

**ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT**

CROSSHAVEN CONSULTING LTD

For

LODESTONE SOLAR LIMITED

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EXECUTIVE SUMMARY

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of **Lodestone Solar Limited (Lodestone)**, to support their application for certification in accordance with clauses 5 and 7 of schedule 15.1. The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits version 7.1.

Lodestone is building a portfolio of solar farms in New Zealand commencing with the generation installation in Kaitaia on the Top Energy network. Lodestone is a 100% New Zealand owned with their offices based in Takapuna Auckland. The intention is that Lodestones solar farms will increase NZ solar production by eight times, acting as a diversified power plant reliably feeding into local networks. The Kaitaia solar farm is the first of five planned solar farms and is scheduled to go live in October 2023. This plant has a 55 GWh capacity so will be required to meet dispatch instructions.

Lodestones compliance is reliant on the compliance of Pulse Energy as registry, switching and reconciliation agent to Lodestone. While Pulse Energy audit report record compliance in relation to the activities that will be performed on behalf of Lodestone, Pulse Energy's systems for registry management, switching and reconciliation functions are configured for single participant code use only therefore are unable to be used for the management of Lodestone ICPs and data.

Pulse Energy have implemented a number of manual processes for performing tasks for Lodestone.

- Registry Management and switching will be undertaken using direct updates in the registry.
- Reconciliation functions will be performed manually within standalone databases and spreadsheets including:
 - Collation of volume information for each solar farm / ICP.
 - Validation of data including checking for completeness and unusual data patterns.
 - Correction or estimation of data including identification of any corrections and estimations with accompanying journals recording methods used.
 - Daylight saving adjustment.
 - Formatting of data into the reconciliation manager file formats.

This audit reviewed the monthly reconciliation process document between Lodestone and Pulse Energy setting out responsibilities for the expected tasks and timeframes. The manual processes were discussed with both Lodestone and Pulse to ensure the manual processes were well understood and sufficient controls will be in place.

The audit identified three recommendations relating to the extent of the manual reconciliation processes being implemented by Pulse to manage Lodestones reconciliation functions.

At the time of the audit Lodestone has not begun trading and no live or test data was available for the audit, the audit has been conducted using reviews of relevant documentation and interviews with key personnel and Lodestones agents. Agent, MEP and reconciliation participant audit reports relating to the agents used by Lodestone were also reviewed.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. While compliance was noted for all relevant parts of the code based on the process reviews and interviews of key personnel, the absence of data available to fully test these processes means compliance cannot be confirmed until Lodestone commences trading and datasets are available for testing and review. I recommend that the next audit is conducted in six months from when trading has commenced. This will ensure that sufficient data is available to fully assess Lodestones compliance with its code obligations and the effectiveness of the processes and interactions with their agents.

The matters raised are shown in the tables below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Future Risk Rating							

Future risk rating	0	1-3	4-14	16-40	41-55	55+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

ISSUES

Subject	Section	Description	Issue

RECOMMENDATIONS

Subject	Section	Description	Recommendation
Relevant information	2.1	Include expected delivery timeframes to monthly reconciliation process document	Lodestone to add timeframes for when interactions between Lodestone and Pulse Energy are required to be completed to ensure that both parties are clear regarding delivery timeframes to meet code obligations.
Relevant information	2.1	Data consistency	Review the registry AC020 audit compliance report and monthly LIS reports as part of the monthly reconciliation process to identify potentially inaccurate information which requires investigation and correction.
Derivation of volume information	9.2	Explore Automating HHR validation steps	Recommend that Pulse Energy explore automating some of these tasks to improve the efficiency and effectiveness of reconciliation process and reduce the time required to perform these tasks during the time critical period leading up

			to submission delivery due dates.
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1. ADMINISTRATIVE

