

ELECTRICITY INDUSTRY PARTICIPATION CODE  
RECONCILIATION PARTICIPANT AUDIT REPORT



For

NOVA ENERGY LIMITED

Prepared by: Rebecca Elliot and Tara Gannon

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## EXECUTIVE SUMMARY

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

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

This audit found 19 non-compliances, makes no recommendations and raises one issue.

Nova has continued to make progress in resolving non-compliance issues during the audit period, and seven of the non-compliances raised in the 2016 audit have now been cleared. In several of the areas where non-compliance still exists, some improvements have also been made, specifically in the areas of registry maintenance with 97% of all new connections updated within five days. This is as a result of the strong focus Nova places on compliance.

The positive highlights from this audit are as follows:

- most required corrections identified during the previous audit have been processed
- 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.

There are a small number of audit findings that affect the accuracy of submission information, as follows:

- two NHH corrections were not processed accurately
- 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
- 17 ICPs with incorrect active periods recorded; these have been largely identified through data cleansing that is underway on historic data mismatches prior to the robust registry discrepancy process that is in place now.

The next audit frequency table indicates that the next audit be due in 12 months. I have considered this result in conjunction with Nova's comprehensive responses and my recommendation for the next audit is 18 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
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.	Weak	Low	3	Identified
Changes to registry	3.3	10 Schedule 11.1	Registry information not updated within 5 business days of the event.	Moderate	Low	2	Identified
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.	Strong	Low	1	Identified
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	Incorrect ANZSIC code assigned.	Moderate	Low	2	Identified
Management of "active" status	3.8	17 Schedule 11.1	Some ICPs with active status discrepancies.	Moderate	Low	2	Identified
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.	Strong	Low	1	Identified
	4.8	10(1) Schedule 11.3	Three ICPs sent with "AA" code instead of the "AD" code.  PD code not used by Orion.	Moderate	Low	2	Identified

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
	4.10	11 Schedule 11.3	One CS file sent with reads incorrectly sent as actuals and with the incorrect last read date.	Moderate	Low	2	Identified
	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.	Moderate	Low	2	Identified
	4.15	17 and 18 Schedule 11.3	Incorrect withdrawal reason sent for two ICPs.  21 late switch withdrawals.	Moderate	Low	2	Identified
Electricity conveyed & notification by embedded generators	6.1	10.13	While meters were bridged, energy was not metered and quantified according to the code for four ICPs	Moderate	Low	2	Identified
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	Some ICPs were not read during the period of supply.	Moderate	Low	2	Identified
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.	Moderate	Low	2	Identified
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.	Moderate	Low	2	Identified

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Calculation of ICP days	11.2	15.6 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.	Moderate	Low	2	Investigating
HHR aggregates information	11.4	15.8	HHR aggregates file does not contain electricity supplied information.	Strong	Low	1	Disputed
Forward estimate process	12.12	6 of Schedule 15.3	The accuracy threshold was not met for all months and revisions.	Strong	Low	1	Disputed
Historical estimate reporting to RM	13.3	10 Schedule 15.3	Historic estimate thresholds were not met for some revisions.	Strong	Low	1	Identified
Future Risk Rating						34	
Next indicative audit frequency						12 months	

## RECOMMENDATIONS

Subject	Section	Recommendation	Description
		Nil	

## ISSUES

Subject	Section	Clause	Description
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.



## 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

Exemption 262 allows Nova to use subtraction to determine submission information for ICP 0008201110WM5F5. The exemption is in place from 8 September 2017, until the earlier of 28 February 2018, or the completion date of a new supply point to Taharoa Village upstream of New Zealand Steel Limited's Taharoa iron sands mine.

## 1.2. Structure of Organisation

Nova provided a current organisational chart.

## 1.3. Persons involved in this audit

Auditors:

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

Nova personnel assisting with this audit:

Title
Switching Team Leader
Billing Team Leader
Billing co-ordinator
Metering and New Connections Team Leader
Retail Operations Manager
Training and Quality Manager
Team Leader Reconciliation
Revenue Manager
Reconciliation Analyst
Energy Analyst

EMS personnel assisting with this audit:

Title
Data 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

Nova uses EMS for the provision of data collection and submission services for grid connected generators, plus provision of information to the pricing manager. AMS and EDMI (on behalf of FLCM & COUP) are agents for HHR 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 with the exception of EMS'. Additional checks were made in relation to the activities they undertake on behalf of Nova and these are referenced throughout the report. 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 reconciliation consumption which is exported to EnergyMarket.
- Stark is used to retrieve HHR generation and customer volumes obtained by Nova. HHR volumes are exported to EnergyMarket to produce reconciliation submissions.
- EnergyMarket is used to produce NHH and HHR reconciliation submissions.
- Kinetiq is used for billing of HHR data.

#### 1.6. Breaches or Breach Allegations

Nova has had no alleged breaches recorded during the audit period within this audit's scope.

## 1.7. ICP Data

Nova provided a list as at September 2017. The quantity of ICPs by status is shown below:

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

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

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

## 1.8. Authorisation Received

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

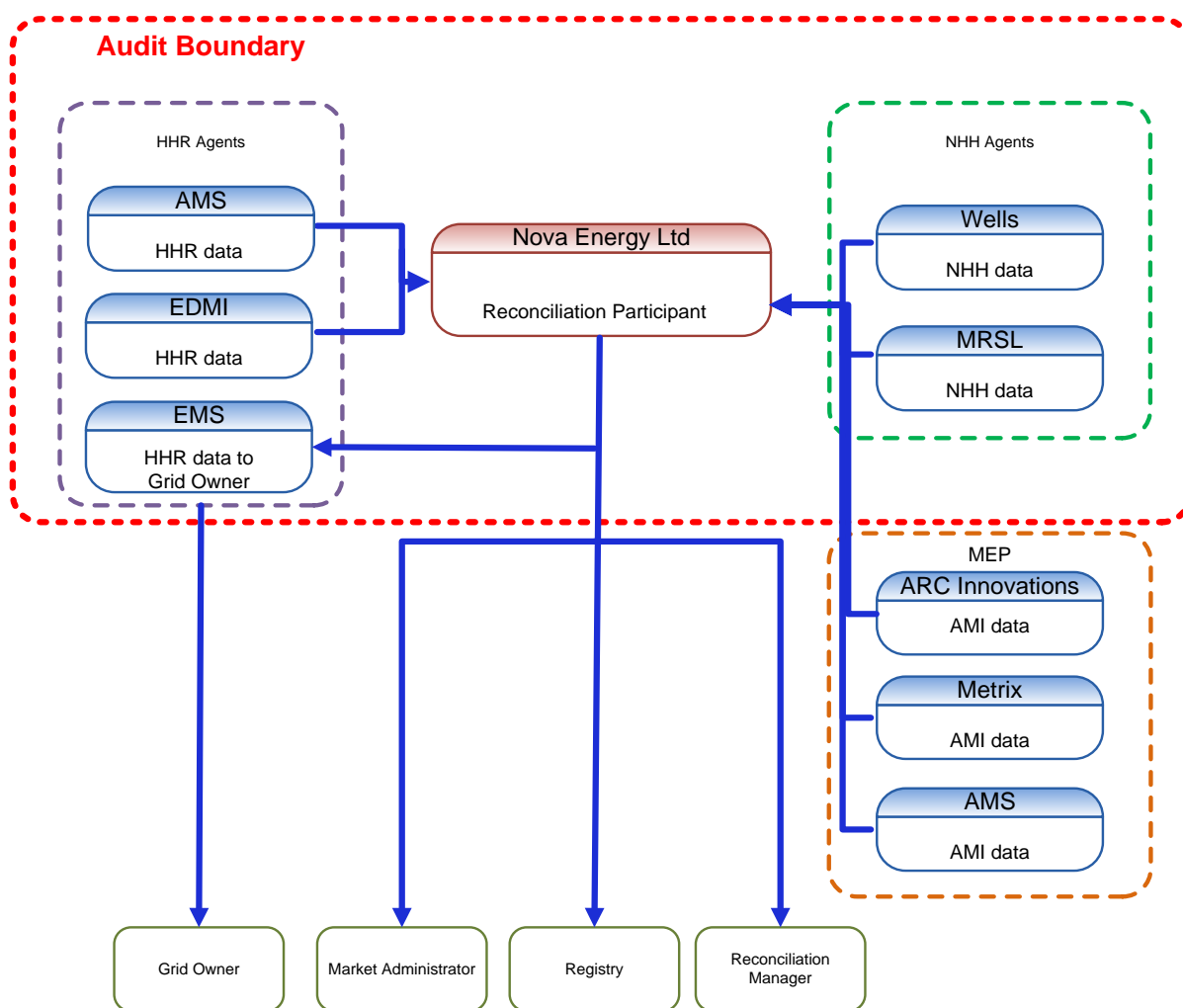
## 1.9. Scope of Audit

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 24-26<sup>th</sup> October 2017, and Nova's premises in Wellington on 24<sup>th</sup> October 2017.

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	
	HHR	NHH
(a) Maintaining registry information and performing switching		
(b) Gathering and storing raw meter data	AMS EMS EDMI	Wells MRSL
(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 (on behalf of FLCM & COUP) 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 with the exception of EMS. Additional checks were made in relation to the activities they undertake on behalf of Nova and these are referenced throughout the report. The agent audit reports 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 September 2016 by Rebecca Elliot (lead auditor). Further comment is made in the relevant sections of this report.

### Table of non-compliance

Subject	Section	Clause	Non-compliance	Status
Distributed generation	1.9.7	10.13(1) &(2) of part 10	Generation volume submitted as load volume for one ICP.	Cleared Refer to <b>section 6.1.</b>
Switching	2.1.4	5 of schedule 11.3	1 late CS file.	Still existing Refer to <b>section 4.3.</b>
	2.2.2	10 of schedule 11.3	1. Use of inaccurate response code. 2. Late sending of some CS files prior to 9/10/15.	1, Still existing 2. Cleared Refer to <b>section 4.8.</b>
	2.2.3	11 of schedule 11.3	1. Date of estimated final bill date being incorrectly recorded as the date of the last actual read in one instance. 2. Two operator errors causing inaccuracies.	Still existing Refer to <b>section 4.10.</b>
	2.2.4	12 of schedule 11.3	1 late RR file.	Still existing Refer to <b>section 4.11.</b>
	2.4	17 of schedule 11.3	79 late NW files.	Still existing Refer to <b>section 4.15.</b>
Provision of Information to the Registry	2.8.2	9 of schedule 11.1	Registry information not provided within 5 business days of being made active.	Still existing Refer to <b>section 3.5.</b>
Changes to Registry Information	2.8.3	10(2) of schedule 11.1	Changes to Registry not updated within 5 days of the event.	Still existing Refer to <b>section 3.3.</b>
Registry Discrepancies	2.8.10	11 of schedule 11.1	12 ICPs found with registry discrepancies.	Still existing. Refer to <b>section 2.1.</b>

Subject	Section	Clause	Non-compliance	Status
Active status	2.8.13	12 & 17 of schedule 11.1	Two ICPs with an incorrect active date.	Still existing Refer to <b>section 3.8.</b>
Maintaining Shared Unmetered Load	2.10.3	11.14 of part 11	Incorrect shared unmetered load for a total of five ICPs.	Cleared Refer to <b>section 5.1.</b>
Distributed unmetered load	2.10.4	11(5) of schedule 15.3	Two databases not audited during the audit period.	Cleared Refer to <b>section 5.4.</b>
NHH metering information	3.3.3	5(b) & (c) of schedule 15.2	Checks for phase failure and broken or missing seals not conducted and recorded.	Cleared. Refer to <b>section 6.6.</b>
Meters not read during period of supply	3.3.5	7(1)&(2) of schedule 15.2	Validated meter reading not obtained during the period of supply for some ICPs.	Still existing. Refer to <b>section 6.8.</b>
NHH correction	4.1.1	19(1) of schedule 15.2	Correction calculated for incorrect period for 1 ICP.	Cleared for this ICP. Refer to <b>section 8.1.</b>
Bypassed meters	4.2.4	10.12, 10.24 & 10.43(3) of part 10. 19 of schedule 11.1, 2(1)(b) of schedule 15.3 and 15.2 of part 15	Three meters bypass corrections not calculated correctly leading to incorrect submission for the bypassed period.	Still existing. Refer to <b>section 8.1</b>



Subject	Section	Clause	Non-compliance	Status
AMI events	4.2.5	17(4)(f) & 21(5) of schedule 15.2	AMI event information not adequately obtained and monitored.	Still existing for ARC meters only Refer to <b>section 9.6</b>
ICP days	5.2	15.6 of part 15	Minor ICP days discrepancies.	Still existing. Refer to <b>section 11.2.</b>
HHR aggregates	5.4	15.8 of part 15	HHR aggregates file does not contain electricity supplied information.	Still existing. Refer to <b>section 11.4.</b>
Creation of submission information	6.1.3	2(1)(c) of schedule 15.3 & 17 of schedule 11.1	<ol style="list-style-type: none"> <li>1. Unmetered submission did not occur for one ICP for a period where it was inactive on the registry but was physically connected.</li> <li>2. Generation kWh submitted as load for one ICP.</li> </ol>	Cleared. Refer to <b>section 12.2.</b>
HE Reporting	6.2.4	10 of schedule 15.3	HE targets not met for some NSPs.	Still existing. Refer to <b>section 13.3.</b>

