ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT

VERITEK

For

NOVA ENERGY LIMITED

Prepared by: Rebecca Elliot and Tara Gannon

Date audit commenced: 22 November 2018

Date audit report completed: 20 December 2018

Audit report due date: 12 April 2019

TABLE OF CONTENTS

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 has continued to make progress in resolving non-compliance issues during the audit period, and seven of the non-compliances raised in the 2017 audit have now been cleared, and a further three have been partially cleared. In several of the areas where non-compliance still exists, improvements have been made. This is as a result of the strong focus Nova places on compliance.

The positive highlights from this audit are as follows:

- greater than 90% of all updates to the registry for new connections and changes to the registry are completed within the required timeframes;
- overall data accuracy is high with robust discrepancy reporting in place to identify and correct errors;
- switching accuracy of data was high and timeliness good;
- all corrections reviewed were processed accurately, and previous non-compliances relating to corrections have been cleared;
- HHR and generation data validation has been expanded to include routine review of event logs.
- Nova continues to provide a high degree of submission accuracy, with generally low variation between revisions and between temporary HHR estimates and actual data; and
- all of the non-compliances with the exception of one have a low breach risk rating score indicating they have a minimal effect on reconciliation. Two non-compliances relating to trading notifications and HHR aggregates have no impact, and are technical non-compliances only.

One area of opportunity was identified. The process for the management of long term active vacant ICPs does not appear to be being actioned as expected resulting in long term active vacant not being disconnected. There are regular attempts to read these sites by meter readers but attempts to either sign up an occupant or disconnect the site seem slow to be actioned.

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.

The audit found 20 non-compliances, and no recommendations or issues were raised. The audit risk rating is 24, which results in an indicative audit frequency of 12 months. This is a significant reduction from a rating of 34 in the previous audit. I have considered this result in conjunction with Nova's responses, which clearly indicate appropriate remedial actions, and my recommendation for the next audit date is 24 months.

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	10.6, 11.2, 15.2	Some errors found in registry data.	Moderate	Low	2	Identified
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.	Strong	Low	1	Identified
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.	Strong	Low	1	Identified
Changes to registry information	3.3	10 Schedule 11.1	Registry information not updated within 5 business days of the event.	Strong	Low	1	Identified
Management of “active” status	3.8	17 Schedule 11.1	Some ICPs with active status discrepancies.	Strong	Low	1	Cleared
Management of “inactive” status	3.9	19 Schedule 11.1	Ten ICPs had inactive status during a period where consumption occurred.	Strong	Low	1	Identified
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	One late transfer CS file.	Strong	Low	1	Identified
Retailers must use same reading - standard switch	4.4	6(1) and 6A Schedule 11.3	One late RR file sent.	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
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.	Strong	Low	1	Identified
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	Five late RR files sent.	Strong	Low	1	Identified
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 Schedule 11.3	One late CS file.	Strong	Low	1	Identified
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	47 late switch withdrawals.	Strong	Low	1	Identified
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.	Strong	Low	1	Identified
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	Some ICPs were not read during the period of supply.	Weak	Low	3	Identified
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, WVY0111 and ROS0221.	Strong	Low	1	Identified
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.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Electricity supplied information provision to the reconciliation manager	11.3	15.7	Some ICPs billed in AXOS were temporarily excluded from the AV120 submissions.	Strong	Low	1	Identified
HHR aggregates information provision to the reconciliation manager	11.4	15.8	HHR aggregates file does not contain electricity supplied information.	Strong	Low	1	Disputed
Forward estimate process	12.12	6 Schedule 15.3	The accuracy threshold was not met for all months and revisions.	Strong	Low	1	Identified
Historical estimate reporting to RM	13.3	10 Schedule 15.3	Historic estimate thresholds were not met for one revision.	Strong	Low	1	Identified
Future Risk Rating							24
Next indicative audit frequency							12

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

RECOMMENDATIONS

Subject	Section	Recommendation	Description
Nil			

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 current exemptions in place for Nova.

ICP 0008201110WM5F5 was settled by subtraction under exemption 262 prior to switching out on 01/02/18. The exemption has now expired.

1.2. Structure of Organisation

Nova provided a current organisational chart for commercial and retail services.

1.3. Persons involved in this audit

Auditors:

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

Nova personnel assisting with this audit:

Title
Switching Team Leader
Billing Service Manager
Billing co-ordinator
Metering and New Connections Team Leader
Retail Operations Manager
Team Leader Reconciliation

Title
Reconciliation Analyst

1.4. Use of Agents (Clause 15.34)

Code reference

Clause 15.34

Code related audit information

A reconciliation participant who uses an agent

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

Audit observation

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

Audit commentary

EMS, EDMI and AMS provide HHR data, and EMS also provides information to the pricing manager and submission services for grid connected generators.

Wells and MRSL provide NHH meter reading services.

All agents have been audited in accordance with the Guidelines for Reconciliation Participant Audits, and were completed within seven months of this audit. The agent audit reports are expected to be submitted along with this report.

1.5. Hardware and Software

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 Nova. 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 in accordance with expected industry standards.

1.6. Breaches or Breach Allegations

The Authority confirmed that no alleged breaches were recorded for Nova during the audit period.

1.7. ICP Data

Nova provided an ICP list as at September 2018. The quantity of ICPs by status is shown below:

Status	Number of ICPs 2018	Number of ICPs 2017	Number of ICPs 2016	Number of ICPs 2015
Active (2,0)	78,861	76,477	82,245	81,657
Inactive – new connection in progress (1,12)	20	42	25	38
Inactive – electrically disconnected vacant property (1,4)	256	377	488	518
Inactive – electrically disconnected remotely by AMI meter (1,7)	94	35	16	0
Inactive – electrically disconnected at pole fuse (1,8)	110	104	14	9
Inactive – electrically disconnected due to meter disconnected (1,9)	32	27	23	18
Inactive – electrically disconnected at meter box fuse (1,10)	117	27	1	5
Inactive – electrically disconnected at meter box switch (1,11)	25	25	0	2
Inactive – electrically disconnected ready for decommissioning (1,6)	71	80	88	98
Inactive – reconciled elsewhere (1,5)	1	1	1	1
Decommissioned (3)	1,328	1,022	736	2,515

The active ICPs on the list file were summarised by meter category in the table below. The active ICPs with a metering category of 9 or blank were checked. Four ICPs are unmetered, and one ICP has an accepted MEP nomination, and Nova is waiting for the MEP to update the metering details on the registry.

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

1.8. Authorisation Received

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

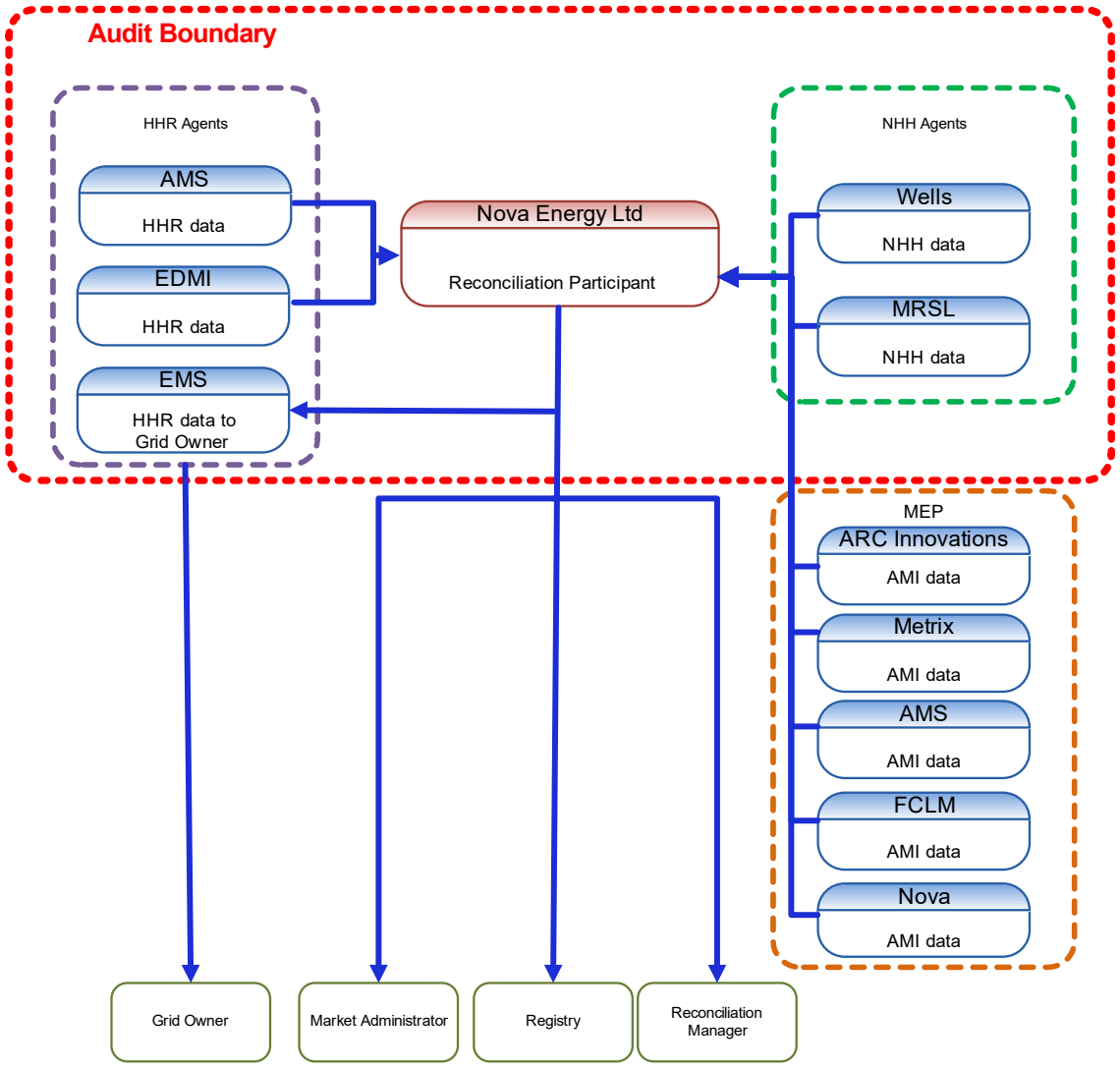
1.9. Scope of Audit

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 V7.1.

The audit was carried out at Nova's premises in Auckland on 20-22 November 2018, and Nova's premises in Wellington on 22 November 2018.

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



The table below shows the tasks under clause 15.38 of part 15 for which Nova 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 MRSL	AMS Arc Metrix Nova FCLM
(c)(iii) Creation and management of HHR & NHH volume information			
(d) – Calculation of ICP days			
(da) - delivery of electricity supplied information under clause 15.7			
(db) - delivery of information from retailer and direct purchaser half hourly metered ICPs under clause 15.8			
(e) – Provision of submission information for reconciliation			
(f) – Provision of metering information to the Grid Owner	EMS		

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

All agents have been audited in accordance with the Guidelines for Reconciliation Participant Audits that were current at the time of the agent's audit. All agent audit reports were within seven months of this report, and are expected to be submitted along with this report.

1.10. Summary of previous audit

Nova provided a copy of the report from the audit conducted in November 2017 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.

NON-COMPLIANCES

Subject	Section	Clause	Non-compliance	Status
Relevant information	2.1	10.6, 11.2, 15.2	Some errors found in registry data.	Still existing
Electrical Connection of Point of Connection	2.11	10.33A	Six reconnected ICPs not certified within 5 business days of reconnection. 38 reconnected ICPs with no certified metering in place.	Still existing
Changes to registry	3.3	10 Schedule 11.1	Registry information not updated within 5 business days of the event.	Still existing
Provision of information to the registry manager	3.5	9 Schedule 11.1	Registry information not updated within 5 business days of the event for eight ICPs.	Cleared
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	Incorrect ANZSIC code assigned.	Cleared
Management of "active" status	3.8	17 Schedule 11.1	Some ICPs with active status discrepancies.	Still existing
Switching	4.4	6(1) and 6A Schedule 11.3	One read request sent without two validated reads. Two read request files were sent with AMI reads labelled as estimates. Nine late RR files sent.	Still existing
	4.8	10(1) Schedule 11.3	Three ICPs sent with "AA" code instead of the "AD" code. PD code not used by Orion.	Cleared
	4.10	11 Schedule 11.3	One CS file sent with reads incorrectly sent as actuals and with the incorrect last read date.	Cleared

Subject	Section	Clause	Non-compliance	Status
	4.11	12 Schedule 11.3	One read request sent without two validated reads. One read request file was sent with AMI reads labelled as estimates. Nine late RR files sent.	Cleared Cleared Still existing
	4.15	17 and 18 Schedule 11.3	Incorrect withdrawal reason sent for two ICPs. 21 late switch withdrawals.	Cleared Still existing
Electricity conveyed & notification by embedded generators	6.1	10.13	While meters were bridged, energy was not metered and quantified according to the code for 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
Correction of NHH meter readings	8.1	19(1) Schedule 15.2	Corrections were processed incorrectly for one defective meter and one bridged meter. Three incorrectly processed corrections for bridged meters identified during the last audit have not been re-processed correctly.	Cleared
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	Stark meter events are not routinely reviewed by Nova. AMI event logs are not monitored for ARC meters.	Cleared
Calculation of ICP days	11.2	15.6 of part 15	One ICP days correction for HHR ICP 0900090793PCDD3 was not processed prior to the 14 month revision. It resulted in over reporting of 25 ICP days in January 2016. ICP days are reported for active, and inactive metered ICPs. According to the code ICP days should only be reported for active ICPs.	14 month revision has passed Cleared
HHR aggregates information	11.4	15.8	HHR aggregates file does not contain electricity supplied information.	Cleared

Subject	Section	Clause	Non-compliance	Status
Forward estimate process	12.12	6 of 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 some revisions.	Still existing

RECOMMENDATIONS

Subject	Section	Clause	Issue	Action
Calculation of ICP days	11.2	15.6	When HHR ICPs are downgraded, there is HHR consumption for the first NHH day, which must be submitted and this leads to one ICP day being submitted as well, which the registry is not expecting.	No information received from the Authority.

2. OPERATIONAL INFRASTRUCTURE

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

Code reference

Clause 10.6, 11.2, 15.2

Code related audit information

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

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

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

Audit observation

The process to find and correct incorrect information was examined. The registry list file as at 30/09/18 was examined to confirm that information was correct and not misleading. The registry validation process was examined in detail in relation to the achievement of this requirement.

Audit commentary

Nova has processes in place to correct information as required by this clause.

