ELECTRICITY INDUSTRY PARTICIPATION CODE

RECONCILIATION PARTICIPANT AUDIT REPORT

For

PULSE ENERGY ALLIANCE LP

Prepared by: Ewa Glowacka – TEG & Associates Ltd
Date audit commenced: 29 October 2019
Date audit report completed: 28 November 2019
Audit report due date: 01-Dec-19

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This reconciliation participant audit was performed at the request of Pulse Energy Alliance LP to support their application for certification, in accordance with clause 4 of Schedule 15.1 of The Code 2010. The relevant clauses audited are as required by the Guidelines for Reconciliation Participants Audits V 7.2 issued by the Electricity Authority.

At the time of the audit, Pulse Energy was trading 76,185 NHH ICPs. The company uses two participant codes, PUNZ and PPPP. The PUNZ code is used for NHH and HHR ICPs, PPPP is used for NHH pre-pay ICPs, which are read remotely. This audit has examined compliance for both codes. Processes used for both registry codes are the same.

To trade pre-pay customers Pulse Energy commissioned a new system. The material change audit of the new system was conducted by Tara Gannon of Veritek. The audit report was finalised on 10 July 2019. JC Consulting will provide the reconciliation services as Pulse Energy's agent. The first 2 ICPs were switched on 30/10/19.

To assist us in assessing compliance with the Code, Pulse Energy provided registry files such as EDA, LIS, PR-255, Switch Breach Report, Audit Compliance Report for the period 10/01/2019 to 30/10/19, and any other information requested for the audit .During the audit we reviewed all agents audit reports and audited JC Consulting and AccuCal.

Since the last audit, Pulse Energy has implemented a number of reports which run weekly or monthly, to addresses previously identified non-compliances. It is evident that such an active approach has given positive results. The level of compliance has improved. 25 non-compliances and 1 recommendation were recorded during the audit.

The level of compliance has improved in the following areas:

- Switch Breach Report noted only late RR file, other switching activities were complete in time
- More timely registry updates, less backdated entries
- Monitoring no -reads and consumption recorded for vacant ICPs

The main issues identified during this audit are:

- Partly non-compliant data provided by AccuCal
- Using Move Switch instead of Standard Switch
- Switching, registry updates, and billing are well documented but no documentation of reconciliation processes

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. Table 1 of the Guidelines for Reconciliation Participant audit provides some guidance on this matter. The Future Risk Rating score is 51 which results in an indicative audit frequency of 6 months. Our recommendation is 12 months. This should allow the time necessary for Pulse Energy to prove that the new processes in place are giving the desired results.

We thank Pulse Energy's staff for their full and complete cooperation in this audit. Their response to any request for information or clarification was answered in a timely manner and each time in depth, supporting evidence was provided.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Relevant information	2.1	11.2	Discrepancies between Gentrack and the registry. Incorrect information in CS files, incorrect submission volumes for 1000023001BP357	Moderate	Low	2	Identified
Provision of information	2.2	15.35	4 breaches were recorded for late or inaccurate submissions	Moderate	Low	2	Identified
Audit trails	2.4	21 of Schedule 15.2	No audit trail for changes made directly in COBRA's database	Moderate	Low	2	Identified
Electrical connection	2.11	10.33A	13 reconnections had expired certification recorded on the registry when they were reconnected	Moderate	Low	2	Identified
Changes to registry	3.3	10 of Schedule 11.1	Late updates of "inactive" and "active" status and trader information	Moderate	Low	2	Identified
Provision of information to the registry manager	3.5	9 of Schedule 11.1	20 late updates to "active" status and incorrect profile for 38 ICPs (solar)	Moderate	Low	2	Identified
ANZSIC codes	3.6	9(1)(k) of Schedule 11.1	4 ICPs had incorrect ANZSIC code recorded in the registry	Strong	Low	1	Identified
Changes to unmetered load	3.7	9(1)(k) of Schedule 11.1	Unmetered load incorrectly recorded for one ICP	Strong	Low	1	Identified
Management of "active" status	3.8	17 of Schedule 11.1	5 ICPs with incorrect "active" date	Moderate	Low	2	Identified
Losing trader	4.3	5 of	Average daily	Moderate	Low	2	Identified

must provide final information - standard switch		Schedule 11.3	consumption methodology is incorrect for ICPs which usage is less than 1 kWh. Information for a small number of ICPs is incorrect is incorrect				
Retailers must use same reading - standard switch	4.4	6(1) and 6A of Schedule 11.3	10 late RR files for standard switch	Strong	Low	1	Identified
Non-half hour switch event meter reading - standard switch	4.5	6(3)(a) of Schedule 11.3	17 RR files provided by a gaining trader (AMI reads) within 5 BD were not accepted	Moderate	Low	2	Identified
Gaining trader informs registry of switch request - switch move	4.7	9 of Schedule 11.3	Incorrect type of switch used	Weak	Low	3	Identified
Losing trader must provide final information - switch move	4.10	11 of Schedule 11.3	Average daily consumption methodology is incorrect for ICPs which usage is less than 1 kWh. Information for a small number of ICPs is incorrect	Moderate	Low	2	Identified
Gaining trader changes to switch meter reading - switch move	4.11	12 of Schedule 11.3	16 late RR files for Switch Move	Moderate	Low	2	Identified
NHH meters interrogated annually	6.9	8(1) of Schedule 15.2	100% attainment was not achieved for more than 251 NSPs over 7 months	Moderate	Low	2	Identified
NHH meters 90% read rate	6.10	9(1) of Schedule 15.2	90% attainment was not achieved for 4 months (19 ICPs)	Moderate	Low	2	Identified
HHR interrogation data requirements	6.13	11(2)(e) of Schedule 15.2	No interrogation log is generated by the interrogation software to record details of all interrogations for readings provided by	Moderate	Low	2	Identified

			AccuCal				
HHR interrogation log requirements	6.14	11(3) of Schedule 15.2	No interrogation log created for readings provided by AccuCal (proprietary software is used)	Weak	Low	3	Identified
Meter data used to derive volume information	9.3	3(5) of Schedule 15.2	Meter data used for reconciliation is truncated or rounded for 65% ICPs	Weak	Medium	6	Identified
HHR aggregates information provision to the reconciliation manager	11.4	15.8	HHR aggregates information provision to the reconciliation manager	Strong	Low	1	Not required. The Code change required a line up with RN file specification. Breach risk rating excluded from total
Creation of submission information	12.2	15.4	Two breaches were recorded for late provision of submission volumes in Feb'19 and June'19	Strong	Low	1	Identified
Accuracy of submission information	12.7	15.12	Inaccurate submission for 1000023001BP357 (Barrage export)	Weak	Low	3	Identified
Permanence of meter readings for reconciliation	12.8	4 of Schedule 15.2	Some forward estimates are not replaced by permanent estimates in R14	Moderate	Low	2	Identified
Forwards estimates process	12.12	6 of Schedule 15.3	Forward estimates do not meet +/- 15% threshold for 7 balancing areas	Moderate	Low	2	Identified
Historical estimate reporting	13.3	10 of Schedule 15.3	Historical estimates target not met for R3, R7, and R14	Moderate	Low	2	Identified
Future Risk Rating						51	
Next audit date							

Future risk rating	0-1	1-3	4-15	16-40	41-55	56+
Indicative audit frequency	36 months	24 months	18 months	12months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Description	Recommendation
Allocation of submission information	12.3	Processes used by the Reconciliation Team are not documented	Document reconciliation processes as soon as possible

ISSUES

Subject	Section	Description	Issue
			Nil

1. ADMINISTRATIVE

1.1. Exemptions from Obligations to Comply with Code (Section 11)

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

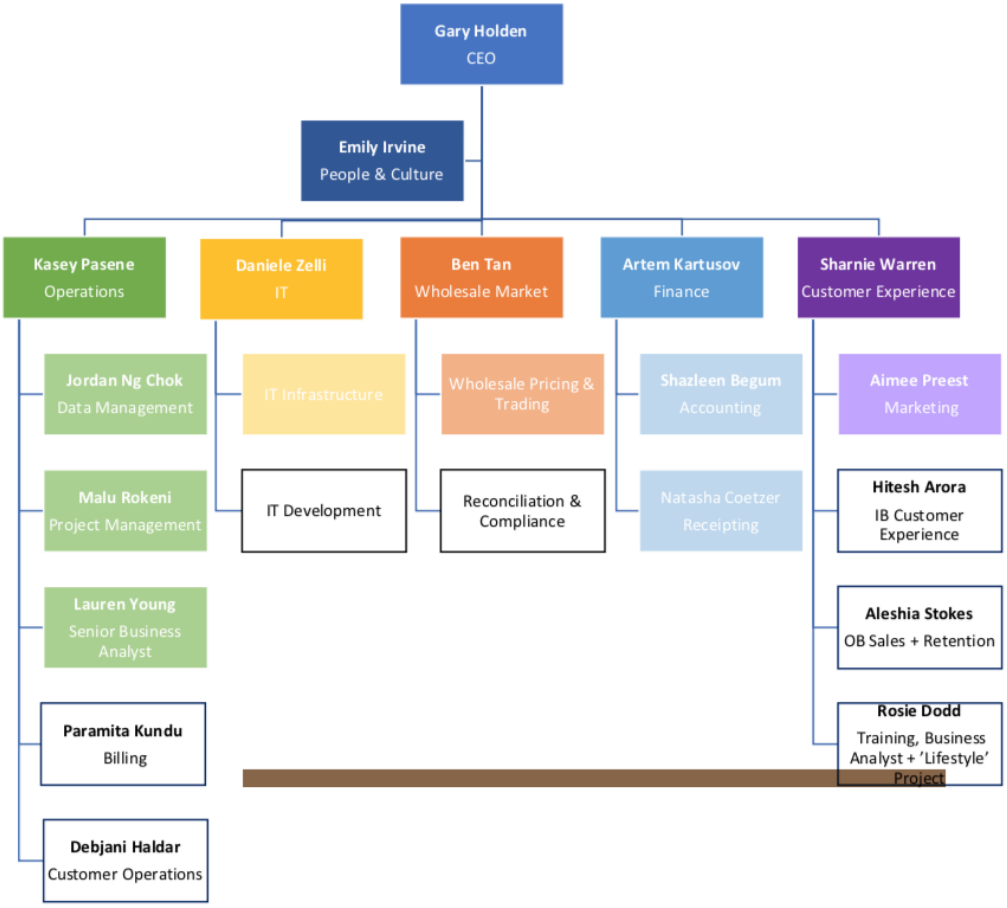
Audit observation

Pulse Energy does not have any exemptions granted to exempt them from compliance with all or any of the clauses.

Audit commentary

Pulse Energy did not apply for any exemptions. We checked the Electricity Authority website and confirm that there are no exemptions in place.

1.2. Structure of Organisation



1.3. Persons involved in this audit

Name	Title	Company
Mike Kew	Reconciliation and Compliance	Pulse Energy
Debjani Haldar	Customer Operation Team Leader	Pulse Energy
Paramita Kundu	Billing Team Leader	Pulse Energy
Edward Pokoroa	Field Services Team Lead	Pulse Energy
Marek Tomecki	Senior Reconciliation Analyst	Pulse Energy
Jason Ting	Reconciliation Analyst	Pulse Energy
Qiuwei Hui	Solution Architect	Pulse Energy
Keerthi Arul	Project Administrator	Pulse Energy
John Candy	Director	JC Consulting
Russell Mann	Director	AccuCal
Ewa Glowacka	Electricity Authority Approved Auditor	TEG & Associates

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

Pulse Energy uses the following agents to fulfil their obligations covered in the scope of this audit:

- Wells – NHH readings
- AMS and EDMI – HHR readings
- AccuCal -HHR readings (2 ICPs)
- JC Consulting – reconciliation services for PPPP (2 ICPs)

Audit commentary

As a part of this audit we audited work done by AccuCal (provision of metering data for 2 ICPs) and JC Consulting. Details are in the relevant parts of this audit.

We reviewed the Wells audit report dated 04/06/2019, AMS audit report dated 23/05/19, and EDMI audit report dated 28/8/19. The EDMI audit report identified 3 non-compliances. None of these non-compliances are relevant to the Pulse Energy operation.

Pulse Energy understand their responsibilities in relation to this clause.

1.5. Hardware and Software

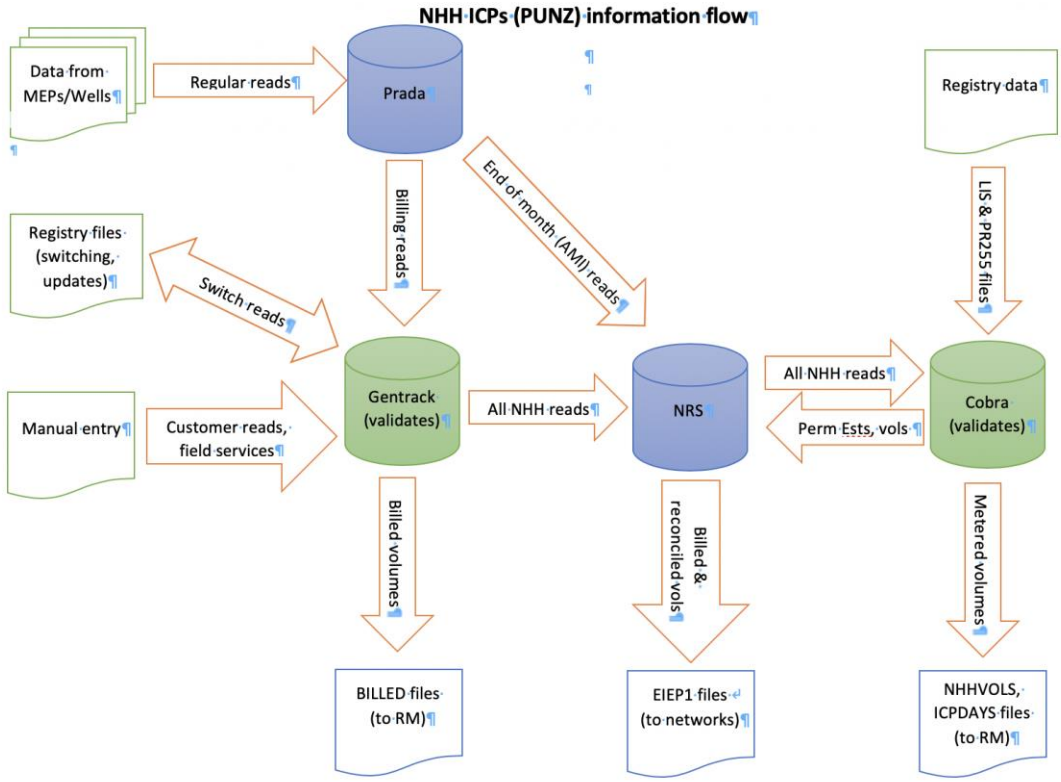
The main systems are as follows:

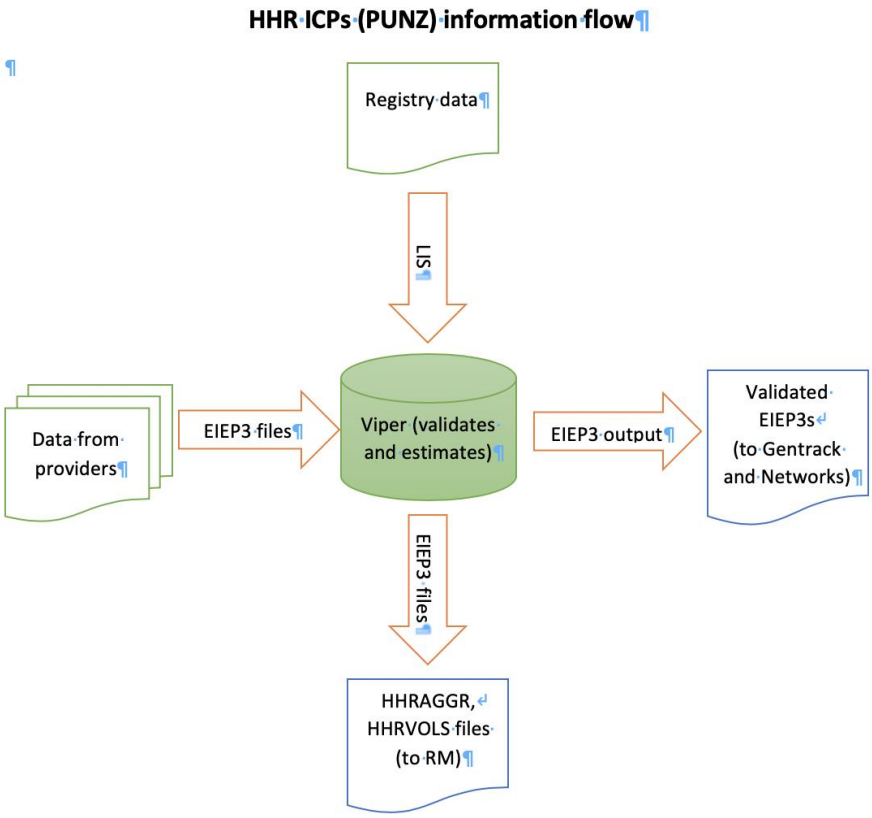
- Gentrack – switching, registry management, and billing
- COBRA – NHH reconciliation

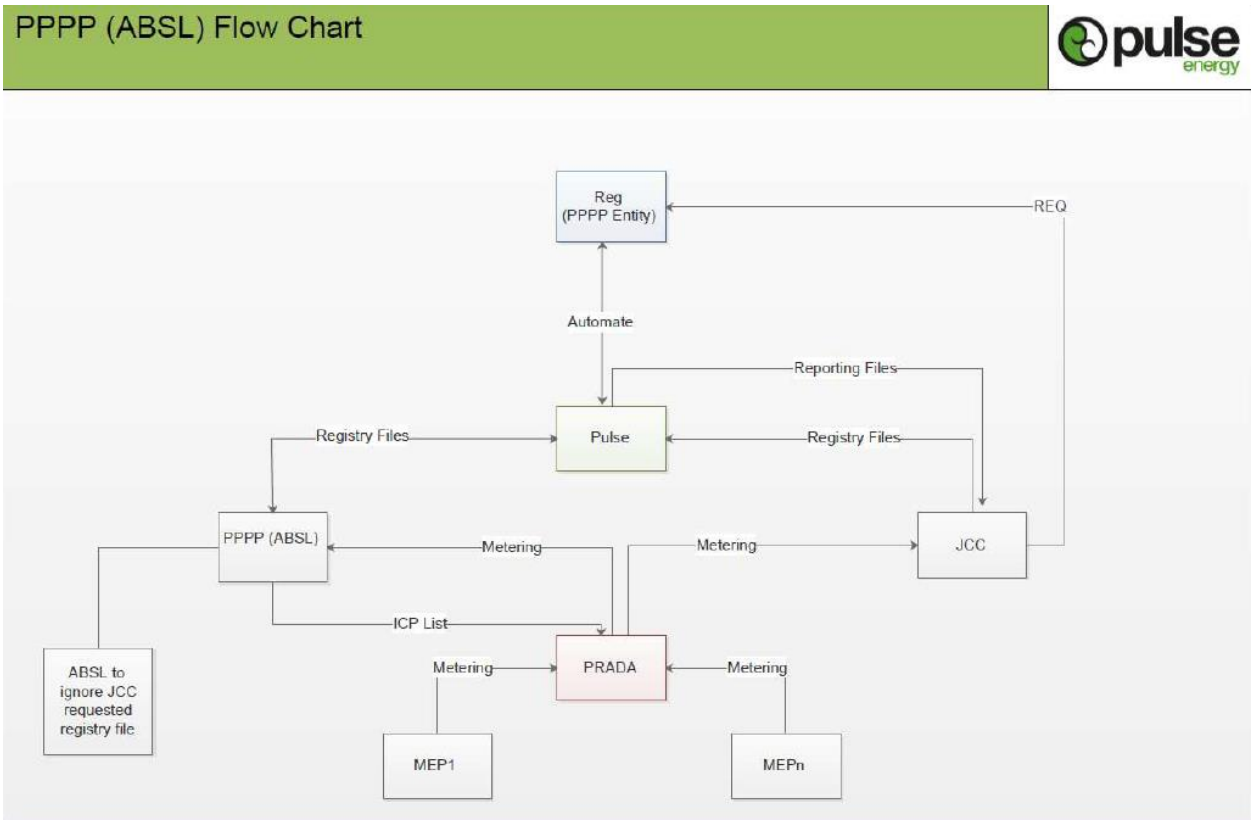
- VIPER – HHR reconciliation
- PRADA – data warehouse
- ABSL – management of pre-pay customers and their readings
- Two routines written in Python to daylight shift data from AccuCal when required and create files for NSPVOLS and HHRVOLS for submissions

The backup schedule/rotation consists of four daily backups (Monday to Thursday), four weekly backups (Friday), two monthly backups (last business day) and a quarterly backup, a new tape is always used. The daily backups are incremental, with all other backups being full. Validation and integrity checks are performed on all backups.