**Table of Recommendations**

Subject	Section	Clause	Recommendation for Improvement	Remedial Action
Unmetered load	2.10.1	2(1)(c) of schedule 15.3	Round unmetered load to two decimal places rather than zero decimal places.	Cleared Refer to <b>section 3.7.</b>
NHH meter reading application	3.3.4	6 of schedule 15.2	Use AMI reads where possible to reduce the number of RR files being received from gaining HHR trading retailers.	Cleared Refer to <b>section 6.7.</b>

**Table of Issues**

Subject	Section	Clause	Recommendation for Improvement	Action
Switching	2.2.2	10 of schedule 11.3	Auditor awareness that the switch breach report measures late CS files from the date the NT is received by the registry not the date it is received by the losing trader but the code measures the timeframe from the date an NT is received by the losing trader.	Auditor awareness recommended when evaluating the switch breach report

## 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 and observed. The list file was examined to confirm that all 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 conducts 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	2017 Qty	2016 Qty	2015 Qty	Comments
Status mismatch between registry and Orion	0	0	1	Nova have reporting in place to identify any of these discrepancies. The report is reviewed and actioned each day.
ICP at status "new connection in progress" (1,12) with an initial electrical connection date populated by the Distributor	0	0	12	No evidence of this occurring.
Active date variance with Initial Electrical connection Date	16	10	56	Analysis of these found three ICPs with mismatched dates that hadn't been identified in the discrepancy report and one ICP that was identified but hadn't been actioned. See <b>Section 3.8</b> .
Incorrect submission flag	0	0	0	No evidence of this occurring.
Distributor indicates embedded generation present with RPS profile	12	16	19	All are in the process of being updated. See <b>Section 6.1</b> .

Issue	2017 Qty	2016 Qty	2015 Qty	Comments
Active ICP with cat 9 and UML="N"	1	2	0	Metering has since been loaded by the MEP. Nova is compliant.
Active ICP with no MEP recorded	2	0	0	Both had an MEP nominated and the MEP hadn't loaded metering at the time of the list file being run. Nova is compliant.
Blank ANZSIC codes	0	0	1	No evidence of this occurring.
Meter cat 3 with residential ANZSIC code	0	0	3	No evidence of this occurring.
ANZSIC "T999" not stated	0	0	994	No evidence of this occurring.
ANZSIC "T994" don't know	0	0	299	No evidence of this occurring.
Incorrect ANZSIC code applied	2	-	-	See <b>Section 3.6</b>
ICPs with Distributor unmetered load populated but retail unmetered load is blank	5	6	4	These have been populated incorrectly by the Distributor and there is no unmetered load present. Nova is correct. See <b>Section 3.7</b>
ICPs with standard unmetered load flag Y but load is recorded as zero	0	0	1	No evidence of this occurring.
ICPs with incorrect shared unmetered load	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	1	No evidence of this occurring.

The daily registry discrepancy process appears to be working well with the exception of:

- One ICP with an active date discrepancy that was not identified in the discrepancy reporting.
- Some inactive ICP statuses in Orion not being included in the registry discrepancy reporting. These were identified via analysis of line change billing from one Distributor. This is being reviewed by Nova.

Through the new connection analysis ICP 0110010436EL4BA was identified as a backdated new connection. This was investigated and found to be the supply for ICP 0015720028ELBE8 that was decommissioned. Rather than reverse the decommissioning events and return the ICP #LBE8 to active, ICP #L4BA was created as a new connection. The creation of a new ICP rather than the correcting of the incorrectly disconnected original ICP is recorded as non-compliance below.

Some additional registry data discrepancies were identified during the audit through the reconciliation analysis. These would not be expected to be picked up through the daily discrepancy process as they are not data mismatches but are process related.

As detailed in **sections 3.8** and **11.2**, one ICP had an incorrect active date on the registry:

ICP	Registry active date	Correct active date
0001020104SN582	12/01/2016	18/01/2016

As detailed in **sections 3.8** and **section 8.1**, seven ICPs with consumption while disconnected did not have their status updated to active on the registry for the consumption period:

ICP	Consumption while disconnected dates
0000174240TR4C9	24/07/17 to 28/09/2017
0006991114RN4BE	05/12/2016 to 10/12/2016
0007901468TUA75	20/07/2017 to 22/09/2017
0009922015WW30E	12/12/2016 to 28/07/2017
1000004758BP7A1	07/06/2017 to 20/09/2017
1000007211BPCB0	24/07/2017 to 18/09/2017
1000009887BP012	01/06/2017 to 22/09/2017

#### Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 2.1</p> <p>With: Clause 10.6, 11.2, 15.2</p> <p>From: entire audit period</p>	<p>Some errors found in registry data.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
<b>Low</b>	<p>Controls are rated as moderate as they are sufficient to mitigate risk most of the time, but there is room for improvement.</p> <p>The audit risk rating is low as the overall volume of ICPs affected is low.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p>This response is in relation to the 7 ICPs with consumption while disconnected and the creation of a new ICP.</p> <p>Other Non-compliances mentioned in section 2.1 have been addressed in their relevant section of the Audit Report.</p> <p>1. Seven ICPs with consumption while disconnected.</p> <p><b>Response:</b> Non-Compliance accepted and remedial action on-going.</p> <p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>Nova will investigate the best course of action for each of the 7 ICPs.</li> <li>Corrective actions will be carried out and completed.</li> </ul> <p>2. The creation of a new ICP rather than the correction of the incorrectly disconnected ICP.</p> <p><b>Response:</b> Non-Compliance accepted.</p> <p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>Since the ICP 0015720028ELBE8 had a registry status of decommissioned the Nova employee applied for and followed a new connections process.</li> <li>Post audit, Veritek gained clarification from the EA and Jade. It was advised; as the ICP was never disconnected the associated decommissioning events should have been reversed. The original ICP should have been returned to an active status rather than create a new ICP.</li> <li>Nova believes this is a Technical non material, non-compliance.</li> </ul> <p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>The Nova employee has been advised of the correct process.</li> </ul>	<p>Q1</p> <p>Completed December 2017</p>	<p>Identified</p>

Preventative actions taken to ensure no further issues will occur	Completion date	
1. Seven ICPs with consumption while disconnected. <ul style="list-style-type: none"> <li>Once the investigation has taken place and reasons identified as to why the registry updates were not made, reporting will be updated. This will ensure these scenarios are caught and updates can occur within required time frames.</li> </ul>	Q1	
2. The creation of a new ICP rather than the correcting of the incorrectly disconnected original ICP. <ul style="list-style-type: none"> <li>Existing processes will be updated to reflect the learning's advised by the EA.</li> <li>New process training will be given to employees undertaking this task type.</li> </ul>	Q1	

## 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 EDM I as agents via SFTP, and data transmission was reviewed as part of their agent audits. HHR data is loaded into EnergyMarket for reconciliation and exported to Kinetiq for billing. I traced a sample of HHR data for ten ICPs from the source files to Energy Market.

### 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

Approximately 25 AMI sites are reconciled and billed as HHR. HHR data is received from AMS for AMS and Arc meters via SFTP. The data is loaded into EnergyMarket hourly, and exported to Kinetiq for billing. I traced a sample of HHR data for five ICPs from the source files to Energy Market.

### 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) 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 15 NHH ICPs from the source files to Orion. Readings for five ICPs were checked for each of the following MEPs:

- AMS
- ARC
- Metrix

### 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 were checked for MRSL and Wells

## Audit commentary

### HHR data received from agents

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

HHR data supplied by AMS for five ICPs for one day, and HHR data supplied by EDM I for five ICPs for one day, was matched from the source files to EnergyMarket. All reads and volumes matched the source files.



### **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**

HHR data supplied by AMS for five ICPs for one day, was matched from the source files to EnergyMarket. All reads and volumes matched the source files.

### **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**

Data within Stark may be edited. I viewed compliant audit trails which included user name, date and time, the activity completed and the reason for the change. Raw data remains in Stark even if it is later edited.

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.

A complete audit trail was viewed in Orion for activity. The logs of these activities for Nova and all agents include the activity identifier, date and time, and an operator identifier.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 10.4*

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

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

- *extends to the full term of the arrangement*
- *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 list file and event detail report for the period from 1/3/17 to 30/9/17 were analysed to confirm process compliance and that controls are functioning as expected.

### Audit commentary

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**.

As discussed in **section 2.1**, analysis found ICP 0110010436EL4BA was identified as a backdated new connection. This was investigated and found to be the supply for ICP 0015720028ELBE8 that was decommissioned. Rather than reverse the decommissioning events and return the ICP #LBE8 to active, ICP #L4BA was created as a new connection. Therefore, there were no genuine backdated new connection. Non-compliance is recorded in **section 2.1** for providing incorrect information to the registry.

### Audit outcome

Compliant

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

### Code reference

*Clause 10.33(1)*

### Code related audit information

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

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

### Audit observation

The new connection process was examined in detail to evaluate the strength of controls. The list file and event detail report for the audit period from 1/3/17 to 30/9/17 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 take 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 (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 list file and event detail report for the period from 1/3/17 to 30/9/17 were analysed to confirm process compliance and controls are functioning as expected. I checked all new connections and reconnections from the event detail report.

46 ICPs (6% of reconnections) were reconnected with expired interim certified meters. Eight of these have since been recertified greater than five days from reconnection. A sample of ten of the ICPs with expired metering still recorded on the registry was checked using the homogenous sampling technique.

### Audit commentary

#### New Connections

All newly connected ICPs were certified within five business days of electrical connection. Analysis found ICP 0110010436EL4BA identified as a backdated new connection. This was investigated and found to be the supply for ICP 0015720028ELBE8 that was decommissioned. Rather than reverse the decommissioning events and return the ICP #LBE8 to active, ICP #L4BA was created as a new connection. Non-compliance is recorded in **section 2.1**. for providing incorrect information to the registry.

Whilst this is carried out by the MEP, Nova work closely with their contractors to ensure that all ICPs are certified within the required time frame. Analysis of this confirmed that all were compliant.

#### Reconnected ICPs

Nova were under the understanding that meter certification was the responsibility of the MEP beyond the point of initial electrical connection and were not aware that they have responsibility to ensure reconnected sites must have a certified meter in place. They are reviewing their reconnection process to ensure that this requirement is met.

The late certification of the eight reconnected ICPs identified through analysis is recorded as non-compliance below. The sample of the reconnected ICPs with expired metering checked found that these installations remain uncertified. Nova are working to recertify these as soon as possible.

The list file identified one ICP (0000004087DE2E9) with the metering removed (category 9) and the UML flag set to "N". This was reviewed on site and found this site was downgraded to NHH and Nova have metering recorded in Orion. It is the MEP's responsibility to load the metering details to the registry.

ICP 0185871631LCB34, noted in the last audit has been confirmed as "inactive - disconnected" with the meters removed. This was updated post the site visit carried out after the last audit and correctly backdated to the date of the meter removal.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.11 With: 10.33A  From: 01-Mar-17 To: 31-Oct-17	Eight reconnected ICPs not certified within 5 business days of reconnection. 38 reconnected ICPs with no certified metering in place. Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are rated as weak as Nova was unaware of the reconnection meter certification requirement and therefore no specific controls were in place. 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
<b>Response:</b> Non-Compliance accepted remedial action on-going.  <b>Action:</b> <ul style="list-style-type: none"> <li>As a result of the Audit, Nova carried out a review on ICPs that had been electrically connected to identify all meters without certification. Circa 53 ICPs were identified.</li> <li>Nova has instigated a program of work across 4 MEP's to certify the metering on the 53 ICPs.</li> </ul>		Q 2 2018	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> <li>Existing processes have been updated to reflect the actions to be taken if the ICP is reconnected with uncertified metering.</li> <li>In addition, reporting has been updated to identify reconnected ICPs with uncertified metering. As part of this reporting Nova are checking the registry.</li> <li>The change to process and reporting will allow Nova to proactively work on resolving electrically connected ICPs with uncertified metering.</li> <li>Non-compliance will continue to occur until all uncertified metering across the industry has been certified.</li> </ul>	<p>Completed December 2017</p> <p>On-going</p>	

## 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. A new site cannot be loaded into Orion without an ICP identifier. As detailed in section 2.1, ICP 0110010436EL4BA was identified as a backdated new connection. This was investigated and found to be the supply for ICP 0015720028ELBE8 that was decommissioned. Rather than reverse the decommissioning events and return the ICP #LBE8 to active, ICP #L4BA was created as a new connection. Therefore, there were no ICPs requested late. Non-compliance is recorded in **section 2.1** for providing incorrect information to the registry.