Nova's registry validation processes are unchanged from the previous audit. They conduct a validation between Orion and the registry on a daily basis. This is run using the Integrity Database. A variety of reports are produced tailored to specific areas of responsibility. These are reviewed and actioned accordingly.

The list file was analysed and the findings are shown in the table below.

Issue	2018 Qty	2017 Qty	2016 Qty	2015 Qty	Comments
Status mismatch between registry and Orion	10	0	0	1	Nova have reporting in place to identify any of these discrepancies. The report is reviewed and actioned each day. Ten ICPs with consumption during a period with inactive status were identified. See **section 3.9**.
ICP at status "new connection in progress" (1,12) with an initial electrical connection date populated by the Distributor	3	0	0	12	All three were timing differences, the registry was updated to active from the initial electrical connection date prior to the audit.
Active date variance with Initial Electrical connection Date	12	16	10	56	11 of these had the correct active date. One ICP was found to have an active date discrepancy. See **section 3.8.**

Issue	2018 Qty	2017 Qty	2016 Qty	2015 Qty	Comments
Incorrect submission flag	0	0	0	0	Compliant
Incorrect profiles	0	0	0	0	Compliant
Distributor indicates embedded generation present with RPS profile	0	12	16	19	Compliant
Active ICP with cat 9 and UML="N"	1	1	2	0	Nova is compliant, an MEP nomination has been accepted and Nova is waiting for metering details to be updated on the registry.
Active ICP with no MEP recorded and UML="N"	1	2	0	0	Nova is compliant, an MEP nomination has been accepted and Nova is waiting for metering details to be updated on the registry.
Active with blank ANZSIC codes	0	0	0	1	No evidence of this occurring.
Meter cat 3 with residential ANZSIC code	0	0	0	3	No evidence of this occurring.
Active with ANZSIC "T999" not stated	0	0	0	994	No evidence of this occurring.
Active with ANZSIC "T994" don't know	0	0	0	299	No evidence of this occurring.
Incorrect ANZSIC code applied	0	2	-	-	No evidence of this occurring.
ICPs with Distributor unmetered load populated but retail unmetered load is blank	0	5	6	4	No evidence of this occurring.
ICPs with standard unmetered load flag Y but load is recorded as zero	0	0	0	1	No evidence of this occurring.
ICPs with incorrect shared unmetered load	0	0	6	7	No evidence of this occurring.
ICPs have UML flag N and no shared unmetered load but Distributor field shows shared unmetered load.	0	0	0	1	No evidence of this occurring.

Registry discrepancies identified during the 2017 audit were rechecked:

ICP	Discrepancy	2018 findings
0001020104SN582	Incorrect active date	**Cleared.** Active date is corrected to 18/01/2016.
0000174240TR4C9	Incorrect inactive status 24/07/17 to 28/09/2017	**Partially cleared.** Still shows as inactive 24/07/17-26/07/17.
0006991114RN4BE	Incorrect inactive status 05/12/2016 to 10/12/2016	**Still existing.**
0007901468TUA75	Incorrect inactive status 20/07/2017 to 22/09/2017	**Still existing.** This ICP has now switched out.
0009922015WW30E	Incorrect inactive status 12/12/2016 to 28/07/2017	**Still existing.**
1000004758BP7A1	Incorrect inactive status 07/06/2017 to 20/09/2017	**Still existing.**
1000007211BPCB0	Incorrect inactive status 24/07/2017 to 18/09/2017	**Partially cleared.** Still shows as inactive 24/07/17-17/08/17.
1000009887BP012	Incorrect inactive status 01/06/2017 to 22/09/2017	**Still existing.** This ICP has now been decommissioned.

Not all corrections were completed from the 2017 audit as expected. Submission has occurred correctly for these ICPs, but the registry status is incorrect for the periods identified above.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 10.6, 11.2, 15.2 From: 01-Oct-17 To: 26-Oct-18	Some errors found in registry data. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate as they are sufficient to mitigate risk most of the time. The audit risk rating is low as the overall volume of ICPs affected is low.

Actions taken to resolve the issue	Completion date	Remedial action status
1. Submission has occurred for 7 ICPs from 2017 Audit but the registry status is incorrect for the periods. **Response:** Non-Compliance accepted and remedial action completed. Actions: • Due to human error with team members not following agreed Nova processes the 7 ICPs from the 2017 audit period were not fully resolved in a timely manner. • Our data integrity reporting identified the ICPs however no action was taken • Update to the 7 ICPs is as follows: o 5 ICPs switched out o 1 ICP has had corrections updated o 1 ICP is decommissioned	November 2018	Identified
2. 10 ICPs with consumption during a period with inactive status were identified **Response:** Non-Compliance accepted and remedial action on-going. Actions: • As an outcome of identifying the 2017 corrections not being completed, Nova will instigate a review of the data integrity reporting that supports identification of ICPs with incorrect status' • Update to the 10 ICPs is as follows: o 2 ICPs resolved o 8 ICPs switched out	Q2	
3. One ICP was found to have an active date discrepancy **Response:** Non-Compliance accepted and remedial action on-going. Actions: • MEP information provided was incorrect for the 1 ICP with active date discrepancy	Q2	

• Nova employee believed they were compliant under Clause 10.33A so did not challenge the MEP metering install paperwork • ICP active date has been corrected		
Preventative actions taken to ensure no further issues will occur	**Completion date**	
• Data integrity reporting to be reviewed further as opportunities to identify discrepancies needs refinement. • Further training was provided across the wider team to refresh understanding of what the issues are and how to resolve them, this is an on-going monthly topic. • Process documentation updated to provide clearer guidelines for follow up, through to correction, is occurring. • Our focus will continue to be on accuracy of event dates and complete and accurate information.	Q2	

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.

HHR data received from agents

HHR data is collected by AMS and EDMI and provided to Nova 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.

August 2018 HHR data for four ICPs supplied by AMS was matched from the source files to Stark, Kinetiq, EnergyMarket, and the HHR aggregates to confirm the process.

HHR and generation data obtained by Nova

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 HHR billed sites

Up to 25 AMI sites were reconciled and billed as HHR for part of the audit period, until they switched out in August 2018.

HHR data was received from AMS for both AMS and Arc meters via SFTP. The data was loaded into EnergyMarket hourly. I traced a sample of HHR data for one ICP from the source files to Stark and Energy Market to confirm the process.

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 MRSL.

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 14 NHH ICPs from the source files to Orion. Readings for two ICPs were checked for all of the MEPs who provide AMI data.

Manual readings

Manual NHH data is provided by Wells and MRSL via SFTP.

I traced a diverse sample of reads for 10 NHH ICPs from the source files to Orion. Readings for five ICPs each were checked for MRSL and Wells.

Audit commentary

HHR data received from agents

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

August 2018 HHR data for two ICPs supplied by AMS and two ICPs supplied by EDMI was matched from the source files to Stark, Kinetiq, EnergyMarket, and the HHR aggregates. All volumes matched.

HHR and generation data obtained by Nova

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 HHR billed sites

August 2018 HHR data for one ICP supplied by AMS was matched from the source files to Stark, Kinetiq, EnergyMarket, and the HHR aggregates. All volumes matched.

AMI readings for NHH billed sites

All the reads matched the source files.

Manual readings

All the reads matched the source files.

Audit outcome

Compliant

2.4. Audit trails (Clause 21 Schedule 15.2)

Code reference

Clause 21 Schedule 15.2

Code related audit information

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

The audit trail must include details of information:

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

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

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

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

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

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

Audit observation

A complete audit trail was checked for all data gathering, validation and processing functions. I reviewed audit trails for a small sample of events.

Audit commentary

Stark

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

I viewed audit trails for a sample of changes, and found they included operator ID, date and time, the activity completed, and the reason for the change. Because there is only one operator ID for Stark, the operator ID recorded does not correspond to a person. From 1 November 2018, the code wording was clarified to confirm that the operator identifier recorded in audit trails should reflect the operator identifier for the person within the reconciliation participant who performed the activity.

Nova normally processes corrections by importing a replacement file, and the user who processed the correction could easily be determined by checking who created the correction file for the sample of audit trail events reviewed.

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.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.4 With: Clause 21 Schedule 15.2 From: 01-Nov-18 To: 22-Nov-18	Stark audit trails do not record the operator identifier for the person who completed the activity; there is only one operator identifier for Stark. 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 rated as strong and the impact as low. Audit trails are available and contain the required information, but the person who processed the change is not identifiable within the audit trail because there is only one operator identifier. A small number of users have access to Stark. For the sample of audit trails reviewed, it was simple to determine which person was responsible for processing the change from supporting information.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non-Compliance accepted. **Comments:** • Stark stored audit trails with a single system operator identifier due to a common login used by Stark users. • The processes for modifying data resulted in files and/or records being stored outside of Stark that identified the person who processed the change. • This was confirmed by the Auditor in the sample of audit trails reviewed. **Actions:** • Nova has created individual logins for users of Stark. • Any modifications to data will result in Audit trails containing a unique operator identifier that corresponds to the person responsible for making changes.	N/A	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As Above	N/A	

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

Code reference

Clause 10.4

Code related audit information

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

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

Audit observation

I reviewed Nova's current terms and conditions.

Audit commentary

Nova'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.

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

Audit commentary

Nova'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.

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

There are no current examples where loss compensation is required.

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 Nova's current terms and conditions.

Audit commentary

Nova's terms and conditions include this requirement.

Audit outcome

Compliant

2.9. Connection of an ICP (Clause 10.32)

Code reference

Clause 10.32

Code related audit information

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

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

Audit observation

The new connection process was examined in detail to evaluate the strength of controls. The registry list for 01/03/18 to 30/09/18 and event detail report for 01/03/18 to 26/10/18 were analysed to confirm process compliance and that controls are functioning as expected.

Audit commentary

Nova had made no changes to their new connection process. Once the ICP is created Nova take the ICP to the "new connection in progress" status in the registry and nominate the MEP. A service request is issued to the contractor via their "JIT" (job issue tracking system). The closing of the service request automatically updates the customer's account in Orion. There is no automated interface between Orion and the registry. All changes are loaded directly to the registry by the operator. Reporting is in place to identify any ICPs where this step is missed via the status discrepancies. The new connection process is discussed in more detail in **section 3.5.**

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 an MEP to temporarily electrically connect a point of connection, only if:

- *they are recorded in the registry as being responsible for the ICP; and*

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

Audit observation

The new connection process was examined in detail to evaluate the strength of controls. The registry list for 01/03/18 to 30/09/18 and event detail report for 01/03/18 to 26/10/18 were analysed to confirm process compliance and controls are functioning as expected.

Audit commentary

Nova's new connections process ensures 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. None of the new connections were temporarily electrically connected, and this is unlikely to occur for Nova.

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:

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

Audit observation

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

The registry list as at 30/09/18, meter installation details report, and event detail report for 01/03/18 to 26/10/18 were analysed to confirm process compliance and that controls are functioning as expected.

Audit commentary

New Connections

The new connection process ensures that an MEP is nominated.

252 (99.2%) of the 254 new connections were certified within five business days of electrical connection. Two HHR new connections, ICPs 0007183386RN7B2 and 1002046503LC25F were certified late due to not enough load being present when these were electrically connected. The MEPs concerned in both instances should have certified these as a lower category and monitored these until there was sufficient load to fully certify these. This has caused Nova to be non-compliant with this clause.

Analysis did not identify any backdated new connections.

Reconnected ICPs

Nova changed their processes as a result of the last audit. The meter certification is checked for all ICPs being reconnected. If the site is already programmed to be replaced or recertified by the MEP then no job is issued. For any other instances a service request is issued to get the ICP's meter/s certified.

Certification details were checked for the 787 reconnections where certification information was available on the metering installation details or event detail report.

54 (6.9%) of the 787 reconnections checked did not have current full certification at the time that they were reconnected. A sample of 20 of these ICPs were checked found all had been identified via the BAU process and:

- for ten ICPs, a service request was raised to recertify the meter, five of these have been completed and the remaining five are still in progress due to customer access issues;
- the remaining ten ICPs had already been identified by the MEP for meter replacement or recertification, of these:
    - four ICPs have been recertified by LMGL using statistical sampling;
    - three ICPs have had their meters replaced as part of the AMI meter roll out; and
    - the remaining three ICPs have been identified by the MEP to be in the programme of work but are yet to have their meters replaced - they were reconnected between 30/4/18 and 4/7/18.

Bridged ICPs

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

The meters for the following ICPs were not recertified on unbridging:

ICP	Date unbridged	Most recent certification date(s)
1001265034LC556	25/01/18	22/12/17 and 10/05/18
0000187565CTACB	19/06/18	23/03/16

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.11 With: 10.33A From: 01-Mar-18 To: 30-Sep-18	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. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1

Audit risk rating	Rationale for audit risk rating
Low	Controls are rated as strong as there are processes in place to identify and address ICPS without certification upon electrical connection. The audit risk rating is low as there is no direct impact on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status
1. 2 ICPs not certified within 5 business days of electrical connection. Response: Non-Compliance accepted. • As described in the 2017 audit outcomes Nova reviewed all ICPs that were electrically connected without certified metering and confirm we instigated a program of work to address these and implemented processes to support actions moving forward. Action: • ICP 0007183386RN7B2 was identified within our data integrity reporting suite. • Action instigated with MEP to revisit site to certify metering. • Certification completed, and registry updated March 2018. • ICP 1002046503LC25F was identified within our data integrity reporting suite. • Action instigated with MEP to correct registry as issue was with MEP data. • Registry updated June 2018.	March – June 2018	Identified

2. 54 ICPs reconnected with no certified metering.
Action:
• 37 ICPs are with MEPs in deployment program
  ○ 30 ETA completion June 2019
  ○ 7 ETA completion March 2019
• 2 ICPs certified on site and awaiting paperwork to be provided by the MEP.
• 3 ICPs were issued recertification jobs with MEPs and are pending completion ETA March 2019.
• 11 ICPs require additional work to be undertaken on site before certification can occur.
  ○ i.e. requires new switchboard, pending customer contact.
	June 2019	

• 1 ICP is now vacant but pending contract negotiation ETA March 2019. ○ Access issue inhibit our ability to issue recertification job, once consumer contract signed metering will be recertified and/or supply disconnected. 3. 2 ICPs were not certified when their meters were unbridged. Action: • Nova instigated unbridging of the meters however recertification was not completed at point of unbridging. • The MEPs were sent back to recertify. • Certification completed November 2018.	November 2018	
Preventative actions taken to ensure no further issues will occur	**Completion date**	
1. 2 ICPs not certified within 5 business days of electrical connection. • Process change implemented February 2019 to review any HHR that does not have adequate load to certify and take steps to ensure certification can be completed within 5 business days. 2. 54 ICPs reconnected with no certified metering. • Processes created post 2017 audit reflect the actions to be taken if an ICP is reconnected with uncertified metering. • Non-compliance will continue to occur until all uncertified metering across the industry has been certified. 3. 2 ICPs were not certified when their meters were unbridged. • Nova have updated our service request template to capture if uncertified metering was identified which will result 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, bridging of meters is an undesirable outcome for Nova.	February 2019 December 2017 February 2019	

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

Nova has arrangements for line function services with all relevant distributors.