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

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

Audit observation

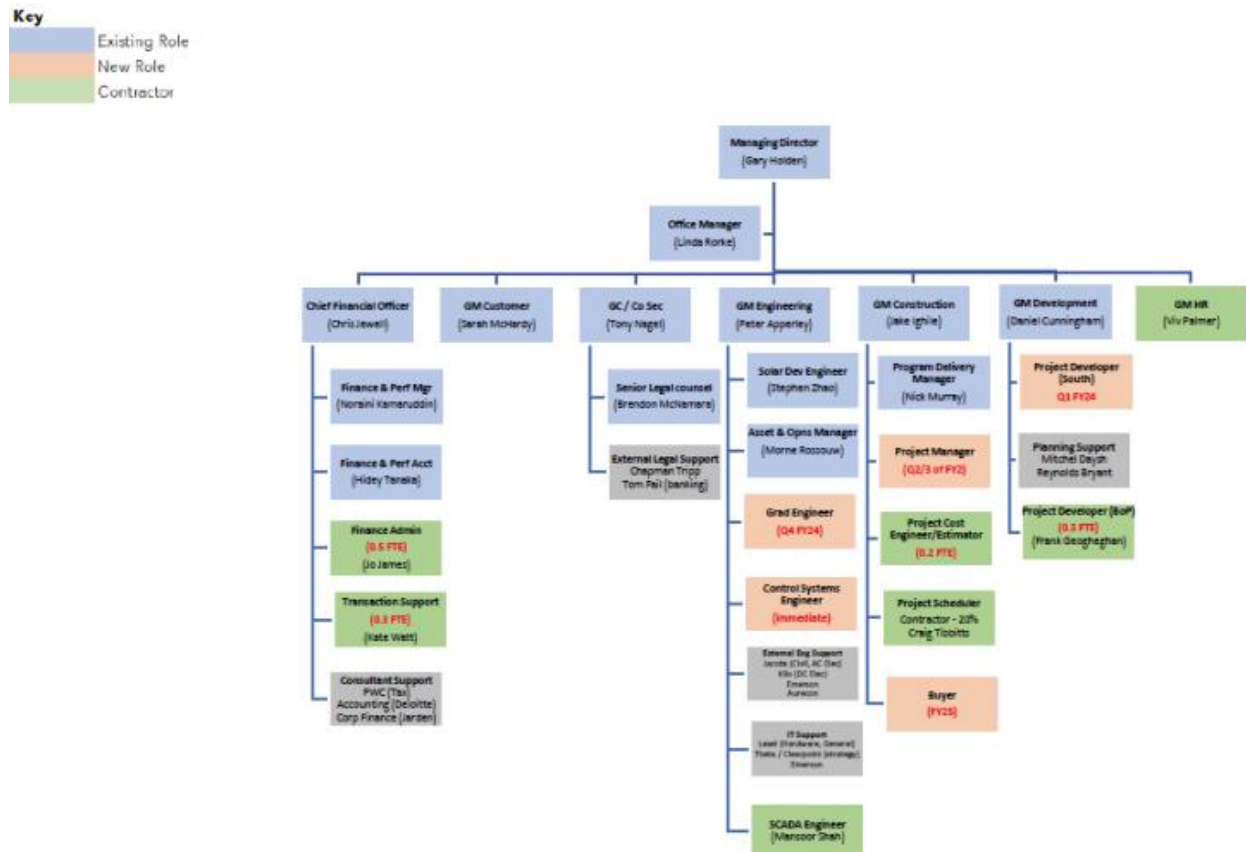
Current code exemptions were reviewed on the Electricity Authority website.

Audit commentary

There are no exemptions in place that are relevant to the scope of this audit.

1.2. Structure of Organisation.

Lodestone provided a copy of their organisation structure for the relevant parts of their business.



1.3. Persons involved in this audit.

Auditor:

Bernie Cross

Crosshaven Consulting Limited

Electricity Authority Approved Auditor

Lodestone personnel assisting in this audit were:

Name	Title
Noraini Kamaruddin	Finance and Performance Manager
Chris Jewell	Chief Financial Officer
Brendon McNamara	Legal Counsel
Mansoor Shah	SCADA Engineer
Peter Apperley	General Manager Engineering
Ben Tan	General Manager, Wholesale Market, Pulse Energy Ltd
Jason Ting	Reconciliation Analyst, Pulse Energy Ltd

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

This area was examined by interview to confirm Solar Energy Services Ltd understands their obligations.

Audit commentary

Lodestone has engaged Pulse Energy Ltd for the performance of registry, switching and submission activities.

Pulse Energy RP audit report was evaluated as part of this audit for the functions they will perform on behalf of Lodestone. Interviews with key personnel at Pulse Energy was also conducted as part of this audit to ensure that an orderly implementation of services will be provided.

EMS also operates as agent for the delivery of HHR metering information relating to the embedded generation plants that have provided an offer into the system operator.

1.5. Hardware and Software

Lodestone

Lodestone have chosen Emerson's Ovation SCADA system for monitoring and control of the equipment at each solar farm. Each solar farm has its own Ovation server and Lodestone operations can access

Ovation either on site in the 33kV substation via the HMI screen or via remote connection from the Takapuna office.

Lodestone has chosen Emerson's Enterprise Data Server (EDS) to consolidate the data from each of the Ovation SCADA systems for access by operations, engineers, finance and management team members in a safe read-only environment. EDS will be Lodestone's data warehouse for solar farm data and will be the source for other applications that might need real time or historical data such as advanced analytics, forecasting and asset management.

A key system that will be reliant on EDS data and which Lodestone needs to establish for Kaitia commissioning is a third-party server called Zoe from Orbit Systems. Zoe will be responsible for automatically producing 36 hours ahead generation forecasts (offer files) and uploading them to NZX's wholesale market via WITS (Wholesale Information Trading System). Zoe will take care of the automated uploads to WITS, but it will need sources of data in order to generate the files. By default, it is expected that Zoe will use APIs to draw information from EDS databases.

Each site has a mini-EDS server that interfaces with the onsite Ovation server and relays data to the central EDS server.

It is the intention that EDS will enable the user to generate generation and purchases monthly files that meet the Reconciliation Manager's requirements in the future. The required files have been incorporated into the EDS User Requirements document in preparation for Lodestone to conduct their own reconciliation in the future.

Pulse Energy

Pulse Energy's systems for registry management, switching and reconciliation functions are configured for single participant code use only therefore are unable to be used for the management of Lodestone ICPs and data.

Pulse Energy have implemented a number of manual processes for performing tasks for Lodestone.