##### 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 list file was analysed in conjunction with the event detail report 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 event detail report for the period from 1/3/17 to 30/9/17 to determine the overall performance for that period. I used the extreme case methodology examining a sample of ten ICPs that were updated greater than 30 days from the event date for each of the event type updates, with the exclusion of new connections in progress (these can only be non-compliant if not updated within five business days of electrical connection).

#### Audit commentary

Nova have a strong focus on compliance with performance against key metrics on display. All staff have a good understanding of these requirements.

Event	Year	Total ICPs	ICPs Notified Within 5 Days	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
Changes to active - reconnections	2015	573	419	154	9.91	73%
	2016	500	455	45	3.4	91%
	<b>2017</b>	<b>780</b>	<b>652</b>	<b>128</b>	<b>5</b>	<b>80%</b>
Change to electrically disconnected other than reason 12 & 6	2015	523	469	54	3.46	90%
	2016	663	631	32	4.05	95%
	<b>2017</b>	<b>796</b>	<b>666</b>	<b>130</b>	<b>21</b>	<b>84%</b>
Change to electrically disconnected ready for decommissioning	2015	58	6	52	20.74	10%
	2016	102	61	41	63.96	60%
	<b>2017</b>	<b>147</b>	<b>122</b>	<b>25</b>	<b>9</b>	<b>83%</b>
New connection in progress status updates	2015	178	129	49	6.71	72%
	2016	124	116	8		94%
	<b>2017</b>	<b>341</b>	<b>341</b>	<b>0</b>	<b>2</b>	<b>100%</b>
Changes of MEP	<b>2017</b>	<b>335</b>	<b>303</b>	<b>32</b>	<b>2.1</b>	<b>90%</b>

### Reconnections

There has been a decline in the number of ICPs updated within five business days and this is largely due to the Edgumbe flood where Nova have a large number of ICPs affected by this. Due to the nature of the event notifications from the field were sometimes slow in being advised. The average notification days is still at five days with only 14 ICPs that were backdated greater than 30 days. Ten of these were examined on site and found:

- four ICPs were identified as part of the revenue risk activity
- three ICPs were identified via the registry discrepancy reporting, these were corrected once the investigations were complete
- the incorrect ICP was recorded on the paperwork for ICP 0044250300PCCE8 causing a delay while this was investigated
- ICP 1000004055BP7F8 was an Edgumbe flood affected site
- ICP 0085365206PC6C1 switched in at vacant but was updated to active late.

#### Inactive - “Vacant” or similar

There has been a decline in the number of ICPs updated within five business days. This is due to Nova undertaking a data cleanse exercise including the comparing of ICP line charge billing from one Distributor to the status held by Orion. This has identified some ICP status discrepancies and it appears that not all ICP statuses in Orion are being included in the registry discrepancy reporting. This is recorded as non-compliance in **Section 2.1** and is being reviewed by Nova. There were 25 ICPs that were backdated greater than 30 days to inactive vacant or similar. The sample checked found that all ten ICPs have been identified as part of the data cleanse project. Performance is expected to improve once this exercise is complete.

#### Inactive - “Ready for Decommissioning”

The decommission process varies from network to network with some advising Nova to move the ICP to “Ready for decommission” 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 improved during the audit period. There were five ICPs not updated within 30 days of the effective date. These were checked and found that:

- three ICPs were updated within five days but the network advised the effective date was incorrect and these were backdated to correct
- two ICPs related to the same fire incident which required investigation, and these were updated as soon as possible.

#### 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 ICP 0110010436EL4BA was created by the Distributor 15/6/17 and backdated to active by Nova to 21/03/16. This was a site where an existing meter was reconnected on a decommissioned ICP. Nova was advised late by the customer that this site had been reconnected. This is recorded as non-compliance below.

#### 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 and found 32 late MEP changes. These were analysed and found only one nominated greater than 30 days. The incorrect MEP was nominated in the first instance. Further sampling found 15 of the 32 ICPs with late nominations were due to the same issue.

#### **Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref: 3.3 With: From: 01-Mar-17 To: 30-Sep-17	Registry information not updated within 5 business days of the event. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls will mitigate risk most of the time but some room for improvement was identified. The audit risk rating is low as whilst the timeliness to update the registry has declined in this audit period this is due to data cleansing underway which is improving data accuracy.		
Actions taken to resolve the issue		Completion date	Remedial action status
<b>Response:</b> Non-Compliance accepted and remedial action is on-going. <b>Comments:</b> <ul style="list-style-type: none"> <li>Since the last Audit Nova has commenced the commitment to improve the status updates for 'Change to electrically disconnected ready for decommissioning'.</li> <li>We acknowledge that there is some room for improvement and continue to work on meeting the update timeframes.</li> <li>It should be noted that a number of factors contribute to the Non-compliance; late paperwork from the field, data corrections with historical events, force majeure events and human error.</li> </ul> <b>Actions:</b> <ul style="list-style-type: none"> <li>We continue to work with our industry stakeholders to improve our compliance time frames.</li> <li>We will update reporting criteria to identify a broader range of scenarios which could result in late updates.</li> </ul>		On-going  Q1	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> <li>• Our focus will continue to be on accuracy of event dates and minimising the time taken to update the registry.</li> <li>• Nova's opinion is that a small number of Non-compliances will continue to occur.</li> </ul>	On-going	

### 3.4. Trader responsibility for an ICP (Clause 11.18)

#### Code reference

*Clause 11.18*

#### Code related audit information

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

*A trader ceases to be responsible for an ICP if:*

- *another trader is recorded in the registry as accepting responsibility for the ICP (clause 11.18(2)(a)); or*
- *the ICP is decommissioned in accordance with clause 20 of Schedule 11.1 (clause 11.18(2)(b)).*
- *if an ICP is to be decommissioned, the trader who is responsible for the ICP must (clause 11.18(3)):*
  - *arrange for a final interrogation to take place prior to or upon meter removal (clause 11.18(3)(a)); and*
  - *advise the MEP responsible for the metering installation of the decommissioning (clause 11.18(3)(b)).*

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

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

#### Audit observation

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

The new connection process was discussed and the list file, as at September 2017, was examined to identify that all active ICPs have an MEP recorded. This analysis found two active ICPs with UML "N" that do not have an MEP recorded in the registry. These were both 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. ICP 0110010436EL4BA was identified as a backdated new connection. This was investigated and found to be the supply for ICP 0015720028ELBE8 that was decommissioned. Rather than reverse the decommissioning events and return the ICP #LBE8 to active, ICP #L4BA was created as a new connection. Non-compliance is recorded in **section 2.1**. There were no ICPs where Nova traded electricity without having an MEP recorded on the registry.

The two ICPs with an MEP nominated but no metering recorded have both had metering added to the registry since the list file was run and are therefore compliant.

### 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 de-electrical connection. Nova also advises the MEP responsible that the site is to be decommissioned, or has been decommissioned dependant on the Distributor’s process.

The sample checked confirmed that all either had an attempt to gain a removal read made and 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 list file was analysed in conjunction with the event detail report for the period from 1/3/17 to 30/9/17 to evaluate the updating of the registry in relation to new connections.

#### Audit commentary

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%
	<b>2017</b>	<b>267</b>	<b>260</b>	<b>7</b>	<b>2.0</b>	<b>97%</b>

Nova have robust controls in place to ensure new connections are updated as soon as possible. This is evident with the year on year improvement. The seven ICPs not updated within five days were checked and found that late paperwork from the field was the most common cause for the delay.

As discussed in **section 2.9**, ICP 0110010436EL4BA was created by the Distributor on 15/6/17 with a "Ready" date of 21/03/16 and backdated to "Active" by Nova to 21/03/16, therefore Nova did not update the registry within five days of the electrical connection. This was a site where an existing meter was reconnected on a decommissioned ICP. Nova was advised that this site had been connected late by the customer.

#### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.5 With: 9 Schedule 11.1  From: 20-Mar-17 To: 28-Sep-17	Registry information not updated within 5 business days of the event for eight ICPs.  Potential impact: Low  Actual impact: Low  Audit history: Multiple  Controls: Strong  Breach risk rating: 1
Audit risk rating	Rationale for audit risk rating
<b>Low</b>	Nova's controls are robust.  The seven late ICPs will have little impact on reconciliation hence the audit risk rating of low.



Preventative actions taken to ensure no further issues will occur	Completion date	
1. Seven ICPs not updated within five days. NA  2. The creation of a new ICP rather than the correcting of the incorrectly disconnected original ICP.  <ul style="list-style-type: none"> <li>Existing processes will be updated to reflect the learning's advised by the EA.</li> <li>New process training will be given to employees undertaking this task type.</li> </ul>	Q1	

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

#### Code reference

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

#### Code related audit information

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

#### Audit observation

The process to capture and manage ANZSIC codes was examined. A Registry list file was reviewed to check ANZSIC codes. This was checked for:

- no ANZSIC codes
- "T99" codes
- accuracy of ANZSIC code applied.

The accuracy was checked by selecting a random sample of 40 active ICPs using the diverse characteristics methodology and checking them on the registry.

#### Audit commentary

Nova ensure that all new customers are assigned an ANZSIC code. Checks for missing or "T99" – non-specific 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 and there were no ICPs with a "T99" – non-specific ANZSIC codes applied. Of the 40 ICPs checked I found two incorrect ANZSIC codes applied.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: With: From: 01-Oct-16 To: 30-Sep-17	Incorrect ANZSIC code assigned. Potential impact: None Actual impact: None Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls will mitigate risk in relation to missing or non-specific codes but is not set up to check code validity. This has no direct impact on reconciliation.		
Actions taken to resolve the issue		Completion date	Remedial action status
<b>Response:</b> Non-Compliance accepted. <b>Comments:</b> <ul style="list-style-type: none"> <li>Errors are in relation to commercial only.</li> <li>When sampling is taken at a given point in time, non-compliance is likely to still occur as there is a time lag from when incorrect ANZSIC codes are identified, corrections investigated and then updates, made.</li> </ul> <b>Actions:</b> <ul style="list-style-type: none"> <li>Nova has begun a data cleanse process to identify possible ANZSIC code misalignment.</li> <li>Sampling the outcomes will be carried out to determine accuracy of the newly identified code.</li> <li>Based on the outcomes a decision will be made on the updates we will/can undertake.</li> <li>As part of this process Nova will need to identify the most accurate resource (source of truth) to compare our data to. Tools such as Google Maps and business data bases can be outdated.</li> </ul>		Q3 2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As Above			

### 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 list file as at July 2017 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

The list file contained 210 ICPs where Nova have unmetered load recorded (excluding shared unmetered load which is discussed in **section 5.1**). These were analysed and found 40 ICPs where the Distributor has populated the unmetered load in the recommended format. The loads were checked and found they all matched.

Examination of the list file found five ICPs with information in the Distributor UML field and no UML information recorded in the Retailer fields and the UML flag = "N". This is checked as part of their registry discrepancy process. For all five ICPs, the Distributor had added the unmetered load in February backdated to the last network event date. These were checked on site and found that the network had added these unmetered load details in error as they are all metered supplies.

#### 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 event detail report and list file report were checked for any variances between the initial electrical connection date and the active date. This identified 11 ICPs with a variance between the active date and the initial electrical connection date and the meter certification.

The process for the management of ICP reconnection was examined. The event detail report for the was analysed and the findings in relation to the timeliness of updates to registry is recorded in **section 3.3**.

#### Audit commentary

Nova's processes will ensure that there is only one customer associated with any ICP and that there is a method of quantification.

#### Active Date vs. Initial Electrical Connection Date

	New Connections	Of those populated Active vs. IED Matched	Different
Distributor Initial Electrical Connection Date	266	255 (96%)	11

Nova's active dates have a high level of accuracy. The 11 ICPs with a date variance were checked and found:

- Eight ICPs have a date that agrees with the meter certification date. The electrical connection paperwork was checked on site and confirmed that Nova had the correct active date.
- Three ICPs where the MEP meter certification date and the Distributor's initial electrical connection date agree but Nova's active date was different. These were checked on site and found that Nova had an initial email returned from the field which indicated an incorrect active date. Subsequent paperwork confirmed the correct active date, but these weren't updated. Two of these had not been identified via the registry discrepancy reporting. ICP 1002036942LCA0A was identified but not actioned. As detailed in **Section 2.1**, Nova are investigating this. This is recorded as a non-compliance below.

#### Active Date vs. Meter Certification Date (excluding UML connections and where the certification date was not recorded in the EDA)

	New Connections	Matched	Different
Meter Certification	266	258 (97%)	8

The eight ICPs with a date variance were checked and found:

- five of these have been made active for the incorrect active date but were certified within five days of electrical connection and are being corrected
- two were ICP splits, therefore the meters were not recertified as this is a paperwork job only and the meters haven't been moved and have current certification
- ICP 1001304122UNAF0 was certified five business days after being electrically connected and is compliant.