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

Nova has appropriate arrangements with all relevant MEPs.

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 Nova.

Audit outcome

Compliant

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

Code reference

Clause 11.7(2)

Code related audit information

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

Audit observation

The new connection process was examined in detail. The registry list as at 30/09/18 and event detail report for 01/03/18 to 26/10/18 were analysed to evaluate the updating of the registry in relation to new connections. This clause links directly to **section 3.5** below. The findings for the timeliness of updates is detailed there.

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 11.1

Code related audit information

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

Audit observation

The process to manage status changes is discussed in detail in **sections 3.8** and **3.9** below.

In this section I have examined the registry list as at 30/09/18 and event detail report for 01/03/18 to 26/10/18. I used the extreme case methodology to select the ten latest updates for each event type for examination.

The process to manage MEP changes was examined, and I used the typical case methodology to examine 20 nominations made more than 30 days after the event date. The list file was examined to identify any active ICPs with no MEP recorded, or with meter category nine recorded and the UML flag set to "N". In all cases Nova was compliant, and the ICPs were either unmetered or the MEP had accepted a nomination.

The process to manage trader updates not relating to MEP nominations or NTs was examined. 20 late updates over 30 days were examined to determine why they were late.

Audit commentary

Nova continue to have a culture where compliance is an integral part of how they do business. The key metrics are on display to the teams and all staff have a good understanding of these requirements and how they impact the customer.

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	2015	573	419	154	9.91	73%
	2016	500	455	45	3.4	91%
	2017	780	652	128	5	80%
	2018	**821**	**784**	**37**	**3**	**95%**
Change to electrically disconnected other than reason 12 & 6	2015	523	469	54	3.46	90%
	2016	663	631	32	4.05	95%
	2017	796	666	130	21	84%
	2018	**1239**	**1207**	**32**	**3**	**97%**
Change to electrically disconnected ready for decommissioning	2015	58	6	52	20.74	10%
	2016	102	61	41	63.96	60%
	2017	147	122	25	9	83%
	2018	**278**	**260**	**18**	**3**	**94%**
Trader updates						
Changes of MEP	2017	335	303	32	2.1	90%
	2018	**3724**	**3564**	**160**	**2.6**	**96%**
Trader updates (excluding MEP nominations and NT updates)	**2018**	**949**	**716**	**233**	**65.5**	**75%**

Reconnections

Nova's reconnection process is robust and is described in **section 3.8**.

The percentage of reconnections updated within five days has improved from 80% to 95%. There were seven reconnected ICPs where the notification date was more than 30 business days after the event date. The nine latest updates were reviewed to determine the reason for the late update:

- four were due to revenue assurance identifying consumption on disconnected ICPs, these were investigated and then backdated to the date of consumption commencing;

- four were delayed due to notification not being received by the metering team, two of these related to flood damaged Edgecumbe properties being reconnected by the network; and
- the remaining ICP was backdated due to a backdated switch and the ICP could not be updated until the switch was complete.

Inactive - "Vacant" or similar

Nova's disconnection process is described in **section 3.9**.

The percentage of updates to inactive (other than reason codes 12 and 6) updated within five days has improved from 84% to 97%. There were 21 ICPs where the notification date was more than 30 business days after the event date. The 2017 audit found reduced compliance because data cleansing was undertaken after some ICPs with incorrect statuses were identified when Nova was reconciling the line charges for one distributor. Nova identified that not all of the statuses held in Orion were included in the reporting. This has been rectified and therefore the volume of corrections has reduced and compliance has improved.

The ten latest updates were reviewed to determine the reason for the late update:

- five were due to human error where the wrong year was inserted in the date causing it to appear backdated, all were identified quickly and corrected;
- four were due to a data correction to insert a meter removal event prior to the ICP being made ready for decommissioning; and
- one ICP was due to the late notification from the network of a fire at the property.

Inactive - "Ready for Decommissioning"

The decommission process varies from network to network with some advising Nova to move the ICP to "ready for decommissioning" after the event whilst for others Nova will move the ICP to "ready for decommissioning" in advance of the decommissioning. Performance in this area has continued to improve during the audit period.

The percentage of updates to ready for decommissioning updated within five days has improved from 83% to 94%. There were six ICPs where the notification date was more than 30 business days after the event date. The ten latest updates were reviewed to determine the reason for the late update. All were due to late notification for the network.

Change of MEP

AMI meter deployments are managed via file uploads based on the ICPs advised by the MEP. This is checked as part of the registry discrepancy reporting.

The nomination date was compared to the metering event effective date to identify any ICPs that were not nominated within five business days. 3564 (96%) of the 3724 MEP nominations were made within five business days. There were 67 ICPs where the nomination was made more than 30 business days after the event date.

20 late updates over 30 business days after the event date were reviewed to determine the reasons for the late updates:

- 18 were due to late notification from the MEP to be nominated to replace the previous MEP;
- one was backdated in error by the operator when loading the MEP nomination; and
- ICP 0000605390TEE0B was nominated to NGCM who accepted the nomination and then advised that the correct MEP in this instance was SMCO.

The 2017 audit found that some nominations were made late because an incorrect MEP was nominated in the first instance. I identified 14 ICPs which had more than one MEP nomination on the event date on the event detail report. 12 late MEP nominations occurred in relation to these ICPs, primarily because an incorrect MEP was selected in the first instance. These are all relate to SMCO not being identified as

the MEP in the first instance. NGCM accepted the nomination and then Nova was advised to nominate SMCO, causing Nova to have to back date the nomination in these instances.

Trader updates

716 (75%) of the 949 trader updates made were within five business days of the event date. 141 of the updates were more than 30 business days after the event date. A sample of 20 late updates more than 30 business days after the event date were examined to determine the reasons for the late updates. These all related to the correction of ANZSIC codes. Nova have backdated them to reflect the date of the ANZSIC code change which meets the requirement to provide complete and accurate data but causes Nova to be non-compliant for backdating.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.3 With: Clause 10 Schedule 11.1 From: 01-Mar-18 To: 30-Sep-18	Registry information 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	Controls are rated as strong with robust exception reporting and processes in place as is reflected by the high level of timely updates to the registry. The audit risk rating is low as the vast majority of updates to the registry occur within the required timeframe.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non-Compliance accepted. **Comments:** • Nova displays on-going commitment to timely status updates which is reflected in the improved compliance results. • MEP nominations will be reviewed further to refine processes. • In the instances where Nova corrected ANZSIC codes for a backdated period we have elected to provide complete and accurate information and acknowledge this creates contention with Clause 10 Schedule 11.1.	N/A	Identified

Actions: • We continue to work with our industry stakeholders to improve our compliance time frames and where required we will elect to provide complete and accurate information.		
Preventative actions taken to ensure no further issues will occur	**Completion date**	
• A review of the MEP nomination process will be undertaken specifically within Smartco MEP areas to reduce multiple MEP nominations occurring. • Our focus will continue to be on accuracy of event dates and complete and accurate information.	N/A	

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 new connection process was discussed and the registry list as at 30/09/18, was examined to confirm whether all active ICPs have an MEP recorded. This analysis found one active ICP with UML "N" that did not have an MEP recorded in the registry. This ICP was examined.

ICP Decommissioning

The process for the decommissioning of ICPs was examined. A selection of ten decommissioned ICPs were checked using the typical case method of sampling to prove the process and confirm controls are in place.

Audit commentary

Retailers Responsibility to Nominate and Record MEP in the Registry

The new connection process is discussed in detail in **sections 2.9** and **3.5**. Nova nominate the MEP at the same time as taking the ICP to the "inactive - new connection in progress" status. All new connections have an MEP nominated.

One active ICP with UML "N" did not have an MEP recorded in the registry. Nova is compliant, an MEP nomination has been accepted and Nova is waiting for metering details to be updated on the registry.

ICP Decommissioning

Nova will continue with their obligations under this clause. ICPs that are vacant and either active or inactive will still be maintained in Orion. 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. Nova also advises the MEP responsible that the site is to be decommissioned, or has been decommissioned, dependent on the distributor's process.

The sample checked confirmed that all had an attempt to gain a removal read made, and a read was gained where possible.

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 registry list as at 30/09/18 and event detail report for 01/03/18 to 26/10/18 were analysed to determine the overall performance for that period.

I used the typical case methodology to examine the ten late updates over 30 business days for status changes to active, and all late updates to new connection in progress status were reviewed.

Audit commentary

The new connection process is described in detail in **section 2.9**. 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
Changes to active- new connections	2015	206	23	183	21.7	11%
	2016	93	87	6	2.3	94%
	2017	267	260	7	2.0	97%
	2018	**254**	**247**	**7**	**2.3**	**97%**
New connection in progress status updates	2015	178	129	49	6.71	72%
	2016	124	116	8		94%
	2017	341	341	0	2	100%
	2018	**296**	**293**	**3**	**0**	**99%**

Active

The new connection process is described in **section 2.9**.

Nova have robust controls in place to ensure new connections are updated as soon as possible. This is evident in the high level of compliance. The seven ICPs not updated within five days were found to be corrections to the first active date for the ICPs. In all cases the original update was within five business days of the original event date.

Inactive - New Connection in Progress

Nova populates the registry for all new connections with the inactive status of (1,12) "New connection in progress" in the first instance. The MEP nomination is then sent at the same time. As this action occurs before electrical connection, non-compliance can only occur if this status update occurs greater than five business days after electrical connection (i.e. a backdated new connection). Analysis found that all three ICPs with the "new connection in progress" status entered more than five business days after the event date had their status updated within five business days of electrical connection.

Audit outcome

Compliant

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

Code reference

Clause 9 (1(k) of Schedule 11.1

Code related audit information

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

Audit observation

The process to capture and manage ANZISC codes was examined.

The registry list as at 30/09/18 was reviewed to check ANZSIC codes, including all active ICPs with codes in the T99 series, and ICPs with meter category 3 and domestic ANZSIC codes.

To confirm the validity of the ANZSIC codes selected I checked a diverse sample of 40 active ICPs across 12 different ANZSIC codes which made up more than 0.2% of the total ICPs.

Audit commentary

Nova ensure that all new customers are assigned an ANZSIC code. Checks for missing or T99 series ANZSIC codes are checked as part of the registry discrepancy process.

The list file was analysed and found that all active ICPs had an ANZSIC code applied. No ICPs had T99 series codes and there were no ICPs with meter category 3 or higher with domestic ANZSIC codes.

Of the 40 ICPs checked I could confirm 36 from google earth checks. All codes were confirmed to be correct.

Audit outcome

Compliant

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

Code reference

Clause 9(1)(f) of Schedule 11.1

Code related audit information

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

- *the code ENG if the load is profiled through an engineering profile in accordance with profile class 2.1 (clause 9(1)(f)(i)); or*
- *the daily average kWh of unmetered load at the ICP in all other cases (clause 9(1)(f)(ii)).*

Audit observation

The process to manage unmetered load was examined. The registry list as at 30/09/18 was examined to identify any ICPs where:

- Unmetered load is identified by the Distributor and none is recorded by Nova.
- Nova's unmetered load figure doesn't match with the Distributor's figure (where it's possible to calculate this if the Distributor is using the recommended format) and the variance is greater than 1.0kWh per day. 1.0 kWh per day was chosen as a sample only; this does not indicate compliance is achieved if an error is found that is less than 1.0 kWh per day.

Audit commentary

Nova checks for unmetered load as ICPs are electrically connected, as they switch in and via registry discrepancy reporting. This ensures that all unmetered load is checked on an ongoing basis.

The list file contained 283 ICPs where the distributor has unmetered load recorded. For all 283 ICPs, Nova has the unmetered load flag set to yes and a daily unmetered kWh greater than zero recorded.

For 133 ICPs the distributor's unmetered load details were populated in the recommended format, and I calculated the expected daily unmetered kWh based on the distributor data. In all cases my recalculation matched Nova's daily unmetered kWh within ±0.0 kWh.

Audit outcome

Compliant

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

Code reference

Clause 17 Schedule 11.1

Code related audit information

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

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

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

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

Audit observation

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

The registry list as at 31/8/18, metering installation details report, and event detail report for 01/03/18 to 26/10/18 were checked for any variances between the initial electrical connection date, meter certification date, and the active date. I checked all 12 ICPs with date variances against either the initial electrical connection date and or the meter certification date.

The process for the management of ICP reconnection and the timeliness of registry updates are discussed in **section 3.3**.

Audit commentary

Nova's processes will ensure that there is only one party per ICP, and will not allow an ICP to be set up without either a meter or, if it is unmetered, the daily unmetered kWh.

A service request is issued via their "JIT" (job issue tracking system) for all reconnections. The closing of the service request automatically updates the customer's account in Orion. There is no automated interface between Orion and the registry. All changes are loaded directly to the registry by the operator.

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

Active dates for the 254 new connections were compared to the distributor's initial electrical connection date, and MEP's certification date where these dates were populated.

	New connections with date populated	Active date matches	Different
Distributor initial electrical connection date	250	243 (97%)	7
Meter certification date	254	249 (98%)	5

In total, there were 12 ICPs with exceptions, all were reviewed:

- 11 ICPs were confirmed to be correct; and
- ICP 1002047987LCBB3 was found to be made active for the incorrect date, it was made active for 5/7/18 as advised by the paperwork returned from the field but the field contractor has since advised that the date should be 9/7/18 (the same date as the meter was certified) and this was corrected on the registry on 16/11/18.

Active status and status date discrepancies identified in the 2017 audit were rechecked, as detailed in **section 2.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.8 With: 17 Schedule 11.1 From: 01-Oct-17 To: 26-Oct-18	Some ICPs with active status discrepancies. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as strong as there is robust reporting in place to identify date mismatches and these are investigated as part of BAU. The audit risk rating is low as the overall level of accuracy is 95% or higher.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non-Compliance not accepted. As per our detailed response in 2.1	N/A	Cleared

Actions: ICP 1002047987LCBB3 • MEP information provided was incorrect for 1 ICP with active date discrepancy. • Nova rely on MEPs providing complete and accurate information. • ICP active date has been corrected November 2018.		
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As per our detailed response in 2.1	N/A	

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 inactive status of "new connections in progress" is used for all new connections. The registry list as at 30/09/18 and registry list with history were 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.