- Registry Management and switching will be undertaken using direct updates in the registry.
- Reconciliation functions will be performed manually within standalone databases and spreadsheets including:
 - Collation of volume information for each solar farm / ICP.
 - Validation of data including checking for completeness and unusual data patterns.
 - Correction or estimation of data including identification of any corrections and estimations with accompanying journals recording methods used.
 - Daylight saving adjustment.
 - Formatting of data into the reconciliation manager file formats.

AccuCal

AccuCal will be utilising MV90 to interrogate the meters at each solar farm to download both the interval data and also the meter event logs.

1.6. Breaches or Breach Allegations

There have been no alleged breaches relevant to the scope of this audit during the audit period.

1.7. ICP Data

Lodestone does not supply any ICPs at the time of the audit. One New connection is scheduled for commissioning mid October 2023.

Lodestone has applied for and is awaiting Registry access to enable registry functions to be initiated.

1.8. Authorisation Received

Lodestone provided authorisation via email.

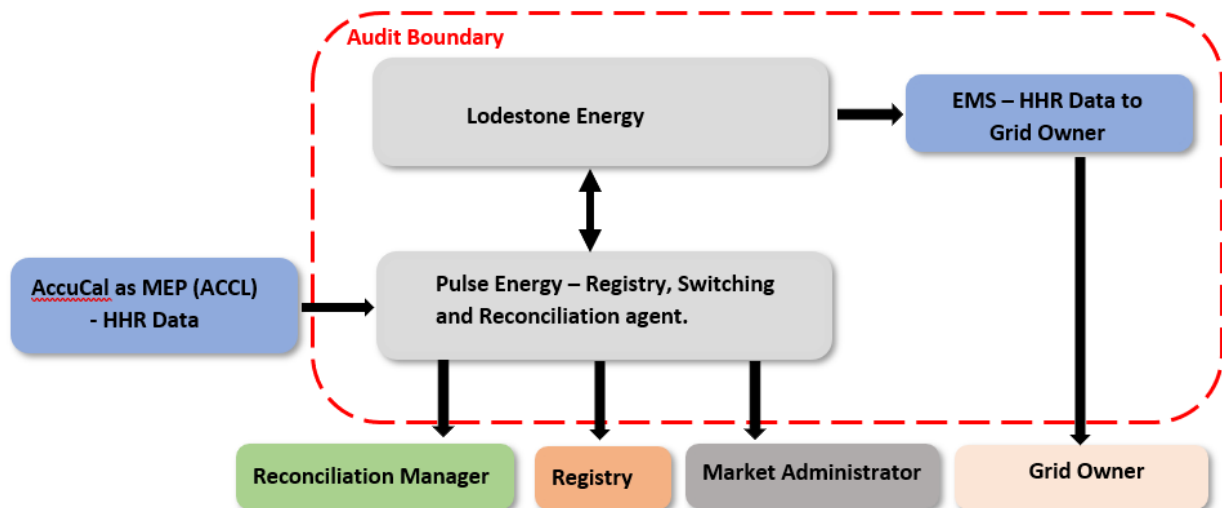
1.9. Scope of Audit

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of Lodestone, to support their application for certification in accordance with clauses 5 and 7 of schedule 15.1.

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

The audit was conducted remotely via Microsoft Teams meetings between 26 September and 2 October 2023.

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



The table below shows the tasks under clause 15.38 of part 15 for which Lodestone requires certification. Lodestone’s compliance is largely reliant on the compliance of Pulse Energy, EMS and AccuCal, as agents

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing AMI data
(a) - Maintaining registry information and performing customer and embedded generator switching	Pulse Energy	
(b) – Gathering and storing raw meter data		AccuCal
(c)(iii) - Creation and management of NHH and HHR volume information	Pulse Energy	
(d) – Calculation of ICP days	Pulse Energy	

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing AMI data
(da) - delivery of electricity supplied information under clause 15.7		
(db) - delivery of information from retailer and direct purchaser half hourly metered ICPs under clause 15.8	Pulse Energy	
(e) – Provision of submission information for reconciliation	Pulse Energy	
(f) - Provision of metering information to the Grid Owner	EMS	

The EMS agent audit reports record compliance in relation to the activities to be performed on behalf of Lodestone. Their audit report is expected to be submitted with this audit.

Pulse Energy registry, switching and reconciliation overall processes were reviewed as part of their reconciliation participant audit. The proposed manual processes were discussed in detail with both Lodestone and Pulse to ensure these are well understood and robust.

Any non-compliances affecting Lodestone are recorded in this report.

1.10. Summary of previous audit

Lodestone provided a copy of the desktop audit report conducted in September 2023 by Chrissy Burrows of Momentous Consulting.

The desktop audit identified that there had been a delay in applying for certification as a reconciliation participant resulting in less than the required two month period (that enables the Electricity Authority to consider and approve the application) from the application date to the expected commissioning date of the first solar farm which will be when Lodestone will begin operating as a reconciliation participant.

2. OPERATIONAL INFRASTRUCTURE

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

Code reference

Clause 10.6, 11.2, 15.2

Code related audit information

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

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

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

Audit observation

The draft monthly reconciliation process document between Lodestone and Pulse Energy was reviewed to confirm responsibilities and expected service levels for each task.

Lodestone has applied for and is awaiting Registry access to enable registry functions to be initiated.