The diagrams below show a configuration of the system and information flow for HHR and NHH ICPs between different databases. The PUNZ code is used for both NHH and HHR ICPs reconciliation, PPPP ICPs are reconciled as NHH only.







1.6. Breaches or Breach Allegations

A number of breaches were lodged against Pulse Energy in the period covered by this audit.

Ref	Status	Result	Decision Date	Impact	Clause	Summary
1811PEAL1	Closed early closure	Early closure	13/02/19	Low	15.4(2)	PUNZ failed to submit data to the reconciliation manager by 16:00 on business day
1901PEAL1	Closed	Early closure	13/02/19	Low	15.4(1)	Pulse initially submitted an overstatement of volume on BD 13, 24th December
1904PEAL1	Closed	Decline to pursue with warning	27/06/19	Medium	15.2(1) 15.4(2)	Pulse became aware that it had materially over-submitted consumption for the R14 washup for January 2018. The Reconciliation Manager was notified, and revised information was submitted later that morning.
1904PEAL2	Closed	Early closure	27/06/19	Low	15.4(2)	Pulse Utilities New Zealand Alliance LP (PUNZ) has failed to submit data to the reconciliation manager by 16:00 on March 19th BD 13 in breach of Part 15.4 (2) of the Code. PUNZ re-submitted the data at 12:38 on the 20th March BD14.

On 5th July 2019, Pulse Energy received a warning letter from Electricity Authority.
On 27 June 2019, the Authority's Compliance Committee considered the breaches of clause 15.2(1) and clause 15.4(2) of the Electricity Industry Participation Code 2010 by Pulse Energy Alliance LP (Pulse). The Committee decided to not investigate the breaches further.
The Committee decided to warn Pulse that the Committee:

- expects strict compliance with the requirements of clause 15.2(1) and 15.4(2)
- will monitor Pulse LP's compliance performance with these clauses
- may formally investigate any further non-compliance with these clauses.

1.7. ICP Data

PUNZ

Metering Category	(22/10/2019)	(01/2019)	(2018)
1	75,973	76,465	71,822
2	162	156	100
3	7	7	1
4	4	4	2
5	2	2	1
9	6	2	5

Status	Number of ICPs (22/10/19)	Number of ICPs (01/19)	Number of ICPs (2018)
Active (2,0)	75,536	75,649	71,933
Inactive – new connection in progress (1,12)	0	3	9
Inactive – electrically disconnected vacant property (1,4)	544	223	259
Inactive – electrically disconnected remotely by AMI meter (1,7)	25	18	22
Inactive – electrically disconnected at pole fuse (1,8)	34	4	5
Inactive – electrically disconnected due to meter disconnected (1,9)	8	2	1
Inactive – electrically disconnected at meter box fuse (1,10)	2	0	1
Inactive – electrically disconnected at meter box switch (1,11)	10	4	4
Inactive – electrically disconnected ready for decommissioning (1,6)	25	32	29
Inactive – reconciled elsewhere (1,5)	1	0	0
Decommissioned (3)	714	590	534

PPPP

Metering Category	(13/11/2019)	date	Date
1	3		
2	0		
3	0		
4	0		
5	0		
9	0		

Status	Number of ICPs (13/11/19)	Date	Date
Active (2,0)	3		
Inactive – new connection in progress (1,12)	0		
Inactive – electrically disconnected vacant property (1,4)	0		
Inactive – electrically disconnected remotely by AMI meter (1,7)	0		
Inactive – electrically disconnected at pole fuse (1,8)	0		
Inactive – electrically disconnected due to meter disconnected (1,9)	0		

Inactive – electrically disconnected at meter box fuse (1,10)	0		
Inactive – electrically disconnected at meter box switch (1,11)	0		
Inactive – electrically disconnected ready for decommissioning (1,6)	0		
Inactive – reconciled elsewhere (1,5)	0		
Decommissioned (3)	0		

1.8. Authorisation Received

Pulse Energy provided a letter of authorisation to TEG & Associates permitting the collection of data from other parties for matters directly related to the audit.

1.9. Scope of Audit

This reconciliation participant audit was performed at the request of Pulse Energy. Clause 16A.24(b) of The Code puts the obligation on the reconciliation participant to obtain Authority approval before performing a function listed in clause 15.38(1), to assure compliance with the Electricity Industry Participation Code 2010. The audit was carried out at 33 Enfield Street, Mt Eden, Auckland on 29 October 2019 and 7, 8 and 19 November 2019. The table below shows the tasks under clause 15.38 of part 15 for which Pulse Energy requires certification.

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Relevant to audit	Agents Involved in Performance of Tasks
(a) - Maintaining registry information and performing customer and embedded generator switching	✓	
(b) – Gathering and storing raw meter data	✓	EDMI – HHR AMS – HHR AccuCal – HHR Wells - NHH
(c)(i) - Creation and management of HHR volume information	✗	
(c)(ii) - Creation and management of NHH volume information	✗	
(c)(ii) - Creation and management of HHR and NHH volume information	✓	JC Consulting for PPPP ICPs
(c)(iv) - Creation and management of dispatchable load information	✗	
(d)(i) – Calculation and delivery of ICP days under clause 15.6	✓	JC Consulting for PPPP ICPs
(d)(ii) - delivery of electricity supplied information under clause 15.7	✓	JC Consulting for PPPP ICPs
(d)(iii) - delivery of information from retailer and direct purchaser half hourly metered ICPs under clause 15.8	✓	JC Consulting for PPPP ICPs
(e) – Provision of submission information for reconciliation	✓	JC Consulting for PPPP ICPs

(f) - Provision of metering information to the grid owner in accordance with subpart 4 of part 13	✗	

1.10. Summary of previous audit

The previous audit was conducted in Jan'19 by Rebecca Elliot and Tara Gannon of Veritek. The following non-compliances were identified.

Subject	Section	Clause	Non-Compliance	Comment
Relevant information	2.1	11.2 & 15.2	Discrepancies between Gentrack and the Registry	Still exits
Provision of information	2.2	15.35	One breach was recorded for late provision of submission information	Still exits
Audit trail	2.4	21 of Schedule 15.2	Viper audit trails do not record the operator identifier for the person who completed the activity; there is only one operator identifier for Viper	Still exits
Electrical connection of point of connection	2.11	10.33A	15 reconnections had expired certification recorded on the registry when they were reconnected	Still exits
Changes to registry information	3.3	10 of Schedule 11.1	173 late updates to active status and 60 late updates to inactive status. 186 late MEP nominations. 453 late trader updates	Still exits
Trader responsibility for an ICP	3.4	11.18	Final reads not used for two decommissioned ICPs	Cleared
Provision of information to the registry manager	3.5	9 of Schedule 11.1	77 late updates to active	Still exits
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	Ten ICPs with incorrect ANZSIC codes	Still exits
Changes to unmetered load	3.7	17 of Schedule 11.1	Unmetered load incorrectly recorded for one ICP	Still exits
Losing trader response to switch request and event dates- standard switch	4.2	3 and 4 Schedule 11.3	Four incorrect AN response codes were applied	Cleared
Losing trader must provide final information – standard switch	4.3	5 of Schedule 11.3	Average daily consumption calculation methodology incorrect Six of 12 examples of questionable average daily consumptions checked found to be incorrect	Still exits

Retailers must use same reading-standard switch	4.4	6(1) of Schedule 11.3	Eight late RR files for transfer switches. Three RRs were not supported by two validated actual reads	Still exits
Gaining trader informs registry of switch request - switch move	4.7	9 of Schedule 11.3	Incorrect switch type used for three ICPs (all related to the ICPs moving from Property Power to Pulse). Some NTs not issued for the correct gain date and therefore not issued within two days after pre-conditions were cleared	Still exits
Losing trader provides information - switch move	4.8	10(1) of Schedule 11.3	Four incorrect AN response codes applied. Pulse proposed an event date more than ten business days after NT receipt for two switch moves	Cleared
Losing trader determines a different date - switch move	4.9	10(2) of Schedule 11.3	Pulse proposed a different event date more than ten days from receipt of NT for two switch moves. Both switches were later completed with the same date as the gaining trader requested	Cleared
Losing trader must provide final information –switch move	4.10	11 of Schedule 11.3	Average daily consumption calculation methodology incorrect. 12 of 15 examples of questionable average daily consumptions checked found to be incorrect Three ICPs with reads incorrectly labelled as actual. One ICP sent with the incorrect final read	Still exits
Gaining trader changes to switch meter reading - switch move	4.11	12 of Schedule 11.3	Five late RR files for switch moves. Three RRs were not supported by two validated actual reads	Still exits
Withdrawal of switch requests	4.15	18 of Schedule 11.3	1 incorrect NW code applied 45 late NW files	Cleared
Electricity conveyed & notification by embedded generators	6.1	10.13, and 15.13	Energy is not metered and quantified according to the Code where meters are bridged.	Cleared
Derivation of meter readings	6.6	3(1), 3(2) and 5 Schedule 15.2	Meter condition information provided by Wells is not routinely reviewed Seven photo reads were treated as validated, when they had not been validated against at least two actual reads from other sources.	Cleared

Interrogate meter once	6.8	7(1) and (2) Schedule 15.2	Two ICPs were unread during the period of supply. Exceptional circumstances did not apply, and the best endeavours requirement was not met	Cleared
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	For nine ICPs without an actual read for 12 months, exceptional circumstances could not be confirmed, and there was insufficient evidence that the best endeavours requirement was met	Cleared
NHH meters 90% read rate	6.10	9(1) and (2) Schedule 15.2	For NSPs without at least 90% of ICPs read within four months, exceptional circumstances could not be confirmed, and there was insufficient evidence that the best endeavours requirement was met	Still exits
Correction of NHH meter readings	8.1	19(1) Schedule 15.2	Two corrections for defective meters from the 2018 audit have not been processed. Five corrections for bridged meters have not been processed, including three relating to the 2018 audit	Cleared
Correction of HHR metering information	8.2	19(2) Schedule 15.2	Estimates replaced some actual HHR data for October 2018	Cleared
Identification of readings	9.1	3(3) Schedule 15.2	Seven ICPs with customer photo reads were treated as validated, when they had not been validated against at least two actual reads from other source	Cleared
NHH metering information data validation	9.5	16 Schedule 15.2	Actual reads not applied when negative consumption is present	Cleared
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	Meter event information for AMI meters is not consistently reviewed	Cleared
HHR aggregates information provision to the reconciliation manager	11.4	15.8	HHR aggregates files do not contain electricity supplied information. One breach was recorded for late provision of HHR submission information in November 2018	Still exits
Creation of submission information	12.2	15.4	One breach was recorded for late provision of HHR submission information in November 2018	Still exits
Accuracy of submission information	12.7	15.12	Some submission information was inaccurate	Still exits
Permanence of meter	12.8	4 Schedule	Some estimates are not replaced by	Still exits

readings for reconciliation		15.2	revision 14	
Forward estimate process	12.12	6 Schedule 15.3	The accuracy threshold was not met for all months and revisions	Still exits
Historical estimate reporting to RM	13.3	10 of Schedule 15.3	Historic estimate thresholds were not met for some revisions	Still exits

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

We reviewed the LIS file and Audit Compliance report for the period covered by this audit to assess compliance. We also conducted sampling of the CS and RR files and validated reconciliation files.

Audit commentary

We identified three places where information provided to participants was incorrect.:

Section 4.3 and **4.10** described that, in some CS files, the flag "E" was used even if the date of the last actual read was in the past, a small number of ICPs had negative daily kWh or due to Gentrack' rounding process daily kWh was "0", when in fact it was less than 1.
Section 12.7 we identified incorrect submission volumes for ICP 1000023001BP357

The analysis of the LIS file and PR-255 found the following:

Issue	ICP	Comment
ANZSIC code assigned as T99	1000027853BPD57	corrected on 6/11/19
UML flag "Y", daily unmetered kWh =1	0000505719DEDE4	DUNE did not record UML in the registry
vacant property, no meter 26/06/17	0000177260TP36D	
vacant property, no meter since 16/6/19	0257351701LC47D	
"active" ICP, no meter details	0000018327EA0BC 0000556890TP8A2 0119117118LC656	NGCM accepted nomination on 18/9/19 NGCM accepted nomination on 18/9/19 FCLM accepted nomination on 21/01/19
Import/export metering, profile RPS	14 ICPs	corrected on 30/9/19 before the reconciliation run
Discrepancy between metering certification date and "active" status	1002056270UN635 (-11 days) 0001113069WM387 (- 62 days) 1002062564UN53C (- 7 days) 0000570502NR2B8 (-88 days)	Incorrect "active" date by PUNZ; it is always earlier than Metering Installation Certification Date

	1099577961CN2F3 (-72 days) 0000009190TEEEB (-26 days)	

Weekly and monthly reports are to monitor data integrity:

Report Name	Frequency	Process
UML Audit	Monthly	Captures mismatches. Field Services picks these up and fixes them in GT/registry
Multiplier Check	Monthly	Captures mismatches. Field Services picks these up and fixes them in GT/registry
Meter Certification Expiry	Monthly	This report captures all ICPs where the meter certification has expired. Field Services Team communicates with the MEPs to have the meter certification updated. Where MEPs send access issues/turndown lists to PUNZ, we contact the customer to arrange access to recertify these meters and issue work orders back to retailers.
ADL Zero	Weekly	Captures all ICPs that have switched in with ADL of 0. The ADLs are manually updated on Gentrack to ensure estimations are correct (where required) for billing purposes.
Consumption on De-Energised Sites	Weekly	Captures all ICPs that are inactive but are recording consumption. Field Services checks consumption, available reads, reconnection requests and possible missing paperwork and updates the status to CO if positive consumption has been confirmed.
Weekly Zero Consumption Report	Weekly	Captures active ICPs with PUNZ that is not recording any consumption. The customers are contacted to clarify whether the site is occupied or not, if the meters are on and in use, and if the site is prone to seasonal useage. If zero consumption is validated, the ICP is removed from the report for the next 4 months (the ICP will reappear and we make the same checks again). If there should be consumption but none is recorded, a Meter Investigation is lodged to find out what the issue is and resolve accordingly. Field Services then works with Revenue Assurance to calculate the estimated consumption to bill the customer to for the timframe 0 consumption was recorded.
Field Services Compliance Raw Data	Weekly	Captures status and retailer mismatches for Field Services and Switching to update (GT vs. registry)
Field Services Compliance	Weekly	Captures various reports as below: ○ Months since actual reads GT vs. Prada ○ Switched in sites with no actual reads ○ Expired Meter Certification ○ Install Status Changes (under 5 days vs. over 5 days) ○ Installed Meters on Decommissioned Sites ○ Invalid ANZSIC Code
Gas and Electricity New Connection Report	Weekly	For monitoring purposes
Daily DUNE IN16 and IN24 Error Report	Daily	Captures DUNE IN16 and all IN24 ICPs that have switched into PUNZ or has had registry updates done recently to invalid registry codes. Field Services updates Gentrack to ensure correct tariffs are available on Gentrack to make the site billable.
Daily Remote Disco Report	Daily	Captures ICPs that have smart meters that have the day before. Field Services issue the sites out for vacant disconnections.

Screenshot

Audit outcome

Non-compliant

Non-compliance	Description

Audit Ref: 2.1 With: 11.2 From: 10-Jan-19 To: 31-Oct-19	Discrepancies between Gentrack and the registry. Incorrect information in CS files, incorrect submission volumes for 1000023001BP357 Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are assessed as moderate. They will mitigate risk most of the time but there is room for improvement. Recently introduced reports help to identify inaccuracies and correct them. Audit risk rating is assigned as low.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
The existing reports are part of an ongoing programme of continuous improvement.	01/08/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Existing reports will be further enhanced and added to as the opportunity arises, and as we can devise suitable ways to detect errors.	01/05/2020	

2.2. Provision of information (Clause 15.35)

Code reference

Clause 15.35

Code related audit information

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

Audit observation

We reviewed the breaches described in **section 1.6**.

Audit commentary

4 breaches were recorded for PUNZ for late or inaccurate submission files.

Audit outcome

Non-compliant

Non-compliance	**Description**

Audit Ref: 2.2 With: 15.35 From: 10-Jan-19 To: 27-Jun-19	4 breaches were recorded for late or inaccurate submissions. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are assessed as moderate. The Authority issued a warning to the company. Audit risk rating is recorded as low because files were late no more than one day therefore the RM was able to process them in time.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
Additional checks have been introduced to the reconciliation submissions, to ensure that any errors that are likely to meet the materiality threshold are identified well before submission deadlines.	01/08/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Further changes to the reconciliation process are in progress and will further improve submission accuracy while improving the management of data errors. In future, there will be much less scope for material errors to arise.	01/08/2020	

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

In **section 1.5** we included three diagrams showing the information flow for PUNZ and PPPP.

Audit commentary

All metering data is downloaded from SFTP servers. It is a fully automated process. The exceptions are customer reads, which are entered into Gentrack.

Reconciliation files are submitted via the RM portal and any manual updates of the registry data are carried out using the registry web portal.

Metering information for PPPP ICPs are gathered by Pulse Energy and JC Consulting download it via SFTP server to their system. The last audit identified non-compliance with this clause because data from

AccuCal was provided via unsecure email. It was rectified and since the last audit monthly readings from AccuCal are downloaded from their SFTP server.

Audit outcome
Compliant

2.4. Audit trails (Clause 21 Schedule 15.2)

Code reference
Clause 21 Schedule 15.2

Code related audit information
Each reconciliation participant must ensure that a complete audit trail exists for all data gathering, validation, and processing functions of the reconciliation participant.
The audit trail must include details of information:

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

The audit trail must cover all archived data in accordance with clause 18.
The logs of communications and processing activities must form part of the audit trail, including if automated processes are in operation.
Logs must be printed and filed as hard copy or maintained as data files in a secure form, along with other archived information.
The logs must include (at a minimum) the following:

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

Audit observation
During the audit we checked a complete audit trail for all data gathering, validation, and processing functions. In **section 1.5** we included three diagrams showing the information flow for PUNZ and PPPP.

Audit commentary
As per the diagram in **section 1.5**, Pulse Energy uses a number of databases. We reviewed the audit trail for each of them.