The process to manage ICPs at the other inactive statuses was examined. A sample of five ICPs at each inactive status (or less if there were not five) using the typical characteristics methodology were checked. A list of 16 ICPs with consumption recorded while disconnected was checked to confirm whether the correct statuses were applied.

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

Audit commentary

Inactive - New Connection in progress

The status "Inactive – new connection in progress" is used by Nova to claim new ICPs as soon as they become "Ready", and to nominate an MEP.

Analysis of the list file found ICP 0000041818HB668 had been at the "inactive – new connection in progress" status since 28/09/16. This was examined during the site audit and confirmed to be at the correct status. The site has since been electrically connected on 28/11/18.

I identified three ICPs that had an initial electrical connection date recorded. All have since been updated to active, and are compliant.

The timeliness of these updates to registry are discussed in **section 3.3.**

Inactive Status (excluding new connection in progress)

The status of "Inactive" is only to be used once a Nova approved contractor has confirmed that the ICP has been disconnected for situations where Nova requests the disconnection. A service request is issued via their "JIT" (job issue tracking system) for all disconnections. The closing of the service request automatically updates the customer's account in Orion. There is no automated interface between Orion and the registry. All changes are loaded directly to the registry by the operator.

Reporting is in place to identify any ICPs where this step is missed via the status discrepancies. This report is actioned on a daily basis. The issue identified in the last audit has been resolved and the discrepancy reporting now includes all ICP statuses in Orion.

The sample checked confirmed that the status aligned between the registry and Orion.

A list of 16 ICPs where consumption while inactive had been identified by Nova was checked to confirm whether the correct statuses were applied. I found the following ICPs had consumption recorded during periods with inactive status:

ICP	Inactive from	Inactive to	Comments
1000026574BP960	26-Mar-18	31-May-18	Reads record some consumption during the inactive period
0009062641CN028	11-Jun-18	18-Sep-18	Reads record some consumption during the inactive period
0001551300PC63D	26-Mar-18	31-May-18	Reads record some consumption during the inactive period
0000000091CP9D7	10-Jul-18	24-Sep-18	Reads record some consumption during the inactive period
0081760600PC73B	26-Feb-18	15-May-18	Reads record some consumption during the inactive period
0003103722TU398	16-Apr-18	28-Oct-18	Reads record some consumption during the inactive period
1000556645PC244	20-Jun-18	23-Aug-18	Reads record some consumption during the inactive period
0006510477RNEC0	21-Sep-17	01-Feb-18	Reads record some consumption during the inactive period
0005303223TUD99	27-Nov-17	10-May-18	Reads record some consumption during the inactive period between 29/04 and 08/05/18
0081151531WE049	21-Aug-17	28-Nov-17	Reads record some consumption during the inactive period

The consumption for these ICPs has been submitted as Nova submits volumes regardless of the ICPs status. This will affect the accuracy of ICP days and this is discussed in **section 11.2**. The ICPs with incorrect inactive statuses are recorded as non-compliance below and in **section 2.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.9 With: Clause 19 Schedule 11.1 From: 26-Feb-18 To: 28-Nov-18	Ten ICPs had inactive status during a period where consumption occurred. 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 assessed to be strong, because most ICPs have the correct status recorded. The impact was assessed to be low. There is no impact on submission; all inactive consumption is reported.

Actions taken to resolve the issue	Completion date	Remedial action status

Response:
Non-Compliance accepted and remedial action on-going.
 	
As per detailed response in 2.1:
 	
10 ICPs with consumption during a period with inactive status were identified.
 	
Actions:
• As an outcome of identifying the 2017 corrections not being completed, Nova will instigate a review of the data integrity reporting that supports identification of ICPs with incorrect status'.
• Update to the 10 ICPs is as follows:
  ○ 2 ICPs resolved
  ○ 8 ICPs switched out
	November 2018	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
As per our detailed response in 2.1 • Data integrity reporting to be reviewed further as opportunities to identify discrepancies needs refinement. • Further training was provided across the wider team to refresh understanding of what the issues are and how to resolve them, this is an on-going monthly topic • Process documentation updated to provide clearer guidelines for follow up, through to correction, is occurring. • Our focus will continue to be on accuracy of event dates and complete and accurate information.	Q2	

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

Nova uses the status "inactive – new connection in progress", and usually changes the status once it is set to "ready". Analysis of the registry list confirmed that no ICPs have had "new" or "ready" status for more than two years.

Nova monitors this via the daily exception reporting in place.

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.

Audit outcome

Compliant

4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

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

Code reference

Clause 2 Schedule 11.3

Code related audit information

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

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

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

Audit observation

The switch gain process was examined to determine when Nova deem all conditions to be met. A sample of five ICPs using the typical sampling methodology 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

Nova'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.

Audit outcome

Compliant

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

Code reference

Clauses 3 and 4 Schedule 11.3

Code related audit information

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

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

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

Audit observation

An event detail report for 01/03/18 to 26/10/18 was reviewed to identify AN files issued by Nova during the audit period, and:

- a sample of two ANs per response code were reviewed to determine whether the codes had been correctly applied;
- assess compliance with the requirement to meet the setting of event dates requirement.

The switch breach report was examined for the audit period.

Audit commentary

Nova uses business rules based on a hierarchy to automatically determine the response code sent. The check of the AN codes found all were correct.

The event detail report was reviewed for all 6,918 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.

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

An event detail report for 01/03/18 to 26/10/18 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 files. The content checked included:

- correct identification of meter readings and correct date of last meter reading
- accuracy of meter readings
- accuracy of average daily consumption (this is based on the most recent read to read consumption).

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

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

Audit commentary

CS timeliness

Nova have robust reporting in place and an experienced switching team who understand these requirements well. The switch breach report for the audit period recorded three late CS files for transfer switches. Only one of the files was genuinely late. This was due to human error.

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	-
Zero	64
More than 200 kWh	244

A sample of ten of these ICPs were checked (five with zero and five with more than 200 kWh), and I found all were calculated correctly.

The CS file content for five CS files was checked and found to be correct.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.3 With: Clause 5 Schedule 11.3 From: 21-Aug-18 To: 21-Aug-18	One late transfer CS file. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Strong controls are in place to ensure that CS files are normally sent on time. The impact is low; one transfer CS file was sent one business day late.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non-Compliance accepted and remedial action completed. **Comments:** • The Nova employee manually stopped the ICP from being included in the CS file export process to ensure accurate actual read(s) were going to be used. • By doing this the employee then omitted updating the effective event date which caused the non-compliance. **Actions:** • Remedial training was provided to the employee.	December 2018	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
• Remedial training was provided to the employee • Nova will implement an additional CS export check across effective event dates by Q2	Q2	

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 for 01/03/18 to 26/10/18 was analysed to identify all read change requests and acknowledgements during the audit period. A sample of ten RR files issued by Nova, and five AC files issued by Nova were checked.

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

Audit commentary

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

Nova issued 338 RR files for transfer switches. 290 were accepted and 48 were rejected. A sample of five rejected files and five accepted files were checked. In all cases there was a genuine reason for Nova's RR, the file content was accurate and supported by two actual reads obtained by Nova (or was as requested by the other trader), and the reads recorded in Nova's system reflected the outcome of the RR process.

Nova issued 443 AC files for transfer switches. 407 were accepted and 36 were rejected. A sample of five AC rejections were checked. All were rejected for valid reasons and a subsequent RR was received and accepted in four instances with corrected data.

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 two late RR files for transfer switches and no late AC files. One of the late RR files was genuinely late due to site access issues to get to actual reads.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.4 With: 6(1) and 6A Schedule 11.3 From: 20-Jun-18 To: 27-Sep-17	One late RR file sent. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Nova's controls are robust. The audit risk rating is low as this will have little to no impact on reconciliation, and the reads provided were correct.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non-Compliance accepted. **Comments:** • The sending of an RR file was late due to the fact that it took >4months to ascertain that the switch in reads were incorrect. • Historical access issues both with Nova and previous provider meant it took an extended length of time to identify the gaining reads were incorrect and gain 2 validated meter readings. • The Code does not allow for the situations where rectifying an issue can exceed 4 calendar months. • We will continue with current practices, as The Code requires a Trader to have 2 validated meter readings.	N/A	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
• Improved compliance has been observed during this audit period based on the outcomes of the 2017 audit. • No issues were found with the content of the RR files. • 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 01/03/18 to 26/10/18 was analysed to identify read change requests issued and received under Clause 6(2) and (3) Schedule 11.3 and determine compliance.

Audit commentary

These RR requests are processed in the same way as those received for greater than 200 kWh 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 found 209 RR files were issued to Nova within five business days of switch completion, by traders using a half hour profile. Of those, 203 files were accepted, and six files were rejected. All rejected files were checked:

- two were validly rejected so that a switch withdrawal could be completed;
- three were validly rejected because the CS file contained actual readings; and
- the RR for ICP 0006510477RNEC0 met the requirements of clause 6(2) and (3) of Schedule 11.3, it was initially rejected as the read was not in line with Nova's read history and was accepted when the proof of reads was provided.

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

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.5 With: Clause 6(2) and (3) Schedule 11.3 From: 05-Feb-18 To: 05-Feb-18	One RR issued under clause 6(2) and (3) of Schedule 11.3 was invalidly rejected. 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 rated as strong, processes are robust and only one file was treated incorrectly. The impact was low, the file was accepted on reissue with the same reading.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non-Compliance accepted and remedial action completed. **Comments:** • The RR was incorrectly rejected by a Nova employee • The employee misinterpreted the fact that an actual read(s) for an AMI communicating meter provided by the gaining trader within 5 days must be used by the losing provider. • The acceptance of the RR was not within 5 days • The subsequent RR was accepted on reissue.	February 2018	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
• Remedial training provided to the employee and wider Nova Switching team. • Process documentation was reviewed and updated to provide clearer understanding and instruction.	February 2019	

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.

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 sample of five ICPs using the typical sampling methodology 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

Nova'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.

Audit outcome

Compliant

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

Code reference

Clause 10(1) Schedule 11.3

Code related audit information

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

- *10(1)(a) If the losing trader accepts the event date proposed by the gaining trader, the losing trader must complete the switch by providing to the registry manager:*
    - *confirmation of the switch event date; and*

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

Audit observation

An event detail report for 01/03/18 to 26/10/18 was reviewed to identify AN files issued by Nova during the audit period, and:

- a sample of two ANs per response code were reviewed to determine whether the codes had been correctly applied; and
- assess compliance with the requirement to meet the setting of event dates requirement.

The switch breach report was examined for the audit period.

Audit commentary

Nova uses business rules based on a hierarchy to automatically determine the response code sent. The check of the AN codes found all were correct.

The 2017 audit found that the PD code was not being applied. Review of the event detail report confirmed that the PD code is available in Orion, and being applied where necessary.

The event detail report was reviewed for all 7,053 switch move ANs to assess compliance with the setting of event dates requirements:

- all 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.

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

Audit outcome

Compliant

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

An event detail report for 1/1/18 to 2/9/18 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

Analysis found all 7,053 switch move 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.

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

An event detail report for 01/03/18 to 26/10/18 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 files. The content checked included:

- correct identification of meter readings and correct date of last meter reading;
- accuracy of meter readings; and
- accuracy of average daily consumption (this is based on the most recent read to read consumption).

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

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

Audit commentary

CS timeliness

Nova have robust reporting in place and an experienced switching team who understand these requirements well. The switch breach report for the audit period recorded ten late CS files for switch moves. None of the files were genuinely late.

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	-
Zero	322
More than 200 kWh	118

A sample of ten of these ICPs were checked (five with zero and five with more than 200 kWh), and I found all were calculated correctly.

The CS file content for five CS files was checked and found to be correct.

Audit outcome

Compliant

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 subclauses (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 4 months after the actual event date, provide to the losing trader a changed

validated meter reading or a permanent estimate supported by 2 validated meter readings, and the losing trader must either,—

(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 for 01/03/18 to 26/10/18 was analysed to identify all read change requests and acknowledgements during the audit period. A sample of ten RR files issued by Nova, and five AC files issued by Nova were checked.

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

Audit commentary

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

Nova issued 401 RR files for switch moves. 319 were accepted and 82 were rejected. A sample of five rejected files and five accepted files was checked. In all cases there was a genuine reason for Nova's RR, the file content was accurate and supported by two actual reads obtained by Nova (or was as requested by the other trader), and the reads recorded in Nova's system reflected the outcome of the RR process.

Nova issued 439 AC files for switch moves. 368 were accepted and 71 were rejected. A sample of five AC rejections were checked and found to be validly rejected. Nova accepted RRs which were reissued with corrected readings.

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 five late RR files for switch moves in relation to four ICPs and no late AC files. All were genuinely late due to access issues preventing these from getting two actual reads within the required timeframe.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.11 With: Clause 12 Schedule 11.3 From: 05-Dec-17 To: 20-Jun-18	Five late RR files sent. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Nova's controls are robust. The audit risk rating is low as this will have little to no impact on reconciliation, and the reads provided were correct.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non-Compliance accepted. **Comments:** 1. Four late RR files sent • The sending of RR files was late due to the fact that it took >4months to ascertain that the switch in reads were incorrect. • An extended length of time to gain 2 validated meter readings has contributed to the non compliance. • The Code at the time of this audit period did not allow for the situations where rectifying an issue can exceed 4 calendar months from the event date. • We will continue with current practices, as The Code requires a Trader to have 2 validated meter readings. 2. One late RR file sent. • One RR file sent late due to the losing provider rejecting Nova's RR as they wanted to undertake their own investigations. • Post the losing provider completing their review Nova's subsequent RR was accepted albeit both the RR's for this ICP were recorded as late.	N/A	Identified

Preventative actions taken to ensure no further issues will occur		
• Nova will continue to work with our employees to ensure they understand the processes and procedures to be followed. • The revised Code (Clause 6A(1) effective 1 February 2019 amends the timeframe to rectify reads, now 4 months from the registry manager giving the gaining trader written notice under Clause 22(d) of having received information about the switch completion. a. We believe the revised code will have a positive impact on reducing the number of late RRs across the industry.	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 3 business days after the arrangement comes into effect.

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

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

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

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

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

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

Audit observation

The HHR switch process was examined and a sample of five ICPs using the typical sampling methodology was checked to confirm that these were notified to the registry within three business days.

Audit commentary

The HHR customer switches are managed in conjunction with the Commercial team.

The sample checked confirmed that all NT files were sent within three business days.

