH profiles applied because a HHR metered ICP also had NHH unmetered load connected.

WISE

Compliance with this clause was assessed:

- all WISE's ICPs have metering category 1, and are submitted as NHH,
- no ICPs with unmetered load are supplied,
- no profiles requiring a certified control device are used,
- no loss or compensation arrangements are required, and

- aggregation of the AV080 report was reviewed in sections **13.2** and **12.3** and confirmed compliant.

I confirmed that the submission information for each NSP for the relevant consumption periods was present in accordance with this clause; the submission information includes NHH volume information only. This information flows through to the submission system and is applied to the relevant revision periods.

Hunet

I confirmed that the process has not changed since the March 2019 audit. That audit findings are detailed below:

Compliance with this clause was assessed:

- no ICPs with unmetered load are supplied,
- no control devices are used for reconciliation purposes,
- no ICPs have error or loss compensation arrangements,
- aggregation of the AV080 report was reviewed in sections **13.2** and **12.3** and confirmed compliant, and
- HHR vols and HHR aggs files are prepared and supplied by TODD, these were confirmed to be accurate

I confirmed that the submission information for each NSP for the relevant consumption periods was present in accordance with this clause; the submission information includes NHH and HHR volume information and multipliers are correctly applied. This information flows through to the submission system and is applied to the relevant revision periods.

Audit outcome

Compliant

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

Code reference

Clause 3 Schedule 15.3

Code related audit information

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

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

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

Audit observation

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

TODD

I reviewed nine AV080 submissions for a diverse sample of months and revisions and confirm that forward and historic estimates are included and identified.

Hunet and WISE

I reviewed nine AV080 submissions for a diverse sample of months and revisions for both Hunet and WISE and confirmed that forward and historic estimates are included and identified as such.

Audit outcome

Compliant

12.11. Historical estimate process (Clause 4 and 5 Schedule 15.3)

Code reference

Clause 4 and 5 Schedule 15.3

Code related audit information

The methodology outlined in clause 4 of Schedule 15.3 must be used when preparing historic estimates of volume information for each ICP when the relevant seasonal adjustment shape is available.

If a seasonal adjustment shape is not available, the methodology for preparing an historical estimate of volume information for each ICP must be the same as in clause 4, except that the relevant quantities kWhPx 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

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

Audit commentary

TODD

The process for managing SASV was examined. SASV are downloaded from the reconciliation manager portal along with the other reconciliation reports. Following download, they are imported manually into EnergyMarket.

The table below shows that all scenarios are calculating as expected and correct SASV (seasonal adjusted shape values) are applied.

Review of examples with consumption during an inactive period, including ICP 0010139785ENACB (scenario B) where the last read period ended on the day after the ICP became inactive, confirmed that all consumption during inactive periods is captured and reported.

Photo readings and customer readings are treated as actual validated reads by the historic estimate process, unless they are not validated and the read type is changed to misread.

Test	Scenario	Test expectation	Result
a	ICP becomes Active part way through a month	Consumption is only calculated for the Active portion of the month.	Compliant
b	ICP becomes Inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	Compliant

Test	Scenario	Test expectation	Result
c	ICP become Inactive then Active again within a month.	Consumption is only calculated for the Active portion of the month.	Compliant
d	ICP switches in part way through a month on an estimated switch reading	Consumption is calculated to include the 1st day of responsibility.	Compliant (all switch in examples provided had actual readings, but I confirmed estimated readings are treated as permanent estimates for scenarios E and F)
e	ICP switches out part way through a month on an estimated switch reading	Consumption is calculated to include the last day of responsibility.	Compliant
f	ICP switches out then back in within a month	Consumption is calculated for each day of responsibility.	Compliant
g	Continuous ICP with a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
h	Continuous ICP without a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
i	Rollover Reads	Consumption is calculated correctly in the instance of meter rollovers.	Compliant
j	Unmetered load for a full month	Consumption is calculating based on daily unmetered kWh for full month.	Compliant
k	Unmetered load for a part month	Consumption is calculating based on daily unmetered kWh for active days of the month.	Compliant
l	Network/GXP/Connection (POC) alters partway through a month.	Consumption is separated and calculated for the separate portions of where it is to be reconciled to.	Compliant
m	ICP with a customer read during the month	Customer reads are not used to calculate historic estimate, unless they have been validated against a set of validated readings from another source	Compliant, the customer read was made a misread and ignored by the historic estimate process
n	ICP with a photo read during the month	Photo reads are not used to calculate historic estimate, unless they have been	Compliant, the photo read was made a misread and ignored

Test	Scenario	Test expectation	Result
		validated against a set of validated readings from another source	by the historic estimate process
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Compliant

WISE

The process for managing SASV was examined. Shape files are automatically uploaded, and a check is conducted to confirm that the correct shape files have been loaded.