Audit commentary

The draft monthly reconciliation process document between Lodestone and Pulse Energy was reviewed confirm responsibilities and expected service levels for each task. This document is still being refined by Lodestone and Pulse Energy to ensure all tasks are clearly identified and responsibilities recorded. This document does not currently record the expected timeframes for when submission files will be available by Pulse Energy for peer review by Lodestone and when Lodestone need to complete their peer review of the submission files and notify Pulse Energy that the files are ready for uploading into the reconciliation managers system. I recommend that Lodestone add timeframes for when interactions between Lodestone and Pulse Energy are required to be completed to ensure that both parties are clear regarding delivery timeframes to meet code obligations.

Recommendation	Description	Audited party comment	Remedial action
Include expected delivery timeframes to monthly reconciliation process document	Lodestone to add timeframes for when interactions between Lodestone and Pulse Energy are required to be completed to ensure that both parties are clear regarding delivery timeframes to meet code obligations.	This was noted by Jason Ting and Ben Tan (Pulse) and Noraini Kamaruddin (Lodestone) in the session with Bernie Cross on 27 Sep 2023. This timeframe is now agreed and added in the reconciliation process document	Cleared

Pulse Energy's systems for registry management are configured for single participant code use only therefore are unable to be used for the management of Lodestone ICPs and data.

Pulse Energy have implemented a number of manual processes for performing tasks for Lodestone and will complete all registry updates manually directly in the registry on receipt of a completed template from Lodestone that requests the required registry updates.

The monthly reconciliation process document does not include a regular check of registry data to Lodestone ICP set ups recorded by Pulse Energy in preparation of producing the monthly submission data. I recommend that the registry’s AC020 trader compliance report and monthly LIS reports are reviewed to identify potential data discrepancies between registry fields for investigation and correction.

Recommendation	Description	Audited party comment	Remedial action
Data consistency	Review the registry AC020 audit compliance report and monthly LIS reports as part of the monthly reconciliation process to identify potentially inaccurate information which requires investigation and correction.	This was noted by Jason Ting (Pulse) and Noraini Kamaruddin (Lodestone) in the session with Bernie Cross on 27 Sep 2023. Corrective action is in progress.	Identified

Audit outcome

Compliant

2.2. Provision of information (Clause 15.35)

Code reference

Clause 15.35

Code related audit information

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

Audit observation

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

Audit commentary

This area is discussed in several sections in this report and compliance is confirmed.

Audit outcome

Compliant

2.3. Data transmission (Clause 20 Schedule 15.2)

Code reference

Clause 20 Schedule 15.2

Code related audit information

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

Audit observation

This is discussed in the AccuCal MEP report, EMS agent report and the Pulse Energy Reconciliation Participant report.

Audit commentary

Compliance is recorded in these audit reports.

Audit outcome

Compliant

2.4. Audit trails (Clause 21 Schedule 15.2)

Code reference

Clause 21 Schedule 15.2

Code related audit information

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

The audit trail must include details of information:

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

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

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

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

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

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

Audit observation

A complete audit trail was checked for all data gathering, validation and processing functions.

Audit commentary

Lodestone uses Pulse Energy as agent for data gathering, validation and processing functions.

Pulse Energy's systems for registry management, switching and reconciliation functions are configured for single participant code use only therefore are unable to be used for the management of Lodestone ICPs and data.

Pulse Energy have implemented a number of manual processes for performing tasks for Lodestone:

- Registry Management and switching will be undertaken using direct updates in the registry.

- Reconciliation functions will be performed manually within standalone databases and spreadsheets including:
 - Collation of volume information for each solar farm / ICP.
 - Validation of data including checking for completeness and unusual data patterns.
 - Daylight saving adjustment.
 - Formatting of data into the reconciliation manager file formats.

Audit trails will be recorded manually via email exchanges using standard templates for ensuring all required information is provided for registry and switching tasks and using a manual log for estimations and corrections applied within the reconciliation functions.

Compliance is recorded in the AccuCal and EMS audit reports for the tasks performed for Lodestone.

Audit outcome

Compliant

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

Code reference

Clause 10.4

Code related audit information

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

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

Audit observation

Lodestone is the customer for the solar farms.

Audit commentary

Not applicable.

Lodestone is the customer for the solar farms that will be traded using this participant code.

Audit outcome

Not applicable

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

Lodestone is the customer for the solar farms that will be traded using this participant code, and authorisation for access is not required.

Audit commentary

Not applicable.

Lodestone is the customer for the solar farms that will be traded using this participant code, and authorisation for access is not required.

Audit outcome

Not applicable

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

Metering is located at the point of connection. No error or loss compensation factors were required.

Audit commentary

Metering is located at the point of connection. No error or loss compensation factors were required.

Audit outcome

Compliant

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

Code reference

Clause 11.15B

Code related audit information

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

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

The terms specified in subclause (1) must be expressed to be for the benefit of the Authority for the purposes of the Contract and Commercial Law Act 2017, and not be able to be amended without the consent of the Authority (clause 11.15B(2)).

Audit observation

Lodestone is the customer for the solar farms that will be traded using this participant code.

Audit commentary

Not applicable.

Lodestone is the customer for the solar farms that will be traded using this participant code.

Audit outcome

Not applicable

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 was discussed to evaluate the strength of controls.

The monthly reconciliation process document between Lodestone and Pulse Energy was reviewed to confirm responsibilities and expected service levels for each task.