Audit outcome

Compliant

4.13. Losing trader provision of information - gaining trader switch (Clause 15 Schedule 11.3)

Code reference

Clause 15 Schedule 11.3

Code related audit information

Within three business days after the losing trader is informed about the switch by the registry manager, the losing trader must:

15(a) - provide to the registry manager a valid switch response code as approved by the Authority; or

15(b) - provide a request for withdrawal of the switch in accordance with clause 17.

Audit observation

An event detail report for 01/03/18 to 26/10/18 was reviewed to identify AN files issued by Nova during the audit period, and a sample of two 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

HHR switch losses are managed in conjunction with the Sales team.

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

Audit outcome

Compliant

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

Code reference

Clause 16 Schedule 11.3

Code related audit information

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

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

> *16(a)- give the losing trader or MEP for the ICP an opportunity to interrogate the metering installation immediately before the ICP is electrically disconnected or the metering equipment is removed; or*
>
> *16(b)- carry out an interrogation and, no later than five business days after the metering installation is electrically disconnected or removed, advise the losing trader of the results and metering component numbers for each data channel in the metering installation.*

Audit observation

The HHR switching process was examined and the switch breach report was analysed and found five late CS files recorded.

Audit commentary

CS timeliness

HH switches are managed in conjunction with the Commercial team. The switch breach report for the audit period recorded one genuinely late CS file for a HH switch. This was investigated and was late due to human error. It was correctly identified on exception reporting but not actioned correctly causing it to be late.

CS content

The content of all 16 HH CS files was reviewed, and found to be compliant.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.14 With: Clause 16 Schedule 11.3 From: 17-Aug-18 To: 21-Aug-18	One late CS file. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Strong controls are in place to ensure that CS files are normally sent on time. The impact is low; one HH CS file was sent three business days late.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non-Compliance accepted and remedial action completed.	November 2018	Identified

Comments: • Complete and accurate information was provided in the CS file. • The ICP impacted was identified via data integrity reporting however the team member responsible did not follow the Nova approved process. **Actions:** • The ICP was sent in the CS file but was late.		
Preventative actions taken to ensure no further issues will occur	**Completion date**	
• Remedial training was provided to the employee • An additional review process was implemented within the team to pick up if any ICPs have been missed and take action before non compliance is observed • Nova will continue to work with our employees to ensure they understand the processes and procedures to be followed.	November 2018	

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

Code reference

Clauses 17 and 18 Schedule 11.3

Code related audit information

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

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

- *for each ICP, the trader withdrawing the switch request must provide the registry manager with (clause 18(c)):*
  - *the participant identifier of the trader making the withdrawal request (clause 18(c)(i)); and*
  - *the withdrawal advisory code published by the Authority. (clause 18(c)(ii))*
- *within 5 business days after receiving notice from the registry manager of a switch, the trader receiving the withdrawal must advise the registry manager that the switch withdrawal request is accepted or rejected. A switch withdrawal request must not become effective until accepted by the trader who received the withdrawal. (clause 18(d))*
- *on receipt of a rejection notice from the registry manager, in accordance with clause 18(d), a trader may re-submit the switch withdrawal request for an ICP in accordance with clause 18(c). All switch withdrawal requests must be resolved within 10 business days after the date of the initial switch withdrawal request. (clause 18(e))*

- *if the trader requests that a switch request be withdrawn, and the resolution of that switch withdrawal request results in the switch proceeding, within 2 business days after receiving notice from the registry manager in accordance with clause 22(b), the losing trader must comply with clauses 3,5,10 and 11 (whichever is appropriate) and the gaining trader must comply with clause 16 (clause 18(f)).*

Audit observation

An event detail report for 1/1/18 to 2/9/18 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 using the typical sampling methodology, including 13 withdrawal requests rejected by other traders;
- identify all switch withdrawal acknowledgements issued by Nova, a sample of ten rejections were checked; and
- confirm timeliness of switch requests, as this is not currently being identified in the switch breach report.

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

Audit commentary

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

47 (1.7%) of the 2,803 NWs were issued more than 60 business days after the event date. 18 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 they were delayed while investigation was carried out to determine whether a withdrawal was required.

125 (3.5%) of the 3,622 AWs issued by Nova were rejections. I reviewed a sample of ten rejections by Nova, and confirmed they were rejected based the information available at the time the response was issued. In some cases Nova asked the other trader to reissue the withdrawal with the correct code, and later accepted.

The switch breach report did not record any late NW or AW files.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.15 With: 17 and 18 Schedule 11.3 From: 02-Feb-18 To: 17-Oct-18	47 late switch withdrawals. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Strong Breach risk rating: 1

Audit risk rating	Rationale for audit risk rating
Low	Nova have robust controls in place. The volume of backdated switch requests is very low (1.7%) therefore the impact on reconciliation will be low.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non-Compliance accepted. **Comments:** • We have investigated the cause of the 47 ICPs where the withdrawal process was instigated > 2 months from switch completion. • Trends on late withdrawals are: a. WP wrong premise b. MI mixed metering c. CX customer cancellation • 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". **Actions:** • We believe no further action is required by Nova.	N/A	Identified

Preventative actions taken to ensure no further issues will occur	Completion date
We believe no further action is required by Nova.	N/A

4.16. Metering information (Clause 21 Schedule 11.3)

Code reference

Clause 21 Schedule 11.3

Code related audit information

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

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

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

Audit observation

The meter reading process in relation to meter reads for switching purposes was examined. Examples to confirm this procedure have been examined as part of the sending of final information for switches and read requests made.

Audit commentary

All meter readings used in the switching process are validated meter readings or permanent estimates. This process is discussed further in **sections 4.3** and **4.10.**

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

Audit outcome

Compliant

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 to confirm that Nova is not a save protected retailer.

Win back processes were examined to determine whether they are compliant.

I checked the event detail report from 01/03/18 to 26/10/18 identify any withdrawn switches with a CX code applied prior to the switch completion date in relation to any switch save protected retailers.

Audit commentary

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

Nova 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 six NWs issued with a CX withdrawal reason code prior to completion of the switch. In all cases the other trader was not switch save protected at the time of the withdrawal.

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.

Examination of the registry list file as at 30/09/18 found Nova has 77 ICPs with shared unmetered load.

Audit commentary

Shared unmetered load is checked as ICPs switch in, and this is checked as part of daily registry discrepancy reporting.

For all 77 ICPs with shared unmetered load the distributor's unmetered load details are populated in the recommended format. I calculated the expected daily unmetered kWh based on the distributor data. In all cases my recalculation matched Nova's daily unmetered kWh within ±0.0 kWh.

Audit outcome

Compliant

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

Code reference

Clause 10.14 (2)(b)

Code related audit information

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

Audit observation

The registry list as at 30/09/18 contained 283 ICPs with unmetered load recorded. Three ICPs have unmetered load between 3,000 and 6,000 kWh per annum and were examined.

Audit commentary

The three ICPs with standard unmetered load between 3,000 and 6,000 kWh per annum are under verandah lighting, which is an approved load type.

Audit outcome

Compliant

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

Code reference

Clause 10.14 (5)

Code related audit information

If the unmetered load limit is exceeded the retailer must:

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

Audit observation

The registry list as at 30/09/18 contained 283 ICPs with unmetered load recorded. No ICPs have unmetered load over 6,000 kWh per annum.

Audit commentary

Nova does not supply any ICPs with unmetered load over 6,000 kWh per annum.

Audit outcome

Compliant

5.4. Distributed unmetered load (Clause 11 Schedule 15.3, Clause 15.37B)

Code reference

Clause 11 Schedule 15.3, Clause 15.37B

Code related audit information

An up-to-date database must be maintained for each type of distributed unmetered load for which the retailer is responsible. The information in the database must be maintained in a manner that the resulting submission information meets the accuracy requirements of clause 15.2.

A separate audit is required for distributed unmetered load data bases.

The database must satisfy the requirements of Schedule 15.5 with regard to the methodology for deriving submission information.

Audit observation

Nova does not wish to trade on DUML ICPs and will not switch any of these ICPs in.

The registry list as at 30/09/18 was examined to identify any DUML ICPs supplied.

Audit commentary

Review of the registry list did not identify any DUML ICPs.

Audit outcome

Compliant

6. GATHERING RAW METER DATA

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

Code reference

Clause 10.13, Clause 10.24 and 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

The registry list and meter installation details reports as at 30/09/18 were examined to determine whether any ICPs with generation were supplied during the audit period. Processes for distributed generation were reviewed.

Audit commentary

Metering installations installed

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

No ICPs have submission information determined by subtraction. ICP 0008201110WM5F5 was settled by subtraction under exemption 262, but has now switched out and the exemption has expired.

Analysis of the registry list found one ICP without metering recorded and the unmetered flag set to no. Nova is compliant, an MEP nomination has been accepted and Nova is waiting for metering details to be updated on the registry.

Distributed generation

Checks for potential distributed generation are carried out as part of the BAU discrepancy reporting in place. This identifies any ICPs where the Distributor indicates there is distributed generation installed but the profile does not indicate this. The PR255 report is also monitored but the "I" channel with a settlement flag of Y does not necessarily indicate generation is present and some MEPs are loading their new meters to the registry with this when no generation is installed. For this reason, Nova can no longer use this as check for distributed generation.

Nova's registry list file as at 30/09/2018 showed 144 active ICPs with generation listed by the Distributor. Nova has recorded profiles compatible with generation for all 144 ICPs. I confirmed that generation profiles applied were consistent with the fuel type recorded by the distributor for all ICPs with PV1 or EG1 profiles.

Population of distributed generation details on the registry is a distributor requirement and not the responsibility of the retailer, but it is the retailer's responsibility to ensure that electricity is quantified in accordance with the code. 142 (99%) of the 144 ICPs with generation listed by the distributor have an injection channel recorded on the registry. The two ICPs without an injection channel were reviewed:

- ICP 0089211800PC22C had generation capacity incorrectly recorded by the distributor, and a backdated correction to L has been processed, Nova's records were correct; and
- ICP 1000531380PCBD9 had its solar generation capacity removed and meter changed, the discrepancy was a timing difference, and the distributor and trader records are now consistent and correctly record no generation.

Discrepancies identified in the 2017 audit which had not been resolved by time the audit report was finalised were rechecked. ICP 0007168696RNA87 had generation details recorded by the distributor but Nova had not been able to confirm whether generation was present. The ICP has now switched out.

Bridged meters

Nova 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.

Nova provided ten 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 8.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.1 With: Clause 10.13 From: 07-Nov-17 To: 16-Jul-18	While meters were bridged, energy was not metered and quantified according to the code for ten ICPs. Potential impact: Low Actual impact: Low Audit history: Three times previously Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as strong as they are sufficient to reduce the risk that meters will be bridged most of the time. Bridging only occurs where a soft reconnection cannot be performed after hours and the customer urgently requires their energy supply for health and safety reasons. For all examples reviewed, corrections had been processed.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non-Compliance accepted and remedial actions on-going. **Comments:** • Nova recognise that the existence of bridged meters is non compliant. • Nova does not initiate the bridging of meters except in extremely rare circumstances where energy supply is required for health and safety reasons. Nova 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. Nova take measures to act reasonably. • Nova has a thorough process in place which describes the actions to be taken if a bridged meter is identified or initiated by Nova. **Actions:** • Nova will continue to work with our MEPs through service level agreements and on-going regular operational meetings to ensure bridging of meters continues to be an undesirable outcome for Nova.	On-going	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
• Nova will complete a review of data integrity reporting criteria as we believe we can implement improvements to the identification of possible bridged meters in a more timely manner. • Nova will continue to work with our MEPs through service level agreements and on-going regular operational meetings to ensure bridging of meters continues to be an undesirable outcome for Nova.	Q2	

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.

The reconciliation manager confirmed the update dates where certification details were updated.

Audit commentary

Nova is responsible for the GIPs shown in the table below. Both meters had current certification.

Responsible party	Description	NSP	MEP	Certification expiry date (NSP table)
TODD	MCKEE	MKE1101TODDGG	TODD	01/04/2021
TODD	ANIWHENUA	ANI0331BOPDNP	TODD	23/03/2021

Nova recertified the metering for MKE1101TODDGG during the audit period. Nova received advice that the certification was complete on 06/06/2018, and notified the reconciliation manager of the new expiry date within ten business days.

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 as at 30/09/18 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

Nova applies four profiles which require AMI metering or certification of control devices; N8N, N8D, N0N, and N0D.

All 209 active ICPs with these profiles applied have AMI metering or a certified control device:

- 207 have AMI metering installed;
- as recorded in the 2017 audit, 0666003261PCB0F does not have AMI metering recorded on the registry, but AMI metering is present because Nova is receiving AMI data; it appears that the MEP updated the AMI metering flag to no in error effective from 20/09/2016 however maintenance of the AMI flag is the responsibility of the MEP; and
- 0006096905RN926 does not have AMI metering, and is final certified and has a certified control device.

Audit outcome

Compliant

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

Code reference

Clause 10.43(2) and (3)

Code related audit information

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

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

Audit observation

Processes relating to defective metering were examined.

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

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 MEP, or the customer. Upon identifying a possible defective meter, a field services job is raised to investigate and resolve the defect.

A sample of ten defective meters were identified, all had stopped recording usage. The MEP was notified in all instances and the meter was changed. Corrections were appropriately processed in all instances, and are discussed further in **section 8.1**.

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

Audit outcome

Compliant

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

Code reference

Clause 2 Schedule 15.2

Code related audit information

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

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

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

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

Data collected by agents and MEPs

Compliance with this clause has been demonstrated by Nova's agents and MEPs as part of their agent audits.

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

Data collected by Nova

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

Nova 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, Nova 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**.

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. I traced reads for a sample of 10 manually read NHH ICPs from the source files to Orion.

Processes to provide meter condition information were reviewed as part of Wells' and MRSL's agent audits. Nova's processes to manage meter condition information were reviewed, including viewing work queues and examples of meter condition issues.

Processes for customer and photo reads were reviewed.

Audit commentary

I traced reads for a sample of 10 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 MRSL and Wells. This reading enters Nova's systems and is labelled as a reading, which denotes that it is a meter reading collected and validated by a meter reader.

MRSL 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 imported into Orion. Based on the condition code, it is automatically directed to a work queue and then assigned to a team member. Work queues are cleared by each team daily.

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;
- signs of tampering or damage;
- phase failure; and
- potentially unsafe installations.

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

Customer and photo readings

MRSL 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 readings provided directly by customers are recorded as customer reads in Orion, and photo readings are recorded as photo reads. I saw examples of this during the audit. Customer and photo reads are treated as actual by the historic estimate process unless they do not pass validation, and are recorded as misreads. This is discussed further in **section 12.11**.