- Gentrack has a compliant audit trail.
- VIPER – HHR ICPs submissions – compliant audit trail. The previous audit noted non-compliance because it had only one user ID. It was addressed by modifying the program to add user name to the audit record

ID	Filename	Import Date_time	username
1395	MTRX_E_PUNZ_ICPHH_201910_20191104_0996739481LC28C_0001.TXT	4/11/2019 1:30:55 p.m.	mike.kew
1394	MTRX_E_PUNZ_ICPHH_201910_20191104_0996739481LC28C_0001.TXT	4/11/2019 12:36:35 p.m.	mike.kew
1393	AMCI_E_PUNZ_ICPHH_201910_20191104_0001112113WMCEF_0001.TXT	4/11/2019 9:20:39 a.m.	mike.kew
1392	AMCI_E_PUNZ_ICPHH_201910_20191104_0001111687WMFE0_0001.TXT	4/11/2019 9:20:37 a.m.	mike.kew
1391	PUNZ_E_HEDL_ICPHH_201910_20191104_084203.txt	4/11/2019 9:11:05 a.m.	mike.kew
1390	MTRX_E_PUNZ_ICPHH_201910_20191101_1001272408LC130_0001.TXT	4/11/2019 9:08:28 a.m.	mike.kew
1389	MTRX_E_PUNZ_ICPHH_201910_20191101_1001262270LC89E_0001.TXT	4/11/2019 9:08:26 a.m.	mike.kew

- COBRA -NHH submissions. Data is imported from Gentrack. COBRA allows a user to add permanent estimates and invalidate readings. During the audit we noted that it is possible for an operator to go directly to the database and change the date of a reading without leaving an

audit trail. The Pulse Energy comment was that this option is hardly ever used. Sometimes it is quicker to make changes directly in the database instead of asking the Switching or Billing Team to make changes.

- PRADA - no option to change data

The previous audit recorded non-compliance for ANI0331 NSP volumes. Pulse Energy implemented a new process. Data from AccuCal is downloaded from their SFTP server

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.4 With: 21 From: 10-Jan-19 To: 31-Oct-19	No audit trail for changes made directly in COBRA's database Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are assessed are moderate. Each part of the system has an audit trail. Changes could be made directly to the COBRA's database in order to meet deadlines for volume submissions. Audit risk rating is assigned as low.

Actions taken to resolve the issue	Completion date	Remedial action status
We have identified options for adding a compliant audit trail to Cobra, and will be actioning these before the next audit	01/04/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See above	01/04/2020	

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

We reviewed Pulse Energy's terms and conditions. They are used for customers traded under both trading codes, PUNZ and PPPP.

Audit commentary

The Pulse Energy's terms and conditions cover customers for the full term of contract, and it covers any participant who may need to rely on this.

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

We reviewed the Pulse Energy's terms and conditions. They are used for customers traded under both trading codes, PUNZ and PPPP.

Audit commentary

The Pulse Energy's terms and conditions includes consent to access a customer's property by authorised parties.
The company confirmed that any access will be provided with the cooperation of a customer and taking into consideration any health & safety issues.

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

This was discussed during the audit. Pulse Utilities mainly trades category 1 metering installations. Only 175 ICPs are category 2 and higher.

Audit commentary

The company confirmed that none of the metering installations traded by them requires the application of any error or loss compensation factors.

Audit outcome

Compliant

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

Code reference

Clause 11.15B

Code related audit information

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

- *the Authority to assign the rights and obligations of the trader under the contract to another trader if the trader commits an event of default under paragraph (a) or (b) or (f) or (h) of clause 14.41 (clause 11.15B(1)(a)); and*
- *the terms of the assigned contract to be amended on such an assignment to—*
- *the standard terms that the recipient trader would normally have offered to the customer immediately before the event of default occurred (clause 11.15B(1)(b)(i)); or*
- *such other terms that are more advantageous to the customer than the standard terms, as the recipient trader and the Authority agree (clause 11.15B(1)(b)(ii); and*
- *the terms of the assigned contract to be amended on such an assignment to include a minimum term in respect of which the customer must pay an amount for cancelling the contract before the expiry of the minimum term (clause 11.15B(1)(c)); and*
- *the trader to provide information about the customer to the Authority and for the Authority to provide the information to another trader if required under Schedule 11.5 (clause 11.15B(1)(d)); and*
- *the trader to assign the rights and obligations of the trader to another trader (clause 11.15B(1)(e)).*

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

Audit observation

We reviewed the Pulse Energy's terms and conditions. They are used for customers traded under both trading codes, PUNZ and PPPP.

Audit commentary

The Pulse Energy's terms and conditions include a provision to allow 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.

Audit outcome

Compliant

2.9. Connection of an ICP (Clause 10.32)

Code reference

Clause 10.32

Code related audit information

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

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

Audit observation

The new connection process and the EDA files were analysed for the audit period. No new connections were completed during the period covered by this audit. There are no plans to sign up new connections as pre-pay (PPPP).

Audit commentary

Each network has its own process for how to deal with new connections. Some of them deal with a customer directly, others prefer a customer to contact a trader first who then request a new ICP.
Every morning the Field Services Team receives a report, based on the registry notification, showing any new ICPs for which Pulse Energy was nominated as the proposed trader.
All newly created ICPs are recorded in Gentrack. Once a customer contacts Pulse Energy, a customer is signed up and a notification is sent to a network accepting the ICP. Field Services issue a SO to a MEP requesting meter installation. NGCM is the preferred MEP. Once a meter is installed and the installation is electrically connected Pulse Energy is notified by the MEP. The date of electrical connection is recorded in Gentrack, which notifies the registry to change the ICP status to "active" and nominates the MEP. Metering details are usually uploaded to the registry by the NGCM within a few days and a metering notification is uploaded to Gentrack. There are exceptions, for example when the NGCM delays the upload of metering data to the registry, Gentrack is not updated therefore reads are rejected and COBRA estimates submission volumes.

Every Monday a report is run to monitor any new ICPs for which Pulse Energy was nominated as the proposed trader, which have not been progressed. There can be various reasons for that, for example, a customer has not contacted them etc. Such a process assures that all ICPs are accounted for.

Since 15/01/19, 356 new connections were electrically connected.

Audit outcome

Compliant

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

Code reference

Clause 10.33(1)

Code related audit information

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

- *for a point of connection to the grid – the grid owner has approved the connection*
- *for an NSP that is not a point of connection to the grid - the relevant distributor has approved the connection.*

- *for a point of connection that is an ICP, but is not as NSP:*
- *the reconciliation participant is recorded in the registry as the trader responsible for the ICP*
- *if the ICP has metered load, 1 or more certified metering installations are in place*
- *if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the temporary electrical connection.*

Audit observation

The new connection process was examined, and the EDA files were analysed for the audit period.

Audit commentary

No temporary electrical connections were requested either by PUNZ or PPPP.

Audit outcome

Compliant

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

Code reference

Clause 10.33A(1)

Code related audit information

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

- *for a point of connection to the grid – the grid owner has approved the connection*
- *for an NSP that is not a point of connection to the grid - the relevant distributor has approved the connection.*
- *for a point of connection that is an ICP, but is not as NSP:*
- *the reconciliation participant is recorded in the registry as the trader responsible for the ICP*
- *if the ICP has metered load, 1 or more certified metering installations are in place*
- *if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the temporary electrical connection.*

Audit observation

The new connection and reconnection process was examined. The EDA files were analysed for the audit period.

Audit commentary

New Connections

The process was described in **section 2.9.** There were no new connections for PPPP.

According to Pulse Energy records for all new installations are certified within 5 business days. The company is notified of electrical connections and updates the registry accordingly. In **section** 2.1 we identified a few ICPs for which the "active" date by PUNZ is earlier than the Metering Installation Certification Date. It gives the impression that installations were not certified before being electrically connected.

Reconnections

Pulse Energy follows a process setup by MEPs. A SO is issued to MEPs by the Field Services Team requesting reconnection or disconnection. The timeliness of updating the registry improved significantly since the last audit (**section 3.3.).** We noted a relatively small number of remote disconnections (1,9) in comparison to disconnecting at pole fuse (1,8).It was explained that SMCO meters can't be disconnected remotely.

We identified a number of ICPs, listed below, which had expired interim certification when they were reconnected. It is identified as non-compliance. Since the last audit Pulse Energy implemented an upgrade to their process to proactively follow up with MEPs to certify installations. The company interacts with customers to provide access to premises. In some cases a customer is reluctant to allow the replacement of a meter or a switchboard is too small or other reasons. It is a well-known problem well reflected in MEPs audit reports.

ICP	Reconnection date	Metering Installation Certification Expiry Date
0046302900PCFC8	01/10/19	01/04/2015
0000061218CPB33	27/09/19	01/04/2015
0036704534PC4F8	24/09/19	01/04/2015
0000062412CPD44	26/07/19	01/04/2015
0081298400PC873	10/07/19	01/04/2015
0035834084PC7D2	23/08/19	01/04/2015
0030422327PCBB3	15/08/19	01/04/2015
0000228360UNE00	27/03/19	01/04/2015
0075244555WEECB	22/05/19	01/04/2015
0000039190UN589	08/04/19	01/04/2015
0000046116CP606	10/04/19	01/04/2015
0000271860WEE9B	27/03/19	01/04/2015
0000034515UNBAD	20/02/19	01/04/2015
0009683624CNF2D	21/02/19	01/04/2015

Bridged meters

Pulse Energy provided a list of 13 ICPs which were identified as bridged during the audit period. All were re-certified by the MEP when they were unbridged as per the registry details.

No bridged meters were identified for PPPP.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.11 With: 10.33A From: 20-Feb-19 To: 31-Oct-19	13 reconnections had expired certification recorded on the registry when they were reconnected Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**

Low	Controls are rated as moderate. Pulse Energy proactively works with MEPs to ensure meters are certified when an ICP is reconnected. Audit risk rating is recorded as low due to the small number of ICPs affected

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
Training and procedures have been modified to ensure agents are aware of the need to advise customers when a meter must be recertified.	01/09/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
There is still room for improvement in ensuring that after reconnection, meters are recertified (when required) within five days. New reporting and procedures are being developed to cover this gap.	01/02/2020	

2.12. Arrangements for line function services (Clause 11.16)

Code reference

Clause 11.16

Code related audit information

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

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

Audit observation

Pulse Energy provided the LIS files for assessment on which networks the ICPs were connected to.

Audit commentary

Pulse Energy has been trading on 72 networks (178 NSPs) in the audit period. The company has Use System Agreements signed for all networks to which their ICPs are connected to.

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

Pulse Energy provided the LIS files for assessment of which MEPs provide their services.

Audit commentary

27 MEPs provide their services to Pulse Energy. There are contracts or arrangements between Pulse Energy and all MEPs. Metrix and NGCM provide the MEP services for the highest percentage of ICPs traded by Pulse Energy.

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 connection process was examined. The EDA fie was examined for the audit period.

Audit commentary

In **section 2.9**, we described in detail the new connection process, which we found compliant. According to the EDA files there were no new connections for PPPP and 356 new connections for PUNZ.

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, MEP nomination, and switching processes were examined. The LIS and EDA files were analysed for the audit period.

Audit commentary

This section is linked to **section 3.5**. The new connection process is detailed in **sections 2.9**. 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 5 business days after the change.

Audit observation
We examined the LIS and EDA files for PUNZ and PPPP for the period covered by this audit.
The first 2ICPs traded using PPPP switched on 30/10/19. No trader or status updates were recorded during the audit period.

Audit commentary
The table below shows the summary of updates in the registry. Overall compliance has improved since the last audit. The percentage of timely status and trader updates has increased for most of them. The most delayed updates are MEP nominations caused by the Gentrack configuration.

Once a customer contacts Pulse Energy, a customer sign up is recorded in Gentrack. Field Services are notified and issue a SO to a MEP requesting meter installation. NGCM is the preferred MEP. It means that Pulse Energy has to wait for notification from the MEP of the meter details to record it in Gentrack, then send the MEP nomination to the registry. Metering information is provided, in some cases, with a delay. It is a cumbersome process, but it is because of the Gentrack configuration. It is a well-known problem, not only for traders.

Status update	Year	Total number of updates	No of updates within 5BD	No of updates later than 5BD	Average notification days [BD]	Percentage compliant
Change to active (2,0)	2018	782	293	489	25	37%
	01/19	459	286	173	15	62%
	10/19	1,684	1,309	375	10	**78%****
Change to electrically disconnected vacant property - (1,4)	2018	224	137	87	8	61%
	01/19	186	163	23	20	88%
	10/19	1,882	1,848	34	2	**98.2%**
Change to reconcile elsewhere (1,5)	2018	0				
	01/19	1	0	1	6	0%

	10/19	0				
Change to electrically disconnected ready for decommissioning (1,6)	2018	30	8	22	69	27%
	01/19	66	35	31	51	53%
	10/19	55	23	32	90	42%
Change to electrically disconnected by AMI meter (1,7)	2018	37	37	0	1	100%
	01/19	6	5	1	1	83%
	10/19	64	63	1	0.03	**98.4%**
Change to electrically disconnected at pole fuse (1,8)	2018	8	3	5	25	38%
	01/19	6	5	3	10	50%
	10/19	179	158	21	23	88.2%
Change to electrically disconnected due to meter disconnected (1,9)	2018	5	5	0	2	100%
	01/19	6	5	1	3	83%
	10/19	56	52	4	13	**92.8%**
Change to electrically disconnected at meter box fuse (1,10)	2018	0				
	01/19	0				
	10/19	16	16	0	2.5	100%
Change to new connection in progress (1,12)	2018	0				
	01/19	0				
	10/19	1	1	1	154	50%
Trader (NT updates and MEP nominations are excluded)	2018	No data recorded				
	01/19	1,086	453	633	198	42%
	10/19	1,051	790	261*	23	75.1%
MEP nomination	2018	4,041	2,394	1647	10	59%
	01/19	1,661	1,319	342	11	79%
	10/19	1,116	861	255	13	77%

* Mostly they are backdates providing changes to embedded generation ICPs, they are updated as a bulk update because of the Gentrack problem. Overall, the average notification days decreased from 198 to 23.

In April'19 Pulse Energy went through a large clean-up process to correct inactive status' therefore there are a high number of backdated entries.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.3 With: 10 of Schedule 11.1 From: 10-Jan-19 To: 31-Oct-19	Late updates of "inactive" and "active" status and trader information Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are recorded as moderate. There are good processes in place, they need to be rigorously followed. The impact on settlement outcomes is minor therefore the audit risk rating is recorded as low.

Actions taken to resolve the issue	Completion date	Remedial action status
New controls have been introduced and are working to contain what was previously a major problem.	01/09/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Training and processes will be further tweaked to ensure that updates are notified within timeframes whenever it is humanly possible to do so. However, it is important to recognise that there will always be some number of late updates arising from causes beyond our control. It has always been our policy to prioritise accuracy over timeliness, whenever the two conflict, and we will continue to submit late updates when it is necessary to ensure accurate reconciliation.	01/03/2020	

3.4. Trader responsibility for an ICP (Clause 11.18)

Code reference

Clause 11.18

Code related audit information

A trader becomes responsible for an ICP when the trader is recorded in the registry as being responsible for the ICP.
A trader ceases to be responsible for an ICP if:

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

A trader who is responsible for an ICP (excluding UML) must ensure that an MEP is recorded in the registry for that ICP (clause 11.18(4)).
A trader must not trade at an ICP (excluding UML) unless an MEP is recorded in the registry for that ICP (clause 11.18(5)).

Audit observation
The new connection and ICPs decommissioning processes were examined. The registry files were reviewed.

Audit commentary
All ICPs have a MEP assigned in the registry. As soon as a meter is installed and the installation electrically connected, an MEP is nominated. At the time of this audit, some new connections metering data has not been uploaded yet.

When an ICP needs to be decommissioned, Pulse Energy requests an MEP removal of a meter and a final read. We checked 10 decommissioned ICPs and confirm final reads were used for reconciliation.

Pulse Energy understands that as soon as they are recorded in the registry as accepting responsibility, the responsibility will cease only when an ICP switches out to another trader.

We checked 10 decommissioned ICPs and confirm final reads were used for reconciliation.
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 5 business days of trading (clause 9(2)).
The trader must provide information specified in 9(1)(k) no later than 20 business days of trading (clause 9(3))

Audit observation

The EDA, LIS files and Audit Compliance report were reviewed for the audit period. The new connection process was described in **section 2.9**.

Audit commentary

Pulse Energy does not use the status "new connection in progress". As soon as they are notified that an installation has been electrically connected, the ICP status is changed to "active" and all the relevant data is uploaded.
The Audit Compliance report identified 20 new connections for which the update to "active" status was done later than 5 business days. It used to be a manual process. It was changed in January'19 when new reporting was put in place to compare Gentrack and the registry status.

We confirm that the information provided to the registry for ICPs traded by Pulse Energy is correct with the exception of the profile recorded for 38 ICPs having installed solar panels. The profiles are corrected before each reconciliation run via a bulk update to overcome the shortcomings of Gentrack. It is a well-managed process.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.5 With: 9 of Schedule 11.1 From: 10-Jan-19 To: 31-Oct-19	20 late updates to "active" status and incorrect profile for 38 ICPs (solar) Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are recorded as moderate. New reporting is working well and the updating of the profile in the registry is done twice per month. The audit risk rating is assessed as low because there is a process in place to identify and correct incorrect entries and volumes will be washed up through the revision process.

Actions taken to resolve the issue	Completion date	Remedial action status

Reporting has been introduced, and a regular process instituted to ensure updates are made with minimum delay.	01/04/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We have requested changes in Gentrack functionality that will allow us to maintain profiles directly, without the need for bulk updates. This should help us to eliminate the current delay.	01/05/2020	

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

We reviewed the Audit Compliance report and the LIS files for the period covered by this audit.

Audit commentary

As per **section 2.1**, one ICP was identified with the code T99, which was corrected. We reviewed ICPs with category 2 metering installations, which have a residential ANZSIC code "0000"assigned.

The 3 ICPs had an incorrect ANZSIC code assigned 0138989036LC646, 0232983380LC6A3, and 0110011611ELF82. They were corrected.

There is an ongoing program of checking up on ANZSIC codes that Pulse Energy has reason to believe may be wrong – mostly, where the code is 'residential', but the network price category suggests something else. Most often, these turn out to be sheds, garages or other outbuildings that for some reason have separate ICPs from the main property.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.6 With: 9(1)(k) of Schedule 11.1 From: 10-Jan-19 To: 31-Oct-19	4 ICPs had incorrect ANZSIC code recorded in the registry Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Strong Breach risk rating:1
Audit risk rating	**Rationale for audit risk rating**

Low	Controls are recorded as strong. ANZSIC code is check during a sign-up process. The audit risk rating is recorded to be low because of the small number of ICPs

Actions taken to resolve the issue	Completion date	Remedial action status
We have developed a number of queries designed to identify suspect ANZSIC errors and introduced a programme to check these codes when customers contact us for other reasons.	01/09/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We are investigating further queries and processes to ensure that information captured during the sales process is accurately reflected in later updates.	01/03/2020	

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

Code reference

Clause 9(1)(f) of Schedule 11.1

Code related audit information

if a settlement type of UNM is assigned to that ICP, the trader must populate:
the code ENG - if the load is profiled through an engineering profile in accordance with profile class 2.1 (clause 9(1)(f)(i)); or
the daily average kWh of unmetered load at the ICP - in all other cases (clause 9(1)(f)(ii)).

Audit observation

The process to manage unmetered load was examined. The LIS and the Audit Compliance Report were examined.

Audit commentary

The information for all ICPs was recorded correctly. Daily kWh are calculated correctly based on distributor information.