The table below shows the test results for the historic estimate scenarios.

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.	Has not occurred
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.	Not applicable – no unmetered load
k	Unmetered load for a part month	Consumption is calculating based on daily unmetered kWh for active days of the month.	Not applicable – no unmetered load

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	Not applicable – no customer reads
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	Not applicable – no photo reads
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Not applicable – no ICPs with multipliers supplied

Hunet

The process for managing SASV was examined. Shape files are automatically uploaded, and a check is conducted to confirm that the correct shape files have been loaded.

The table below shows the test results for the historic estimate scenarios.

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

Test	Scenario	Test expectation	Result
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.	Not applicable – no unmetered load
k	Unmetered load for a part month	Consumption is calculating based on daily unmetered kWh for active days of the month.	Not applicable – no unmetered load
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	Not applicable – no customer reads
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 The photo read is not used by the historic estimate process
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Compliant

Audit outcome

Compliant

12.12. Forward estimate process (Clause 6 Schedule 15.3)

Code reference

Clause 6 Schedule 15.3

Code related audit information

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

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

Audit observation

The process to create forward estimates was reviewed.

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

Audit commentary

TODD

Forward estimates are created based the daily average consumption between the previous two actual reads. If less than two actual reads are available, the daily average consumption for the meter is used instead of the previous two readings. Initial submissions use a flat line profile to calculate the forward estimate, and revisions are profiled using SASV.

Daily average consumption is based on historic actual reads. If less than two actual reads are available, the consumption is estimated as the daily consumption provided by the losing retailer on switch in, or an estimate of daily consumption for similar ICPs split between the meters. The daily average consumption can be manually amended where necessary, such as where the customer contract lists the expected consumption.

The accuracy of the initial submission, in comparison to each subsequent revision is required to be within 15% and within 100,000kWh in relation to forward estimations. The table below shows the number of balancing areas where this target was not met.

Quantity of balancing areas with differences over 15% and 100,000 kWh

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Jun 2018	-	-	6	6	138
Jul 2018	-	1	13	13	136
Aug 2018	-	-	11	11	141
Sep 2018	-	15	15	15	144
Oct 2018	-	15	15		150
Nov 2018	12	12	12		152
Dec 2018	1	2	2		154
Jan 2019	1	1	1		158
Feb 2019	-	-	-		160
Mar 2019	-	-	-		164
April 2019	-	-	-		169
May 2019	-	-			170

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
June 2019	-	-			173
July 2019	-	-			170
August 2019	-	-			173

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Jun 2018	-5.39%	-4.95%	6.54%	6.97%
Jul 2018	0.84%	1.06%	12.96%	13.32%
Aug 2018	0.81%	0.56%	12.26%	12.80%
Sep 2018	5.06%	16.26%	16.32%	16.35%
Oct 2018	4.72%	15.79%	16.32%	
Nov 2018	13.96%	12.78%	12.84%	
Dec 2018	4.82%	5.88%	5.96%	
Jan 2019	-4.01%	-4.39%	-4.33%	
Feb 2019	-0.28%	-0.65%	-0.30%	
Mar 2019	0.43%	0.86%	0.92%	
April 2019	-1.96%	-1.12%	-1.00%	
May 2019	-2.39%	-1.70%		
June 2019	-4.77%	-4.41%		
July 2019	-1.02%	-0.70%		
August 2019	-1.14%	-1.15%		

I reviewed the all balancing area differences where the variation between revisions was more than $\pm 15\%$ and $\pm 100,000$ kWh and found they were all due to backdated profile changes with the exception of:

- two balancing areas in the Ashburton area both have a large volume of seasonal irrigation causing a difference between the unprofiled and profiled totals, and
- forward estimation was too high and seasonal profiling caused DUNEDINDUNEG (December 18 r1) to be just over the 100,000 kWh threshold at 106,194 kWh, but this settled to below the 100,000 units from r3 onwards.

I note that there have the differences have settled with none occurring since Feb 19.

WISE

WISE's forward estimate process is based on estimated reads entered in PEBS. The estimated reads are calculated from the average daily consumption, which is based on actual read history. If no historical information is available, the average daily consumption from the CS file, or information provided by the customer on sign up is used.