Audit outcome

Compliant

6.7. NHH meter reading application (Clause 6 Schedule 15.2)

Code reference

Clause 6 Schedule 15.2

Code related audit information

For NHH switch event meter reads, for the gaining trader the reading applies from 0000 hours on the day of the relevant event date and for the losing trader at 2400 hours at the end of the day before the relevant event date.

In all other cases, All NHH readings apply from 0000hrs on the day after the last meter interrogation up to and including 2400hrs on the day of the meter interrogation.

Audit observation

The process of the application of meter readings was examined.

Audit commentary

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

All AMI systems have a clock synchronisation function, which ensures correct time-stamping. Manual readings taken by MRSL and 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

Compliant

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

Code reference

Clause 7(1) and (2) Schedule 15.2

Code related audit information

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

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

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

Audit observation

The process to manage missed reads was examined.

A sample of 10 ICPs not read during the period of supply was reviewed.

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".

The process for missed reads was examined. Nova's no reads process begins immediately on "failed read attempted" by the meter reader which will result in a Nova communication being left at the customers property to indicate we were not able to read the meter(s). A text message is sent subsequent to this failed read attempt followed by a phone call. If this elicits no response a bill with a high estimate is sent. Letters are only sent to customers if they are triggered by a staff member. This process takes time to complete therefore for any ICPs that are with Nova for a short time compliance is unlikely to be achieved. The no read process for AMI ICPs is discussed in **Section 9.6**.

A report of ICPs not read during the period of supply was provided for the period 1 June 2017 to 30 September 2018. 30 ICPs were not read during the period of supply. Of these, 22 (73%) were supplied for less than 50 days. I reviewed all eight ICPs which had been supplied by Nova for more than 50 days and found:

- the best endeavours requirement had been met for one ICP;
- ICP 1000547447PC187 was a backdated switch in and then switched away one week after the switch completed; and
- three attempts could not be proven for the remaining six ICPs checked; the average period of supply for these customers was 165 days and it appears that the expected process was not followed consistently in these instances.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.8 With: Clause 7(1) and (2) Schedule 15.2 From: 01-Oct-17 To: 26-Oct-18	Some ICPs were not read during the period of supply. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as weak as the expected process was not followed for six of the eight examples checked suggesting that the process is haphazard. The impact is assessed as low as the vast majority of ICPs are read during the period of supply.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non-Compliance accepted remedial action is on-going. **Comments** • Nova acknowledges that the intended improvements identified as part of the 2017 audit outcomes have not improved compliance outcomes.	N/A	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

Nova will:
• Adjust our no reads process to:
  ○ Automated text solution will be implemented for any site that has no actual read(s), <60days.
  ○ automated email solution will be implemented for any site that has no actual read(s) 61-90days.
  ○ Phone calls will be attempted for any site that has no actual read(s) >91 days.
• Update our reporting criteria to support the changes to automate communication methods.
• Nova continue to identify and implement solutions that support the use of AMI reads.
	Q2	

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

Code reference

Clause 8(1) and (2) Schedule 15.2

Code related audit information

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

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

Audit observation

The meter reading process was examined. Monthly reports for June to September 2018 were provided, and reviewed to determine whether they met the requirements of clauses 8 and 9 of schedule 15.2.

A sample of ten ICPs not read in the previous 12 months were reviewed to determine whether reasonable endeavours were used to attain reads, and if exceptional circumstances existed.

Audit commentary

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
June 2018	204	33	55	99.9%
July 2018	205	34	54	99.9%
August 2018	230	31	49	99.9%
September 2018	237	33	51	99.9%

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

Nova provided a list of ICPs unread for 12 months as at 30 September 2018. I reviewed ten ICPs not read in the previous 12 months determine whether exceptional circumstances exist, and if Nova had used their best endeavours to obtain readings. Exceptional circumstances applied in all cases.

Nova provides monthly reports on meter reading frequency to the Electricity Authority. I reviewed the reports for June to September 2018, 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.

Audit outcome

Compliant

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

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

In relation to each NSP, each reconciliation participant must ensure that for each NHH ICP at which the reconciliation participant trades continuously for each four months, for which consumption information is required to be reported into the reconciliation process. A validated meter reading is obtained at least once every four months for 90% of the non-half hour 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 for June to September 2018 were reviewed.

All ICPs on an NSP that did not meet the threshold were checked to determine if exceptional circumstances existed.

Audit commentary

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	ICPs unread for 4 months	Overall percentage read
June 2018	226	4	335	99.5%
July 2018	225	4	387	99.4%
August 2018	230	2	403	99.4%
September 2018	237	2	437	99.4%

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

Nova provided a list of ICPs unread for four months as at 30 September 2018. I reviewed the ICPs on the two NSPs where the threshold wasn't met. This identified two ICPs that hadn't been read. Both are on a meter read round, and 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.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 15.2

Code related audit information

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

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

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

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

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

Audit observation

NHH data is collected by

- MRSL 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.

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

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

Nova 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 Nova's agent. Their processes for HHR data collection were reviewed as part of their agent audit.

Audit commentary

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

Nova 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

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

Nova uses Stark to retrieve HHR data from the generation meters and some customer meters. The interrogation process was discussed, and the interrogation data was viewed.

EMS reports generation data to the reconciliation manager as Nova's agent. HHR interrogation data was reviewed as part of their agent audit.

Audit commentary

Compliance with this clause has been demonstrated by AMS, EDMI, 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
- 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

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

Nova 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 Nova's agent. HHR interrogation logs were reviewed as part of their agent audit.

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 ±0.1% (±2 seconds).

Audit observation

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

Nova 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.

Audit commentary

Compliance with this clause has been demonstrated by AMS and EDMI 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

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. Nova'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.

Nova's own 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.

Password protection is in place to ensure that unauthorised personnel cannot access meter data in Stark, EnergyMarket, or Orion.

NHH

I reviewed NHH meter read data in Orion from October 2013 during the audit. Data is archived for more than 48 months as required by the code.

I traced reads for a sample of 22 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 2014 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.

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 discussed, and non-metering information was viewed to determine whether the archiving requirements were met.

Audit commentary

Nova archives all non-metering information for manual reads as required by this clause.

No other non-metering information is collected.

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

(1) If a reconciliation participant detects errors while validating non half hour meter readings, the reconciliation participant must—
(a) confirm the original meter reading by carrying out another meter reading; and
(b) if the second meter reading confirms that the original meter reading is erroneous, replace the original meter reading with the second meter reading (even if the second meter reading is at a different date).
(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—
(a) substitute the original meter reading with an estimated reading that is marked as an estimate; and

(b) subsequently replace the estimated reading in accordance with clause 4(2).

Audit observation

Processes for correction of NHH meter readings were reviewed.

Audit commentary

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.

Defective meters

Where a defective meter is identified a field services job is raised, and the meter is usually replaced. An estimated closing read is applied to capture consumption that occurred during the faulty period.

I reviewed ten examples of corrections for stopped or faulty meters and confirmed that the corrections flowed through to reconciliation submissions.

Multiplier corrections

Consumption is adjusted by the multiplier recorded against the meter. Corrections flow through to revision submissions.

One example of a multiplier discrepancy was provided. No correction was required, because the multiplier was correctly recorded in Orion and the discrepancy related to incorrect data recorded on the registry by the MEP.

Bridged meter corrections

Bridged meters are corrected by replacing the meter on an estimated closing read which captures consumption during the bridged period.

I reviewed ten examples of corrections for bridged meters and confirmed that the corrections flowed through to reconciliation submissions.

Inactive ICPs with consumption

Consumption is reported for all open meters regardless of status. Any consumption while disconnected will be reported, and this was confirmed by checking submission information for 17 ICPs with consumption while inactive.

Incorrect statuses for ICPs which were consuming during inactive periods is recorded as non-compliance in **section 3.9**.

2017 audit issues

Corrections not processed accurately in the 2017 audit were followed up and confirmed to be resolved:

ICP	Correction type	2018 comments
1000531428PCED0	Bridged meter	**Cleared.** Bridged consumption was correctly reported in the September 2017 r14 submission.
0000134741TR61C	Stopped meter	**Cleared.** Consumption during the stopped period was correctly reported in the September 2017 r14 submission.

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:
(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
(b) if the relevant metering installation does not have a check meter or data storage device, substitute the original meter reading with data from another period provided—
(i) the total of all substituted intervals matches the total consumption recorded on a meter, if available; and
(ii) the reconciliation participant considers the pattern of consumption to be materially similar to the period in error.

Audit observation

Processes for correction of HHR meter readings were reviewed. Ten examples of HHR corrections were provided for review.

EMS completes corrections to generation data as Nova's agent. Compliance was assessed in their agent audit report.

Audit commentary

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.

Ten examples of HHR corrections were provided:

- four corrections related to backdated switches in where the ICPs were not reported in the initial allocation but included in later revisions, correction involved adding the actual volume data according to the normal process;
- two corrections related to backdated switches out where the ICPs were reported in the initial allocation, but not included in later revisions, correction involved deleting the data for the period where the ICP was not supplied by Nova from the working data, so that it would be excluded from the reports;
- two corrections related to meter removals, where the meter had been removed without authorisation and final consumption was estimated; and
- the other two corrections related to temporary estimation for missing data, which were subsequently replaced with actual data when it became available; in all cases estimates were based on a similar period and profile.

The accuracy of temporary and permanent estimates is discussed in **section 9.6**. 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.

Audit outcome

Compliant

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

Code reference

Clause 19(3) Schedule 15.2

Code related audit information

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

Audit observation

Error and loss compensation arrangements were discussed.

Audit commentary

Nova confirmed there are currently no error or loss compensation arrangements in place.

Audit outcome

Compliant

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

Code reference

Clause 22(1) and (2) Schedule 15.2

Code related audit information

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

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

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

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

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

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

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

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

Audit observation

Corrections are discussed in **sections 8.1** and **8.2.** Audit trails are discussed in **section 2.4**.

EMS completes corrections to generation data as Nova's agent. Compliance was assessed in their agent audit report.

Audit commentary

NHH

Nova'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 in Orion. These audit trails are discussed further in **section 2.4**.

HHR

HHR data is collected by EDMI and AMS as agents, and by Nova using Stark.

Compliance with the requirements to retain raw reading data was assessed as part of EDMI and AMS' agent audits. Nova 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.

Audit outcome

Compliant

9. ESTIMATING AND VALIDATING VOLUME INFORMATION

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

Code reference

Clause 3(3) Schedule 15.2

Code related audit information

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

Audit observation

A sample of reads and volumes were traced from the source files to 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 8.1** and **8.2**.

Audit commentary

All estimated readings are clearly identified as required by this clause.

Photo and customer readings are identified. 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.

Audit outcome

Compliant

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

Code reference

Clause 3(4) Schedule 15.2

Code related audit information

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

3(4)(a) - validated meter readings

3(4)(b) - estimated readings

3(4)(c) - permanent estimates.

Audit observation

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

Audit commentary

Volume information is directly derived from validated meter readings, estimated readings, or permanent estimates.

Audit outcome

Compliant

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

Code reference

Clause 3(5) Schedule 15.2

Code related audit information

All meter data that is used 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 EDMI as agents. Nova uses Stark to retrieve HHR data from the generation meters and some customer meters.

EMS reports generation data to the reconciliation manager as Nova's agent. Their processes for HHR data were reviewed as part of their agent audit.

Audit commentary

The MEP or agent retains raw, unrounded data.

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

I viewed data collected by Nova in Stark, and confirmed it is not rounded or truncated.

Audit outcome

Compliant

9.4. Half hour estimates (Clause 15 Schedule 15.2)

Code reference

Clause 15 Schedule 15.2

Code related audit information

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

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

Audit observation

The HHR data estimate processes were examined, and a sample of ten estimates were reviewed.

Generation data is reported by EMS as Nova's agent. Estimation was reviewed as part of their agent audit.

Audit commentary

HHR

If Nova 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 and permanent 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 ± 5% of the actual data. Nova 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.

Audit outcome

Compliant

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

Code reference

Clause 16 Schedule 15.2

Code related audit information

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

> *16(2)(a) - confirmation that the meter reading or estimated reading relates to the correct ICP, meter, and register*
>
> *16(2)(b) - checks for invalid dates and times*
>
> *16(2)(c) - confirmation that the meter reading or estimated reading lies within an acceptable range compared with the expected pattern, previous pattern, or trend*
>
> *16(2)(d) - confirmation that there is no obvious corruption of the data, including unexpected zero values.*

Audit observation

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

Audit commentary

NHH data is validated by several processes.

Meter reader validation

For meters read by MRSL 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. MRSL and Wells also provide meter condition information, as discussed in **section 6.4.** Compliance is confirmed for all agents regarding data validation.

Orion validation

A further validation occurs within the Orion system, this validation checks the following:

- meter and register number match
- missing readings
- invalid dates and times
- high consumption
- low consumption (less than $5 and less than zero)
- readings lower than the previous reading
- gas reading but no electricity reading
- consumption on vacant premises
- third estimated reading – automated billing does not occur until this is investigated
- short and long days
- high dollars (over $300 for electricity residential)
- low dollars (less than $5)
- zero consumption – all examples are manually investigated and disconnected if required.

Samples of meter readers notes from the agents were checked. All had been actioned and resolved.

Vacant consumption

Monitoring occurs for consumption where the property is vacant. These ICPs may be active or may show as disconnected. These are investigated, and the disconnection process commences. As discussed in **section 6.8**, this process does not appear to be being applied in all instances delaying the resolution of such sites. The readings for these ICPs are validated and consumption appears in the relevant submission files.

Inactive consumption

Disconnected with consumption is not identified through the billing validation process, but is identified through the meter reading process. The consumption is submitted but the ICP status is not updated to align in all instances. This is recorded as non-compliance in **section 2.1**.

Zero consumption

Reporting is in place to identify zero consumption for four consecutive reads. This list is filtered to exclude those ICPs that may be holiday homes or have seasonal loads. Higher priority is given to commercial ICPs and where there is consumption on the controlled or gas meter, but no consumption on the uncontrolled meter. Once the list has been filtered, outbound calling is conducted and where necessary a site visit is arranged. The controls in this area appear to be very robust.

The matter of "bridged" AMI metering was evaluated to ensure validation processes are comprehensive enough to identify any meters that have been bypassed. Bridging occurs when an ICP has an AMI metering installation and remote disconnection has occurred, then the Retailer or the MEP arrange a "manual" reconnection and the field technician physically bypasses the meter. Corrections for bridged consumption are discussed in **section 8.1**.