Audit commentary

Lodestone will notify Pulse Energy whenever a new connection has been completed and will provide the meter installation paperwork to enable the registry update to be completed within the required five business days.

Pulse Energy have implemented a number of manual processes for performing tasks for Lodestone and will complete all registry updates manually directly in the registry.

Pulse Energy as Lodestones registry management agent will monitor the registry notification files monthly as part of the reconciliation processes and will identify any new ICPs where Lodestone has been recorded as the proposed trader.

Pulse Energy's new connection process does not routinely use the "inactive - new connection in progress" status, so MEP nomination does not occur until the ICP is "active".

Audit outcome

Compliant

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

Code reference

Clause 10.33(1)

Code related audit information

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

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

Audit observation

There has been only one completed new connection to date.

Audit commentary

Lodestone has not conducted or authorised any temporary electrical connections.

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

Audit observation

New connection processes were discussed.

No reconnection and meter bridging tasks have been undertaken to date.

Lodestone do anticipate supplying unmetered ICPs.

Audit commentary

New connection processes were discussed and Lodestone have a good understanding of their obligations.

Kaitaia solar farm (ICP 0010001026TEB59) is scheduled to be commissioned in October 2023 and a category 5 metering installation has been installed in preparation of the livening of this ICP by the distributor.

Lodestone will be the meter equipment owner (MEO) for the solar farm metering equipment and AccuCal will be the Metering equipment provider (MEP).

Audit outcome

Compliant

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

Distributor agreements were reviewed relating to the solar farm developments under construction in the TOP Energy and Horizon networks.

Audit commentary

Lodestone has a distributor agreement in place with Top Energy for the Kaitaia solar farm which is scheduled for commissioning in October 2023. Lodestone is also progressing distributor agreements for the other solar farms currently under construction.

Lodestone also has distributed generator connection agreements in place for these two solar farms under construction.

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

MEP agreement with AccuCal was reviewed.

Audit commentary

Lodestone has an MEP agreement in place to provide MEP services for the solar farms being developed.

Audit outcome

Compliant

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

Code reference

Clause 10.33B

Code related audit information

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

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

Audit observation

Lodestone will initially only supply ICPs relating to its own solar farms so switching is unlikely to occur.

Audit commentary

If any ICPs reconnected as part of a switch in are then withdrawn the gaining trader is expected to disconnect using the same methodology as the losing trader used.

Lodestone intends to only supply its solar farms using this participant code therefore no switching activity is expected to occur.

Audit outcome

Not applicable

2.15. Electrical disconnection of ICPs (Clause 10.33B)

Code reference

Clause 10.33B

Code related audit information

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

Audit observation

Lodestone intends to only supply ICPs relating to its own solar farms, so disconnection is unlikely to occur.

Audit commentary

Lodestone intends to only supply ICPs relating to its own solar farms, so disconnection is unlikely to occur.

Audit outcome

Not applicable

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

Code reference

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

Code related audit information

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

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

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

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

Audit observation

Processes that would involve seals being broken or removed were discussed.

Audit commentary

Lodestone has not yet arranged for any field services work that would require seals to be removed or broken.

Lodestone's processes require that in all cases where field work may require seals to be broken or removed that this work will be completed by the MEP, who are required to ensure that only qualified personnel perform work and manage and trace seals.

Audit outcome

Compliant

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

Code reference

Clause 10.33C and 2A of Schedule 15.2

Code related audit information

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

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

If the trader bridges a meter, the trader must:

- *determine the quantity of electricity conveyed through the ICP for the period of time the meter was bridged.*
- *submit that estimated quantity of electricity to the reconciliation manager.*
- *within 1 business day of being advised that the meter is bridged, notify the MEP that they are required to reinstate the meter so that all electricity flows through a certified metering installation.*

The trader must determine meter readings as follows:

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

Audit observation

The process for bridging meters was discussed.

Audit commentary

Lodestone solar farms will have metering installation category 5 metering installed which is not capable of being bridged.

Lodestone is not intending to provide retail services for metering installation category one ICPs where meter bridging could occur.

Audit outcome

Compliant

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

Code reference

Clause 11.30

Code related audit information

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

Audit observation

The requirement to ensure the ICP number is present on all invoices provided to customers was discussed.

Lodestone is the customer for the ICPs relating to the solar farms.

Audit commentary

Lodestone is the customer for the ICPs relating to the solar farms. No invoicing is expected to occur.

Audit outcome

Not applicable

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

Code reference

Clause 11.30A

Code related audit information

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

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

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

Audit observation

Lodestone is the customer for the ICPs relating to the solar farms.

Audit commentary

Lodestone is the customer for the ICPs relating to the solar farms.

Audit outcome

Not applicable

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

Code reference

Clause 11.30B

Code related audit information

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

- *on their website*
- *in outbound communications to residential consumers about price and service changes*

- *to residential consumers on an annual basis*
- *in directed outbound communications about the consumer's bill.*

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

Audit observation

Lodestone is the customer for the ICPs relating to the solar farms.

Audit commentary

Lodestone is the customer for the ICPs relating to the solar farms.

Audit outcome

Not applicable

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 discussed to confirm compliance with the requirement to obtain ICP identifiers for points of connection to local or embedded networks.

Audit commentary

This requirement is well understood and managed by Lodestone.