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

Quantity of balancing areas with differences over 15% and 100,000 kWh

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Jul 2018	0	0	0	0	7
Aug 2018	0	0	0	0	7
Sept 2018	0	0	0	0	7
Oct 2018	0	0	0	-	7
Nov 2018	0	0	0	-	7
Dec 2018	0	0	0	-	7
Jan 2019	0	0	0	-	7
Feb 2019	0	0	0	-	7
Mar 2019	0	0	0	-	7
April 2019	0	0	0		7
May 2019	0	0	-	-	7
June 2019	0	0	-	-	7

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Jul 2019	0	0	-	-	7
Aug 2019	0	0	-	-	7
Sept 2019	0	-	-	-	7
Oct 2019	0	-	-	-	7

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Jul 2018	-0.11%	0.70%	0.70%	0.70%
Aug 2018	-0.29%	0.13%	0.11%	0.12%
Sept 2018	0.27%	1.18%	1.23%	1.23%
Oct 2018	-0.04%	0.14%	0.14%	-
Nov 2018	-0.43%	-0.33%	-0.32%	-
Dec 2018	-0.15%	-0.10%	-0.10%	-
Jan 2019	-0.20%	-0.10%	-0.10%	-
Feb 2019	-0.20%	-0.20%	-0.04%	-
Mar 2019	-0.39%	0.06%	0.01%	-
April 2019	0.00%	0.00%	-0.05%	-
May 2019	-0.20%	0.00%	-	-
June 2019	-0.10%	-0.13%	-	-
Jul 2019	0.21%	0.27%	-	-
Aug 2019	-0.14%	-0.16%	-	-

Month	Revision 1	Revision 3	Revision 7	Revision 14
Sept 2019	0.08%	-	-	-
Oct 2019	0.00%	-	-	-

Hunet

Hunet’s forward estimate process is based on a “straight line” methodology, and where no historical information is available, the average daily consumption from the CS file is used. As a last resort, a “forward default” estimate of five units per day is used for residential customers and an agreed daily value with commercial customers. This meets the requirements of this clause.

The accuracy of the initial submission, in comparison to each subsequent revision is required to be within 15% and within 100,000kWh. The table below shows the target was met for all months and all revisions except for April 2019, due to a meter reading error which resulted in an additional 465,000 kWh being incorrectly submitted in the day 4 file. The recommendation in **section 9.5**, regarding validation settings, should ensure this issue does not occur again. There was another meter reading error in October 2019, which also didn’t get identified by validation. The error resulted in an additional 50,000 kWh for R1. This section relates to forward estimates. The errors mentioned above relate to the accuracy of historic estimates, so compliance is recorded in this section for Hunet, but non-compliance is recorded in **sections 9.5 and 2.1**.

Quantity of balancing areas with differences over 15% and 100,000 kWh

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Jul 2018	0	0	0	0	25
Aug 2018	0	0	0	0	26
Sept 2018	0	0	0	0	27
Oct 2018	0	0	0	-	27
Nov 2018	0	0	0	-	29
Dec 2018	0	0	0	-	29
Jan 2019	0	0	0	-	31
Feb 2019	0	0	0	-	35
Mar 2019	0	0	0	-	34
April 2019	1	1	1		35

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
May 2019	0	0	-	-	37
June 2019	0	0	-	-	38
Jul 2019	0	0	-	-	45
Aug 2019	0	0	-	-	46
Sept 2019	0	-	-	-	47
Oct 2019	0	-	-	-	47

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Jul 2018	0.20%	1.33%	0.20%	0.22%
Aug 2018	0.82%	1.19%	0.98%	0.99%
Sept 2018	0.87%	0.52%	0.40%	0.38%
Oct 2018	0.07%	0.30%	0.22%	-
Nov 2018	0.09%	0.17%	0.21%	-
Dec 2018	1.55%	0.98%	1.55%	-
Jan 2019	-0.07%	0.18%	0.22%	-
Feb 2019	0.15%	0.18%	0.25%	-
Mar 2019	0.07%	0.07%	0.19%	-
April 2019	13.45%	13.50%	13.61%	-
May 2019	-0.11%	-0.19%	-	-
June 2019	-0.35%	-0.38%	-	-
Jul 2019	-0.07%	-0.07%	-	-