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.

As detailed in **sections 2.1** and **11.2**, the ICP days analysis identified one ICP with an active date discrepancy:

ICP	Registry active date	Correct active date	Comment
0001020104SN582	12/01/2016	18/01/2016	New connection taken to active for the incorrect date.

Seven ICPs with consumption while disconnected did not have their status updated to active on the registry for the consumption period:

ICP	Consumption while disconnected dates
0000174240TR4C9	24/07/17 to 28/09/2017
0006991114RN4BE	05/12/2016 to 10/12/2016
0007901468TUA75	20/07/2017 to 22/09/2017
0009922015WW30E	12/12/2016 to 28/07/2017
1000004758BP7A1	07/06/2017 to 20/09/2017
1000007211BPCB0	24/07/2017 to 18/09/2017
1000009887BP012	01/06/2017 to 22/09/2017

#### Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 3.8</p> <p>With: 17 Schedule 11.1</p> <p>From: 01-Oct-16</p> <p>To: 30-Sep-17</p>	<p>Some ICPs with active status discrepancies</p> <p>Potential impact: Medium</p> <p>Actual impact: Low</p> <p>Audit history: Multiple</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
<p><b>Low</b></p>	<p>Controls will mitigate risk most of the time but some room for improvement was identified.</p> <p>The audit risk rating is low as the overall level of level of accuracy is 95% or higher.</p>



Actions taken to resolve the issue	Completion date	Remedial action status
<p>Part of the Non-Compliance for 3.8 (Seven ICPs with consumption while disconnected) has been addressed in 2.1. The response for 2.1 has been copied below.</p> <p>1. Seven ICPs with consumption while disconnected.</p> <p><b>Response:</b> Non-Compliance accepted and remedial action on-going.</p> <p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>• Nova will investigate the best course of action for each of the 7 ICPs.</li> <li>• Corrective actions will be carried out and completed.</li> </ul> <p>2. ICP 0001020104SN582 - New connection taken to active for the incorrect date.</p> <p><b>Response:</b> Non-Compliance accepted remedial action completed.</p> <p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>• The cause of this discrepancy was due to human error.</li> </ul> <p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>• Nova worked with the MEP to reverse the incorrect event.</li> <li>• A correct event update was made to the Registry made in 9 January 2018.</li> </ul>	<p>Q1</p> <p>Completed January 2018</p>	<p>Identified</p>

Preventative actions taken to ensure no further issues will occur	Completion date	
1. Seven ICPs with consumption while disconnected. <ul style="list-style-type: none"> <li>Once the investigation has taken place and reasons identified as to why the registry updates were not made, reporting will be updated to ensure these scenarios are caught and updates can occur within time frames.</li> </ul>	Q1	
2. ICP 0001020104SN582 - New connection taken too active for the incorrect date. <ul style="list-style-type: none"> <li>Existing Reporting will be refined to pick up errors of this nature.</li> <li>Action to correct the errors will then be taken.</li> <li>New process training will be given to employees undertaking this task type.</li> </ul>	Q1	

### 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 list file was examined to identify any ICPs that had been at the “Inactive - new connection in progress” with an initial electrical connection date was 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. The findings in relation to the timeliness of updates to registry is 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 no ICPs that have been at this status for greater than 24 months and identified one ICP that had an initial electrical connection date recorded. This has since been updated compliantly to active.

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. As discussed in **section 3.3**, Nova are undertaking a data cleanse which is identifying some historic status mismatches. It appears that not all ICP statuses in Orion are being included in the registry discrepancy reporting. Nova are investigating this. Those ICPs that have been found to be at the incorrect inactive status when they should have been “active” are recorded as non-compliant in **section 3.8**.

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

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

## Audit outcome

Compliant

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

#### Code reference

*Clause 15 Schedule 11.1*

#### Code related audit information

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

#### Audit observation

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

## Audit commentary

As Nova uses the status “inactive – new connection in progress”. No ICPs were found in the list file in the new or ready status, and they have not received any requests from Distributors.

## Audit outcome

Not applicable

## 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.

#### Audit commentary

Nova has mechanisms in place that ensure the five business day cooling off period is adhered to through either “holding” specific ICP’s from processing within NT files and/or utilising the withdrawal/cancellation process, ensuring no penalties are applied to the customer.

A sample of NT files was checked. All switches were sent within two business days of the agreement being reached and the clearance of any pre-conditions.

#### Audit outcome

Compliant

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

#### Code reference

*Clauses 3 and 4 Schedule 11.3*

#### Code related audit information

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

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

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

#### **Audit observation**

An event detail report for the audit period was reviewed, to identify AN files issued by Nova during the audit period. A sample of five 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.

The event detail report was analysed to assess compliance with the requirement to meet the setting of event dates requirement.

#### **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 switch breach report for the audit period was checked and confirmed that all AN files were sent on time.

The event detail report contained 7,427 transfer switches. All had an event date within five days and therefore none were greater than ten days. Nova also provided their own reporting which confirmed compliance.

#### **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 the audit period was reviewed, to identify CS files issued by Nova during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of five records. 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).

The process to manage the sending of the CS file within five business days of the event date was examined.

The switch breach history report for the audit period was reviewed to identify late CS files.

### Audit commentary

The CS file content was correct.

Nova have robust reporting in place and an experienced switching team who understand these requirements well. The switch breach report for the audit period was checked and confirmed that all CS files were sent on time.

### Audit outcome

Compliant

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

### Code reference

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

### Code related audit information

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

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

*If the gaining trader disputes a switch meter reading because the switch event meter reading provided by the losing trader differs by 200 kWh or more, the gaining trader must, within four calendar months of the actual event date, provide to the losing trader a changed switch event meter reading supported by two validated meter readings.*

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

### Audit observation

The process for the management of read requests was examined.

The event detail report and switch breach report were analysed to identify all read change requests and acknowledgements during the audit period.

A combined sample of ten read change requests from the event detail report was selected using the diverse sample methodology. The sample included both transfer and gaining trader read requests, files exchanged with different traders, and a mix of acceptances and rejections.

The switch breach history report for the audit period was reviewed and found nine late RR files.

### 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.

The sample checked were correct with the exception of:

- ICP 0000003544EN2ED. This read request was sent with only one validated read. This was due to human error and is recorded as non-compliance.
- Two switches (ICP 0000006407CPE7E and 0000012833HRCD8) where the AMI read was sent as an estimate when it was an actual. This is recorded as non-compliance below.

The nine late RR files were checked and found they were all delayed due to the time taken to get two validated reads.

### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.4 With: 6(1) and 6A Schedule 11.3  From: 28-Aug-17 To: 30-Sep-17	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. Potential impact: Low Actual impact: Low Audit history: None 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
<p>1. One read request sent without two validated reads.</p> <p><b>Response:</b> Non-Compliance accepted and remedial action completed.</p> <p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>• An employee of Nova and the losing trader agreed to an initiate a RR process without 2 validated meter reads.</li> <li>• This is not an approved Nova process.</li> </ul> <p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>• Remedial training was undertaken with the employee.</li> <li>• As this is not Nova process we do not expect to see another instance of this occurrence.</li> </ul> <p>2. Two read request files were sent with AMI reads labelled as estimates.</p> <p><b>Response:</b> Non-Compliance accepted and remedial action completed.</p> <p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>• In both instances a Nova Energy team member manually updated our billing system incorrectly.</li> <li>• This is not an approved Nova process.</li> </ul> <p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>• Remedial training was undertaken with the employee.</li> </ul> <p>3. Nine late RR files.</p> <p><b>Response:</b> Non-Compliance accepted.</p> <p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>• In these cases all RR files were late due to the length of time taken to gain 2 validated meter readings.</li> <li>• The Code does not allow for the situations where rectifying an issue can exceed 4 calendar months.</li> <li>• We will continue with current practices, as The Code requires a Trader to have 2 validated meter readings.</li> </ul> <p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>• Nova commits to reviewing the process and reasons for delays and looking for opportunities to improve.</li> </ul>	<p>Completed December 2017</p> <p>Completed December 2017</p> <p>On- going</p>	<p>Identified</p>



Preventative actions taken to ensure no further issues will occur	Completion date	
1. One read request sent without two validated reads • Team refresher training.	Q1	
2. Two read request files were sent with AMI reads labelled as estimates. • Team refresher training.	Q1	
3. Nine late RR files As per our action above.	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 and switch breach report were analysed. A sample of five ICPs (or all were checked if less than five were found) for each of the following scenarios were selected using the typical sample methodology from the event detail report. The sample covered both transfer and gaining trader read requests, and a variety of other participants.

- other retailer's request accepted by Nova
- other retailer's request rejected by Nova

##### 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.

The sample of AMI reads accepted checked were compliant. The event detail report recorded two RR requests that were rejected within five days of the event date. One was from Electric Kiwi. They are adding register values together and allocating multi register meters to one channel. This is incorrect, and Nova have correctly rejected these requests on the basis of not accepting misleading information. The other was rejected from a NHH trader and was subsequently accepted once agreement had been gained with the customer.

## Audit outcome

Compliant

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

#### Code reference

Clause 7 Schedule 11.3

#### Code related audit information

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

#### Audit observation

Confirm 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

Not applicable

### 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.

### Audit commentary

All switches are sent within two business days of the agreement being reached and the clearance of any pre-conditions.

### Audit outcome

Compliant

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

### Code reference

*Clause 10(1) Schedule 11.3*

### Code related audit information

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

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

### Audit observation

An event detail report for the period from 1/3/17-30/9/17 was reviewed, to identify AN files issued by Nova during the audit period. A sample of two ANs per response code were reviewed to determine whether the codes had been correctly applied.

The switch breach history report for the audit period was reviewed in relation to both late AN and CS files.

The process to manage the sending of the CS file within five business days of the event date was examined.

### 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 with the exception of three ICPs sent with the "AA" code where the "AD" code is more accurate.

I recorded non-compliance last year for sending disconnected sites as "AA" when the most accurate code to send would be the "PD" code. This is being added to Orion. No examples of this were found in the sample checked. This is recorded as non-compliance below.

Examination of the switch breach report for the audit period confirmed that all AN files were sent on time.

The switch breach report recorded 41 "E2" late CS breaches recorded for the audit period. A sample of ten of these was checked on the registry and found no valid breaches. I note that the switch breach report has not been updated to align with the new code, therefore it is incorrectly recording late CS files.

## Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 4.8</p> <p>With: Clause 10(1) Schedule 11.3</p> <p>From: 01-Oct-16</p> <p>To: 30-Sep-17</p>	<p>Three ICPs sent with “AA” code instead of the “AD” code.</p> <p>PD code not used by Orion.</p> <p>Potential impact: None</p> <p>Actual impact: None</p> <p>Audit history: Twice</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>Nova’s controls are robust but rated as moderate as the “PD” code is not used in Orion.</p> <p>This has no direct impact on reconciliation hence audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p><b>Response:</b></p> <p>Non-Compliance accepted.</p> <p><b>Comments:</b></p> <p>In Nova’s view this non-compliance has no operational or material impact.</p> <p><b>Actions:</b></p> <p>Our action from last year was that we would;</p> <ul style="list-style-type: none"> <li>Review current state and identify options.</li> <li>Make a decision on the best solution to rectify the Non-compliance.</li> </ul> <p>We carried out the following;</p> <ul style="list-style-type: none"> <li>A solution was created, tested and implemented.</li> <li>Nova is now using an automated process employing best endeavours to apply the AN codes.</li> </ul>		Completed December 2017	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> <li>As above</li> </ul>	NA	

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

##### Code reference

*Clause 10(2) Schedule 11.3*

##### Code related audit information

*If the losing trader determines a different date, the losing trader must also complete the switch by providing to the registry manager as described in sub-clause (1)(a):*

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

##### Audit observation

The setting of event dates for move switches was examined. The event detail report for the audit period was examined comparing the NT requested event date with the AN event date sent by Nova for any switches dated earlier than the NT requested date for the 11,690 switch moves recorded. The report was also checked for any event dates that were set greater than ten days from the NT receipt date and a sample of ten ICPs were checked using the typical sample methodology.

##### Audit commentary

Analysis found no switches with where the event date was set earlier than the gaining trader's requested date, and no ICPs were found with event dates set greater than ten business days from the NT receipt 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 the audit period was reviewed to identify CS files issued by Nova during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of five records. 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).

### Audit commentary

The CS file content was correct the sample checked except for ICP 0000001191CP173. Customer reads were sent as actuals with the incorrect read date. This was due to human error.

### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.10 With: 11 Schedule 11.3  From: 26-Jun-17 To: 13-Jul-17	One CS file sent with reads incorrectly sent as actuals and with the incorrect last read date.  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 will mitigate risk most of the time but some room for improvement was identified.  This will have a minor impact on reconciliation therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
<p><b>Response:</b> Non-compliance accepted and remedial action completed.</p> <p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>The non-compliance is a result of a customer supplied read which an employee incorrectly labelled.</li> <li>The action by the employee resulted in the incorrect last actual read date being inserted into the CS.</li> </ul> <p><b>Action</b></p> <ul style="list-style-type: none"> <li>In this instance the process followed by the employee was not a Nova approved process and the staff member has been advised of their error.</li> </ul>	Completed December 2017	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> <li>Process documentation will be updated to ensure clarity of compliance requirements and approved process.</li> <li>Nova continues to work with our employees to ensure they understand the processes and procedures to be followed.</li> </ul>	Q1	

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

##### Code reference

Clause 12 Schedule 11.3

##### Code related audit information

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

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

- *if the losing trader notifies its acceptance or does not provide any response, the losing trader must use the switch event meter reading supplied by the gaining trader. (clause 12(3)(b)).*

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

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

#### **Audit observation**

The process for the management of read requests was examined.

The event detail report and switch breach report were analysed to identify all read change requests and acknowledgements during the audit period.

A combined sample of ten read change requests from the event detail report was selected using the diverse sample methodology. The sample included both transfer and gaining trader read requests, files exchanged with different traders, and a mix of acceptances and rejections.

The switch breach history report for the audit period was reviewed and found seven late RR files.

#### **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.

The sample checked were correct with the exception of:

- ICP 0000003544EN2ED, which was sent with only one validated read. These were the reconnection reads. Nova are investigating this to determine why this was sent after only one validated read.
- ICP 0000025230DEFFB where the AMI read was sent as an estimate when it was an actual.

The seven late RR files were checked and found they were all delayed due to the time taken to get two validated reads.

#### **Audit outcome**

Non-compliant



Non-compliance	Description
<p>Audit Ref: 4.11</p> <p>With: 12 Schedule 11.3</p> <p>From: 01-Oct-16</p> <p>To: 30-Sep-17</p>	<p>One read request sent without two validated reads.</p> <p>One read request file was sent with AMI reads labelled as estimates.</p> <p>Nine late RR files sent.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
<p><b>Low</b></p>	<p>Controls will mitigate risk most of the time.</p> <p>The audit risk rating is low as this will have little to no impact on reconciliation, and the reads provided were correct.</p>



<p>3. Nine late RR files sent.</p> <p><b>Response:</b></p> <p>Non-Compliance accepted.</p> <p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>• In these cases all RR files were late due to the length of time taken to gain 2 validated meter readings.</li> <li>• The Code does not allow for the situations where rectifying an issue can exceed 4 calendar months.</li> <li>• We will continue with current practices, as the code requires a Trader to have 2 validated meter readings.</li> </ul> <p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>• Nova commits to reviewing the process and reasons for delays and looking for opportunities to improve.</li> </ul>	On - going	
<b>Preventative actions taken to ensure no further issues will occur</b>	<b>Completion date</b>	
<p>1. One read request sent without two validated reads</p> <ul style="list-style-type: none"> <li>• Team refresher training.</li> </ul>	Q1	
<p>2. One read request file was sent with AMI reads labelled as estimates.</p> <ul style="list-style-type: none"> <li>• Process documentation will be updated to provide clarity of compliance requirements.</li> <li>• Nova will continue to work with our employees to ensure they understand the process and procedures to be followed.</li> </ul>	Q1	
<p>1. Nine late RR files sent.</p> <p>As per our action above.</p>	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 were checked to confirm that these were notified to the registry within two 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

The HHR switch process was examined and the event detail report and switch breach report were analysed to identify all HHR switch files sent during the audit period. The switch breach report recorded no breaches.

#### 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

These are managed in conjunction with the Commercial team.

The CS files recorded as being late in the switch breach report were checked and none were late, and are therefore compliant.

#### Audit outcome

Compliant

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

#### Code reference

*Clauses 17 and 18 Schedule 11.3*

### Code related audit information

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

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

- *for each ICP, the trader withdrawing the switch request must provide the registry manager with (clause 18(c)):*
  - o *the participant identifier of the trader making the withdrawal request (clause 18(c)(i));*
  - and*
  - o *the withdrawal advisory code published by the Authority. (clause 18(c)(ii))*
- *within 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

The switch withdrawal process was examined. The content of a sample of two ICPs for each withdrawal code from the event detail report were checked using the typical sampling methodology. A sample of five switch rejections were checked using the typical sample methodology. The event detail report was also analysed to confirm timeliness of switch requests, as this is not currently being identified in the switch breach report. 99% of all withdrawals are made within two months. 21 ICPs of 2044 withdrawal requests that were backdated greater than two months from the event date. A sample of ten of these were checked using the diverse case methodology.

### Audit commentary

These are managed via Orion. Analysis of the switch withdrawal codes found all codes were being used correctly with the exception of ICPs 0000120797EN629 and 0000122557TRA18 which we sent with the “WP” code when the “UA” code would have been more accurate.

The sample of rejected switch requests checked confirmed they had all been rejected for valid reasons.

The sample of late NW requests found that these were late due to the time required to investigate and determine the correct action. All were processed as soon as possible.

### Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 4.15</p> <p>With: 17 and 18 Schedule 11.3</p> <p>From: 27-Aug-15</p> <p>To: 27-Sep-17</p>	<p>Incorrect withdrawal reason sent for two ICPs.</p> <p>21 late switch withdrawals.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Once</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
<p><b>Low</b></p>	<p>Errors will be mitigated most of the time. Use of withdrawal codes training opportunity identified.</p> <p>The volume of backdated switch requests is very low (1%) therefore the impact on reconciliation will be low.</p>





Preventative actions taken to ensure no further issues will occur	Completion date	
1. Incorrect withdrawal reason sent for two ICPs. <ul style="list-style-type: none"> <li>As above.</li> </ul> 2. 21 late switch withdrawals. <ul style="list-style-type: none"> <li>In last year's audit response Nova suggested that these types of situations need to be considered for possible Code review.</li> <li>As part of the 2018 Code review programme a Nova representative is part of the EA Switching Technical Group. We believe this will include a review of the withdrawal process and timings.</li> </ul>	NA	

#### 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 **Section 4.3**.

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.

Winback processes were examined to determine whether they are compliant.

I checked the event detail report for all withdrawn switches from the audit period, to 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. The check of the event detail report confirmed compliance.

##### Audit outcome

Compliant

## 5. MAINTENANCE OF UNMETERED LOAD

### 5.1. Maintaining shared unmetered load (Clause 11.14)

#### Code reference

Clause 11.14

#### Code related audit information

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

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

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

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

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

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

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

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

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

#### Audit observation

The registry list was reviewed and found Nova has 75 ICPs with shared unmetered load.

I reviewed the processes to identify shared unmetered load.

#### Audit commentary

These were analysed and found 70 ICPs where the Distributor has populated the unmetered load in the recommended format. The loads matched for all of those able to be checked.

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

#### 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

Examination of the Nova list file found 210 active ICPs have unmetered load recorded, excluding shared unmetered load. Two ICPs were identified as having a load of between 3-6,000 kWh. These were both examined.

### Audit commentary

Both were of an approved load type and can therefore be treated as standard unmetered load.

### Audit outcome

Compliant

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

### Code reference

*Clause 10.14 (5)*

### Code related audit information

*If the unmetered load limit is exceeded the retailer must:*

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

### Audit observation

Nova has 210 ICPs with unmetered load (this excludes the five ICPs with Distributor field populated only on the registry). All have a load of less than 6,000 kWh.

### Audit commentary

Not applicable

### Audit outcome

Not applicable

#### 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 last audit identified four DUML ICPs. Three of these have switched away during the audit period. ICP 0008056235HB73B was examined and confirmed that it is one connection with an approved load type of less than 6,000 kWh per annum and can therefore be treated as standard unmetered load.

##### Audit commentary

Not applicable

##### Audit outcome

Not applicable

## 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 was examined to determine compliance. Processes for distributed generation were reviewed.

#### Audit commentary

Exemption 262 allows Nova to use subtraction to determine submission information for ICP 0008201110WM5F5. This is discussed further in **section 1.1**.

All active ICPs with the unmetered flag set to no, have at least one meter installed.

Nova's registry list file as at 30/09/2017 showed 80 active ICPs with generation listed by the Distributor. 71 had an injection channel recorded on the registry, and Nova has generation capacity recorded for 68 (95.7%).

Population of distributed generation details on the registry is a MEP requirement and not the responsibility of the retailer, but it is the retailer's responsibility to ensure that electricity is quantified in accordance with the code. Nine active ICPs had generation capacity listed by the distributor, but did not have an injection channel recorded on the registry. These were reviewed to determine whether distributed generation was present:

- For six of the nine ICPs, injection metering is in the process of being installed.
- Two ICPs had incorrect distributed generation details recorded by the distributor. ICP 0089211800PC22C relates to the McKee GIP, the distributor has incorrectly recorded installation type B. ICP 1099573175CNFD9 does not have generation installed, the distributor has now removed the generation details and reset the installation type to L.
- The customer at ICP 0007168696RNA87 is expected to move out and the site will be disconnected. Nova have been unable to confirm whether generation is installed.

Five ICPs with injection channels were recorded with the profile RPS. These were checked and found to have been corrected:

- Profiles for ICPs 0001190930TG759, 0002611990WE11D, 0046252944PCB7F and 1000015457BP23D were corrected effective from their gain date, and I confirmed that the correction will flow through to submissions.
- ICP 1000022999BP60D is shut down following a fire in May 2016. The profile has been corrected to TG2 and consumption will be reported with the correct profile when it resumes.

The profiles of EG and PV were checked, to determine whether they had been applied correctly based on the fuel type. ICP 0011006802PCDFA had wind indicated, and was recorded with the PV profile. This has been corrected to EG1 and will be reported correctly in revision submissions.

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**.

The 2016 audit found that ICP 0000764472NV075 had generation consumption recorded as load, due to an incorrect meter configuration recorded on the registry. A correction has been processed for historic consumption from the switch in on 02/12/2015 to 31/10/2016, generation consumption has been correctly reported from November 2017 onwards.

## Audit outcome

### Non-compliant

Non-compliance	Description
<p>Audit Ref: 6.1</p> <p>With: Clause 10.13</p> <p>From: January to August 2017</p>	<p>While meters were bridged, energy was not metered and quantified according to the code for four ICPs.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Twice previously</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
<b>Low</b>	<p>Controls are rated as moderate as they are sufficient to reduce the risk most of the time.</p> <p>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. In nine of the ten examples reviewed, corrections had been processed.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p><b>Response:</b> Non-Compliance accepted.</p> <p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>Nova has detailed reporting to identify occurrences of bridged meters when paper work is not received from the field. We have refined existing reporting and put additional controls in place.</li> <li>Nova does not initiate the bridging of meters and agrees that a bridged meter is not a desirable outcome when reconnecting a customer.</li> <li>Nova has a thorough process in place which describes the actions to be taken if a bridged meter is identified in both proactive and reactive scenarios.</li> </ul> <p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>Nova will continue to work with our MEPs through service level agreements to ensure bridging of meters continues to be an undesirable outcome for Nova.</li> </ul>	Completed October 2017	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<ul style="list-style-type: none"> <li>As per our action above.</li> <li>Continue to peer review corrections for accuracy.</li> </ul>	On-going	

## 6.2. Responsibility for metering at GIP (Clause 10.26 (6), (7) and (8))

### Code reference

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

### Code related audit information

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

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

*The participant responsible for the metering installation must:*

- *advise the reconciliation manager of the certification expiry date not later than 10 business days after certification of the metering installation*



- *become the MEP or contract with a person to be the MEP*
- *advise the reconciliation manager of the MEP identifier no later than 20 days after entering into a contract or assuming responsibility to be the MEP.*

#### Audit observation

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

#### Audit commentary

Nova is responsible for the GIP shown in the table below.

Responsible party	Description	NSP	MEP	Certification expiry date (NSP table)
TODD	MCKEE	MKE1101TODDGG	TODD	2/07/2018

Nova has not recertified, modified or installed any metering during the audit period. The meter has current certification.

#### Audit outcome

Compliant

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

#### Code reference

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

#### Code related audit information

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

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

#### Audit observation

The registry list was reviewed to confirm the profiles used.

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

#### Audit commentary

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

All 266 active ICPs with these profiles applied were checked and found to have AMI metering, or a certified control device:

- 264 have AMI metering installed.
- 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. Maintenance of the AMI flag is the responsibility of the MEP.
- 0000041057TRBC9 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.

Corrections were appropriately processed for nine of the ten faulty meters, non-compliance is recorded for one ICP in **section 8.1**.

Compliance with this clause for generation meters has been demonstrated by EMS as part of their agent audit. Because EMS' audit report is more than seven months old, I confirmed that no faulty meters have been identified for Nova since EMS' March 2017 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 it does not exceed the maximum interrogation cycle on the registry.*

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

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

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

*2(6) – The interrogation systems must record:*

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

#### **Audit observation**

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.