Reconciliation submissions

Processes to review reconciliation submission information are discussed in **section 12.2.**

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

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 EDMI as agents, and data validation was reviewed as part of their agent audits.

AMS and EDMI provide event information to Nova, which is reviewed and acted upon.

- AMS review their event information and email events requiring action to Nova as they are identified. I viewed four examples of these events, and found Nova had acted to investigate each event and resolve any issues.
- EDMI emails information on events with their business day one downloads. I viewed the event information provided with three monthly downloads, and found Nova had taken action to investigate and resolve issues where required.

HHR and generation data obtained by Nova

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.

Following the 2017 audit, Nova began routinely reviewing the Stark meter data storage device event reports. The 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.

Nova validates the consumption information created by EMS by comparing it to the accruals Nova 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 Nova.

AMI data

Nova 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), AMS (for AMS and Smartco meters), FCLM and Nova. AMS, Metrix and FCLM email event information to Nova for action. ARC provides a no read report and a weekly zero consumption report and any ICPs identified are investigated. I reviewed examples of events and the reports sent to Nova, including communications faults and possible generation, and noted action had been undertaken where requested.

Non-communicating AMI sites are notified to Nova after 30 consecutive days of no reads and these are then put in manual read rounds until the issue is resolved.

Audit outcome

Compliant

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

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

Code reference

Clause 13.136

Code related audit information

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

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

Audit observation

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 pricing manager and the relevant grid owner half-hour metering information for:

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

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

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

Audit observation

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

Audit observation

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 therefore notification is not required.

Audit outcome

Not applicable

11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

11.1. Buying and selling notifications (Clause 15.3)

Code reference

Clause 15.3

Code related audit information

Unless an embedded generator has given a notification in respect of the point of connection under clause 15.3, a trader must 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

A registry list for 01/03/18 to 30/09/18 and event detail report for 01/03/18 to 26/10/18 was reviewed to confirm the profiles used. Processes to create buying and selling notifications were reviewed.

Audit commentary

Trading notifications are not required for the HHR, RPS, UML, EG1, or PV1 profiles.

Review of the event detail report confirmed that Nova did not begin trading on any NSPs with non-standard profiles during the audit period, but they did cease trading at four NSPs using non-standard profiles. Trading notifications were not issued because it is not possible to enter the profile into trading notifications on the RM portal, and Nova still had ICPs connected to these NSPs on other profiles. This is recorded as a technical non-compliance below.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.1 With: Clause 15.3 From: 17-Apr-18 To: 06-Sep-18	No trading notification was provided when Nova ceased using the N8N and N8D profiles at KMO0331, TMI0331, WVY0111 and ROS0221. Potential impact: None Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	It was not possible for Nova to create the required trading notification using the reconciliation portal. There is no impact, the reconciliation manager's system recorded the profiles correctly.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non Compliance accepted.	N/A	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Comment: • Nova has changed profiles for all ICPs on N8D N8N or N0D N0N to either HHR or RPS. • Following this change, Nova is using the following profiles for reconciliation: HHR, RPS, UML, EG1, or PV1. • Participants are not required to notify the Reconciliation Manager under this clause if these profiles are used.	March 2019	

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 ten NSPs with a small number of ICPs to confirm the AV110 ICP days calculation was correct.

I reviewed variances for 12 months of GR100 reports, and investigated variances.

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

Audit commentary

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 five NSPs with a small number of ICPs each, and HHR 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.

ICP days continue to be reported for ICPs with inactive status which have at least one open meter. This is not compliant with clause 15.6, which requires traders to report ICP days, defined in the code as "any day when an ICP with the installation type L or B is recorded on the registry as having the status of Active". Consumption is only reported where there are ICP days, and Nova's method ensures that if any consumption occurs during an inactive period it will be reported.

The following table shows the ICP days difference between Nova files and the RM return file (GR100) for all available revisions for 12 months. The consistent low negative percentage figures indicate that the Nova ICP days are higher than those on the registry, because inactive ICP days are included in Nova's submissions.

Month	Ri	R1	R3	R7	R8	R14
Oct 2017	-0.70%	-0.70%	-0.70%	-0.69%	-	-0.70%
Nov 2017	-0.69%	-0.69%	-0.68%	-0.68%	-	-0.69%
Dec 2017	-0.64%	-0.64%	-0.60%	-0.64%	-	-0.64%
Jan 2018	-0.59%	-0.60%	-0.59%	-0.60%	-	-0.59%
Feb 2018	-0.61%	-0.57%	-0.62%	-0.63%	-	-0.61%
Mar 2018	-0.63%	-0.64%	-0.64%	-	-	-0.63%
Apr 2018	-0.64%	-0.64%	-0.65%	-	-	-0.64%
May 2018	-0.64%	-0.65%	-0.66%	-	-	-0.64%
Jun 2018	-0.64%	-0.65%	-0.66%	-	-	-0.64%
Jul 2018	-1.33%	-1.35%	-	-	-	-1.33%
Aug 2018	-0.69%	-0.70%	-	-	-	-0.69%
Sep 2018	-0.70%	-	-	-	-	-0.70%

I reviewed 27 NSP level ICP days differences:

- 18 differences occurred because inactive ICP days are reported;
- five were timing differences related to backdated switches, the timeliness of switching files is discussed in **section 4**; and

- four differences related to network node changes, which were not processed in time for the initial and revision one submissions, network nodes are checked as part of Nova's pre-submission checks described in **section 12.3**.

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 three upgrades to HHR and two downgrades to NHH were checked. The downgrades were both processed correctly, but two of the upgrades were processed with errors which have since been corrected:

ICP	Upgrade date	
0000043013WEDBF	11/09/2018	A date error when processing the change resulted in one NHH ICP day being missed. Orion has been updated and corrected data will be provided in revision submissions. All consumption was captured.
0001442648UNF82	17/03/2018	The change of submission type has now been reversed after being processed in error, and the ICP will be reported as NHH for revision submissions.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.2 With: Clause 15.6 of part 15 From: January 2016 To: 22-Nov-18	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. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate, as they are sufficient to mitigate the risk of incorrect ICP days most of the time, but there is room for improvement. The impact is rated as low because the number of ICP days affected is low. Because consumption is only reported where there are ICP days, Nova's method ensures that if any consumption occurs during an inactive period it will be reported.

Actions taken to resolve the issue	Completion date	Remedial action status
1. Incorrect NHH ICP days were reported for two upgraded ICPs, and correct information will be provided for revision submissions **Response:** Non-Compliance accepted and remedial action completed **Actions** • The process in carrying out upgrades/downgrades involved updating dates in a field used by the submission system to determine reporting dates. • In processing TOU upgrades, on 4 occasions the field was populated to end a day earlier than it should have resulting in the last ICP day not being reported. • This issue does not affect TOU downgrades due to the way Nova's system operates. • Nova has correctly updated the dates for the ICPs identified above. 2. ICP days are reported for active and inactive metered ICPs. According to the code ICP days should only be reported for active ICPs. **Response:** Non-Compliance accepted. **Actions:** • Nova will continue to report ICP days for TOU & NTOU inactive metered ICPs with consumption as this ensures any consumption that occurs during the inactive period is reported.	February 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
1. Incorrect NHH ICP days were reported for two upgraded ICPs, and correct information will be provided for revision submissions. • Nova has reviewed TOU upgrades/downgrades over the previous 14 months and found an additional 2 TOU Upgrades with a similar issue where the last ICP day was not being reported, we have made corrections to these as well.	February 2019	

• These will be washed up in the upcoming revisions. • Process documentation created to support clear guidelines for the requirement of how to populate key system fields and training provided to the wider Nova team. • We have implemented reporting to our data integrity suite to actively identify any further instances of incorrect ICP days and correct.		

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

Code reference

Clause 15.7

Code related audit information

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

> *15.7(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*
>
> *15.7(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

Audit observation

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

GR130 reports for January 2016 to September 2018 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

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.

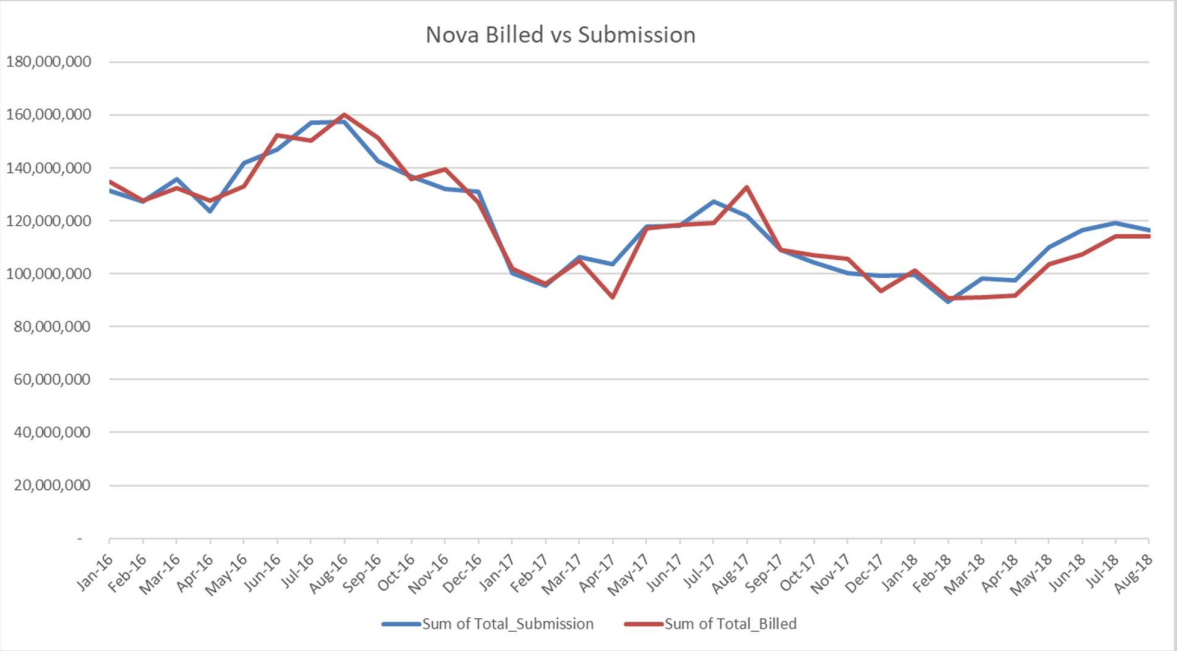
I also checked the difference between submission and electricity supplied information for a 33 month period, and the results are shown chart below. The total difference is 1.7% for the two years ended July 2018 and 3.0% for the year ended July 2018 (submission higher than billed).

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 have been billed in AXOS since September 2017, and their billed data is downloaded and imported into EnergyMarket. During the project to implement TOD billing, the project

team was responsible for downloading the AXOS data, and had hoped to automate the process prior to handover to the operations team. This automation was not completed before the project ended and TOD billing became part of normal operations, so AXOS billed volumes were temporarily not included in some AV120 reports.

Processes have now been put in place to ensure that the AXOS data is downloaded daily, and imported into EnergyMarket prior to business day four each month. September 2017 has been washed up with correct billed data, and all other months will be washed up by revision 14.

Monthly, Nova 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.**



Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.3 With: Clause 15.7 From: Sep-17 To: Oct-18	Some ICPs billed in AXOS were temporarily excluded from the AV120 submissions. 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, 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. The issue has now been resolved and AXOS billed data is imported into EnergyMarket prior to the AV120 submission being generated. Corrected data will be washed up.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non Compliance accepted and remedial action completed **Comment:** • As billed data for Time Of Day (TOD) ICPs is generated from another system (AXOS) and is not automatically included in Nova's AV120 – as billed report submission unless it is imported into EnergyMarket prior to submissions. • The automation of billed data from AXOS to EnergyMarket wasn't completed. • This resulted in Nova's AV120 – as billed submissions excluding TOD billed volumes. **Action:** • Nova has imported billed files from Axos from September 2017 onwards into EnergyMarket. • These will be submitted in wash-up submissions. • Once these have been washed-up, the variance between billed and submission for the year ending July 2018, falls under 1%.	November 2018	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
• Nova has imported initial and wash-up billed data from Axos at the start of each month that aligns with the initial and wash-up AV120 – as billed submissions, that are made in the month. • This ensures TOD billed volumes are reported in Nova's AV120 – as billed report.	March 2019	

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

Code reference

Clause 15.8

Code related audit information

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

> *15.8(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*
>
> *15.8(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

Audit observation

I confirmed that the process for the calculation and aggregation of HHR data is correct, by matching HHR aggregates information with the HHR volumes data for ten submissions.

The GR090 ICP Missing files were examined for October 2017 to September 2018. An extreme case sample of 15 ICPs missing from eight or more revisions were checked.

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

Audit commentary

No breaches had been recorded for late provision of submission information.

Nova's HHR aggregates report contains submission information, not electricity supplied information as specified under clause 15.8. Although the reports Nova 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, and checking 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 October 2017 to September 2018. An extreme case sample of 15 ICPs missing from the largest number of submissions were checked and found to relate to:

- backdated changes to NHH submission type;
- inactive ICPs which were included in submissions with zero consumption but are not expected on the registry; and
- network node changes, network nodes are checked as part of Nova's pre-submission checks described in **section 12.3**.

I also reviewed Nova's volumes and aggregates for September and October 2018 for reasonableness, and did not find any evidence of under submission of volumes for these months.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.4 With: Clause 15.8 From: entire audit period	HHR aggregates file does not contain electricity supplied information. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The issue relating to content of the aggregates file is an error in the code, Nova is providing submission information as expected.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non-Compliance not accepted. **Comments:** As per our prior audit response; • 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	Disputed
Preventative actions taken to ensure no further issues will occur	**Completion date**	
N/A	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

HHR data is collected by AMS and EDMI as agents, and EMS reports generation data to the reconciliation manager as Nova'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.

Nova uses the Stark system to retrieve HHR data from the generation meters every half hour, and customer meters weekly.

Audit commentary

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.

Audit outcome

Compliant

12.2. Creation of submission information (Clause 15.4)

Code reference

Clause 15.4

Code related audit information

By 1600 hours on the 4th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all NSPs for which the reconciliation participant is recorded in the registry as having traded electricity during the consumption period immediately before that reconciliation period (in accordance with Schedule 15.3).

By 1600 hours on the 13th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all points of connection for which the reconciliation participant is recorded in the registry as having traded electricity during any consumption period being reconciled in accordance with clauses 15.27 and 15.28, and in respect of which it has obtained revised submission information (in accordance with Schedule 15.3).

Audit observation

A list of breaches was obtained from the Electricity Authority. There were no breaches for late provision of submission information.