Month	Revision 1	Revision 3	Revision 7	Revision 14
Aug 2019	0.01%	-0.05%	-	-
Sept 2019	0.17%	-	-	-
Oct 2019	-1.29%	-	-	-

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 12.12</p> <p>With: Clause 6 of Schedule 15.3</p> <p>From: 1-Dec-18</p> <p>To: 31-Dec-18</p>	<p>TODD</p> <p>The accuracy threshold was not met due to FE being estimated too high in relation to balancing area DUNEDINDUNEG (December 18 r1).</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Twice previously</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls are rated as strong, as they are sufficient to ensure almost all data is within the prescribed thresholds.</p> <p>Initial data is replaced with revised data and washed up.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>TODD</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> Nova has historically achieved a strong level of compliance regarding its accuracy of Forward estimates. As shown in the auditor's commentary above, only 2 balancing areas were outside of the threshold prescribed. Additionally, at an aggregate level the average percentage change between the initial revision against subsequent revisions was well within the 15% threshold - indicating robustness in Nova's Forward estimate process. 		March 2019	Identified

<p>Actions:</p> <ul style="list-style-type: none"> Following our previous audit where Nova registered a non-compliance under this clause, Nova have used end of month reads for ICPs where AMI data is available. This has resulted in Nova's initial submissions becoming more accurate as the proportion of Historic estimates increase and Forward estimates decrease. Additionally, increased consumption based on starting and ending end of months reads reduces the effect of profiling, further reducing the variance between the initial submission and subsequent revisions. Nova incorporated this change for submission months starting February 2019 onwards. The auditor has noted in the audit report that differences have settled with none occurring since February 2019. 		
<p>Preventative actions taken to ensure no further issues will occur</p>	<p>Completion date</p>	
<ul style="list-style-type: none"> Nova will continue entering end of month reads for ICPs where AMI data is available. This will ensure a high degree of accuracy in the initial submission and smaller variances between the initial and subsequent revisions. Nova recognise it will be on-going to achieve full compliance with this clause due to factors such as legacy meters, mid-month reads and the effects of aggressive profiling. 	<p>March 2019</p>	

12.13. Compulsory meter reading after profile change (Clause 7 Schedule 15.3)

Code reference

Clause 7 Schedule 15.3

Code related audit information

If the reconciliation participant changes the profile associated with a meter, it must, when determining the volume information for that meter and its respective ICP, use a validated meter reading or permanent estimate on the day on which the profile change is to take effect.

The reconciliation participant must use the volume information from that validated meter reading or permanent estimate in calculating the relevant historical estimates of each profile for that meter.

Audit observation

The event detail report was examined to identify all ICPs which had a profile change during the report period.

A sample of ICPs with profile changes were reviewed to confirm that there was an actual or permanent estimate reading on the day of the profile change.

Audit commentary

TODD

In the event of a profile change, TODD uses a validated meter reading on the day that the change is effective. All ten ICPs checked had an actual meter reading recorded on the day of the profile change, and the day before the profile change.

WISE

WISE only uses the RPS profile, and no profile changes have occurred.

Hunet

Hunet only uses the HHR, PV1 and RPS profiles, and no profile changes have occurred.

Audit outcome

Compliant

13. SUBMISSION FORMAT AND TIMING

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

Code reference

Clause 8 Schedule 15.3

Code related audit information

For each category 3 of higher metering installation, a reconciliation participant must provide half hour submission information to the reconciliation manager.

For each category 1 or category 2 metering installation, a reconciliation participant must provide to the reconciliation manager:

- *Half hour submission information; or*
- *Non half hour submission information; or*
- *A combination of half hour submission information and non half hour submission information*

However, a reconciliation participant may instead use a profile if:

- *The reconciliation participant is using a profile approved in accordance with clause Schedule 15.5; and*
- *The approved profile allows the reconciliation participant to provide half hour submission information from a non half hour metering installation; and*
- *The reconciliation participant provides submission information that complies with the requirements set out in the approved profile.*

Half hour submission information provided to the reconciliation manager must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *trading period*

The non half hour submission information that a reconciliation participant submits must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *consumption period or day*

Audit observation

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

Aggregation of NHH volumes is discussed in **section 12.3**, aggregation of HHR volumes is discussed in **section 11.4** and NSP volumes are discussed in **section 12.6**.

Audit commentary

TODD

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 in **section 11.3** and appeared reasonable.

Hunet and WISE

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

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

The submitted data was also compared to billed data for both Hunet and WISE in **section 11.3** and appeared reasonable.