Nova collects some HHR data, and generation data, using Stark.

#### **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.

EDMI and AMS email information on clock synchronisation events. AMS have not advised of any such incidents during the audit period. I viewed an example from EDM I of this during the audit and noted Nova had appropriately estimated data for the period affected.

#### **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**, and are compliant with the requirements of this clause.

## Audit outcome

Compliant

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

#### Code reference

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

#### Code related audit information

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

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

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

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

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

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

#### Audit observation

The data collection process was examined.

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

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 correct.

MRSL and Wells provide customer readings in the notes field, and record a no read. I checked an example in Orion, and noted that the normal no read process was followed. 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. Customer and photo reads are not treated as actual by the historic estimate process.

MRSL and Wells provide meter condition information with their daily read files, which is imported into Orion. Based on the condition code, it is automatically directed to a work queue. Work queues are cleared by each team daily. I reviewed examples of:

- meter register issues, including a different meter being present
- seals present and intact, or signs of tampering and damage
- unsafe installations are sent to the safety management team for action
- property information is sent to the billing team.

All were actioned as expected. No examples of phase failure were available for review.

During the 2016 audit, non-compliance was recorded because MRSL and Wells were not reporting phase failure on CT metered installations, and missing or broken seals. MRSL and Wells' 2017 audits confirmed that they do check for missing and broken seals and phase failure.

#### Audit outcome

Compliant

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

#### Code reference

Clause 6 Schedule 15.2

#### Code related audit information

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

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

#### Audit observation

The process of the application of meter readings was examined.

#### Audit commentary

All AMI systems have a clock synchronisation function, which ensures correct timestamping. Nova imports the midnight AMI midnight readings, which are applied as at 2400hrs.

Manual readings taken by MRSL and Wells and the readings are applied correctly.

The 2016 audit found Nova were using AMI reads for switch event meter readings only if the read date and the switch event date coincide, and recommended AMI reads should be used wherever possible. This recommendation has been implemented.

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 files was examined in **sections 4.3** and **4.10**.

#### 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 eight ICPs not read during the period of supply were reviewed.

#### Audit commentary

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 read process begins after 90 days without an actual read. This makes compliance difficult for any ICPs that are with Nova for a short time. 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 2016 to 30 September 2017. 47 ICPs were not read during the period of supply. Of these, 39 (83%) were supplied for less than 90 days. I reviewed all eight ICPs which had been supplied by Nova for more than 90 days and found:

- For four ICPs, the best endeavours requirement had been met.
- For the other four ICPs, the best endeavours requirement was not met and exceptional circumstances did not exist. In two cases there was no attempt to contact the customer to obtain a read, and in two cases the customer was contacted once, but no read was provided.

#### Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 6.8</p> <p>With: Clause 7(1) and (2) Schedule 15.2</p> <p>From: entire audit period</p>	<p>Some ICPs were not read during the period of supply.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>Controls are rated as moderate because they will mitigate the risk most of the time, but ICPs may remain unread and the best endeavours requirement may not be met where ICPs are supplied for a short period.</p> <p>The impact is assessed as low because in half the cases reviewed, the best endeavours requirement had been met.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p><b>Response:</b> Non-Compliance accepted, remedial action is on-going</p> <p><b>Comments</b> As per our past audit response;</p> <ul style="list-style-type: none"> <li>Nova has put processes in place to use AMI reads post switch completion to improve compliance. Improvements in compliance have been achieved but this process is on-going and is dependent on an AMI meter being installed and communicating.</li> <li>We believe achieving 100% compliance remains unattainable on legacy meter sites when period of supply is short.</li> </ul> <p>Nova agrees that in the 4 cases identified we did not meet the criteria of best endeavours or exceptional circumstances.</p> <p><b>Action</b> Nova will investigate the following and action a solution;</p> <ul style="list-style-type: none"> <li>Look at beginning our no reads process earlier than the current 90 days.</li> <li>Update our reporting criteria to identify those customers that require additional communication or have not received the expected.</li> <li>Introduced other methods of communication to increase our success in contacting the customer.</li> </ul>	On-going	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
As above.	On-going	

#### 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 meter reading frequency reports for the months of April to August 2017 were provided.

A sample of five meter reading frequency reports to the Electricity Authority were reviewed, to determine whether they met the requirements of clauses 8 and 9 of schedule 15.2.

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

Nova provides monthly reports on meter reading frequency to the Electricity Authority. I reviewed the reports for April 2017 to August 2017, 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.

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
April 2017	186	43	80	99.9%
May 2017	187	37	75	99.9%
June 2017	191	35	71	99.9%
July 2017	191	34	66	99.9%
August 2017	197	35	61	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 31 August 2017. 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. The best endeavours requirement was met for all ten ICPs checked.

#### 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 4 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 meter reading frequency reports for the months of April to August 2017 were provided.

Four ICPs not read in the previous four 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 > 4 months	NSPs <90% read	ICPs unread for 4 months	Overall percentage read
April 2017	200	3	379	99.5%
May 2017	201	2	453	99.4%
June 2017	200	2	480	99.4%
July 2017	201	2	463	99.4%
August 2017	204	3	453	99.3%

Compliance with the four month reading requirements was not achieved for three NSPs. Four ICPs connected to those NSPs were affected, and I reviewed them to determine whether exceptional circumstances exist, and if Nova had used their best endeavours to obtain readings.

- two ICPs are electricity substations where health and safety issues prevent meter readers from gaining access and reads are provided by the substation staff and labelled as estimates - exceptional circumstances exist.
- for the other two ICPs, the best endeavours requirement has been met.

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 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 MEP's 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 EDM I 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, EDM I, and EMS as part of their agent audits. Because EMS' audit report is more than seven months old, I confirmed that there have been no changes to their processes since their March 2017 audit.

Nova interrogates generation station 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 EDM I 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, EDM I, and EMS as part of their agent audits. Because EMS' audit report is more than seven months old, I confirmed that there have been no changes to their processes since their March 2017 audit.

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 EDM I 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, EDM I, and EMS as part of their agent audits. Because EMS' audit report is more than seven months old, I confirmed that that there have been no changes to their processes since their March 2017 audit.

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
- interrogation method (always the same).

##### Audit outcome

Compliant

## 7. STORING RAW METER DATA

### 7.1. Trading period duration (Clause 13 Schedule 15.2)

#### Code reference

*Clause 13 Schedule 15.2*

#### Code related audit information

*The trading period duration, normally 30 minutes, must be within  $\pm 0.1\%$  ( $\pm 2$  seconds).*

#### Audit observation

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

Stark sends an automated email to the reconciliation team 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

Nova's agents and MEPs retain a copy of the raw meter data, and their compliance with the archiving and storage requirements was reviewed as part of their agent audits.

Nova's own audit trails were reviewed in **section 2.4**.

Raw meter data from at least 48 months prior was reviewed to ensure that it is retained.

#### Audit commentary

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

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

## 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.

Password protection is in place for Orion to ensure unauthorised personnel cannot access raw meter data. I traced reads for a sample of 32 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 invalidated, but it is possible to delete the invoice header to remove the associated readings from Orion and then re-enter the reads as estimates.

## HHR

I reviewed HHR meter read data in EnergyMarket from September 2013 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 reads cannot be modified without an audit trail being created.

### 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.

### Audit outcome

Compliant

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

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

#### Code reference

Clause 19(1) Schedule 15.2

#### Code related audit information

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

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

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

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

#### Audit observation

Processes for correction of NHH meter readings were reviewed.

#### Audit commentary

Where errors are detected during validation of non-half hour meter readings then firstly 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 30 examples of corrections and found:

Correction type	Number checked	Number reported correctly	Comments
Multiplier	1	1 (100%)	Consumption is adjusted by the multiplier recorded against the meter. Corrections flow through to revision submissions.
Bridged meters	10	9 (90%)	Bridged meters are corrected by replacing the meter on an estimated closing read which captures consumption during the estimated period.  ICP 1000531428PCED0 had the bridged consumption recorded on an occupier customer account, with dates that overlapped another existing account. Because there was more than one read on the same day, Orion ignored the estimated read which included the bridged consumption on the occupier account, and applied the actual read recorded on the customer account when calculating reconciliation consumption.

Correction type	Number checked	Number reported correctly	Comments
Stopped meters	10	9 (90%)	<p>Stopped and faulty meters are corrected by replacing the meter on an estimated closing read which captures consumption during the stopped or faulty period.</p> <p>0000134741TR61C had the estimated closing read including consumption during the stopped period recorded on an occupier account. The dates for this account overlapped a customer account. Because there was more than one read on the same day, Orion ignored the estimated read which included the estimate of consumption during the faulty period, and applied the actual read recorded on the customer account when calculating reconciliation consumption.</p>
Disconnected with usage	9	9 (100%)	<p>Consumption is reported for all open meters regardless of status. Any consumption while disconnected will be reported.</p> <p>One of the examples checked did not have genuine consumption while disconnected. For the other eight examples, consumption recorded during the disconnected period was reported.</p> <p>For seven of the eight ICPs with genuine consumption while disconnected, the status of the ICP had not been updated to active on the registry. This is recorded as non-compliance in <b>section 2.1</b>.</p>

The 2016 audit identified a stopped meter correction for ICP 1000012077BP709 which was calculated using an incorrect read and incorrect period, resulting in under reporting of 12kWh for the period from 30/10/2015 to 10/11/2015. The consumption was washed up in the 14 month revision for November 2015.

- The 2016 audit identified three bridged meter corrections which were processed incorrectly, resulting in a total over submission of 813 kWh. The final revision has now passed, so no further action can be taken to correct the submission values. .

#### Audit outcome

Non-compliant



Non-compliance	Description
<p>Audit Ref: 8.1 With: Clause 19(1) Schedule 15.2</p> <p>From: entire audit period</p>	<p>Corrections were processed incorrectly for one defective meter and one bridged meter.</p> <p>Three incorrectly processed corrections for bridged meters identified during the last audit have not been re-processed correctly.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Once previously</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
<p><b>Low</b></p>	<p>Controls are rated as moderate as they are sufficient to reduce the risk of incorrect consumption most of the time. There is some room for improvement, particularly around the use of overlapping customer and occupier accounts.</p> <p>The risk rating is low, only two of the ICPs checked had corrections processed incorrectly during the audit period.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p>1. Corrections were processed incorrectly for one defective meter and one bridged meter.</p> <p><b>Response:</b> Non-Compliance accepted remedial action underway.</p> <p><b>Comments</b></p> <ul style="list-style-type: none"> <li>The Audit identified that if there was more than one read on the same day, Orion ignored the estimated read (which included the estimate of consumption during the faulty period) and applied the actual read recorded on the customer account when calculating reconciliation consumption.</li> </ul> <p><b>Action</b></p> <ul style="list-style-type: none"> <li>Nova has investigated a solution and will implement the improved process to mitigate on-going occurrences.</li> </ul> <p>2. Three incorrectly processed corrections for bridged meters identified during the last audit have not been re-processed correctly.</p> <p><b>Response:</b> Non-Compliance accepted.</p> <p><b>Comments</b></p> <ul style="list-style-type: none"> <li>Nova implements regular meetings to review calculations and incorrect calculations have reduced.</li> <li>Despite our best endeavours in this instance our revised calculations weren't re-processed and we accept the Non – compliance for over submission.</li> </ul> <p><b>Action</b></p> <ul style="list-style-type: none"> <li>A process will be put in place to check that the revision has flowed through to re-submission.</li> </ul>	<p>Q1</p> <p>Q1</p>	<p>Identified</p>
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>1. Corrections were processed incorrectly for one defective meter and one bridged meter.</p> <ul style="list-style-type: none"> <li>As per our action above.</li> </ul> <p>2. Three incorrectly processed corrections for bridged meters identified during the last audit have not been re-processed correctly.</p> <ul style="list-style-type: none"> <li>As per our action above.</li> </ul>	<p>NA</p>	

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

### Code reference

Clause 19(2) Schedule 15.2

### Code related audit information

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

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

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

### Audit observation

Processes for 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.

- Three corrections related to backdated switch ins or withdrawals. The ICP was not reported in the initial allocation but included in later revisions. Correction involved adding the actual volume data according to the normal process.
- One correction related to a backdated switch out. The ICP was 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.
- Six 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**. An appropriate audit trail was demonstrated, including the relevant period, methodology used, and who conducted the correction.

#### Generation

Compliance with this clause has been demonstrated by EMS as part of their agent audit. Because EMS' audit report is more than seven months old, I confirmed that there have been no data corrections or changes to EMS' processes since their March 2017 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 EDMl and AMS as agents, and by Nova using Stark.

Compliance with the requirements to retain raw reading data was assessed as part of EDMl and AMS' agent audits. Nova retains the raw meter reading data within Stark, and compliant 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. Because EMS' audit report is more than seven months old, I confirmed that that there have been no data corrections or changes to EMS' processes since their March 2017 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, 8.2 and 9.4**.