One ICP, 0000505719DEDE4, already identified in the previous audit, is a metered supply and is also still being billed for the BTS although it is likely that there is no longer a BTS supply any more. This ICP has never had an unmetered supply recorded by the distributor. The other ICP recorded in the previous audit switched out to Genesis.

Audit outcome

Non-compliant

Non-compliance	Description

Audit Ref: 3.7 With: 9(1)(f) of Schedule 11.1 From: 10-Jan-19 To: 31-Oct-19	Unmetered load incorrectly recorded for one ICP Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Strong Breach risk rating:1
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are recorded as strong; information is validated against a distributor entry . One correction from the previous audit overlooked. The audit risk rating is recorded as low because it was only one ICP (1 kWh per day)

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
Reporting has been introduced to identify discrepancies between internal and distributor information.	01/03/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Reporting is now checked regularly, and discrepancies are investigated. However, further procedural changes are needed to ensure that discrepancies are appropriately resolved.	01/02/2020	

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

Code reference

Clause 17 Schedule 11.1

Code related audit information

The ICP status of "active" is 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 1 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 Pulse Energy registry list and the Audit Compliance Report for the audit period were checked for any variances between the initial electrical connection date, meter certification date, and the active date. All variances were discussed with the company.

The process for the management of ICP reconnection and the timeliness of registry updates are discussed in **section 2.11**.

Audit commentary

The Audit Compliance Report identified 6 ICPs (**section 2.1**) where there is a mismatch between the Metering Installation Certification Date and the "active" date. It needs to be corrected but because it is a historic data it could require a few participants to reverse their entries.

4 entries relate to the previous audit period. It needs to be resolved between 3 parties, MEP, a distributor and PUNZ. In this audit period were only two ICP 0001113069WM387 and 000580482PCBF7. For ICP 1000580482PCBF7, it looks like an incorrect MEP date of installation certification.

Weekly reports monitor incorrect status are run and finding executed.

Gentrack only allows one customer per ICP. No ICP can be billed without a meter recorded or unmetered load.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.8 With: 17 of Schedule 11.1 From: 31-Jan-19 To: 31-Oct-19	5 ICPs with incorrect "active" date Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are recorded as moderate. More detective work needs to be done. Audit risk rating is recorded as low, minor impact on settlement outcomes.

Actions taken to resolve the issue	Completion date	Remedial action status
Improved reporting has made it easier to identify and monitor these instances.	01/09/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Reports are monitored regularly, and processes will be streamlined to ensure that errors are dealt with promptly and correctly. There will always be scope for some discrepancy between the three parties involved (MEP, network, retailer), so it is impossible to eliminate errors entirely unless we are willing to compromise accuracy. It is our belief that accuracy is the most important thing to maintain.	01/02/2019	

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 LIS and EDA files were examined to identify all ICPs with the status “inactive”. The process of disconnection was examined.

Audit commentary

As a part of the new connections process, Pulse Energy does not use “inactive – new connection status” but we found two exceptions. Pulse Energy commented that it was necessary to use this status to fix a problem with transactions in the registry.

If an ICP needs to be disconnected a SO is sent by the Field Services to the MEP or WELLS. Once a confirmation is received, Gentrack is updated then the registry. Weekly reporting is used as a monitoring tool to ensure identical ICP status in both Gentrack and the registry.

We sampled 10 ICPs to verify the date of disconnection in the registry with paperwork from contractors. In **section 3.3** we identified late updates to or from “inactive” status.

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

It is a distributor’s obligation to monitor an ICP which has had the status of “New” or “Ready” for 24 calendar months or more. It is expected that a trader be able to respond to such queries from distributors.

Audit commentary

We analysed the LIS files. There were no ICPs with the status “ready”. Pulse Energy occasionally receives requests for further information on ICPs which have been “new” or “ready” for more than 24 months from distributors. No recent communications have been received. Pulse Energy gets daily notifications of new connections where they have been nominated as the retailer.

Audit outcome

Compliant

4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

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

Code reference

Clause 2 Schedule 11.3

Code related audit information

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

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

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

Audit observation

The standard switch process was examined to assess compliance. We reviewed the EDA files and the Switch Breach Report for the period 10/01/2019 to 31/10/19.

Audit commentary

During the audit period 7,666 NTTR using the PUNZ code were sent. Once all pre-conditions are met the Sales Team "triggers" the sending of NT files to the registry.
During the audit period all ICPs gained were metering installations category 1 and 2. The correct type of switch was used.

2 NTTR were sent for PPPP.

No backdated standard switches were recorded for PUNZ and PPPP in the Switch Breach Report.

Audit outcome

Compliant

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

Code reference

Clauses 3 and 4 Schedule 11.3

Code related audit information

Within 3 business days after receiving notice of a switch from the registry manager, the losing trader must establish a proposed event date. The event date must be no more than 10 business days after the date of receipt of such notification, and in any 12 month period, at least 50% of the event dates must be no more than 5 business days after the date of notification. The losing trader must then:

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

- *providing a request for withdrawal of the switch in accordance with clause 17 (clause 3(c) of Schedule 11.3).*

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

Audit observation

We reviewed the EDA files and Audit compliance report for the period 10/01/2019 to 31/10/19.

Audit commentary

AN files are sent the same or following day. The Switch Breach did not record any late AN files. We reviewed 10 AN files and found the format is correct. The previous audit recorded non-compliance because Pulse Energy was using the reason code "AA" instead "AD" when an advanced meter was present. Recently the Authority clarified that the code "AD" should be used when the company is in the process of arranging a smart meter installation.

96.8% had the event date within 5 business days of the receipt of the NT. Compliance with clause 4 (b) of Schedule 11.3 was met.

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 5 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

We reviewed the EDA files and Audit compliance report for the period 10/01/2019 to 31/10/19.

Audit commentary

CS files are automatically generated by Gentrack. 3,706 CS files were sent in the audit period. We sampled 10 CS files to check if the information in Gentrack was transferred correctly. We found the format and all information was correct.

The analysis of the CS meter comp, CS install file for the audit period showed us a few problems with the CS files information as was noted in the previous audit. The problems with the content of the CS files is tabled below:

Issue	Number of ICPs
Read type flagged "A" when the last read in the past	8
Average daily consumption = 0	149

Negative average daily usage	2
Average daily consumption greater than 200	16

Note: We tried to distinguish between a Standard Switch and Switch Move but it is not always accurate because the same ICP could go through the switching process twice using a different type of switch within the audit period.

- Pulse Energy is working closely with Gentrack to resolve the issue of the negative value of average daily consumption. Definitely the magnitude of this problem is much smaller than it used to be. We identified 2 ICPs, CS files were provided to a gaining trader in March and August this year
- Average daily consumption is expected to be calculated using the volume from the last two validated reads divided by the number of days between them. This method gives false results if validated reads are received daily. Gentrack calculates the average daily consumption using the following logic
    1. Get Latest Reading record (Record#1) for a register where Read has a status of Validated by Gentrack and is a read type of one of the below;
        1. 'BR','C','CR','E','FE','FR','GR','IM','MR','OR','PR','RM','SR','TOU'
    2. It then finds the previous record before the above using the same criteria as above (Record#2).
    3. It then takes the consumption recorded from Record#1 and divides this by the number of days between the read date of Record#1 and Record#2.
    4. It then uses this calculated value as the Average Daily Value.
    When Gentrack derives the average daily consumption as less than 1 kWh, it rounds down to 0 kWh, which could be right for some installations but not all of them. Pulse Energy is in discussions with Gentrack to determine if an Excel type of rounding should be used. We asked the Authority for their opinion awaiting a response for us, .

Daily reads do not get imported to Gentrack at this stage, they are stored in PRADA.

The Switch Breach Report did not record any late CS files.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.3 With: 5 of Schedule 11.3 From: 10-Jan-19 To: 31-Oct-19	Average daily consumption methodology is incorrect for ICPs which usage is less than 1 kWh. Information for a small number of ICPs is incorrect Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate. Pulse Energy proactively works with Gentrack to ensure that information is CS files is correct. Audit risk rating is recorded as low due to the small number of ICPs affected

Actions taken to resolve the issue	Completion date	Remedial action status
As the auditor has noted, we are working with Gentrack to address known issues in the CS file data. Some of the issues have been resolved, although some remain.	01/04/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Work is continuing to resolve the remaining areas of noncompliance. The issue of incorrect read quality flags will be resolved in January. The outstanding instances of negative EDC are currently still under investigation.	01/04/2020	

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

Code reference

Clause 6(1) and 6A Schedule 11.3

Code related audit information

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

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

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

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

Audit observation

The EDA file and the Switch Breach Report for the audit period was analysed. Pulse Energy sent 20 RR files (5 RR were rejected) files and received 105 files Pulse Energy rejected 60 RR files). We walked through the RR files process. The company designed a new tool which allows them to quickly evaluate if a CS read provided by a losing trader can be accepted. It is a manual calculation but highly effective.

Audit commentary

The Switch Breach Report identified 10 late RR files. All of them relate to the beginning of this year when Pulse Energy waited for a scheduled actual read from WELLS. Now as soon a CS file is received from a losing trader it is evaluated. If the read type is E, WELLS is requested to conduct a special read. . RR files are generally initiated via email between two retailers. Pulse Energy always includes in email calculation of new read, supported by validated reads.

We selected 10 RR files send to or received from other retailers to checked if files were imported into Gentrack and used to calculate submission volumes. We found it compliant. Overall, we found the RR process robust.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.4 With:6(1) and 6A of Schedule 11.3 From: 10-Jan-19 To: 22-Apr-19	10 late RR files for Standard Switch Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating:1
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as strong. A new tool to evaluate CS reads from losing traders is highly effective. All non-compliance relates to time before the new tool was implemented. Audit risk rating is recorded as low

Actions taken to resolve the issue	Completion date	Remedial action status
A new process has been introduced to identify ICPs with potentially incorrect switching reads at an early stage, to ensure that RRs can be sent in time. New logic has been added to the reconciliation system to capture accepted RR reads from Registry files and ensure that they are used for reconciliation.	01/09/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The process to ensure that RR reads are sent in a timely fashion will be tweaked as necessary during use.	01/02/2020	

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 5 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 EDA file for the audit period was analysed.

Audit commentary

The analysis of the EDA file showed that Pulse Energy did not send any RR files using the above clauses. The company mainly trades NHH ICPs.

During the audit period Pulse Energy received 17 RR files from Electric Kiwi and Flick Energy. The provided switch event meter reading reads were from AMI meters and provided within 5 business days. Pulse Energy rejected all of them, which is non-compliant. The reason for the rejections was over a tiny number of kWh.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.5 With:6(3)(a) of Schedule 11.3 From: 23-Feb-19 To: 07-Oct-19	17 RR files provided by a gaining trader (AMI reads) within 5 BD were not accepted Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating:2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate. Pulse Energy was not aware of this clause but often accepts switch event reads which are sent after 5BD. Audit risk rating is recorded as low

Actions taken to resolve the issue	Completion date	Remedial action status
This is a training issue, which is in the process of being corrected now.	01/01/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
This is a training issue, which is in the process of being corrected now.	01/01/2020	

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
There were no disputes with losing retailers. If such a situation were to occur in the future it would be resolved in accordance with this clause.

Audit commentary
Pulse Energy confirmed that no disputes occurred in the period covered by this audit which would require a resolution. Pulse Energy stated that they will not decline to accept another retailer' validated meter reading or permanent estimate if they are reasonable and appropriate in the applicable circumstances.

Audit outcome
Compliant

4.7. Gaining trader informs registry of switch request - switch move (Clause 9 Schedule 11.3)

Code reference
Clause 9 Schedule 11.3
Code related audit information
The switch move process applies where a gaining trader has an arrangement with a customer or embedded generator to trade electricity at an ICP using non half-hour metering or an unmetered ICP, or to assume responsibility for such an ICP, and no other trader has an agreement to trade electricity at that ICP, this is referred to as a switch move and the following provisions apply:
If the "uninvited direct sale agreement" applies, the gaining trader must identify the period within which the customer or embedded generator may cancel the arrangement in accordance with section 36M of the Fair Trading Act 1986. The arrangement is deemed to come into effect on the day after the expiry of that period.
In the event of a switch move, the gaining trader must advise the registry manager of a switch and the proposed event date no later than 2 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 move process was examined to assess compliance. We reviewed the EDA files and the Switch Breach Report for the period 10/01/2019 to 31/10/19.

Audit commentary
During the audit period 6,398 NTMI using the PUNZ code were sent. Once all pre-conditions are met the Sales Team "triggers" the sending of the NT files to the registry.
During the audit period all ICPs gained were metering installations of category 1 and 2.

We observed that the majority of Switch Move switches were backdated. It was discussed with the Switching Team and the comment was that if the NTTR was sent requesting a switch event in the past it is rejected by the losing traders. To remedy that it was decided to use the Switch Move process when in fact it was a Standard Switch process that should have be used.

We did not evaluate how many ICPs were switched using the incorrect process. We are positive that some of them are correct. It will be quite a laborious process to evaluate all of them.

This type of switch was not used for PPPP.

In the last audit it was noted that Pulse Energy were connecting ICPs that they were not the retailer for and then switching them from a different date. This was followed up during this audit. Pulse Energy stated that the issue was caused by insufficient training of the Sales Team who were not aware of the implications of their actions.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.7 With: 9 of Schedule 11.3 From: 10-Jan-19 To: 31-Oct-19	Incorrect type of switch used Potential impact: Low Actual impact: Unknown Audit history: Twice before Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as weak. It is a common practise used between some traders. Audit risk rating is recorded as low. The impact on settlement outcomes is minor, ICPs switch on the same read

Actions taken to resolve the issue	Completion date	Remedial action status
It is likely that this will continue to happen, because we cannot realistically backdate TR switches. It is common practice to use NTMI for backdated switches to ensure that the site switches on the requested date. This was discussed in the EA's recent switch process review, where the consensus was that a new switch type should be created for use in these instances.	01/12/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See above.	01/12/2019	

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

Code reference

Clause 10(1) Schedule 11.3

Code related audit information

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

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

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

Audit observation

The switch move process was examined to assess compliance. We reviewed the EDA files and the Switch Breach Report for the period 10/01/2019 to 31/10/19.

Audit commentary

AN files are sent the same or following day. The Switch Breach did not record any late AN files. We reviewed 10 AN files and found the format is correct. The previous audit recorded non-compliance because Pulse Energy was using the reason code "AA" instead "AD" when an advanced meter was present. Recently the Authority clarified that the code "AD" should be used when the company is in the process of arranging a smart meter installation.

The company policy is to accept the switch event date proposed by a gaining trader. We did not identify any ICPs for which a proposed date was more than 10 days ahead.

No late AN files were recorded by the Switch Breach Report.

Audit outcome

Compliant

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

Code reference

Clause 10(2) Schedule 11.3

Code related audit information

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

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

Audit observation

The switch move process was examined to assess compliance. We reviewed the EDA files and the Switch Breach Report for the period 10/01/2019 to 31/10/19.

Audit commentary

The analysis showed that for Switch Moves Pulse Energy did not determined a different 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

We reviewed the EDA files and Audit compliance report for the period 10/01/2019 to 31/10/19.

Audit commentary

CS files are automatically generated by Gentrack. 6,746 CS files were sent in the audit period.
We sampled 8 CS files to check if the information in Gentrack was transferred correctly. We found the format and information was correct.

The analysis of the CS meter comp, CS install files, showed us a few problems with the CS files information as noted in the previous audit. The problem with the content of the CS files is tabled below:

Issue	Number of ICPs
Read type flagged "A" when the last read in the past	17
Average daily consumption = 0	1623
Negative average daily usage	37
Average daily consumption greater than 200	35

Note: We tried to distinguish between a Standard Switch and Switch Move but it is not always accurate because the same ICP could go through the switching process twice using a different type of switch within the audit period.

In **section 4.3** we described the logic used by Gentrack to calculate average daily consumption. When Gentrack derives the average daily consumption as less than 1 kWh, it rounds down to 0 kWh, which could be right for some installations but not all of them. Pulse Energy is in discussions with Gentrack to determine if an Excel type of rounding should be used. We asked the Authority for their opinion awaiting a response for us, .

The Switch Breach Report did not record any late CS files.

Audit outcome

Non-compliant

Non-compliance	Description

Audit Ref: 4.10 With: 11 of Schedule 11.3 From: 10-Jan-19 To: 31-Oct-19	Average daily consumption methodology is incorrect for ICPs which usage is less than 1 kWh. Information for a small number of ICPs is incorrect Potential impact: Unknown Actual impact: Low Audit history: Twice previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate. Pulse Energy proactively works with Gentrack to ensure that information is CS files is correct. Audit risk rating is recorded as low due to the small number of ICPs affected

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
As the auditor has noted, we are working with Gentrack to address known issues in the CS file data. Some of the issues have been resolved, although some remain.	01/04/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Work is ongoing to ensure that all information provided in CS files is fully compliant.	01/04/2020	

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

Code reference

Clause 12 Schedule 11.3

Code related audit information

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

- *if the switch meter reading established by the gaining trader differs by less than 200 kWh from that provided by the losing trader, both traders must use the switch event meter reading provided by the gaining trader (clause 12(2)(a)); or*
- *if the switch event meter reading provided by the losing trader differs by 200 kWh or more from a value established by the gaining trader, the gaining trader may dispute the switch meter reading. In this case, the gaining trader, within 4 calendar months of the date the registry manager gives the gaining trader written notice of having received information about the switch completion, must provide to the losing trader a changed validated meter reading or a permanent estimate supported by 2 validated meter readings and the losing trader must either (clause 12(2)(b) and clause 12(3)):*
- *advise the gaining trader if it does not accept the switch event meter reading and the losing trader and the gaining trader must resolve the dispute in accordance with the 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 5 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 EDA file and the Switch Breach Report for the audit period was analysed. Pulse Energy sent 313 RR files (127 were rejected) and received 588 files (277 were rejected). We walked through the RR files process. The company designed a new tool which allows them to quickly evaluate if the CS read provided by a losing trader can be accepted. It is a manual calculation but highly effective. RR files are generally initiated via email between two retailers. Pulse Energy always includes in the email the calculation of the new read, providing validated reads.

Audit commentary

The Switch Breach Report identified 16 late RR files. All of them relate to the beginning of this year when Pulse Energy waited for a scheduled actual read from WELLS. Now as soon as the CS file is received from a losing trader it is evaluated. If the read type is E, WELLS is requested to conduct a special read.

We selected 10 RR files sent to or received from other retailers to check if files were imported into Gentrack and used to calculate submission volumes. We found it compliant.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.11 With:12 of Schedule 11.3 From: 10-Jan-19 To: 03-Sep-19	16 late RR files for Switch Move Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating:2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate. A new tool to evaluate CS reads from losing traders is highly effective but there are still late RR file are sent in August and September. Audit risk rating is recorded as low

Actions taken to resolve the issue	Completion date	Remedial action status

A new process has been introduced to identify ICPs with potentially incorrect switching reads at an early stage, to ensure that RRs can be sent in time. New logic has been added to the reconciliation system to capture accepted RR reads from Registry files and ensure that they are used for reconciliation.	01/09/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The process to ensure that RR reads are sent in a timely fashion will be tweaked as necessary during use.	01/02/2020	

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

Code reference

Clause 14 Schedule 11.3

Code related audit information

The gaining trader switch process applies when a trader has an arrangement with a customer or embedded generator to trade electricity at an ICP at which the losing trader trades electricity with the customer or embedded generator, and one of the following applies at the ICP:

- *the gaining trader will trade electricity through a half hour metering installation that is a category 3 or higher metering installation; or*
- *the gaining trader will trade electricity through a non-AMI half hour metering installation and the losing trader trades electricity through a non-AMI non half hour metering installation; or*
- *the gaining trader will trade electricity through a non-AMI non half hour metering installation and the losing trader trades electricity through anon-AMI half hour metering installation*

If the uninvited direct sale agreement applies to an arrangement described above, the gaining trader must identify the period within which the customer or embedded generator may cancel the arrangement in accordance with section 36M of the Fair Trading Act 1986. The arrangement is deemed to come into effect on the day after the expiry of that period.
A gaining trader must advise the registry manager of the switch and expected event date no later than 3 business days after the arrangement comes into effect.
14(2) The gaining trader must include in its advice to the registry manager:

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

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

14(4)(a) – the proposed event date is in the same month as the date on which the gaining trader advised the registry manager; or
14(4)(b) – the proposed event date is no more than 90 days before the date on which the gaining trader advises the registry manager and this date is agreed between the losing and gaining traders.