Two new connections are in progress relating to solar farms at Kaitaia and Edgecumbe. Both have ICP numbers issued by the distributor.

Audit outcome

Compliant

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

Code reference

Clause 11.7(2)

Code related audit information

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

Audit observation

The new connection processes were examined in detail to evaluate the strength of controls.

No switching has occurred yet.

Audit commentary

The new connection processes were reviewed in **section 2.9**.

Lodestone has applied for and is awaiting Registry access to enable registry functions to be initiated.

Pulse Energy has responsibility for updating the registry on behalf of Lodestone. There have been no status or trader undertaken for Lodestone at the time of the audit.

The accuracy and timeliness of registry updates is discussed in **section 3.5**.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 11.1

Code related audit information

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

Audit observation

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

The monthly reconciliation process document between Lodestone and Pulse Energy was reviewed to confirm responsibilities and expected service levels for each task.

Lodestone is in the process of arranging registry access to enable their registry management and switching agent (Pulse Energy) to be able to perform updates on their behalf.

Audit commentary

Pulse Energy will have the responsibility for updating the registry on behalf of Lodestone once registry access has been provided by the registry manager.

Audit outcome

Compliant

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)):
 - o arrange for a final interrogation to take place prior to or upon meter removal (clause 11.18(3)(a)); and
 - o 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 MEP nomination processes were reviewed.

Audit commentary

Retailers Responsibility to Nominate and Record MEP in the Registry

The new connection process is discussed in detail in **sections 2.9**. Because the 1,12 “inactive new connection in progress” status is not used, MEP nominations will occur when the ICP is moved to “active” status. Any backdated updates to “active” are likely to also have late MEP nominations.

Lodestone is in the process of arranging registry access to enable their registry management and switching agent (Pulse Energy) to be able to perform updates on their behalf.

MEP nominations will be applied by Lodestones registry management agent Pulse Energy and rejected nominations will be monitored manually by Pulse Energy and notified to Lodestone.

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

ICP information was reviewed to determine compliance.

Audit commentary

Pulse Energy has responsibility for updating the registry on behalf of Lodestone. No new connections have been completed at the time of the audit. Two new connections are in progress relating to solar farms at Kaitaia and Edgumbe.

Lodestone has applied for and is awaiting Registry access to enable a login to be created for Pulse Energy so that registry functions can be initiated.

Audit outcome

Compliant

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

Code reference

Clause 9 (1)(k) of Schedule 11.1

Code related audit information

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

Audit observation

The process to capture and manage ANZSIC codes was discussed.

Audit commentary

As part of the new connection process Lodestone will determine the ANZSIC code for each ICP and notify Pulse Energy to populate the registry accordingly.

Audit outcome

Compliant

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

Code reference

Clause 9(1)(f) of Schedule 11.1

Code related audit information

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

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

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

Audit observation

Lodestone do not intend to supply ICPs with unmetered load.

Audit commentary

Lodestone do not intend to supply ICPs with unmetered load.

Audit outcome

Not applicable

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

Code reference

Clause 17 Schedule 11.1

Code related audit information

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

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

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

- *the ICP has only 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 new connection processes were examined in detail as discussed in **sections 2.9** and **3.5**.

The reconnection process was discussed.

Audit commentary

The new connection processes were examined. The status of an ICP is only changed to “active” once confirmation has been received. Submission information is provided for all “active” ICPs, including “active” vacant ICPs.

Lodestone will perform a regular comparison of Active dates for new connections to the distributor’s initial electrical connection date, and MEP’s certification date using the AC020 report. Where an exception is identified Lodestone will investigate the reason for the mismatch in dates.

Audit outcome

Compliant

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

Code reference

Clause 19 Schedule 11.1

Code related audit information

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

- *electricity cannot flow at that ICP (clause 19(a)); or*

- *submission information related to the ICP is not required by the reconciliation manager for the purpose of compiling reconciliation information (clause 19(b)).*

Audit observation

The disconnection process was discussed.

Audit commentary

Pulse Energy is responsible for updating the registry on behalf of Lodestone.

Lodestone has not undertaken any disconnections to date.

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

There are no ICPs with LODE as the proposed trader at the "new" or "ready" statuses as the registry manager has not yet completed registry access for Lodestone.

Audit commentary

Lodestone is actively monitoring the new connections relating to their solar farm developments to ensure these are completed in a timely manner.

Lodestone do not anticipate undertaking new connections for other customers.

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

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Code reference

Clause 9 Schedule 11.3

Code related audit information

The switch move process applies where a gaining trader has an arrangement with a customer or embedded generator to trade electricity at an ICP using non half-hour metering or an unmetered ICP, or to assume responsibility for such an ICP, and no other trader has an agreement to trade electricity at that ICP, this is referred to as a switch move and the following provisions apply:

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

In the event of a switch move, the gaining trader must advise the registry manager of a switch and the proposed event date no later than 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

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Audit observation

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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 a non-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