#### Audit commentary

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

Photo and customer readings are treated as estimates as required by this clause.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 3(4) Schedule 15.2*

#### Code related audit information

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

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

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

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

#### Audit observation

A sample of submission data was reviewed in **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. Because EMS' audit report is more than seven months old, I confirmed that that there have been no changes to their processes since their March 2017 audit.

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 seven temporary estimates and nine permanent 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.

There is a requirement to use “reasonable endeavours” to ensure this data is accurate to within 10%.

Review of the temporary and permanent estimates showed:

- Two estimates were based on register readings.
- 13 estimates were 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.

I compared the temporary estimates with the replacement values for six ICPs and found the estimate was within  $\pm 10\%$  for four ICPs. For the other two ICPs, the difference was more than  $\pm 10\%$  but less than 21 kWh per ICP across the entire period estimated.

Nova has 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. Because EMS' audit report is more than seven months old, I confirmed that there have been no data corrections, data estimations, or changes to EMS' processes since their March 2017 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

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.

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 dollars 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.

Monitoring occurs for consumption where the property is vacant. These ICPs may be active or may show as disconnected. Investigation occurs immediately, and the disconnection process commences. The readings for these ICPs are validated and consumption appears in the relevant submission files.

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.

Disconnected with consumption is not identified through the billing validation process but as described in **section 8.1** is identified through the meter reading process and the consumption is submitted but the ICP status is not updated to align. This is recorded as non-compliance in **section 8.1**.

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**.

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

#### HHR data received from agents

HHR data is collected by AMS and EDM I as agents, and data validation was reviewed as part of their agent audits.

AMS and EDM I email event information to Nova for investigation. AMS emails event data with the volume files, and a summary report mid-month. EDM I emails event data at the end of each month. I saw examples of these emails, which included outages, communication issues and time differences. In all cases reviewed, Nova had taken appropriate action to investigate and make corrections as 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.
- clock synchronisation.

Nova does not routinely review meter data storage device event reports, but does refer to them if a validation exception is created. This is recorded as non-compliance below.

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, and EMS confirmed there have been no changes to their processes since their audit was completed in March 2017.

#### 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) and AMS (for AMS and Smartco meters). AMS and Metrix email event information to Nova for action. I reviewed examples of events emailed 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 out in manual read rounds until the issue is resolved.

Nova have worked with AMS and Metrix provide meter event data via SFTP and in addition to this they advise Nova via email notifications of events that require further investigation. Nova are acting on these as they are received. They are continuing to refine the quality of the meter event data reporting being sent as analysis if this found that it contains a high volume of false positive results. Event data is not provided by ARC. Nova are working with AMS who are developing this reporting on behalf of ARC. This is recorded as non-compliance.

#### EnergyMarket validations

All HHR electronic data is validated in EnergyMarket, as well as on receipt. This validation includes comparison with expected or previous flow patterns, and checks for missing data.

#### Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 9.6</p> <p>With: Clause 17 Schedule 15.2</p> <p>From: entire audit period</p>	<p>Stark meter events are not routinely reviewed by Nova.</p> <p>AMI event logs are not monitored for ARC meters.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Twice previously</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>Controls are rated as moderate, because in most cases metering issues will be identified through Nova's validation processes and the event logs will be checked.</p> <p>The risk rating is low, because there is a small risk that an event affecting meter accuracy may not be identified through the validation checks.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p>1. Stark meter events are not routinely reviewed by Nova.</p> <p><b>Response:</b></p> <ul style="list-style-type: none"> <li>• Non-compliance accepted.</li> </ul> <p><b>Action</b></p> <ul style="list-style-type: none"> <li>• A new monthly report has been created which summarises the meter event information for the Stark meters.</li> <li>• The report was reviewed for all the meter events during December 2017. While the issues identified by the report had already been identified and addressed via other validation reports, this report will provide an additional layer of validation should an error ever be missed by the other validation steps.</li> </ul> <p>2. AMI event logs are not monitored for ARC meters.</p> <p><b>Response:</b></p> <p>Non-Compliance accepted remedial action is on-going.</p> <p><b>Comments</b></p> <ul style="list-style-type: none"> <li>• As per our last Audit response, Nova worked with AMS and Metrix to ensure processes were applied across event logs.</li> <li>• ARC does not currently have event reporting in place.</li> <li>• We do receive AMI no-reads reporting from ARC (which includes non-communicating meters) on a regular basis which is interrogated by Nova.</li> </ul> <p><b>Action</b></p> <ul style="list-style-type: none"> <li>• ARC have committed to providing Nova an interim report on sites not recording consumption (which are not being picked up in their no-reads or non-communicating reporting) in January 2018.</li> <li>• Nova will implement immediate review and subsequent actions.</li> </ul>	<p>Completed December 2017</p> <p>Q1</p>	<p>Identified</p>



## 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. EMS' agent audit was more than seven months ago, and EMS confirmed there have been no changes to their processes since their March 2017 audit, and no issues with generation data for Nova.

#### 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. EMS' agent audit was more than seven months ago, and EMS confirmed there have been no changes to their processes since their March 2017 audit, and no issues with generation data for Nova.

### 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. EMS' agent audit was more than seven months ago, and EMS confirmed there have been no changes to their processes since their March 2017 audit, and no issues with generation data for Nova.

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 was reviewed to confirm the profiles used. Processes to create buying and selling notifications were reviewed. The NZX Reconciliation User Guide was reviewed.

#### Audit commentary

Trading notifications are no longer required for the HHR, RPS, UML, EG1, or PV1 profiles.

Nova has trading notifications in place for all other profiles, and there have not been any breach notifications regarding late trading notifications.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 15.6*

#### Code related audit information

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

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

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

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

#### Audit observation

The process for the calculation of ICP days was examined by checking five NSPs with a small number of ICPs to confirm the AV110 ICP days calculation was correct.

I reviewed variances for 19 months of GR100 reports, and investigated any large discrepancies.

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 seven NSPs with a small number of ICPs each, including NSPs with HHR ICP days only, NSPs with NHH ICPs only, and NSPs with both. The ICP days calculation was confirmed to be correct for the NSPs checked.

I found that ICP days are reported for days where the ICP has inactive status, if there is an 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 19 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
Jan 2016	-0.50%	-0.49%	-0.50%	-0.50%	-	-0.50%
Feb 2016	-0.56%	-0.55%	-0.56%	-0.56%	-	-0.56%
Mar 2016	-0.53%	-0.55%	-0.51%	-0.55%	-	-0.54%
Apr 2016	-0.56%	-0.56%	-0.58%	-0.57%	-	-0.55%
May 2016	-0.58%	-0.54%	-0.59%	-0.59%	-	-0.57%
Jun 2016	-0.58%	-0.60%	-0.60%	-0.60%	-	-0.59%
Jul 2016	-0.61%	-0.62%	-0.62%	-0.60%	-	-0.63%
Aug 2016	-0.60%	-0.61%	-0.60%	-0.58%	-	-
Sep 2016	-0.60%	-0.61%	-0.61%	-0.59%	-0.59%	-
Oct 2016	-0.61%	-0.61%	-0.62%	-0.59%	-	-
Nov 2016	-0.58%	-0.60%	-0.57%	-0.58%	-	-
Dec 2016	-0.60%	-0.61%	-0.57%	-0.58%	-	-
Jan 2017	-0.57%	-0.56%	-0.55%	-0.57%	-	-
Feb 2017	-0.59%	-0.59%	-0.59%	-0.61%	-	-

Month	Ri	R1	R3	R7	R8	R14
Mar 2017	-0.61%	-0.62%	-0.62%	-	-	-
Apr 2017	-0.60%	-0.63%	-0.63%	-	-	-
May 2017	-0.63%	-0.66%	-0.68%	-	-	-
Jun 2017	-0.62%	-0.65%	-0.67%	-	-	-
Jul 2017	-0.68%	-0.68%	-	-	-	-

I reviewed ten NSP level ICP days differences:

- One ICP had an incorrect active date on the registry, resulting in an ICP days discrepancy. The ICP days reported were correct, but a registry discrepancy is noted in **section 2.1**.

ICP	Registry active date	Correct active date	Comments
0001020104SN582	12/01/2016	18/01/2016	ICP days are correctly reported from the meter installation date 18/01/2016.

- Four were timing differences relating to backdated switches and switch withdrawals. The timeliness of switching files is discussed in **section 4**.
- One was a timing difference relating to a status change to active. The timeliness of status updates is discussed in **section 3**.
- 0003721172WF8C8 had a meter change on 15/01/2016 which had not been processed with the correct dates, which resulted in a one day difference. This was corrected prior to the 14 month revision.
- ICP 0001271054PC0FA downgraded from HHR to NHH on 15/07/2016. It is recorded as HHR on the registry until 14/07/2016 and as NHH from 15/07/2016. Because the ICP was reported as HHR up to trading period 15 on 15/07/2017, Nova reported that day as both HHR and NHH on the ICP days submission, resulting in a one day discrepancy. I've raised this as an issue for the Authority to consider.

Issue	Description	Remedial action
Clause 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.	I recommend a Code change so that the last day with half hour submission can be half hour all day and the NHH day starts at the beginning of the next day.

In the 2016 audit, three instances of incorrect ICP days were identified in the January 2016 three month revision. These were rechecked during the audit:

NSP	HHR or NHH	Reg ICP Days	Nova ICP Days	Diff	2016 Comments	2017 Comments
BPE0331	HHR	192	217	-25	One ICP had ICP days for the whole month but it only started on the 25 <sup>th</sup> . Consumption was temporarily estimated as zero for the entire month as well.	<b>Still existing.</b>  Registry ICP days remain 192, and retailer days remain 217 for the 7 and 14 month revisions. The data had been corrected in Stark but had not been transferred to EnergyMarket. A process change has now occurred to ensure that all data is refreshed each month to prevent corrections being missed.  Non-compliance is raised below.
HAM0111	NHH	1719	1718	1	One new connection ICP should have had the meter installed in Orion on the day before to ensure consumption and ICP days are allocated to the correct days.	<b>Cleared.</b>  The issue was resolved after the 7 month revision, ICP days reported and the registry both show 1719 in the 14 month revision.
WTS0011	NHH	31	30	1	One ICP had a meter change during the month. The meter was removed on the 14 <sup>th</sup> but the new meter was not installed in Orion until the 16 <sup>th</sup> .	<b>Cleared.</b>  The issue was resolved after the 7 month revision, ICP days reported and the registry both show 31 in the 14 month revision.

The event detail report was reviewed to identify upgrades from NHH to HHR, and downgrades from HHR to NHH. A sample of three upgrades to HHR and one downgrade were checked; all had been processed correctly.

#### Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 11.2</p> <p>With: Clause 15.6 of part 15</p> <p>From: January 2016</p>	<p>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.</p> <p>ICP days are reported for active, and inactive metered ICPs. According to the code ICP days should only be reported for active ICPs.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Once previously</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<p><b>Low</b></p>	<p>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.</p> <p>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.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>1. One ICP day's 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.</p> <p><b>Response:</b></p> <p>Non-Compliance accepted and remedial action completed.</p> <p>2. ICP days are reported for active, and inactive metered ICPs. According to the code ICP days should only be reported for active ICPs.</p> <p><b>Response:</b></p> <p>Non-Compliance accepted.</p> <p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>Nova will continue to report ICP days for TOU &amp; NTOU inactive metered ICPs with consumption as this ensures any consumption that occurs during the inactive period is reported.</li> </ul>		<p>November 2016</p>	<p>Investigating</p>

Preventative actions taken to ensure no further issues will occur	Completion date	
<p>1. One ICP day's 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.</p> <ul style="list-style-type: none"> <li>The submission process now requires all revisions to be washed-up and kWh &amp; ICP days will be submitted even if there is no change.</li> </ul>	November 2016	

### 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 2015 to August 2017 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.