Audit observation

The gaining switch process was examined. The EDA file was examined to determine if any gaining switches occurred.

Audit commentary
The review of the EDA file showed that no gaining switches occurred. The company gained only category 1 and 2 metering installations.

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 3 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 gaining switch process was examined. The EDA file was examined to determine if any gaining switches occurred.

Audit commentary
The review of the EDA file showed that no gaining switches occurred, no AN files were sent.

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 3 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 5 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 EDA file was examined to determine if any gaining switches occurred.

Audit commentary
As per section 4.12, no gaining switches occurred.

Audit outcome
Compliant

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

Code reference
Clauses 17 and 18 Schedule 11.3
Code related audit information
A losing trader or gaining trader may request that a switch request be withdrawn at any time until the expiry of 2 calendar months after the event date of the switch.
If a trader requests the withdrawal of a switch, the following provisions apply:

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

Audit commentary
Pulse Energy sent 2,025 NW files and received 3,480 NW files. We examined 10 randomly chosen NW files and the reason code used was correct. 1,048 NW files used the reason code "CX" which accounts for 50%. It was discussed during the audit. Pulse Energy commented that often a losing retailer contacts a customer after a switch is finalised and offers them a better deal. It is the reason for the high percentage of NWCX.

The Switch Breach report did not record any late NW files.

No NW were sent for PPPP code.

Audit outcome
Compliant

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 the switching process was examined. All reads are received from MEPs or agents.

Audit commentary

The company understands that it would be their responsibility to obtain any additional read and pay for it.

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

Pulse Energy has been a part of the Switch Save Protection program since 2015.

Audit commentary

Pulse Energy does not initiate any win-back activity with lost customers during or after the switch. The company confirmed that contact is only made with departing customers to confirm their notice period and any termination fees that apply and discuss outstanding accounts, if required.

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

We reviewed the LIS files and the Audit Compliance report for the period covered by this audit.

Audit commentary

No shared unmetered load is traded using PPPP code and there are no plans for the future.

Using PUNZ code, Pulse Energy trades 15 shared unmetered load ICPs. Based on distributor information held by the registry, daily kWh are calculated correctly.

Audit outcome

Compliant

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

Code reference

Clause 10.14 (2)(b)

Code related audit information

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

Audit observation
The LIS was reviewed to identify any ICPs which load exceeds 3,000 kWh per annum.

Audit commentary
We identified one such ICP, 0000678614UN599, which has a daily kWh of 9.98, which is 3,642 kWh per annum. The load is predictable and of the type approved and published by the Authority.

Audit outcome
Compliant

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

Code reference
Clause 10.14 (5)
Code related audit information
If the unmetered load limit is exceeded the retailer must:

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

Audit observation
The LIS was reviewed to identify any ICPs which load exceeds 3,000 kWh per annum.

Audit commentary
We identified one ICP, 0000678614UN599, which has a daily kWh of 9.98, which is 3,642 kWh per annum. The load is predictable and of the type approved and published by the Authority. There are no ICPs which load exceed 6,000 kWh per annum.

Audit outcome
Compliant

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

Code reference
Clause 11 Schedule 15.3, Clause 15.37B
Code related audit information
An up-to-date database must be maintained for each type of distributed unmetered load for which the retailer is responsible. The information in the database must be maintained in a manner that the resulting submission information meets the accuracy requirements of clause 15.2.
A separate audit is required for distributed unmetered load data bases.
The database must satisfy the requirements of Schedule 15.5 with regard to the methodology for deriving submission information.
Audit observation
The LIS was reviewed to identify any DUML ICPs.
Audit commentary
Pulse Energy does not trade any distributed unmetered load ICPs.

Audit outcome
Compliant

6. GATHERING RAW METER DATA

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

Code reference

Clause 10.13, Clause 10.24 and Clause 15.13

Code related audit information

A participant must use the quantity of electricity measured by a metering installation as the raw meter data for the quantity of electricity conveyed through the point of connection.
This does not apply if data is estimated or gifted in the case of embedded generation under clause 15.13.
A trader must, for each electrically connected ICP that is not also an NSP, and for which it is recorded in the registry as being responsible, ensure that:

- *there is 1 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 Audit Compliance Reports and other registry files were reviewed to assess compliance.
Pulse Energy trades 1336 installations where embedded generation is installed. The profiles used for reconciliation are HHR, RPS, PV1, and EG1.
We reviewed NHHVOLS for Mar'19 to May'19 and confirm that for all these installations volumes were submitted.

Audit commentary

No subtraction method is used to determine submission information provided to the reconciliation manager.
The table below shows non-AMI ICPs with solar connected. The reads are provided by WELLS.
If actual meter reads are not available the Reconciliation Team will call on the Pricing team to do that. They will approximate volumes and profile based on forecasts and previous months' figures.

ICP	Meter	Profile
0000141152HBB39	No solar application from a customer yet	RPS
0000202570UN526	More work has to be done on a customer switchboard	RPS
0000225045MP793	I/E meter	RPS PV1
0000304593HB8FF	No solar	RPS
0000306419MPFC5	I/E meter	RPS PV1
0000557524NR3CF	I/E meter	RPS PV1
0000559968TPAC5	Not connected yet	RPS
0000590149TU3EA	No solar	RPS
0001120525ML896	I/E meter	RPS PV1
0001170337TGDE4	I/E meter	RPS PV1
0001184770PCDAF	I/E meter	RPS PV1
1000012629BPA9C	No solar	RPS

Audit outcome

Compliant

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 3 months for the grid owner to review and comment on the design*
- *respond within 3 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

Pulse Energy is not responsible for any GIP.

Audit commentary

This clause is nor applicable. Compliance was not assessed.

Audit outcome

Not applicable

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

Reconciliation files analysis showed that Pulse Energy submits volumes to the reconciliation manager using the RPS, , EG1 and PV1 profiles.

Audit commentary

No control devices are needed therefore they have never approached a MEP asking for a control device to be certified.

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

The process for defective & bridged meters was examined. Pulse Energy provided 10 examples of possible faulty meters. A potentially faulty meter is identified through the validation process.

Audit commentary

In a situation where no consumption is recorded for "active" ICPs, a SO is issued to the relevant MEP and they are asked to investigate. Before the MEP does any investigation they ask Pulse Energy to contact the customer to check if the power is on. If the MEP decides that a meter is faulty it is replaced, and the metering installation recertified.

From a reconciliation point of view all intervening reads (showing zero consumption) should be flagged as 'invalid'. Consumption is shaped across the unmetered period by the applicable profile.

Audit outcome

Compliant

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

Code reference

Clause 2 Schedule 15.2

Code related audit information

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

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

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

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

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

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

2(6) – The interrogation systems must record:

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

Audit observation

The data collection process was examined.

Meter readings are collected by MEPs and passed to Pulse Energy. Data received from MEPs is automatically uploaded to Gentrack or VIPER except readings for PPPP ICPs which are passed to JC Consulting via SFTP server.

AccuCal was audited to asses compliance with this clause.

Audit commentary

We reviewed the EDMI and AMCI audit report. No non-compliances were identified relating to the above clause.

The clock synchronisation process was reviewed as a part of the MEPs audit.

During the audit AccuCal stated that the clock of the computer which reads two ICPs for Pulse Energy is automatically synchronised to MSL time.

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.

WELLS provides daily NHH reads. WELLS also provides a file listing any broken or missing seals or if any meter tampering was noted. The file is reviewed and acted on.

Pulse Energy accepts customer reads in the form of email, photo or phone call.

Audit commentary

A record of customer reads is attached to the account in Gentrack. This will only be validated if there are at least two 'ordinary reads' to validate against. Validated reads will be used for reconciliation. The company preference is to receive remotely read meters from MEPs but for some installations this is not the case yet.

The WELLS agent audit report was reviewed, and compliance confirmed.

Audit outcome
Compliant

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

Code reference
Clause 6 Schedule 15.2
Code related audit information
For NHH switch event meter reads, for the gaining trader the reading applies from 0000 hours on the day of the relevant event date and for the losing trader at 2400 hours at the end of the day before the relevant event date.
In all other cases, All NHH readings apply from 0000hrs on the day after the last meter interrogation up to and including 2400hrs on the day of the meter interrogation.

Audit observation
The switch read from the CS file is used as a start read for NHH ICPs. Consecutive readings from WELLS and MEPs, apply from 0000hrs on the day after the last meter interrogation up to and including 2400hrs on the day of the meter interrogation.

Audit commentary
Compliance confirmed based on scenarios described in **section 12.11**.

Audit outcome
Compliant

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

Code reference
Clause 7(1) and (2) Schedule 15.2
Code related audit information
Each reconciliation participant must ensure that a validated meter reading is obtained in respect of every meter register for every non half hour metered ICP for which the participant is responsible, at least once during the period of supply to the ICP by the reconciliation participant and used to create volume information.
This may be a validated meter reading at the time the ICP is switched to, or from, the reconciliation participant.
If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 7(1).

Audit observation
The process for missing reads was examined.
Pulse Energy provided a list of ICPs for which no actual read was obtained, during the period of supply, for the period covered by this audit. The list contains 4 ICPs.

Audit commentary
It was discussed during the audit. Pulse Energy made a number of attempts to read these sites but with no success. We would call them exceptional circumstances sites.

Data was estimated for billing and reconciliation purposes. The ICPs switched away to other retailers. A review of the CS files received by Pulse Energy when the ICPs were gained shows that the previous retailer had the same access problem. Switch Event reads were estimated, and the last actual reads were not very recent.

Audit outcome

Compliant

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

Code reference

Clause 8(1) and (2) Schedule 15.2

Code related audit information

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

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

Audit observation

Every month Pulse Energy provides the Authority with a Meter Reading Frequency report. We reviewed the Meter Reading Frequency reports for Jan'19 to July'19 to check if the company had 100% attainment of reads.

Audit commentary

The results of the review are shown below:

Month	Total number of NSPs	Number of ICPs with less than 100%	ICP unread for 12 months
Jan-19	172	50	111
Feb-19	172	46	76
Mar-19	171	40	57
Apr-19	179	36	51
May-19	179	31	45
Jun-19	179	26	35
Jul-19	179	22	30

Compliance has not been met for a number of NSPs. It is evident that the number of not read meters dramatically decreased, by more than 50%. It is the result of the project called "No reads project", which was launched in April'19. A weekly report is run to monitor which ICPs are missing reads for 12 months. The stats are shown below:

Smart Meters Unread for 12+ Months								
	ARCS SM	COUP SM	FCLM SM	IHUB SM	MTRX SM	NGCM SM	SMCO SM	Smart meter issues Total
12/04/2019	0	0	0	0	0	3	0	3
18/04/2019	0	0	0	0	0	3	0	3
23/04/2019	0	0	0	0	0	3	0	3
29/04/2019	0	0	0	0	0	3	0	3
6/05/2019	0	0	0	0	0	5	0	5
13/05/2019	0	0	0	0	0	4	0	4
27/05/2019	0	0	0	0	0	3	0	3
4/06/2019	0	0	0	0	0	4	0	4
10/06/2019	0	0	0	0	0	4	0	4
17/06/2019	0	0	0	0	0	4	0	4
24/06/2019	0	0	0	0	0	4	0	4
01/07/2019	0	0	0	0	0	4	0	4
08/07/2019	0	0	0	0	0	4	0	4
15/07/2019	0	0	0	0	0	4	0	4
29/07/2019	0	0	0	0	0	4	0	4
05/08/2019	0	0	0	0	0	4	0	4
12/08/2019	0	0	0	0	0	4	0	4
19/08/2019	0	0	0	0	0	4	0	4
26/08/2019	0	0	0	0	0	3	0	3
02/09/2019	0	0	0	0	0	3	0	3
09/09/2019	0	0	0	0	0	3	0	3
16/09/2019	0	0	0	0	0	3	0	3
01/10/2019	0	0	0	0	0	0	0	0
07/10/2019	0	0	0	0	0	0	0	0
16/10/2019	0	0	0	0	0	0	0	0
22/10/2019	0	0	0	0	0	0	0	0

Legacy Metering Issues - 12+ Months					
	Gas sites Unread	Sites on Manual	Sites Pending Manual	Non smart issues Total	Grand total
12/04/2019	2	40	2	44	47
18/04/2019	2	39	0	41	44
23/04/2019	2	39	0	41	44
29/04/2019	2	39	1	42	45
6/05/2019	1	42	0	43	48
13/05/2019	1	36	0	37	41
27/05/2019	1	34	0	35	38
4/06/2019	1	46	0	47	51
10/06/2019	1	43	0	44	48
17/06/2019	1	41	0	42	46
24/06/2019	1	35	0	36	40
01/07/2019	1	40	0	41	45
08/07/2019	1	39	0	40	44
15/07/2019	1	39	0	40	44
29/07/2019	1	34	0	35	39
05/08/2019	0	35	0	35	39
12/08/2019	0	33	0	33	37
19/08/2019	0	32	0	32	36
26/08/2019	0	30	0	30	33
02/09/2019	0	30	0	30	33
09/09/2019	0	25	0	25	28
16/09/2019	0	23	0	23	26
01/10/2019	0	26	0	23	23
07/10/2019	1	24	0	25	25
16/10/2019	0	18	0	18	18
22/10/2019	0	16	0	16	16

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.9 With: 8(1) of Schedule 15.2 From: 10-Jan-19 To: 31-Oct-19	100% attainment was not achieved for more than 251 NSPs over 7 months Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	There are good processes in place, they need to be rigorously followed. Number of no reads is decreasing steadily. The impact on settlement outcomes is minor therefore the audit risk rating is recorded as low.

Actions taken to resolve the issue	Completion date	Remedial action status
Since the last audit, we have undergone a major initiative to identify and resolve all sites with read issues over the long term. This is reflected in the steady decline in the number of sites unread over 12 months. We are now in a position to show that best endeavours have been made in every outstanding case.	01/10/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

BAU processes have been improved and reporting instituted to ensure that we can quickly identify sites that are not being read and take appropriate measures in good time. ICPs are first identified after 4 months without a read, and efforts focused to ensure that very few will ever reach the 12+ month category.	01/10/2019	

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

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

In relation to each NSP, each reconciliation participant must ensure that for each NHH ICP at which the reconciliation participant trades continuously for each 4 months, for which consumption information is required to be reported into the reconciliation process. A validated meter reading is obtained at least once every 4 months for 90% of the non-half hour metered ICPs.

A report is to be sent to the Authority providing the percentage, in relation to each NSP, for which consumption information has been collected no later than 20 business days after the end of each month. If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 9(1).

Audit observation

Every month Pulse Energy provides the Authority with a Meter Reading Frequency report. We reviewed the Meter Reading Frequency reports for Jan'19 to July'19 to check if the company had 90% attainment of reads.

Audit commentary

The table below shows how 90% attainment of reads was not met by how many NSPs and ICPs,.

Month	Total number of NSPs	Number of ICPs with less than 90%	ICPs unread for 4 months
Jan-19	172	1	1
Feb-19	172	1	1
Apr-19	179	8	37
May-19	179	9	38

Compliance has not been met for a number of NSPs. It is evident that the number of not read meters dramatically decreased. Compliance was achieved from June'19 onwards. This is the result of the project called "No reads project", which was launched in April'19. A weekly report is run to monitor which ICPs are missing reads for 4+ months. The stats are shown below:

Smart Meters Unread for 4+ Months								
	ARCS SM	COUP SM	FCLM SM	IHUB SM	MTRX SM	NGCM SM	SMCO SM	Smart meter issues Total
12/04/2019	1	3	3	0	2	70	1	80
18/04/2019	1	3	3	0	2	65	0	74
23/04/2019	1	3	3	0	2	65	0	74
26/04/2019	1	2	3	0	1	52	0	59
29/04/2019	1	2	3	0	1	52	0	59
6/05/2019	1	3	3	0	4	76	4	91
13/05/2019	1	2	3	0	2	53	1	62
15/05/2019	1	2	2	0	2	37	1	45
23/05/2019	1	2	2	0	2	29	1	37
27/05/2019	1	2	2	0	2	26	1	34
4/06/2019	1	3	3	0	3	56	0	66
10/06/2019	1	2	2	0	3	51	0	59
17/06/2019	1	2	2	0	3	42	0	50
24/06/2019	1	2	1	0	3	34	0	41
01/07/2019	1	3	3	0	3	50	0	60
08/07/2019	1	2	3	0	3	43	0	52
15/07/2019	1	2	3	0	3	40	0	49
29/07/2019	0	1	3	0	1	38	0	43
05/08/2019	0	1	7	0	2	64	0	74
12/08/2019	0	1	7	0	2	60	0	70
19/08/2019	0	1	7	0	2	57	0	67
26/08/2019	0	1	7	0	1	50	0	59
02/09/2019	1	1	5	0	2	70	0	79
09/09/2019	1	0	4	0	2	67	0	74
16/09/2019	1	0	2	0	3	62	0	68
01/10/2019	0	1	1	0	0	11	0	13
07/10/2019	0	1	0	0	0	11	0	12
16/10/2019	0	0	0	0	0	50	0	50
22/10/2019	0	0	0	0	1	39	0	40

Legacy Metering Issues - 4+ Months					
	Gas sites Unread	Sites on Manual	Sites Pending Manual	Non smart issues Total	Grand total
12/04/2019	28	359	28	415	495
18/04/2019	25	355	0	380	454
23/04/2019	26	341	0	367	441
26/04/2019	24	309	2	335	394
29/04/2019	24	301	3	328	387
6/05/2019	35	420	1	456	547
13/05/2019	32	332	9	373	435
15/05/2019	29	240	4	273	318
23/05/2019	27	241	0	268	305
27/05/2019	27	229	1	257	291
4/06/2019	24	335	10	369	435
10/06/2019	14	317	0	331	390
17/06/2019	11	270	1	282	332
24/06/2019	10	211	2	223	264
01/07/2019	23	345	9	377	437
08/07/2019	23	312	0	335	387
15/07/2019	21	288	0	309	359
29/07/2019	14	214	0	228	271
05/08/2019	29	334	0	363	437
12/08/2019	19	290	0	309	379
19/08/2019	17	264	0	281	348
26/08/2019	15	235	1	251	310
02/09/2019	23	382	0	405	484
09/09/2019	21	340	0	361	435
16/09/2019	20	284	0	304	372
01/10/2019	24	447	0	471	484
07/10/2019	24	413	1	438	450
16/10/2019	20	309	3	332	382
22/10/2019	16	254	3	273	313

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.10 With: 9(1) of Schedule 15.2 From: 10-Jan-19 To: 31-Oct-19	90% attainment was not achieved for 4 months (19 ICPs) Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	There are good processes in place, they need to be rigorously followed. Number of no reads is decreasing steadily. The impact on settlement outcomes is minor therefore the audit risk rating is recorded as low.