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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)):*
 - o *the participant identifier of the trader making the withdrawal request (clause 18(c)(i)); and*
 - o *the withdrawal advisory code published by the Authority. (clause 18(c)(ii))*
- *within 5 business days after receiving notice from the registry manager of a switch, the trader receiving the withdrawal must advise the registry manager that the switch withdrawal request is accepted or rejected. A switch withdrawal request must not become effective until accepted by the trader who received the withdrawal. (clause 18(d))*
- *on receipt of a rejection notice from the registry manager, in accordance with clause 18(d), a trader may re-submit the switch withdrawal request for an ICP in accordance with clause 18(c). All switch withdrawal requests must be resolved within 10 business days after the date of the initial switch withdrawal request. (clause 18(e))*
- *if the trader requests that a switch request be withdrawn, and the resolution of that switch withdrawal request results in the switch proceeding, within 2 business days after receiving notice from the registry manager in accordance with clause 22(b), the losing trader must comply with clauses 3,5,10 and 11 (whichever is appropriate) and the gaining trader must comply with clause 16. (clause 18(f))*

Audit observation

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Code reference

Clause 11.15AA to 11.15AC

Code related audit information

A losing retailer (including any party acting on behalf of the retailer) must not initiate contact to save or win back any customer who is switching away or has switched away for 180 days from the date of the switch.

The losing retailer may contact the customer for certain administrative reasons and may make a counteroffer only if the customer initiated contact with the losing retailer and invited the losing retailer to make a counteroffer.

The losing retailer must not use the customer contact details to enable any other retailer (other than the gaining retailer) to contact the customer.

Audit observation

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit commentary

Lodestone has not yet undertaken any switching activity and does not intend to switch any ICPs using the LODE participant code.

Audit outcome

Not applicable

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

Lodestone does not anticipate supplying ICPs with shared unmetered load.

Audit commentary

Lodestone does not anticipate supplying ICPs with shared unmetered load.

Audit outcome

Not applicable

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

Lodestone does not anticipate supplying ICPs with unmetered load.

Audit commentary

Lodestone does not anticipate supplying ICPs with unmetered load.

Audit outcome

Not applicable

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

Code reference

Clause 10.14 (5)

Code related audit information

If the unmetered load limit is exceeded the retailer must:

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

Audit observation

Lodestone does not anticipate supplying ICPs with unmetered load.

Audit commentary

Lodestone does not anticipate supplying ICPs with unmetered load.

Audit outcome

Not applicable

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

Code reference

Clause 11 Schedule 15.3, Clause 15.37B

Code related audit information

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

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

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

Audit observation

Lodestone does not anticipate supplying ICPs with Distributed unmetered load.

Audit commentary

Lodestone does not anticipate supplying ICPs with Distributed unmetered load.

Audit outcome

Not applicable

6. GATHERING RAW METER DATA

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

Code reference

Clause 10.13, Clause 10.24 and 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

Processes for metering, submission, and distributed generation were reviewed.

Audit commentary

Metering installations installed.

Lodestone's new connection process for its solar farms ensures that metering is installed before electrical connection occurs. No ICPs will be settled using subtraction.

Distributed Generation

Lodestone solar farms will have appropriate HHR metering in place to record the I flow volumes prior to their connection to the distribution network.

Lodestone's registry agent, Pulse Energy will also perform a monthly comparison of set up information against the registry to ensure any ICPs with an installation type indicating that distribution generation is present, also have an I flow meter register present. Pulse Energy will notify Lodestone of any exceptions identified from this monthly comparison for investigation.

Bridged meters

Lodestone solar farms will have metering installation category 5 metering installed which is not capable of being bridged.

Lodestone is not intending to provide retail services for metering installation category one ICPs where meter bridging could occur.

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

The network supply points (NSP) table was reviewed to confirm whether Lodestone is responsible for any GIPs.

Audit commentary

Review of the NSP table confirmed that Lodestone are not responsible for any GIPs.

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

Lodestone intends to submit only HHR submission information and certified control devices are not required for HHR submission.

Audit commentary

Lodestone intends to submit only HHR submission information and certified control devices are not required for HHR submission.

Audit outcome

Not applicable

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

Code reference

Clause 10.43(2) and (3)

Code related audit information

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

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

Audit observation

Processes relating to defective metering were discussed.

Audit commentary

AccuCal scans meter event logs at regular intervals to identify any events that may have impacted data accuracy and notifies the reconciliation participant and agent. AccuCal also provides full meter event logs to the reconciliation participants agent to enable an additional review of these logs.

Where possible AccuCal also sets up email alerts for critical events (power outages, phase failure etc) so that these can be investigated and where necessary resolved as soon as possible.

Pulse Energy as reconciliation agent performs data validation looking to periods of unexpected zero consumption or unusual consumption patterns indicating potential data accuracy issues. Where any exceptions are identified, Pulse escalates the exception to Lodestone to investigate further.

Audit outcome

Compliant

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

Code reference

Clause 2 Schedule 15.2

Code related audit information

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

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

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

This process was reviewed as part of the AccuCal MEP audit report.

Audit commentary

Compliance is recorded in the AccuCal MEP audit reports.

AccuCal monitors clock synchronisation for the meters associated with the Lodestone solar farms.

AccuCal will advise Pulse of clock synchronisation events, and no action is usually required.

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

Lodestone intends to submit all volume information as HHR.

Audit commentary

Lodestone intends to submit all volume information as HHR.

Audit outcome

Not applicable

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

Lodestone intends to submit all volume information as HHR.

Audit commentary

Lodestone intends to submit all volume information as HHR.