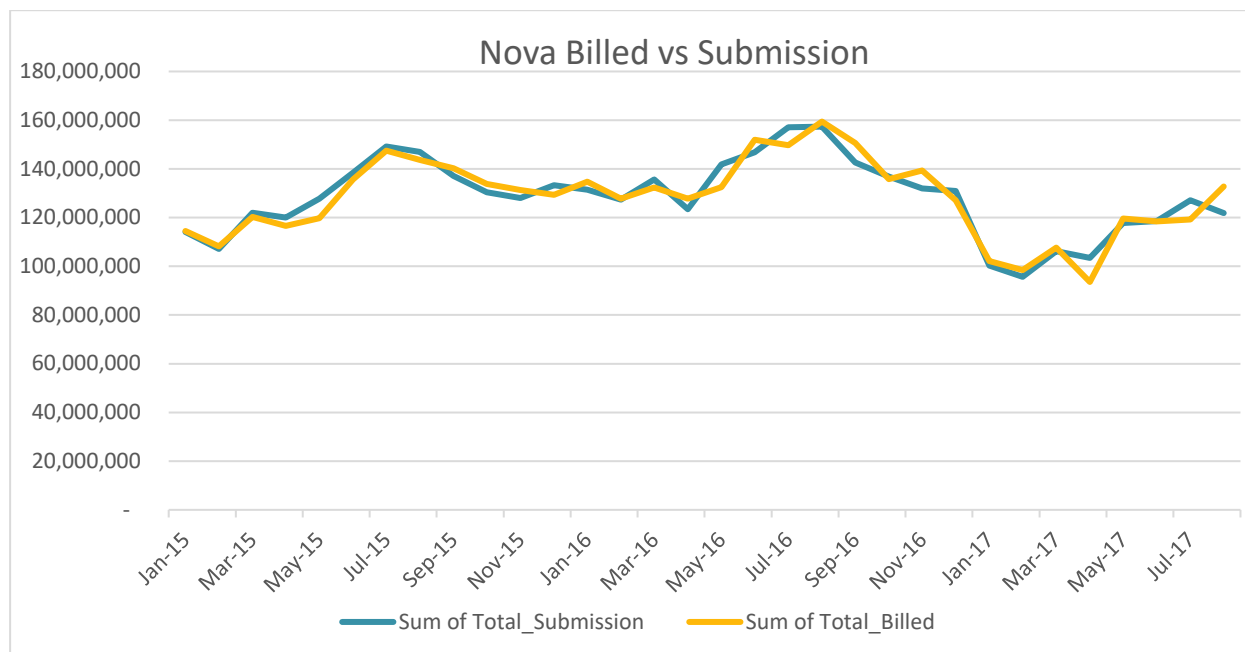
#### Audit commentary

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

The process for the calculation of as billed volumes was examined by checking five NSPs with a small number of ICPs against invoice information. The AV120 billed consumption calculation was confirmed to be correct for the NSPs checked.

I also checked the difference between submission and electricity supplied information for a 32 month period, and the results are shown chart below. The total difference is 0.39% for the two years ended August 2017 (billed higher than submission).

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 12.2**.



The differences appear to relate mainly to timing differences between billed and submitted data.

#### Audit outcome

Compliant

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

#### Code reference

Clause 15.8

#### Code related audit information

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

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

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

#### Audit observation

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

The GR090 ICP Missing files were examined for August 2016 to July 2017. All differences were reviewed.

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 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 four ICPs against the source volume data. Compliance was confirmed.

The GR090 ICP Missing files were examined for all revisions for August 2016 to July 2017. All differences were reviewed and found to be timing differences relating to:

- backdated switches
- backdated status updates to decommissioned.

Late switching files and updates to the registry are discussed in **sections 3** and **4**.

### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.4 With: Clause 15.8  From: entire audit period	HHR aggregates file does not contain electricity supplied information.  Potential impact: Low  Actual impact: Low  Audit history: Once previously  Controls: Strong  Breach risk rating: 1
Audit risk rating	Rationale for audit risk rating
<b>Low</b>	Controls are rated as strong, and the impact as low, because the requirement to report electricity supplied information is an error in the code, and Nova is providing submission information as expected. In most cases, billed volumes would match reported volumes.



Actions taken to resolve the issue	Completion date	Remedial action status
<p><b>Response:</b></p> <p>Non-Compliance not accepted.</p> <p><b>Comments:</b></p> <p>As per our last audit response;</p> <ul style="list-style-type: none"> <li>Nova Energy will continue to prepare the HHR aggregates file at an ICP level based on submission information as required by the Reconciliation Manager.</li> <li>Nova supports a Code change to allow the aggregate files used in practice within the industry to remain unchanged.</li> </ul>	NA	Disputed
<p><b>Preventative actions taken to ensure no further issues will occur</b></p>	<p><b>Completion date</b></p>	
NA	NA	

## 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 EDML 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, EDML, and EMS as part of their agent audits, and AMS' MEP audit. EMS confirmed there have been no changes to their processes since their March 2017 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

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

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)
- Unmetered load quantities for each ICP that has unmetered load associated with it.

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

### 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. Because EMS' audit report is more than seven months old, I confirmed that there have been no changes to their processes for the creation of generation submissions since their audit was completed in March 2017.

### 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**.

### NHH

Nova prepares NHH submissions in EnergyMarket using reconciliation consumption generated in Orion. Further information on calculation of historic estimate is recorded in **section 12.11**, and aggregation of the AV080 report is checked in **section 13.2**.

A sample of NHH ICPs were checked to make sure they are handled correctly, including unmetered load, distributed generation, and vacant ICPs with consumption:

- six ICPs with injection/export registers were checked and found that generation consumption was correctly submitted
- ten ICPs with vacant consumption were checked and found that vacant consumption was correctly submitted
- ten ICPs with unmetered volumes were reviewed, including standard and shared unmetered and found that the correct consumption was submitted.

The 2016 audit identified two NHH submission inaccuracies which have now been corrected.

- ICP 0001262623UN60C is unmetered and was incorrectly recorded as de-energised from 01/04/2004 until 01/02/16. Usage for the de-energised period has been captured from 20/09/2015 and included in 14 month wash up submissions. Correct consumption has been reported for February 2016 onwards.
- ICP 0000764472NV075 had generation consumption recorded as load, due to an incorrect meter configuration recorded on the registry. A correction has been processed for historic consumption from the switch in on 02/12/2015 to 31/10/2016. Generation consumption has been correctly reported from November 2017 onwards.

A sample of corrections were reviewed to ensure that they flowed through to revision submissions in **section 8.1**.

### 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 five months were compared, to confirm zeroing occurs.

#### Audit commentary

##### Generation

Nova validates the consumption information created by EMS by importing it into EnergyMarket and comparing it to the information that Nova has recorded. I reviewed these checks 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. Data is also compared to the previous revision to identify any changes.

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 it appeared in a previous submission for the period but not in the current submission. GR170 and AV080 files for December 2015 to April 2016 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 credits; 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.

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

The registry list was examined.

#### Audit commentary

Review of the registry list 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

The registry list was examined.

#### Audit commentary

Review of the registry list confirmed that Nova does not own any local or embedded networks.

## 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. Because EMS' report is more than seven months old, I confirmed that there have been no changes to their processes for submission of generation data since the audit was completed.

## 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.

## 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 December 2015 to February 2016 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 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**
- aggregation of the AV080, AV110, and AV090/140 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<sub>Px</sub>.*

### 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 Orion.

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	ICPs become Inactive 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	Consumption is calculated to include the 1st day of responsibility.	Compliant
E	ICP switches out part way through a month	Consumption is calculated to include the last day of responsibility.	Compliant

Test	Scenario	Test Expectation	Result
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

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.

#### 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 7/8	Revision 14	Total Balancing Areas
Apr 2016	0	0	0	0	103
May 2016	0	0	0	0	103
Jun 2016	0	0	0	0	104
Jul 2016	0	0	0	0	106
Aug 2016	0	0	0	-	107
Sep 2016	0	0	0	-	114
Oct 2016	0	0	0	-	118
Feb 2017	0	0	8	-	118
Mar 2017	0	0	-	-	119
May 2017	0	4	-	-	121

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

Month	Revision 1	Revision 3	Revision 7/8	Revision 14
Apr 2016	-1.21%	-0.42%	-0.35%	-0.37%
May 2016	-5.07%	-3.90%	-3.47%	-3.54%
Jun 2016	-4.25%	-3.12%	-3.09%	-3.11%
Jul 2016	-2.98%	-1.34%	-1.37%	-1.40%
Aug 2016	0.38%	-0.24%	-0.22%	
Sep 2016	4.20%	3.39%	3.33%	
Oct 2016	4.96%	4.61%	4.57%	
Feb 2017	-0.67%	-0.96%	8.30%	-
Mar 2017	-0.82%	-0.09%	-	-
May 2017	-6.23%	3.67%	-	-

I reviewed all balancing area differences where the variation between revisions was more than  $\pm 15\%$  and  $\pm 100,000$  kWh). In all cases, the differences could be explained by the backdated NHH to HHR changes for AMI ICPs. Once the volumes for these ICPs were removed from the difference calculation, none of the NHH differences were over the  $\pm 15\%$  and  $\pm 100,000$  kWh threshold.

#### Audit outcome

##### Non-compliant

Non-compliance	Description
Audit Ref: 12.12 With: Clause 6 of Schedule 15.3  From: entire audit period	The accuracy threshold was not met for all months and revisions. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1

Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>Controls are rated as strong, as they are sufficient to ensure data is within the accuracy threshold except where an ICP has changed submission type between revisions.</p> <p>Initial data is replaced with revised data, and washed up.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p><b>Response:</b></p> <p>Non-Compliance not accepted.</p> <p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>The balancing areas where variations between revisions was more than <math>\pm 15\%</math> and <math>\pm 100,000</math> kWh were due to ICPs on RPS being migrated to AMI HHR submissions after the initial submission for that month had occurred.</li> <li>The method used by the auditor to identify these variations was at a balancing area level, then additionally broken down by metering type. As noted by the auditor above, if the profile change ICPs are accounted for, the balancing areas would not have exceeded variations of more than <math>\pm 15\%</math> and <math>\pm 100,000</math> kWh.</li> <li>Clause 6(3) of Schedule 15.3 states 'The methodology used for calculating a forward estimate may be determined at the discretion of the reconciliation participant, and only if the reconciliation participant ensures that the accuracy of its initial submission information against each subsequent revision cycle submission information for each balancing area is within the percentage of error specified and published, from time to time, by the Authority', it does not state that this comparison needs to be made at the metering type level.</li> </ul>		NA	Disputed
Preventative actions taken to ensure no further issues will occur		Completion date	
NA		NA	

## 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 01/03/2017 to 30/09/2017 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 the reports was examined.

#### 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 AV080 NHH volumes aggregation process was examined by checking five NSPs with a small number of ICPs each. The AV110 ICP days aggregation process was examined by checking five NSPs with a small number of ICPs each. The aggregation was confirmed to be correct.

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 are completed by EMS as Nova's agent. Compliance was assessed as part of their agent audit.

#### Audit commentary

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

Compliance with this clause has been demonstrated by EMS as part of their agent audit. Because EMS' report is more than seven months old, I confirmed that there have been no changes to their processes for submission of generation data since the audit was completed.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 10 Schedule 15.3*

#### Code related audit information

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

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

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

#### Audit observation

The timeliness of submissions of historic estimate was reviewed in **section 12.2**. I reviewed nine months of AV080 reports to determine whether historic estimate requirements were met.

#### Audit commentary

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

The table below shows that the HE threshold was not met for three NSPs for the November 2016 three month revision. Overall Nova's compliance in this area is very high.



Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Dec 2015			178	178
Jan 2016			179	179
Feb 2016			182	182
Mar 2016		183		183
Apr 2016		183		183
May 2016		183		183
Sep 2016	195			195
Oct 2016	197			197
Nov 2016	195			198

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
Dec 2015	-	-	100.0%
Jan 2016	-	-	100.0%
Feb 2016	-	-	100.0%
Mar 2016	-	100.0%	-
Apr 2016	-	100.0%	-
May 2016	-	100.0%	-
Sep 2016	99.6%	-	-
Oct 2016	99.6%	-	-

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Nov 2016	99.5%	-	-

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 13.4 With: Clause 10 of Schedule 15.3  From: entire audit period	Historic estimate thresholds were not met for some revisions. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate, 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
<b>Response:</b> Non-Compliance accepted.  <b>Comments:</b> <ul style="list-style-type: none"> <li>100% HE has been achieved for R14 from Jan 2016 to-date (Oct 2016 R14).</li> <li>Any Forward Estimates at R14 will continue to be checked.</li> <li>'Permanent estimate' read types will continue to be applied.</li> </ul>		NA	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
NA		NA	

## CONCLUSION

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

This audit found 19 non-compliances, makes no recommendations and raises one issue.

Nova has continued to make progress in resolving non-compliance issues during the audit period, and seven of the non-compliances raised in the 2016 audit have now been cleared. In several of the areas where non-compliance still exists, some improvements have also been made, specifically in the areas of registry maintenance with 97% of all new connections updated within five days. This is as a result of the strong focus Nova places on compliance.

The positive highlights from this audit are as follows:

- most required corrections identified during the previous audit have been processed
- 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.

There are a small number of audit findings that affect the accuracy of submission information, as follows:

- two NHH corrections were not processed accurately
- inactive ICP days are included in the ICP days submissions, but this process ensures that any consumption that occurs during the inactive period will also be reported
- 17 ICPs with incorrect active periods recorded, these have been largely identified through data cleansing that is underway on historic data mismatches prior to the robust registry discrepancy process that is in place now.

The next audit frequency table indicates that the next audit be due in 12 months. I have considered this result in conjunction with Nova's comprehensive responses and their continued effort to improve compliance year on year and my recommendation for the next audit is 18 months.

## PARTICIPANT RESPONSE

Nova has reviewed this audit and their comments are recorded in the report. No further comments were provided.