Actions taken to resolve the issue	Completion date	Remedial action status
The "no reads" project has ensured that reads are being obtained, and smart reads are being used when available.	01/05/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See above.	01/05/2019	

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 readings are provided by MEPs and WELLS.

Audit commentary

An assessment of compliance with this clause was conducted during their MEP and WELLS audits. We reviewed the WELLS audit report, compliance with this clause was confirmed.

Audit outcome

Compliant

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

Code reference

Clause 11(1) Schedule 15.2

Code related audit information

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

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

Audit observation

51 ICPs are traded by Pulse Energy. HHR data is provided by MEPs and agents. The company also received HHR data (1 ICP) from AccuCal on behalf of Pioneer Energy. All meters are read remotely.

Audit commentary

Compliance with this clause was assessed during the EDMI and AMCI audit. The audit confirmed compliance with this clause.

We assessed AccuCal compliance during this audit. The company uses proprietary software to read ION and EDMI meters.

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

51 ICPs are traded by Pulse Energy. HHR data is provided by MEPs and agents. The company also received HHR data (1 ICP) from AccuCal on behalf of Pioneer Energy. All meters are read remotely.
We assessed AccuCal compliance during this audit. The company uses proprietary software to read ION and EDMI meters.

Audit commentary

AccuCal meets compliance with clause 11(2)(b) by manually recording meter time before reconciliation and adjusting if necessary. The event log is downloaded and reviewed by AccuCal on behalf of Pulse Energy.
Compliance with 11(2)(e) is not met, an interrogation log is not generated.

Compliance with this clause was assessed during the EDMI and AMCI audit. The audit confirmed compliance with this clause.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.13 With: 11(2)(e) of Schedule 15.2 From: 10-Jan-19 To: 31-Oct-19	No interrogation log is generated by the interrogation software to record details of all interrogations for readings provided by AccuCal Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are recorded as moderate. There are only two meters read by AccuCal. AccuCal is certified as ATH and MEP. Reading meters and providing data to traders is additional services provided

Actions taken to resolve the issue	Completion date	Remedial action status

We are working on transferring the meter data provision function to another provider, who we know are able to maintain compliant information.	01/02/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See above	01/02/2020	

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

51 ICPs are traded by Pulse Energy. HHR data is provided by MEPs and agents. The company also received HHR data (1 ICP) from AccuCal on behalf of Pioneer Energy. All meters are read remotely.
We assessed AccuCal compliance during this audit. The company uses proprietary software to read ION and EDMI meters.

Audit commentary

The functionality of the ION and EDMI software allows the programming of meters and the downloading of data. The software is not strictly compliant with 11(3)(a)(b) like for example MV90. There is no log file created during interrogation to meet the requirements of this clause.
Compliance with clause 11(3)(e) is achieved by recording the clock errors manually for each meter. AccuCal advised that a clock for 1000023002BPF97 was adjusted by 5 sec and 1000023001BP357 by 6 sec.

Compliance with this clause was assessed during the EDMI and AMCI audit. The audits confirmed compliance with this clause.

Audit outcome

Non-compliant

Non-compliance	Description

Audit Ref: 6.14 With: 11(3) of Schedule 15.2 From: 10-Jan-19 To: 31-Oct-19	No interrogation log created for readings provided by AccuCal (proprietary software is used) Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are recorded as weak because the software used by AccuCal to read two meters does not create an interrogation log. AccuCal is certified as ATH and MEP. Reading meters and providing data to traders is additional services provided The audit risk rating is low, no impact on settlement outcomes

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
We are working on transferring the meter data provision function to another provider, who we know are able to maintain compliant information.	01/02/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See above	01/02/2020	

7. STORING RAW METER DATA

7.1. Trading period duration (Clause 13 Schedule 15.2)

Code reference
Clause 13 Schedule 15.2
Code related audit information
The trading period duration, normally 30 minutes, must be within ±0.1% (±2 seconds).

Audit observation
The trading period duration was reviewed as part of the MEP, EDMI agent and AccuCal audits.

Audit commentary
We reviewed data provided by all parties and confirm the trading period is 30 minutes.

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
Meters are interrogated by MEPs, EDMI, AccuCal and Wells who archive raw meter data.

Audit commentary
We reviewed EDMI and Wells audit reports which confirmed that data is stored indefinitely. AccuCal confirmed during the audit that data is stored from 2001 for all their customers.

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
It was discussed during the audit. Pulse Energy does not use non-metering information to determine profile data.

Audit commentary

No non-metering information is collected by Pulse Energy.

Audit outcome

Compliant

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

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

Code reference

Clause 19(1) Schedule 15.2

Code related audit information

If a reconciliation participant detects errors while validating non-half hour meter readings, the reconciliation participant must:

19(1)(a) - confirm the original meter reading by carrying out another meter reading

19(1)(b) - replace the original meter reading the second meter reading (even if the second meter reading is at a different date)

19(1A) if a reconciliation participant detects errors while validating non half hour meter readings, but the reconciliation participant cannot confirm the original meter reading or replace it with a meter reading from another interrogation, the reconciliation participant must:

- *substitute the original meter reading with an estimated reading that is marked as an estimate; and*
- *subsequently replace the estimated reading in accordance with clause 4(2)*

Audit observation

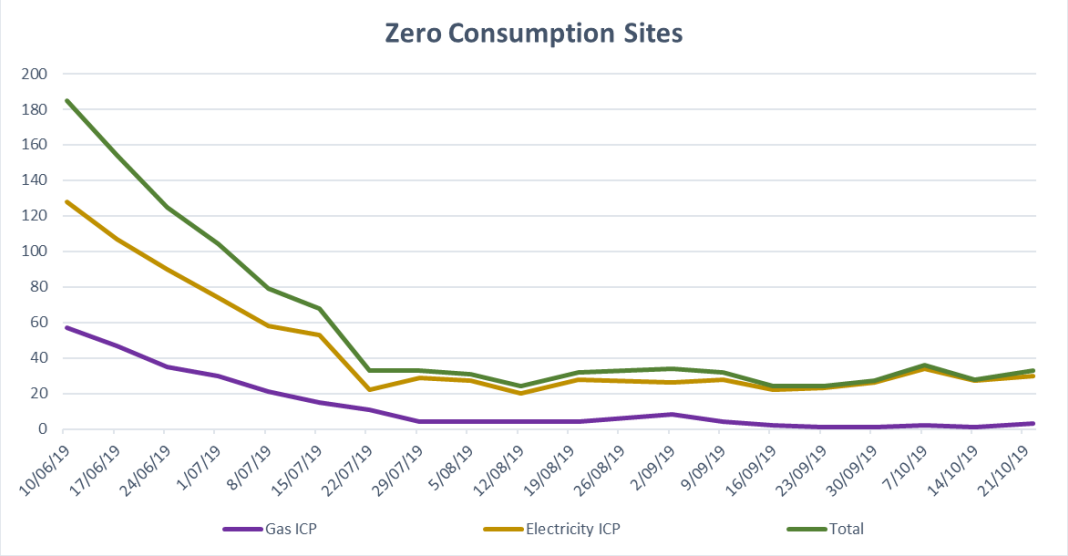
Pulse Energy makes sure it receives daily reads for NHH sites from MEPs or from WELLS.
If such a situation occurs that errors are detected, an additional meter read will be requested from a MEP or Wells.
We reviewed the validation process in **section 9.5** which can identify readings which need to be corrected. Weekly reports are run, and issues are investigated and resolved.

Audit commentary

We asked Pulse Energy to provide us with the list of "problem" ICPs traded in the audit period.

Issue	Number of ICPs	Resolution
Vacant ICPs with kWhs*	44	Being investigated; some of them are occupied, some of them incorrect setup in Gentrack
Disconnected ICPs with kWh	18	11 ICPs -consumption was recorded in error; 7 ICPs – status was updated in the registry
AMI bridged meters	14	Volumes have been estimated and reconciled
Stopped or faulty meter	10	2 ICPs are still under investigation, rest of them were addressed
Incorrect multiplier	10	These customers were all contacted and compensated during a clean-up exercise in Feb-Mar 2019. Reconciliation washups were corrected by Feb 2019

*Zero consumption report which is run weekly shows dramatic decrease in numbers.



Pulse Energy methodically goes through all issues. These reports are reviewed by The Switching Team and if they can't resolve an issue themselves they work together with the Billing Team and The Revenue Assessment Team.
The previous audit listed 3 ICPs with bridged meters for which volumes were not estimated by the time the report was finalised. We checked this with Pulse Energy, and they confirm that volumes for these ICPs were estimated and provided to the reconciliation manager.

Audit outcome
Compliant

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

Code reference
Clause 19(2) Schedule 15.2

Code related audit information
If a reconciliation participant detects errors while validating half hour meter readings, the reconciliation participant must correct the meter readings as follows:

19(2)(a) - if the relevant metering installation has a check meter or data storage device, substitute the original meter reading with data from the check meter or data storage device; or
19(2)(b) - if the relevant metering installation does not have a check meter or data storage device, substitute the original meter reading with data from another period provided:

- *(i) The total of all substituted intervals matches the total consumption recorded on a meter, if available; and*
- *(ii) The reconciliation participant considers the pattern of consumption to be materially similar to the period in error*

Audit observation
Pulse Energy trades 51 ICPs. It was discussed during the audit. The company stated that no correction of HHR data occurred.

Audit commentary
If Pulse Energy considers that the data is not accurate, in the first instance, it will talk to the MEP or agent who provided the data.
Installations traded are mostly domestic customers, therefore a check meter or data storage device won't be installed.

If data needs to be substituted, register reads will be used to ensure that substituted intervals match the total consumption recorded on the meter (**section 9.4**). There were no instances where HHR metering data had to be corrected.

Audit outcome
Compliant

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

Code reference
Clause 19(3) Schedule 15.2
Code related audit information
A reconciliation participant may use error compensation and loss compensation as part of the process of determining accurate data. Whichever methodology is used, the reconciliation participant must document the compensation process and comply with audit trail requirements set out in the Code.

Audit observation
Error and loss compensation was discussed during the audit.

Audit commentary
Pulse Energy stated that they do not have any ICPs for which error or compensation needs to be applied.

Audit outcome
Compliant

8.4. Correction of HHR and NHH raw meter data (Clause 19(4) and (5) Schedule 15.2)

Code reference
Clause 19(4) and (5) Schedule 15.2
Code related audit information
In correcting a meter reading in accordance with clause 19, the raw meter data must not be overwritten. If the raw meter data and the meter readings are the same, an automatic secure backup of the affected data must be made and archived by the processing or data correction application.
If data is corrected or altered, a journal must be generated and archived with the raw meter data file. The journal must contain the following:

19(5)(a)- the date of the correction or alteration
19(5)(b)- the time of the correction or alteration
19(5)(c)- the operator identifier for the person within the reconciliation participant who made the correction or alteration
19(5)(d)- the half-hour metering data or the non-half hour metering data corrected or altered, and the total difference in volume of such corrected or altered data
19(5)(e)- the technique used to arrive at the corrected data
19(5)(f)- the reason for the correction or alteration.

Audit observation
Pulse Energy only receives a copy of raw meter data, and it is archived and never adjusted. The MEPs audit assess compliance with this clause. Both the EDMI and AMCI reports confirm that raw data is never changed or overwritten.
During the audit AccuCal confirm that raw data is never changed or overwritten.

Audit commentary

If any correction or copy of raw data is required a journal will be created. It is the same journal which is created when metering data is estimated.

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

Data received from MEPs or agents is marked as actual. Any estimated data received from Metrix is not imported to Gentrack therefore does not flow to COBRA. Pulse Energy also accepts customer reads.

Audit commentary

The readings are clearly identified in Gentrack. Customer reads are treated as actual for reconciliation purposes if they are validated in Gentrack by at least two "ordinary reads" A read provided by a customer by email with attached photo or phone call are stored against each account for auditing purposes.

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

During the audit we reviewed submission files in **section 11** and **12.**

Volume information provided to the reconciliation manager is calculated based on validated meter readings or estimates. All NHH data stored in Gentrack and used for reconciliation purposes is validated. WELLS data is validated when uploaded to the system, data from MEPs goes through basic validation and then again during a billing run. We reviewed submission files for Jan'19 to May'19.

HHR volumes are stored in VIPER.

Audit commentary

Submission volumes are derived from validated meter readings, estimated readings or permanent estimates.

NHH register reads are received daily from MEPs and WELLS. The correctness of the calculation for volumes using meter readings was assessed during NHH scenarios described in **section 12.11**.

Audit outcome

Compliant

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

Code reference

Clause 3(5) Schedule 15.2

Code related audit information

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

Audit observation

NHH register reads from AMS contain 2-3 decimal places. Most NHH reads from Metrix do not, although there are some exceptions. Manual reads from WELLS and customer reads do not have decimal places.

Audit commentary

Metering data is imported to PRADA, no rounding or truncation occurs. Once data is imported to Gentrack and COBRA, the decimal points are truncated. There are a tiny handful of exceptions (1% of all readings) for which decimal places are retained.

At the end of the month AMI reads are copied to COBRA via NRS, meter readings are rounded, which is non-compliance with this clause. AMS and SMCO provide services for nearly 65% of Pulse Energy ICPs. It means that a significant number of readings are effected by truncation or rounding.

HHR readings from MEPs or agents are not rounded or truncated on upload to the system.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.3 With: 3(5) of Schedule 15.2 From: 11-Jan-19 To: 31-Oct-19	Meter data used for reconciliation is truncated or rounded for 65% of ICPs Potential impact: Unknown Actual impact: Medium Audit history: None Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are recorded as weak. The upload routine of meter data from AMS must be changed. The impact on settlement outcomes is medium therefore the audit risk rating is recorded as medium.

Actions taken to resolve the issue	Completion date	Remedial action status
We are investigating the changes required to ensure that reads are not truncated; however, we are not in a position to make this change immediately. Since the system only truncates decimal places, the overall impact on reads is never more than 1 unit, and aggregated impact on volumes is very close to zero. Planned improvements to the reconciliation process should eliminate this issue in future.	01/08/2020	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
See above	01/08/2020	

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 estimation process was examined. Pulse Energy trades 51 HHR ICPs. VIPER is used to process data and create reconciliation files. The software has a functionality to estimate data if necessary.
The company provided 4 examples of estimated data. In 3 cases, at a later date, data was replaced by actual data provided by AMCI or EDMI. The details are below:

1001102112LCA04 - estimates for June 2019 replaced with actuals
0000042410NTE17 - estimated for one period to cover meter replacement
0177041862LCF3E - estimates (for April 2019) replaced by actuals on 22/05
0000100620WP51F - estimates (for Oct 2018) replaced by actuals on 27/02/2019

Audit commentary

The method which is used depends on how many intervals needs to be estimated. If it is only a small number of intervals needing to be estimated, a straight line is used. If one day or more requires estimation, a customer profile is used. Estimated data is labelled as "estimated" against each interval. In both scenarios estimated data is scaled to match the total kWh.

Audit outcome

Compliant

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

Code reference

Clause 16 Schedule 15.2

Code related audit information

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

16(2)(a) - confirmation that the meter reading or estimated reading relates to the correct ICP, meter, and register
16(2)(b) - checks for invalid dates and times
16(2)(c) - confirmation that the meter reading or estimated reading lies within an acceptable range compared with the expected pattern, previous pattern, or trend
16(2)(d) - confirmation that there is no obvious corruption of the data, including unexpected 0 values.

Audit observation

The process of NHH read validation was reviewed. Metering data is validated in two places, Gentrack and COBRA.

On upload the following validation is conducted by Gentrack:

- Checks for invalid dates and times
- Ensure that a read received is assigned to a meter on the correct ICP.
- Ensure that a read received is assigned to a meter with the correct serial number.
- Ensure that a read received is assigned to a channel with the correct channel number
- Check read date prior the last read date
- Ensure that our retailer is responsible for the ICP for the day of the read.

Additional reports are run to identify readings on vacant installations, inactive or decommissioned, negative consumption, too low or too high daily consumption. Once billing run is done, a so-called post checking reports are run, which is another validation of data e.g. unbilled ICPs, which could be caused by incorrect reads which were not identified during data upload.

COBRA validates data on upload. Any ICPs which fail validation are not used for submissions. The following parameters are used:

Threshold Parameters

Code	Value	Starts On	Description	+ New Parameter
BATCH_PROCESS_SIZE	2000.0	2019-07-08	Amount of channels to process in one batch	
BREACH_PERCENT	0.15	2014-01-01	The percentage point change in units after which a balancing area will breach (where BREACH_UNITS is also exceeded)	
BREACH_UNITS	100000.0	2014-01-01	The number of units after which a balancing area will breach (where BREACH_PERCENT is also exceeded)	
CLOCKED_METER_PER	0.5	2014-01-01	The percentage increase used to detect if the meter has rolled over	
DEFAULT_DEFAULT_ESTIMATE	12.5	2015-01-01	Default value used when no default estimation is found for a content code and availability period	
ICP_ACTIVE_MAX_MONTHS	15.0	2015-01-01	The maximum number of months (integer) an ICP end date can expire before it is considered inactive	
MAT_UPD_KWH	20.0	2019-06-06	Material Units Per Day Change (kWh)	
MAT_UPD_PER	2.0	2019-07-06	Material Units per Day Change (%)	
MAX_DEENRG_CONSUMP	500.0	2014-01-01	The maximum volume allowed for a period where an ICP is de-energised	
MAX_ZERO_DAYS	100000.0	2014-01-01	The maximum number of days that an active ICP should have zero consumption	
NEG_READ_THRESHOLD	0.0	2015-01-01	Threshold in kWh before a negative reading error is tripped.	
ON_HOLD_CHECK_COUNT	100.0	2015-01-01	Number of channels to process before checking if the batch is on hold	

Audit commentary

Weekly reports are created and reviewed by the Switching team and the Revenue Assurance Team. The list of weekly reports run is shown below:

Report Name	Frequency	Process
UML Audit	Monthly	Captures mismatches. Field Services picks these up and fixes them in GT/registry
Multiplier Check	Monthly	Captures mismatches. Field Services picks these up and fixes them in GT/registry
Meter Certification Expiry	Monthly	This report captures all ICPs where the meter certification has expired. Field Services Team communicates with the MEPs to have the meter certification updated. Where MEPs send access issues/turndown lists to PUNZ, we contact the customer to arrange access to recertify these meters and issue work orders back to retailers.
ADL Zero	Weekly	Captures all ICPs that have switched in with ADL of 0. The ADLs are manually updated on Gentrack to ensure estimations are correct (where required) for billing purposes.
Consumption on De-Energised Sites	Weekly	Captures all ICPs that are inactive but are recording consumption. Field Services checks consumption, available reads, reconnection requests and possible missing paperwork and updates the status to CO if positive consumption has been confirmed.
Weekly Zero Consumption Report	Weekly	Captures active ICPs with PUNZ that is not recording any consumption. The customers are contacted to clarify whether the site is occupied or not, if the meters are on and in use, and if the site is prone to seasonal useage. If zero consumption is validated, the ICP is removed from the report for the next 4 months (the ICP will reappear and we make the same checks again). If there should be consumption but none is recorded, a Meter Investigation is lodged to find out what the issue is and resolve accordingly. Field Services then works with Revenue Assurance to calculate the estimated consumption to bill the customer to for the timframe 0 consumption was recorded.
Field Services Compliance Raw Data	Weekly	Captures status and retailer mismatches for Field Services and Switching to update (GT vs. registry)
Field Services Compliance	Weekly	Captures various reports as below: ◦ Months since actual reads GT vs. Prada ◦ Switched in sites with no actual reads ◦ Expired Meter Certification ◦ Install Status Changes (under 5 days vs. over 5 days) ◦ Installed Meters on Decommissioned Sites ◦ Invalid ANZSIC Code
Gas and Electricity New Connection Report	Weekly	For monitoring purposes
Daily DUNE IN16 and IN24 Error Report	Daily	Captures DUNE IN16 and all IN24 ICPs that have switched into PUNZ or has had registry updates done recently to invalid registry codes. Field Services updates Gentrack to ensure correct tariffs are available on Gentrack to make the site billable.
Daily Remote Disco Report	Daily	Captures ICPs that have smart meters that have the day before. Field Services issue the sites out for vacant dis connections.