There were no records in the ICPMISS file for Hunet, indicating correctly aggregated submissions.

Audit outcome

Compliant

13.2. Reporting resolution (Clause 9 Schedule 15.3)

Code reference

Clause 9 Schedule 15.3

Code related audit information

When reporting submission information, the number of decimal places must be rounded to not more than two decimal places.

If the unrounded digit to the right of the second decimal place is greater than or equal to five, the second digit is rounded up, and if the digit to the right of the second decimal place is less than five, the second digit is unchanged.

Audit observation

I reviewed the rounding of data on the AV090, AV140 and AV080 reports as part of the aggregation checks. AV130 submissions were reviewed in **section 12.6**.

Audit commentary

TODD

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

Hunet and WISE

The review of nine AV080 reports each for Hunet and WISE confirmed that submission information is appropriately rounded to two decimal places.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 15.3

Code related audit information

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

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

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

Audit observation

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

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

Audit commentary

TODD

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

Overall TODD's compliance in this area is very high. The table below shows that the HE threshold was not met for a small number of NSPs for the June, July and August 2019 3-month revisions.

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Jul 2018			223	223
Aug 2018			227	227
Sep 2018			235	235
Feb 2019		248		248

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Mar 2019		250		250
Apr 2019		256		256
Jun 2019	256			257
Jul 2019	253			254
Aug 2019	257			259

The table below shows that the percentage HE at a summary level for all NSPs is well above the required targets. A permanent estimate read type is used to deal with any ICPs without an actual reading at 14 months.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Jul 2018	-	-	100.00%
Aug 2018	-	-	100.00%
Sep 2018	-	-	100.00%
Feb 2019	-	99.83%	-
Mar 2019	-	99.75%	-
Apr 2019	-	99.71%	-
Jun 2019	98.85%	-	-
Jul 2019	98.82%	-	-
Aug 2019	98.93%	-	-

WISE

The quantity of historical estimates is contained in the submission file and is not a separate report. Historic estimate targets were not met for all revisions. Read attainment rates are discussed in **sections 6.9, 6.10 and 6.11.**

Quantity of NSPs where revision targets were met

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Jul 2018	-	-	38	38
Aug 2018	-	-	40	40
Sep 2018	-	-	39	39
Feb 2019	-	40	-	40
Mar 2019	-	40	-	40
Apr 2019	-	40	-	40
Jun 2019	40	-	-	40
Jul 2019	40	-	-	40
Aug 2019	40	-	-	40

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

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Jul 2018	-	-	100.00%
Aug 2018	-	-	100.00%
Sep 2018	-	-	100.00%
Feb 2019	-	100.00%	-
Mar 2019	-	100.00%	-
Apr 2019	-	100.00%	-
Jun 2019	100.00%	-	-
Jul 2019	100.00%	-	-

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Aug 2019	100.00%	-	-

Hunet

The quantity of historical estimates is contained in the submission file and is not a separate report. There were nine examples between January 2019 and August 2019 where the R3 submissions were not 80% HE. These all related to three ICPs with the following issues:

- a meter fault was detected with ICP 0002221151WF237 and data was estimated,
- access issues prevented reading of ICP 0000037783UND22, which has now been replaced with AMI, and
- a communications issue was present for ICP 0000014236KP043, which is now resolved.

Read attainment rates are discussed in **sections 6.9, 6.10 and 6.11.**

Quantity of NSPs where revision targets were met

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Jul 2018	-	-	42	42
Aug 2018	-	-	43	43
Sep 2018	-	-	44	44
Feb 2019	56	58	-	58
Mar 2019	57	59	-	59
Apr 2019	59	61	-	61
Jun 2019	65	-	-	65
Jul 2019	73	-	-	73
Aug 2019	73	-	-	74

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

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Jul 2018	-	-	100.00%
Aug 2018	-	-	100.00%
Sep 2018	-	-	100.00%
Feb 2019	99.51%	99.81%	-
Mar 2019	99.49%	99.84%	-
Apr 2019	99.47%	99.84%	-
Jun 2019	99.79%	-	-
Jul 2019	99.73%	-	-
Aug 2019	99.73%	-	-