- Nova prepares HHR submissions in EnergyMarket**.**

- Nova prepares NHH submissions in EnergyMarket using information from Orion. A sample of NHH ICPs were checked to make sure they are handled correctly.
- A sample of corrections were reviewed to ensure that they flowed through to revision submissions in **sections 8.1** and **8.2**.
- NSP volumes submissions are created by EMS as Nova's agent.

Processes to ensure that HHR, NHH and generation submissions are accurate were reviewed.

Audit commentary

Nova and their agents prepare submission information for each NSP for the relevant consumption periods. The submission information includes:

- HHR volume information for generation stations and customers;
- NHH volume information (forward or historic estimates); and
- Unmetered load quantities for each ICP that has unmetered load associated with it.

Generation

Generation data is reported by EMS as Nova's agent. Compliance with this clause has been demonstrated by EMS as part of their agent audit.

Nova 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

Nova 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; 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 **section 8.1**.

NHH volumes are reviewed prior to submission, these checks are discussed in **section 12.3**.

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. The GR170 and AV080 files for nine revisions were compared, to confirm zeroing occurs.

Audit commentary

Generation

Nova validates the consumption information created by EMS by comparing it to the accruals Nova 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 Nova.

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 found to contain the same NSPs, confirming that zeroing is occurring as required.

NHH metered and unmetered volumes are reviewed prior to submission. Nova 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 seven month revision are checked, to ensure that steps are being taken to obtain actual reads.

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

Review of the NSP table confirmed that 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

A registry list was reviewed to confirm Nova does not own any local or embedded networks.

Audit commentary

Nova 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

Generation data is reported by EMS as Nova'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.

Audit commentary

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.

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 8.1** and **8.2**.

Audit commentary

Review of alleged breaches confirmed that no reconciliation submissions were made late.

No issues which impacted on the accuracy of volume information submitted to the reconciliation manager were identified.

Audit outcome

Compliant

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

Code reference

Clause 4 Schedule 15.2

Code related audit information

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

Volume information created using estimated readings must be subsequently replaced at the earliest opportunity by the reconciliation participant by volume information that has been created using validated meter readings or permanent estimates by, at the latest, the month 14 revision cycle.

A permanent estimate may be used in place of a validated meter reading, but only if, despite having used reasonable endeavours; the reconciliation participant has been unable to obtain a validated meter reading.

Audit observation

NHH volumes 14 month revisions were reviewed for April to June 2017 to identify any forward estimate still existing.

Audit commentary

The proportion of HE in the 14 month revision files is 100%. 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.

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 must comprise the following:

- *half hour volume information for each ICP notified in accordance with clause 11.7(2) for which there is a category 3 or higher metering installation (clause 2(1)(a))*
- *for each ICP about which information is provided under clause 11.7(2) for which there is a category 1 or category 2 metering installation (clause 2(1)(b)):*
  - *a) half hour volume information for the ICP; or*
  - *b) non half hour volumes information calculated under clauses 4 to 6 (as applicable).*
  - *c) unmetered load quantities for each ICP that has unmetered load associated with it derived from the quantity recorded in the registry against the relevant ICP and the number of days in*

the period, the distributed unmetered load database, or other sources of relevant information (clause 2(1)(c))

- *to create non half hour submission information a reconciliation participant must only use information that is dependent on a control device if (clause 2(2)):*
  - *a) the certification of the control device is recorded on 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 prepared by Nova were reviewed. The registry list as at 30/09/18 was examined to determine compliance.

Audit commentary

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**;
- certification of control devices was reviewed in **section 6.3**;
- loss and compensation arrangements were reviewed in **section 8.3**; and
- aggregation of the AV080, AV110, AV090 and AV140 submissions are covered in **sections 13.2, 11.2,** and **11.4** respectively.

Audit outcome

Compliant

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

Code reference

Clause 3 Schedule 15.3

Code related audit information

For each ICP that has a non-half hour metering installation, volume information derived from validated meter readings, estimated readings, or permanent estimates must be allocated to consumption periods using the following techniques to create historical estimates and forward estimates (clause 3(1)).

Each estimate that is a forward estimate or a historical estimate must clearly be identified as such (clause 3(2)).

If validated meter readings are not available for the purpose of clauses 4 and 5, permanent estimates may be used in place of validated meter readings (clause 3(3)).

Audit observation

Review of nine AV080 submissions, to confirm that historic estimates are included and identified.

Permanence of meter readings is reviewed in **section 12.8**. The methodology to create forward estimates is reviewed in **section 12.12**.

Audit commentary

I reviewed nine AV080 submissions for a diverse sample of months and revisions and confirm that forward and historic estimates are included and identified.

Audit outcome

Compliant

12.11. Historical estimate process (Clause 4 and 5 Schedule 15.3)

Code reference

Clause 4 and 5 Schedule 15.3

Code related audit information

The methodology outlined in clause 4 of Schedule 15.3 must be used when preparing historic estimates of volume information for each ICP when the relevant seasonal adjustment shape is available.

If a seasonal adjustment shape is not available, the methodology for preparing an historical estimate of volume information for each ICP must be the same as in clause 4, except that the relevant quantities 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 Orion.

Audit commentary

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.

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

Test	Scenario	Test expectation	Result
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 appropriately validated
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 was not validated and was ignored by the historic estimate process
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Compliant

My findings in **sections 8.1** and **11.2** confirmed that any consumption that occurs during inactive periods will be reported. The historic estimate examples reviewed above did not have consumption while inactive.

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.

Audit outcome

Compliant

12.12. Forward estimate process (Clause 6 Schedule 15.3)

Code reference

Clause 6 Schedule 15.3

Code related audit information

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

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

Audit observation

The process to create forward estimates was reviewed.

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

Audit commentary

Forward estimates are 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. 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
Aug 17	0	0	0	-	131
Sep 17	0	0	0	-	129
Oct 17	0	0	0	-	131

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Nov 17	1	0	0	-	132
Dec 17	0	0	0	-	135
Jan 18	0	0	0	-	136
Feb 18	0	0	0	-	138
Mar 18	0	0	-	-	138
Apr 18	0	0	-	-	137
May 18	0	0	-	-	137
Jun 18	0	0	-	-	138

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

Month	Revision 1	Revision 3	Revision 7/8	Revision 14
Jul 17	6.95%	6.95%	7.60%	-
Aug 17	3.77%	3.76%	4.05%	-
Sep 17	3.78%	3.39%	3.31%	-
Oct 17	5.74%	5.46%	5.38%	-
Nov 17	1.05%	0.71%	0.65%	-
Dec 17	3.76%	3.79%	3.79%	-
Jan 18	-1.47%	-1.85%	-1.83%	-
Feb 18	0.57%	0.01%	0.02%	-
Mar 18	1.17%	1.86%	-	-
Apr 18	-4.15%	-3.96%	-	-

Month	Revision 1	Revision 3	Revision 7/8	Revision 14
May 18	-6.08%	-4.92%	-	-
Jun 18	-5.39%	-4.95%	-	-

I reviewed the one balancing area difference where the variation between revisions was more than ± 15% and ± 100,000 kWh (ASHBURTEASHG November 2017 r1). The difference was just over the 100,000 kWh threshold at 109,308 kWh and I confirmed that the difference was caused mainly by a spike in the profiling for this NSP.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.12 With: Clause 6 of Schedule 15.3 From/to: Nov-17 r1	The accuracy threshold was not met for all months and revisions. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as strong, as they are sufficient to ensure almost all data is within the prescribed thresholds. Initial data is replaced with revised data, and washed up.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non-Compliance accepted and remedial action taken. **Comments:** • Nova has historically achieved a strong level of compliance regarding its accuracy of Forward estimates. As shown in the auditor's commentary above, only 1 balancing area was outside of the threshold prescribed due to a profile spike at the NSP. • Additionally, at an aggregate level the average percentage change between the initial revision against subsequent revisions was well within the	March 2019	Identified

15% threshold - indicating robustness in Nova's Forward estimate process. • However, it will be difficult to always achieve full compliance with this clause due to factors such as legacy meters, mid-month reads and the effects of aggressive profiling.		
Preventative actions taken to ensure no further issues will occur	**Completion date**	
• Nova has started entering end of month reads for ICPs that already obtain monthly reads from AMI data sources. • This will result in Nova's initial submissions being more accurate as the proportion of Historic estimates increase and Forward estimates decrease. • In the February 2019 initial submission, Nova's Forward estimate percentage reduced by 53% because of this action. • Additionally, the increased number of ICPs where consumption is calculated based on starting and ending end of months reads negate the effect of profiling in future submissions, further reducing the variance between the initial submission and subsequent revisions.	March 2019	

12.13. Compulsory meter reading after profile change (Clause 7 Schedule 15.3)

Code reference

Clause 7 Schedule 15.3

Code related audit information

If the reconciliation participant changes the profile associated with a meter, it must, when determining the volume information for that meter and its respective ICP, use a validated meter reading or permanent estimate on the day on which the profile change is to take effect.

The reconciliation participant must use the volume information from that validated meter reading or permanent estimate in calculating the relevant historical estimates of each profile for that meter.

Audit observation

The event detail report for 01/03/18 to 26/10/18 was examined to identify all ICPs which had a profile change during the report period.

A typical sample of five 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

In the event of a profile change, Nova uses a validated meter reading on the day that the change is effective. All ICPs checked had an actual meter reading recorded on the day of the profile change, and the day before the profile change.

Audit outcome

Compliant

13. SUBMISSION FORMAT AND TIMING

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

Code reference

Clause 8 Schedule 15.3

Code related audit information

Submission information provided to the reconciliation manager must be aggregated to the following level:

- *NSP code (clause 8(a))*
- *reconciliation type (clause 8(b))*
- *profile (clause 8(c))*
- *loss category code (clause 8(d))*
- *flow direction (clause 8(e))*
- *dedicated NSP (clause 8(f))*
- *trading period for half hour metered ICPs and consumption period or day for all other ICPs (clause 8(g)).*

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

Aggregation of 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

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;
- 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.

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

Submission information is appropriately rounded to no more than two decimal places.

Audit outcome

Compliant

13.3. Historical estimate reporting to RM (Clause 10 Schedule 15.3)

Code reference

Clause 10 Schedule 15.3

Code related audit information

By 1600 hours on the 13th business day of each reconciliation period the reconciliation participant must report to the reconciliation manager the proportion of historical estimates per NSP contained within its non half hour submission information.

The proportion of submission information per NSP that is comprised of historical estimates must (unless exceptional circumstances exist) be:

- *at least 80% for revised data provided at the month 3 revision (clause 10(3)(a))*
- *at least 90% for revised data provided at the month 7 revision (clause 10(3)(b))*
- *100% for revised data provided at the month 14 revision (clause 10(3)(c)).*

Audit observation

The timeliness of submissions of historic estimate was reviewed in **section 12.2**.

I reviewed nine months of AV080 reports to determine whether historic estimate requirements were met.

Audit commentary

The quantity of historical estimates is contained in the submission file and is not a separate report.

Overall Nova's compliance in this area is very high. The table below shows that the HE threshold was not met for NSP ONG0331 for the April 2018 three month revision. One ICP was affected, it switched in on 05/04/2018 and no reads were obtained until after revision 3. The NSP had 100% historic estimate by R7.

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Apr 2017	198			198
May 2017	201			201

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Jun 2017	201			201
Dec 2017		217		217
Jan 2018		437		437
Feb 2018		217		217
Apr 2018	218			219
May 2018	219			219
Jun 2018	223			223

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
Apr 2017	-	-	100.00%
May 2017	-	-	100.00%
Jun 2017	-	-	100.00%
Dec 2017	-	99.87%	-
Jan 2018	-	99.89%	-
Feb 2018	-	99.89%	-
Apr 2018	99.26%	-	-
May 2018	99.15%	-	-
Jun 2018	99.23%	-	-

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 13.3 With: Clause 10 of Schedule 15.3 From: April 2018 (r3)	Historic estimate thresholds were not met for one revision. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as strong, as they are sufficient to mitigate the risk of not meeting the threshold most of the time. The audit risk rating is low, as Nova was close to the target in all cases.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non-Compliance accepted. **Comments:** • 100% HE has been achieved for R14 from Jan 2017 to-date (Dec 2017 R14). • Any Forward Estimates at R14 will continue to be checked. • 'Permanent estimate' read types will continue to be applied.	N/A	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
• Nova has started entering end of month reads for ICPs that already obtain monthly reads from AMI data sources. • This will result in the proportion of Historic estimates increasing in Nova's submissions and assist Nova in meeting its historical estimate targets.	March 2019	

CONCLUSION

Nova has continued to make progress in resolving non-compliance issues during the audit period, and seven of the non-compliances raised in the 2017 audit have now been cleared, and a further three have been partially cleared. In several of the areas where non-compliance still exists, improvements have been made. This is as a result of the strong focus Nova places on compliance.

The positive highlights from this audit are as follows:

- greater than 90% of all updates to the registry for new connections and changes to the registry are completed within the required timeframes;
- overall data accuracy is high with robust discrepancy reporting in place to identify and correct errors;
- switching accuracy of data was high and timeliness good;
- all corrections reviewed were processed accurately, and previous non-compliances relating to corrections have been cleared;
- HHR and generation data validation has been expanded to include routine review of event logs.
- Nova continues to provide a high degree of submission accuracy, with generally low variation between revisions and between temporary HHR estimates and actual data; and
- all of the non-compliances with the exception of one have a low breach risk rating score indicating they have a minimal effect on reconciliation. Two non-compliances relating to trading notifications and HHR aggregates have no impact and are technical non-compliances only.

One area of opportunity was identified. The process for the management of long term active vacant ICPs does not appear to be being actioned as expected resulting in long term active vacant not being disconnected. There are regular attempts to read these sites by meter readers but attempts to either sign up an occupant or disconnect the site seem slow to be actioned.

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.

The audit found 20 non-compliances, and no recommendations or issues were raised. The audit risk rating is 24, which results in an indicative audit frequency of 12 months. This is a significant reduction from a rating of 34 in the previous audit. I have considered this result in conjunction with Nova's responses, which clearly indicate appropriate remedial actions, and my recommendation for the next audit date is 24 months.

PARTICIPANT RESPONSE

Nova has reviewed this audit and our detailed comments are recorded in the report where appropriate.

Nova is pleased to be continuing to set the industry standard in terms of its internal controls. It will continue address those areas of opportunity and believes that its processes of continuous improvement are ingrained in the culture of the client services team. As such, Nova believes that the Authority can have confidence that an audit cycle of 24 months is both adequate, and appropriate for Nova's client servicing operations.