Screenshot

In our opinion it is an effective way to identify problems with readings, which later on had a flow on effect on reconciliation submissions.

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

All installations but 4 ICPs are metered. Some of them are read remotely some of them by WELLS. Remote reads are provided by MEPs and Pulse Energy agents which are EDMI, AMCI, and AccuCal. The data validation process was reviewed, see **section 9.5**.

Audit commentary

We reviewed the EDMI and AMCI audit report, which confirm compliance.
When data is uploaded an exception report is created. To assist validation EDMI, AMCI and FCLM provide log files. The log files are reviewed by Pulse Energy.

AMCI does not provide log files but they are reviewed by them and if any events occurred which impact data integrity Pulse Energy will be notified. Aniwhenua metering installation is very complex. AccuCal is the MEP providing services. They have in depth knowledge of the technical characteristic therefore I am confident that their review of logs on behalf of Pulse Energy meet compliance with this clause.

Audit outcome

Compliant

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

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

Code reference

Clause 13.136

Code related audit information

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

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

Audit observation

Pulse Energy is not required to provide information to the grid owner.

Audit commentary

This clause is nor applicable. Compliance was not assessed.

Audit outcome

Not applicable

10.2. Unoffered & intermittent generation provision of metering information (Clause 13.137)

Code reference

Clause 13.137

Code related audit information

Each generator must provide the relevant grid owner half-hour metering information for:

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

The generator must provide the relevant grid owner with the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of that generator's volume information. (clause 13.137(2))
If such half-hour metering information is not available, the generator must provide the pricing manager and the relevant grid owner a reasonable estimate of such data. (clause 13.137(3))

Audit observation

Pulse Energy is not required to provide information to the grid owner.

Audit commentary

This clause is nor applicable. Compliance was not assessed.

Audit outcome

Not applicable

10.3. Loss adjustment of HHR metering information (Clause 13.138)

Code reference
Clause 13.138
Code related audit information
The generator must provide the information required by clauses 13.136 and 13.137,
13.138(1)(a)- adjusted for losses (if any) relative to the grid injection point or, for embedded generators the grid exit point, at which it offered the electricity
13.138(1)(b)- in the manner and form that the pricing manager stipulates
13.138(1)(c)- by 0500 hours on a trading day for each trading period of the previous trading day.
The generator must provide the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of the generator's volume information.

Audit observation
Pulse Energy is not required to provide information to the grid owner.

Audit commentary
This clause is not applicable. Compliance was not assessed.

Audit outcome
Not applicable

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

Code reference
Clause 13.140
Code related audit information
If the generator provides half-hourly metering information to a grid owner under clauses 13.136 to 13.138, or 13.138A, it must also, by 0500 hours of that day, advise the relevant grid owner.

Audit observation
Pulse Energy is not required to provide information to the grid owner.

Audit commentary
This clause is not applicable. Compliance was not assessed.

Audit outcome
Not applicable

11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

11.1. Buying and selling notifications (Clause 15.3)

Code reference

Clause 15.3

Code related audit information

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

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

Audit observation

Pulse Energy provided the LIS file and EDA file for the period 03/01/19 to 31/10/19 to identify which profiles are used.

Audit commentary

Pulse Energy uses HHR, RPS, EG1 and PV1 profiles for volume submissions to the reconciliation manager. Notice to the reconciliation manager for these profiles is not required.

Audit outcome

Compliant

11.2. Calculation of ICP days (Clause 15.6)

Code reference

Clause 15.6

Code related audit information

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

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

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

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

Audit observation

Pulse Energy calculates ICP days using VIPER and COBRA as part of the submission process. AV-110 files are submitted on the 4th business day and on the 13th business day of each reconciliation period. On day 13th Pulse Energy submits ICP days files for a current month and consecutive wash-ups.

Pulse Energy provided AV-110 and GR-100 for the audit period.

Audit commentary

The table below shows the ICP days submitted to the reconciliation manager. The table is based on the GR-100 provided by Pulse Energy.

Month	Total number of NSPs	R0	R1	R3	R7	R14
Mar-18		-0.01%	-0.01%	0.00%	0.00%	0.00%
Apr-18		-0.02%	-0.01%	0.00%	0.00%	0.01%
May-18		0.00%	-0.02%	0.00%	0.00%	0.00%
Jun-18		-1.33%	-0.01%	0.00%	-0.01%	0.00%
Jul-18		0.00%	0.01%	0.00%	0.00%	
Aug-18		-0.01%	0.00%	0.00%	0.00%	
Sept-18		-0.01%	0.00%	-0.01%	-0.01%	
Oct-18		0.00%	0.00%	-0.01%	0.00%	
Nov-18		0.00%	-0.01%	0.00%	0.01%	
Dec-18	190	0.00%	-0.02%	0.00%	0.00%	
Jan-19	189	0.00%	0.00%	-0.02%	0.00%	
Feb-19	190	0.00%	0.01%	0.00%	-0.01%	
Mar-19	188	0.00%	-0.01%	0.02%		
Apr-19	188	0.00%	0.00%	0.00%		
May-19	188	0.00%	0.03%	0.00%		
June-19	187	0.00%	0.00%			
July-19	187	0.00%	-0.01%			
Aug-19	188	0.00%	0.01%			

ICP days for PPPP are calculated and submitted by JC Consulting. We examined the calculation of ICP days by Pulse Energy and their agent and found it complaint.
Pulse Energy closely monitors the GR-100 provided by the reconciliation manager to assess their compliance.

Compliant

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

Code reference
Clause 15.7
Code related audit information

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

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

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

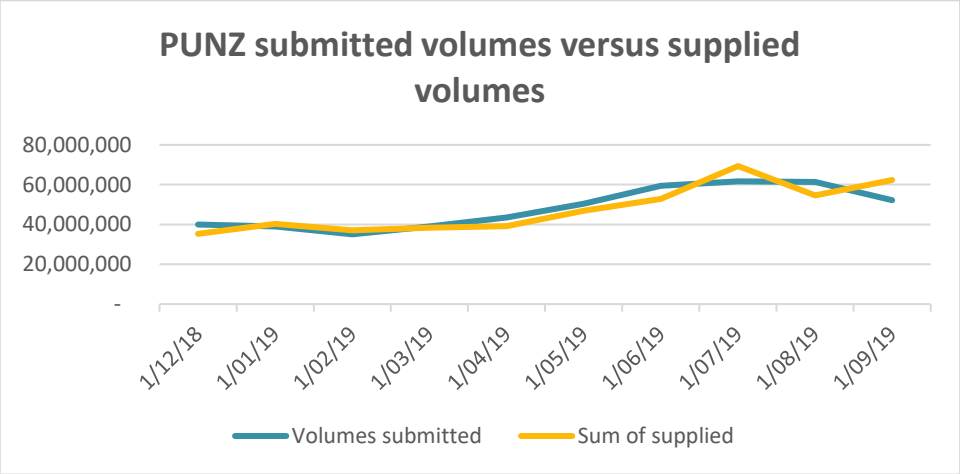
Audit observation

The BILLED file for PUNZ is created in Gentrack and submitted to the reconciliation manager every month. JC Consulting submits the BILLED file for PPPP based on financial information provided by Pulse Energy. The first file was submitted in November'19.

Pulse Energy provided a sample of BILLED files for review. We also reviewed GR-130 for the audit period.

Audit commentary

The graph below shows volumes submitted and supplied for the audit period. The graph does not include PPPP volumes as they were submitted for the first time in October'19 (2 ICPs).



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

Pulse Energy provided the HHRAGGR and GR-090 files for the audit period.

Audit commentary

The HHRAGGR (AV-090) files are created in VIPER. At the time of this audit Pulse Energy was trading 57 HHR ICPs. We compared volumes between HHRVOLS and HHRVOLS for March to May'19, they matched. We have also randomly chosen 3 ICPs and traced volumes from the source data to reconciliation file.

A review of GR-090 showed that volumes were submitted for all CPs which had the flag type of reconciliation marked as HHR.

The HHRAGGR files are prepared at ICP level based on submission information. Clause 15.8 states that the HHRAGGR should contain electricity supplied information rather than submission information. The Reconciliation Manager Functional Specification in section 3, described HHRAGGR as HHR submission information that is aggregated per ICP for the whole month.
There is a misalignment between the Code requirements and RM file specification. It is a problem well known to the Authority and is awaiting a resolution.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.4 With: 15.8 From: 03-Jan-19 To: 31-Oct-19	HHRAGGR files do not contain electricity supplied information Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Pulse Energy submits submissions volumes as per the reconciliation manager specification.

Actions taken to resolve the issue	Completion date	Remedial action status
We will continue to submit volumes in accordance with RM specification	01/10/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will continue to submit volumes in accordance with RM specification	01/10/2020	

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 1 of the techniques set out in clause 15.36(3) specified by the Authority.

Audit observation

Pulse Energy trades 51 HHR ICPs. Data is collected by EDMI, AccuCal (1000023001BP357 and 1000023002BPF97), AMCI and MEPs. Compliance with this clause has been demonstrated by EDMI and AMCI as part of its agent audit. As a part of this audit we review compliance with this clause with AccuCal.

Audit commentary

Data provided by MEPs and EDMI is already daylight shifted. Data received from AccuCal is in standard time. Pulse Energy daylight shifts using two special programs written in Python.

Data is adjusted for daylight savings as part of the process to prepare submissions. The trading period run on technique is applied, and we confirmed this by walking through the process and checking submissions for Sep'19 and Oct'19 for 1000023001BP357 and 1000023002BPF97.

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

Pulse Energy provided reconciliation data for 6 months. We confirmed that volumes are submitted on day 4 and day 13 (all relevant revisions). NHHRVOLS, ICPDAYS, BILLED, HHRVOLS, and HHRAGGR files are submitted.

PUNZ

COBRA is used to create NHH submissions and VIPER HHR submissions.

PPPP

NHH submissions are created by JC Consulting using the RM TOOL. 2 ICPs switched on 30/10/19.

Audit commentary

Two breaches were recorded for late provision of submission volumes for PUNZ in Feb'19 and June'19, it is described in **section 1.6**.

The way in which COBRA processes data has some flaws which require extra vigilance from the operator. The company commented that there is a known bug with Cobra, there is a fraction of channels that do get left out of later revisions. Currently, that affects about 500-600 channels at R7, up to 1500 or so (i.e. a little over 1% of the total) at R14. Those channels need to be identified, and the missing volumes estimated and manually added to the totals from Cobra.

To address it before the NHHVOLS file is submitted, Pulse Energy send the COBRA's output data to JC Consulting. He verifies it using his system to assist the Reconciliation Team that volumes for all ICPs with correct channels are submitted. He provides a file which shows discrepancies and Pulse Energy addresses them before final NHHVOLS are submitted. The process is described in **section 12.3.**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.2 With: 15.4 From: 06-Feb-19 To: 31-Oct-19	Two breaches were recorded for late provision of submission volumes in Feb'19 and June'19 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 recorded as strong, actual impact as low. The files were submitted the next day therefore the reconciliation manager processed them in time. No impact on settlement outcome, audit risk rating is recorded as low.

Actions taken to resolve the issue	Completion date	Remedial action status
Additional checks have been introduced to the reconciliation submissions, to ensure that any errors that are likely to meet the materiality threshold are identified well before submission deadlines.	01/08/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Further changes to the reconciliation process are in progress and will further improve submission accuracy while improving the management of data errors.	01/06/2020	

12.3. Allocation of submission information (Clause 15.5)

Code reference

Clause 15.5

Code related audit information

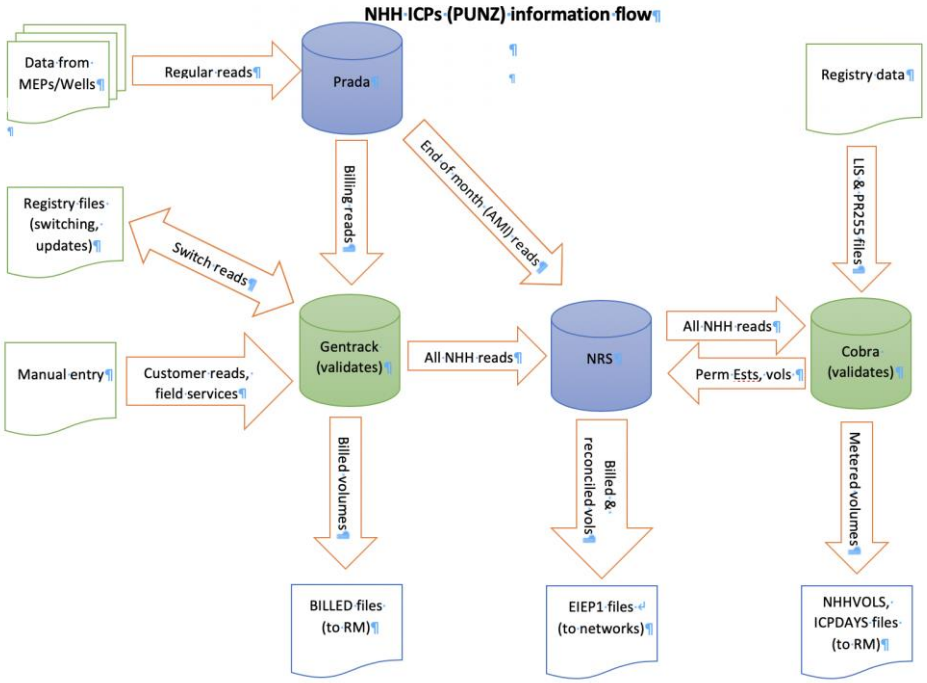
In preparing and submitting submission information, the reconciliation participant must allocate volume information for each ICP to the NSP indicated by the data held in the registry for the relevant consumption period at the time the reconciliation participant assembles the submission information. Volume information must be derived in accordance with Schedule 15.2.
However, if, in relation to a point of connection at which the reconciliation participant trades electricity, a notification given by an embedded generator under clause 15.13 for an embedded generating station is in force, the reconciliation participant is not required to comply with the above in relation to electricity generated by the embedded generating station.

Audit observation

PUNZ

Data is provided monthly by MEPs and agents. All HHR data is screened by an operator running different validations such as missing data, high values etc. The current month submissions are compared with last month submissions.

Before NHHVOLS are submitted on day 3 and day 14 (including revisions), Pulse Energy send the COBRA's output data to JC Consulting which independently is verifies using his system to see that volumes for all ICPs are submitted. He JC Consulting provides a file which shows the discrepancies and Pulse Energy addresses them before final NHHVOLS are submitted. The data flow of NHH reads is as shown below;



PPPP

Submission files are prepared by JC Consulting and uploaded to the RM portal. The first 2 ICPs switched in on 30/10/19.

Audit commentary

COBRA's design allows you to easily follow all meter readings and see what volumes were submitted for each month. It also allows you to mark a reading as a permanent estimate when appropriate (not frequently used see **section13.3**) and enter estimated readings. As described in **section 12.2**, COBRA has a few issues, which were described in the previous audit.

To address COBRA's issues Pulse Energy is working together with JC Consulting using the following process to identify .discrepancies before submission files are sent to the reconciliation manager.

1. Before each reconciliation run Pulse Energy provides COBRA's output e.g. "20190 R0 detailed batch.csv"
2. JC Consulting analyses it is using registry files imported into his system. He provides 4 files as feedback:
   - Comparison_yyyymm – shows which ICPs are missing, missing channels etc
   - Nearmatch year_yyyymm – usually it shows that meter serial number often is incorrect by one character
   - Mismatch_ yyyymm
   - ICP_POC_mismatch_yyyymm - , mismatch between POC in the registry and COBRA. In some cases COBRA still "remembers" POCs which were decommissioned. We checked 5 ICPs and POC used for submissions was correct

The first two files are used by the Reconciliation Team to correct submissions.

We reviewed the Comparison files for October'19 day 4 and 13.

The file "Comparison_201910_20191105092219.xls" showed various discrepancies for 78,951 ICPs. Below is a summary of discrepancies:

- One ICP (0008741266CN429) had a negative consumption (-23 kWh), day 13 showed 9 kWh. Negative consumption is not addressed by the Reconciliation Team unless it is a high value making NSP volume negative
- 233 ICPs were not included in COBRA's output but according to the registry it was Pulse Energy responsibility to submit volumes
- 16,110 ICPs had "0" consumption recorded. The Reconciliation Team commented that they do not look at channels with zero consumptions. Zero volume channels are monitored and investigated by the Revenue Assurance Team.

The 233 ICPs which were not included in COBRA's output had volumes assigned using the following process:

- Gentrack calculates volumes based on meter readings for each ICP
- ICPs volume calculated by Gentrack is recorded in a spreadsheet then they are aggregated to mimic AV-080 format
- Monthly AV-080 is created by COBRA
- Volumes are added or subtracted to previously created AV-080. For month October'19 145,591 kWh were added and subtracted 300,076 kWh. Subtracted volumes are mainly contributed by HHR data (200,000 kWh) (mainly for Vector, specifically where the Line Loss Code is VECA2 or VECA3). Some submission flags that are set to N, this is predominantly LINES (100,000 kWh).

The process described above is followed for each submission and consecutive revision. It is a difficult process, open to mistakes. All credit should be given to Pulse Energy for their effort to have submission files as accurate as possible.

We examined the file "Comparison_201910_2019111881546.xls" (day 13), It listed for 78,960 ICPs. The below table shows a comparison of the number of specific discrepancies (related to submission volume) between two files provided by JC Consulting

Issue	Day4	Day13
Zero volume	16,110 ICPs	16,829 ICPs
Negative volume	0	0
Not in COBRA's output	233 ICPs	1,546 ICPs

221 ICPs were listed in both files. We check 10 ICPs from day 14 file, there were no switches which were not finalised before day4.

We picked up a few ICPs not included in COBRA's output and there was an issue caused by a mismatch between a switch event read date recorded in Gentrack and in COBRA (from LIS file). Gentrack records a switch event read as a transfer date minus one day. The result is that COBRA does not "see" a switch read until actual read is provided by an MEP or WELLS.
There is a procedure called "Correct dates on switch in reads", written in the past. What it does is to identify reads in Cobra where:

- The read type is 'Installed meter'
- The read date is one day before the ICP start date (i.e. the switch-in date)
- The channel currently doesn't have a read on the switch-in date

Once such ICPs are identified the "Correct dates on switch in reads", procedure adds one day to the date of those reads, to match the switch-in date (COBRA's expectation). It doesn't change anything else about the read (so the "created at" date, for instance, will still be the same). The procedure can be run at any time, and it will only update reads that need it (there is no risk of duplication).
It is believed in this case it was run between day 4 and day 13 of this month, which would account for the corrections we saw. The comment was that it is almost certain it is not run automatically.

Our concern is that the process for submissions are not documented like other areas such as switching, meter rewards, billing etc. We see it as a high risk for the company and our recommendation is to document it is as soon as possible. At the time of the audit two people were familiar with the process.