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 13.3</p> <p>With: Clause 10 of Schedule 15.3</p> <p>From: Jun-Aug 19 r3</p>	<p>Hunet</p> <p>Historic estimate thresholds were not met for R3 for a small number of months and revisions.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>Controls are rated as strong, as they are sufficient to mitigate the risk of not meeting the threshold most of the time. The NSPs where the target wasn't met have a low total number of ICPs.</p> <p>The audit risk rating is low because the overall percentage of HE is high.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p>Hunet</p> <p>Response:</p> <p>Non-Compliance accepted.</p> <p>Comments:</p> <ul style="list-style-type: none"> • Historic estimate thresholds not met for R3 for small number of months & revisions <ul style="list-style-type: none"> ○ The threshold was not met for some NSPs for revisions 3 and small number of ICPs are connected at the NSPs. <p>Actions:</p> <ul style="list-style-type: none"> • We have been actively working on gaining an actual read at the earliest timeframe as possible 	On-going	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> • Hunet will continue focusing on optimising its standard by identifying and monitoring its performance and opportunities for improvement. 	On-going	

CONCLUSION

Nova operates the TODD, WISE, and HNET (Hunet) participant codes. For TODD an audit period from January 2019 to March 2020 was considered. For WISE and Hunet an audit period from June 2019 to March 2020 was considered, starting immediately after Nova's material change audit to include these codes. Unless otherwise specified, the processes and non-compliances described in the report apply to all codes.

TODD

TODD has continued to make progress in resolving non-compliance issues during the audit period, and there continues to be a strong focus on compliance. The positive highlights from this audit are as follows:

- a high level of compliance for the timeliness and accuracy of registry updates and switching,
- overall data accuracy is high with robust discrepancy reporting in place to identify and correct errors, and all corrections reviewed were processed accurately, and
- TODD continues to provide a high degree of submission accuracy, with generally low variation between revisions and between temporary HHR estimates and actual data.

The key areas requiring improvement are:

- the NHH read attainment process, which is currently under review to improve efficiency and compliance,
- validation of customer and photo readings requires improvement to ensure that only readings which have been validated against a set of validated actual readings not provided by the customer are used in the reconciliation process, and
- some ICPs billed in AXOS were double counted in the AV120 submissions, because the billed data is held within Orion and AXOS, TODD is aware of this issue and is working to resolve it.

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 very poor. Unfortunately for TODD, this means the HHR data derived from ARC meters is not considered to be accurate in accordance with Clause 15.2.

As found in previous audits, inactive ICP days are included in the ICP days submissions, but this process ensures that any consumption that occurs during the inactive period will be reported.

WISE

Registry updates were generally found to be timely and accurate, and corrections were processed promptly and as required. Disconnected ICPs not changed to inactive status unless they are disconnected for more than three days, which has a minor impact the correct use of the inactive status.

For switching, there were a small number of late files and some inaccurate file content. Improvements have recently been made to consider the latest readings when creating CS files, which should improve the accuracy of switch event reads.

Readings are well managed, and read attainment is generally high. No submission accuracy issues were identified.

Hunet

Registry updates were generally found to be timely and accurate, and corrections were processed promptly and as required.

For switching, there were a small number of late files and some inaccurate file content.

Readings are well managed, and read attainment is generally high. In some instances, the revision three historic estimate thresholds were not met.

Two large meter reading errors resulted in significant over submission of 465,000 kWh and 50,000 kWh in April and October 2019, which were washed up in the next revision. It is recommended that validation processes are improved to identify unusually high consumption to prevent recurrence of this issue.

Conclusion

The audit found 30 non-compliances, and five recommendations were raised. The audit risk rating is 46, which results in an indicative audit frequency of six months. This is an increase from an audit risk rating of 34 and 24 non-compliances in the previous audit. The increase has largely been caused by an increase in the number of non-compliances, with most affecting small numbers of ICPs or events, and all having a low audit risk rating. Controls were strong for 17 non-compliances and moderate for 11 non-compliances. One minor non-compliance relating to application of AN codes was assessed to have weak controls, and a disputed non-compliance relating to rounding of reads was assessed to have no controls. I have considered this result in conjunction with Nova's responses, which indicate clear remedial actions and resolution dates. My recommendation for the next audit date is in at least 18 months on 15 November 2022.

PARTICIPANT RESPONSE

TODD, Hunet & WISE have reviewed this audit and our detailed comments are recorded in the report where appropriate.

We continue to maintain a high industry standard in terms of its internal controls. Work will continue to address those areas of opportunity and continuous improvement is evident by the consistent LOW risk rating across ALL non-compliances. As such, Nova believes that the Authority can have confidence that an audit cycle of 24 months is both adequate, and appropriate.