UML ICPs are correctly reconciled; volumes are calculated in Gentrack based on information in the registry. ICPs with embedded generation have the correct profile assigned.

Audit outcome

Compliant

Description	Recommendation	Audited party comment	Remedial action
Creation of reconciliation files are not documented	Document reconciliation processes as soon as possible	We agree that this is a weakness and have begun to document the process.	This work should be completed well before the next audit.

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

Pulse Energy is not a grid owner.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

12.5. Provision of NSP submission information (Clause 15.10)

Code reference

Clause 15.10

Code related audit information

The participant (if a local or embedded network owner) must provide to the reconciliation manager for each NSP for which the participant has given a notification under clause 25(1) Schedule 11.1 (which relates to the creation, decommissioning, and transfer of NSPs) the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.10(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period. (clause 15.10(b))*

Audit observation

Pulse Energy is not an embedded network owner, but it provides NSPVOLS files on behalf of Pioneer Energy as their agent. Pulse Energy provided files for Sept'19 and Oct'19 for review.
Metering data is provided by AccuCal. Once the data is downloaded from the SFTP server, it is imported into a folder from which a special script is written in Python which creates submission files.

We compared the original file with the submission file for October'19 and noted that there was an outage on 13/10, (33 intervals), full day of 14/10, and 15/10 (31 intervals). On 32 interval was recorded 0.004776 which was recorded in NSPVOLS due to rounding algorithm.

Audit commentary

Submission files were submitted in correct format on behalf of Pioneer Energy.
No late file submissions were recorded.

Audit outcome

Compliant

12.6. Grid connected generation (Clause 15.11)

Code reference

Clause 15.11

Code related audit information

The participant (if a grid connected generator) must deliver to the reconciliation manager for each of its points of connection, the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.11(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period. (clause 15.11(b))*

Audit observation

We reviewed the LIS file and confirm that Pulse Energy is not a grid connected generator.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

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

In **section 12.3** we described the methodology for how submission files are created. Every month on day 13, Pulse Energy submits revised reconciliation files. JC Consulting compares the COBRA's output with his system and provides the comparison files. As part of the switching review we followed the RR files process and confirm that any accepted RR files from winning retailers are recorded in Gentrack and data flows to COBRA.

We reviewed the schedule of reconciliation submissions used by Pulse Energy. Every month, on day 13th, revision files are submitted for the relevant month. The company also provided the GR-170NHH file from the reconciliation manager.

JC Consulting submit revision files for PPPP.

We reviewed submission volume for ICP 1000023001BP357 for which data is provided by AccuCal and required reformatting. We found a few anomalies.

Audit commentary

We confirm that Pulse Energy submits revision files to the reconciliation manager. We reviewed the initial and revision reconciliation files for Jan'19 to Oct'19 when assessing compliance in **section 13.3**.

In **section 1.6** we noted the breach in relation to R14.

The previous audit identified a number of non-compliances related to the accuracy of submissions. 11 issues were listed in the table. 9 of them were cleared before the audit was finalised.

We followed up partially cleared issues, the comments are below:

1. Incorrect profile for EG ICPs. As per **section 3.5** we noted the incorrect profile for such ICPs. Pulse Energy has a process in place to have the correct profile by the end of the month. It is a bulk update done by Gentrack. At the time of the audit it was the most effective way to have correct data in submission files.
2. Bridged meters as per **section 8.1** – consumption was estimated for the bridged period.
3. Incorrect status of inactive ICPs where consumption is recorded. There is a process in place to run a weekly report to identify such ICPs and investigate

Accuracy of submissions are not as accurate as they should be but as per **section 12.3**, Pulse Energy is working together with JC Consulting to address it. Each revision becomes more accurate, but it takes time.

There are some problems with the accuracy of data provided to the reconciliation manager for ICP 1000023001BP357. We analysed data from August to October'19.
Our conclusion is that the Import and Export channels are transposed and kVArh are submitted as kWh.

Month	File provided by AccuCal				PUNZ HHRAGGR file	
	Export [kWh]	Export [kVArh]	Import [kWh]	Import [kVArh]	Import [kWh]	Export [kWh]
Aug-19	1105.5	3.8	266	917.2	1105.5	917.2
Sept-19	75.3	4.9	443.5	145.9	75.3	145.9
Oct-19	0	4.3	386.9	78.4	0	78.4

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.7 With: 15.12 From: 01-Aug-19 To: 31-Oct-19	Some submission information was inaccurate Potential impact: Low Actual impact: Low Audit history: Twice before Controls: Weak Breach risk rating:3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are recorded as weak. More detective controls need to be designed. The impact on settlement outcomes is minor (1 ICPs) therefore the audit risk rating is recorded as low. Audit risk rating low

Actions taken to resolve the issue	Completion date	Remedial action status
We are correcting the tools used to convert meter data into submission data for this ICP	01/01/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

We are working on transferring the meter data provision requirement to another provider, who we know are able to maintain compliant information.	01/02/2020	

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

Code reference

Clause 4 Schedule 15.2

Code related audit information

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

The relevant reconciliation participant must, at the earliest opportunity, and no later than the month 14 revision cycle, replace volume information created using estimated readings with volume information created using validated meter readings.

If, despite having used reasonable endeavours for at least 12 months, a reconciliation participant has been unable to obtain a validated meter reading, the reconciliation participant must replace volume information created using an estimated reading with volume information created using a permanent estimate in place of a validated meter reading.

Audit observation

We reviewed forward estimates from Oct'17 to July'18, the last shows total FE for a month. It shows a significant decrease of forwards estimates in R14 from June'18.

Month	Total submission [kWh]	Total Historical estimates [kWh]	Total Forward Estimates [kWh]
Oct-17	38,925,496	38,751,222	174,274
Nov-17	35,120,090	34,937,845	182,245
Dec-17	34,249,241	34,000,954	248,287
Jan-18	34,552,023	34,323,951	228,071
Feb-18	31,892,552	31,746,817	145,735
Mar-18	36,304,250	36,142,312	161,938
Apr-18	40,851,732	40,679,979	171,753
May-18	49,416,488	49,307,399	109,089
June-18	58,066,882	58,036,127	30,755
July-18	59,949,954	59,905,082	44,872

Audit commentary

Pulse Energy has implemented more stringent controls of meter readings, running weekly reports of missing reads, incorrect reads etc. The process of sending requests to WELLS to read new non -AMI meters is fully automated.

The small percentage of forward estimates in R14 could be caused by COBRA not having the correct flag for switched out ICPs as described in **section 13.3**.

Audit outcome

Non-compliant

Non-compliance	Description

Audit Ref: 12.8 With: 4 of Schedule 15.2 From: 10-Jan-19 To: 31-Oct-19	Some forward estimates are not replaced by permanent estimates in R14 Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are recorded as moderate. More detective controls need to be designed. There are good processes in place implemented by the Filled Services and the Switching Team, they need to be rigorously followed. The impact on settlement outcomes is minor therefore the audit risk rating is recorded as low. Audit risk rating low

Actions taken to resolve the issue	Completion date	Remedial action status
This has been identified as a weakness, and we have made progress in reducing the number of affected sites.	01/08/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
A system will be introduced to ensure that permanent estimates are available for all unread meters after 13 months. However, this will take some time to implement and integrate with other affected business processes.	01/06/2020	

12.9. Reconciliation participants to prepare information (Clause 2 Schedule 15.3)

Code reference

Clause 2 Schedule 15.3

Code related audit information

If a reconciliation participant prepares submission information for each NSP for the relevant consumption periods in accordance with the Code, such submission information for each ICP must comprise the following:

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

- *to create non half hour submission information a reconciliation participant must only use information that is dependent on a control device if (clause 2(2)):*
    - *a) the certification of the control device is recorded in the registry; or*
    - *b) the metering installation in which the control device is location has interim certification.*
- *to create submission information for a point of connection the reconciliation participant must apply to the raw meter data (clause 2(3):*
    - *a) for each ICP, the compensation factor that is recorded in the registry (clause 2(3)(a))*
    - *b) for each NSP the compensation factor that is recorded in the metering installations most recent certification report. (clause 2(3)(b))*

Audit observation

We reviewed submission files for NHH ICPs created by Pulse Energy and submission files for PPPP ICPs created by JC Consulting.

Audit commentary

In **section 12.2**. we described in detail the process used by the company to make sure that volumes are submitted for all ICPs for which they are responsible.

We confirm:

- ICPs category 3 metering installations have submission type HHR
- EG ICPs have correct profile assigned
- Only profile HHR, RPS, PV1, and EG1 is used , which do not require certified control devices
- UML ICPs are accounted for
- No ICPs with loss or compensation factor
- HHR submissions were correctly aggregated – **section 11.4**

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

We reviewed the AV-080 for Jan'19 to Sept'19.

Audit commentary

We confirm that historic estimates were included and identified correctly.

Audit outcome

Compliant

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

Code reference

Clause 4 and 5 Schedule 15.3

Code related audit information

The methodology outlined in clause 4 of Schedule 15.3 must be used when preparing historic estimates of volume information for each ICP when the relevant seasonal adjustment shape is available.
If a seasonal adjustment shape is not available, the methodology for preparing an historical estimate of volume information for each ICP must be the same as in clause 4, except that the relevant quantities kWh_{PX} must be prorated as determined by the reconciliation participant using its own methodology or on a flat shape basis using the relevant number of days that are within the consumption period and within the period covered by kWh_{PX}.

Audit observation

If the seasonal adjustment file (GR-30) is not available, which is the case for day 4 submissions, COBRA does not create their own shape file. It will calculate a forward estimate, which will be replaced by historical estimates once a shape file provided by the reconciliation manager is available (day13).

Audit commentary

For the assessment of compliance with this clause we provided Pulse Energy with a set of scenarios to validate the accuracy of the calculation of historic and forward estimation for NHH ICP days. The results are shown below.

Test	Scenario	Test expectation	Result	Sample ICP
1	ICP becomes Active part way through a month	Consumption is only calculated for the Active portion of the month.	Compliant	0001041030TG7CD
2	ICP becomes Inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	Compliant	0000364325WT978
3	ICP become Inactive then Active again within a month.	Consumption is only calculated for the Active portion of the month.	Compliant	0009912118WW47D
4	ICP switches in part way through a month on an estimated switch reading	Consumption is calculated to include the 1st day of responsibility.	Compliant	0030180366PCD28
5	ICP switches out part way through a month on an estimated switch reading	Consumption is calculated to include the last day of responsibility.	Compliant	1099567185CN1AF
6	ICP switches out then back in within a month	Consumption is calculated for each day of responsibility.	Compliant	0000001374DEA1D
7	Continuous ICP with a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant	0000000083TED22
8	Continuous ICP without a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant	0000004969TRA16
9	Rollover Reads	Consumption is calculated correctly in the instance of meter rollovers.	Compliant	0000122073TR342

10	Unmetered load for a full month	Consumption is calculating based on daily unmetered kWh for full month.	Compliant	0003240696HB401
11	Unmetered load for a part month	Consumption is calculating based on daily unmetered kWh for active days of the month.	Compliant	0007175794RN1C7
12	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	1000558199PCBDA
13	ICP with a customer read during the month	Customer reads are not used to calculate historic estimate, unless they have been validated against a set of validated readings from another source	Compliant	0002272561MLC72
14	ICP with a photo read during the month	Photo reads are not used to calculate historic estimate, unless they have been validated against a set of validated readings from another source	Compliant	0000652102TP4FD
15	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Compliant	0000001017EN060

COBRA's design allows you to see on the screen the calculation of HE for each individual ICP, which is an appreciated feature from an auditing point of view.

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

We reviewed the estimation process. The average daily consumption provided by a losing retailer is not used by Pulse Energy. Estimates are calculated using a historic information or type of customer and pricing applied by networks. If a validated reading is available during the read period, COBRA applies the daily average for the period between two register reads.

We reviewed GR-170NHH in relation to forward estimate accuracy. We chose June'18 and examined the wash up files.

Balancing area	R0 [kWh]	R1 [kWh]	R3 [kWh]	R7 [kWh]	R14 [kWh]

AUCKLNDVECTG	5,563,130.56	6,116,961.08	6,336,702.97	6,358,056.99	6,403,139.16
CENTRALLINEG	135,073.88	142,210.10	136,076.94	130,420.92	157,282.00
CROMWELDUNEG	606,414.19	657,517.07	667,987.15	696,663.80	698,738.33
KAI0111MPOWG	208,390.44	226,462.62	233,410.09	239,905.44	239,714.84
RNBAL01ORONG	1,232,510.96	1,415,254.22	1,442,256.48	1,450,662.42	1,459,483.21
SWCKMPOWG	241,689.36	275,458.27	285,007.02	288,207.72	289,583.51
WAIKATOWAIKG	662,738.89	736,809.39	767,147.58	782,241.09	782,254.05

Balancing area	R1/R0	R3/R0	R7/R0	R14/R0
AUCKLNDVECTG	9.96%	13.91%	14.29%	**15.10%**
CENTRALLINEG	5.28%	0.74%	-3.44%	**16.44%**
CROMWELDUNEG	8.43%	10.15%	14.88%	**15.22%**
KAI0111MPOWG	8.67%	12.01%	**15.12%**	**15.03%**
RNBAL01ORONG	14.83%	**17.02%**	**17.70%**	**18.42%**
SWCKMPOWG	13.97%	**17.92%**	**19.25%**	**19.82%**
WAIKATOWAIKG	11.18%	**15.75%**	**18.03%**	**18.03%**

Audit commentary

We noted the volumes for R7 and R14 change for more than 15%. For SWCKMPOWG, R7 and R14 volumes were higher nearly 20% in comparison with initial submissions. Based on the last two audits, our conclusion is that the high percentage of the increase of volumes for R7 and R14 is a result of problems with submission accuracy in the past. Pulse Energy has put a lot of resources in to its clean-up project and the results are visible in other parts of this report. In the next few months we should see even more improvement.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.12 With: 6 of Schedule 15.3 From: 10-Jan-19 To: 31-Oct-19	Forward estimates do not meet +/- 15% threshold for 7 balancing areas Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are recorded as moderate. More detective controls need to be designed. The high percentage of the increase of volumes is the result of actions in the past. We believe new processes will address this. Audit risk rating is recorded as low because the processes to review and validate data are good, which should have a positive flow on effect on the accuracy of submission volumes
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

New checks, and particularly the increased use of end-of-month AMI reads, have had the effect of improving the accuracy of preliminary submissions, which will reduce variance with later washups.	01/08/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See above	01/08/2019	

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

Code reference

Clause 7 Schedule 15.3

Code related audit information

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

Audit observation

We examined the EDA file and the Audit compliance Report from the point of view of profile changes. The most common profile change is from RPS to RPS PV1. Usually it is done just before the reconciliation run.

Audit commentary

According to the Audit Compliance Report, 235 profile changes occurred in the audit period. Some of them were backdated as a part of the clean-up project. For any profile changes the validated meter reading was on the day.

Audit outcome

Compliant

13. SUBMISSION FORMAT AND TIMING

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

Code reference

Clause 8 Schedule 15.3

Code related audit information

For each category 3 of higher metering installation, a reconciliation participant must provide half hour submission information to the reconciliation manager.

For each category 1 or category 2 metering installation, a reconciliation participant must provide to the reconciliation manager:

- *Half hour submission information; or*
- *Non half hour submission information; or*
- *A combination of half hour submission information and non-half hour submission information*

However, a reconciliation participant may instead use a profile if:

- *The reconciliation participant is using a profile approved in accordance with clause Schedule 15.5; and*
- *The approved profile allows the reconciliation participant to provide half hour submission information from a non-half hour metering installation; and*
- *The reconciliation participant provides submission information that complies with the requirements set out in the approved profile.*

Half hour submission information provided to the reconciliation manager must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *trading period*

The non-half hour submission information that a reconciliation participant submits must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *consumption period or day*

Audit observation

Pulse Energy creates NHH submissions using COBRA and HHR ICPs using VIPER. JC Consulting creates submissions for PPPP ICPs (2). We reviewed NHH files for May'19 to Sept'19

Audit commentary

We reviewed files and confirm that the format of submission files is compliant. We reviewed HHRVOLS and HHRAGGR in **section 11.4**. NHHVOLS were discussed in **section 12.9**.

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 2 decimal places.

If the unrounded digit to the right of the second decimal place is greater than or equal to 5, the second digit is rounded up, and

If the digit to the right of the second decimal place is less than 5, the second digit is unchanged.

Audit observation

COBRA and the RM TOOL (PPPP ICPs) rounds submission information to two decimal places. It is done after all data aggregation per NSP and loss factor code is complete.

Audit commentary

Compliance confirmed after a review of submission files (HHRAGGR, HHRVOLS, NHHVOLS, and BILLED) confirmed that submission data is rounded to two decimal places.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 15.3

Code related audit information

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

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

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

Audit observation

Pulse Energy uses COBRA to create and submit reconciliation files for NHH ICPs. We reviewed files submitted for the period Jan'19 to Sept'19 and GR-170 for the same period.

The table shows number of NSPs for which historic estimates percentage have not met the threshold specified in this clause

Month	Total number of NSPs	R3	R7	R14
Jun-18	170	6	2	161
Jul-18	167	5	2	165
Aug-18	167	5	1	

Sept-18	167	11	0	
Oct-18	167	7	2	
Nov-18	166	4	3	
Dec-18	190	3	4	
Jan-19	189	4	4	
Feb-19	190	4	4	
Mar-19	188	4		
Apr-19	188	3		
May-19	188	0		
June-19	187	3		

The table below shows the percentage of historical estimates across all NSPs

Month	Total number of NSPs	R3	R7	R14
Jun-18	170	93.24%	98.83%	99.93%
Jul-18	167	93.35%	98.40%	99.91%
Aug-18	167	93.79%	99.03%	
Sept-18	167	93.81%	98.11%	
Oct-18	167	94.94%	98.50%	
Nov-18	166	94.75%	97.63%	
Dec-18	190	95.36%	98.38%	
Jan-19	189	94.83%	97.00%	
Feb-19	190	95.87%	98.29%	
Mar-19	188	95.33%		
Apr-19	188	96.68%		
May-19	188	98.12%		
June-19	187	97.30%		

Audit commentary

The same non-compliance was noted during the previous audit. Overall Pulse Energy's compliance with this clause for R3 and R7 is good. R14 revision is different as the majority of NSPs do not reach 100% of

historical estimates. There was not a straight forward explanation. We took R14 for ALB0331 to see what could be the problem. Volumes for 5 ICPs still had a percentage of FE. Closer analysis showed that 3 ICPs already switched out to other retailers. It would appear that there is not a process in place to investigate this non-compliance, which could be easily solved if a final switch non -actual event reads were treated as permanent estimates as long they were accepted by a wining retailer. The review of GR-170NHH files could be useful tool.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 13.3 With: 10 of Schedule 15.3 From: 10-Jan-19 To: 31-Oct-19	Historical estimates target not met for revision 3, 7, and 14 Potential impact: Low Actual impact: Low Audit history: Multiple time Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are recorded as moderate, non-compliance with R3 is and 7 is small (volumes are ever decreasing). More detective controls needs to be designed. The impact on settlement outcomes is minor therefore the audit risk rating is recorded as low.

Actions taken to resolve the issue	Completion date	Remedial action status
We have identified the common scenarios that lead to data being incorrectly recorded at the R14 submission stage (mostly, switch reads, and meter change information not being correctly captured by Cobra) and will be implementing new processes to catch and correct these cases.	01/04/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See above	01/04/2020	

CONCLUSION

PARTICIPANT RESPONSE