Audit outcome

Not applicable

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

Lodestone intends to submit all volume information as HHR.

Audit commentary

Lodestone intends to submit all volume information as HHR.

Audit outcome

Not applicable

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

Lodestone intends to submit all volume information as HHR.

Audit commentary

Lodestone intends to submit all volume information as HHR.

Audit outcome

Not applicable

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

Lodestone intends to submit all volume information as HHR.

Audit commentary

Lodestone intends to submit all volume information as HHR.

Audit outcome

Not applicable

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

Lodestone intends to submit all volume information as HHR.

Audit commentary

Lodestone intends to submit all volume information as HHR.

Audit outcome

Not applicable

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

Code reference

Clause 11(1) Schedule 15.2

Code related audit information

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

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

Audit observation

HHR data is collected by AccuCal as MEP for the Lodestone solar farms.

Audit commentary

Compliance is recorded in the AccuCal MEP audit report.

Audit outcome

Compliant

6.13. HHR interrogation data requirement (Clause 11(2) Schedule 15.2)

Code reference

Clause 11(2) Schedule 15.2

Code related audit information

The following information is collected during each interrogation:

11(2)(a) - the unique identifier of the data storage device

11(2)(b) - the time from the data storage device at the commencement of the download unless the time is within specification and the interrogation log automatically records the time of interrogation

11(2)(c) - the metering information, which represents the quantity of electricity conveyed at the point of connection, including the date and time stamp or index marker for each half hour period. This may be limited to the metering information accumulated since the last interrogation

11(2)(d) - the event log, which may be limited to the events information accumulated since the last interrogation

11(2)(e) - an interrogation log generated by the interrogation software to record details of all interrogations.

The interrogation log must be examined by the reconciliation participant responsible for collecting the data and appropriate action must be taken if problems are apparent or an automated software function flags exceptions.

Audit observation

HHR data is collected by AccuCal for the Lodestone solar farms.

Audit commentary

Compliance is recorded in the AccuCal MEP audit report.

Audit outcome

Compliant

6.14. HHR interrogation log requirements (Clause 11(3) Schedule 15.2)

Code reference

Clause 11(3) Schedule 15.2

Code related audit information

The interrogation log forms part of the interrogation audit trail and, as a minimum, must contain the following information:

11(3)(a)- the date of interrogation

11(3)(b)- the time of commencement of interrogation

11(3)(c)- the operator identification (if available)

11(3)(d)- the unique identifier of the meter or data storage device

11(3)(e)- the clock errors outside the range specified in Table 1 of clause 2

11(3)(f)- the method of interrogation

11(3)(g)- the identifier of the reading device used for interrogation (if applicable).

Audit observation

HHR data is collected by AccuCal for the Lodestone solar farms.

Audit commentary

Compliance is recorded in the AccuCal MEP audit report.

Audit outcome

Compliant

7. STORING RAW METER DATA

7.1. Trading period duration (Clause 13 Schedule 15.2)

Code reference

Clause 13 Schedule 15.2

Code related audit information

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

Audit observation

Compliance is recorded in the AccuCal MEP audit report.

Audit commentary

Compliance is recorded in the AccuCal MEP audit report.

Audit outcome

Compliant

7.2. Archiving and storage of raw meter data (Clause 18 Schedule 15.2)

Code reference

Clause 18 Schedule 15.2

Code related audit information

A reconciliation participant who is responsible for interrogating a metering installation must archive all raw meter data and any changes to the raw meter data for at least 48 months, in accordance with clause 8(6) of Schedule 10.6.

Procedures must be in place to ensure that raw meter data cannot be accessed by unauthorised personnel.

Meter readings cannot be modified without an audit trail being created.

Audit observation

Processes to archive and store raw meter data were discussed and reviewed.

Audit commentary

AccuCal will read the HHR meters for the solar farms and provide this data to Pulse Energy for reconciliation functions. AccuCal processes for collection and management of raw meter data were covered in their MEP audit and compliance was recorded.

Lodestone also have developed data warehouse called EDS which will store meter data retrieved from its solar farm metering points for a period of at least seven years.

Audit outcome

Compliant

7.3. Non metering information collected / archived (Clause 21(5) Schedule 15.2)

Code reference

Clause 21(5) Schedule 15.2

Code related audit information

All relevant non-metering information, such as external control equipment operation logs, used in the determination of profile data must be collected, and archived in accordance with clause 18.

Audit observation

Processes to record non-metering information were discussed.

Audit commentary

Non metering information is not collected by Lodestone; therefore, compliance was not assessed.

Audit outcome

Not applicable

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

Lodestone intends to submit all volume information as HHR.

Audit commentary

Lodestone intends to submit all volume information as HHR.

Audit outcome

Not applicable

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

Code reference

Clause 19(2) Schedule 15.2

Code related audit information

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

19(2)(a) - if the relevant metering installation has a check meter or data storage device, substitute the original meter reading with data from the check meter or data storage device; or

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

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

Audit observation

Processes for correction and estimation were reviewed.

Audit commentary

HHR corrections will be processed by Pulse Energy as Lodestones agent.

Corrections are created based on the best information available.

Where errors or missing data are detected during validation of half-hour metering information, and check metering data is not available, data from a period with a quantity and profile expected to be similar to the estimated period is used.

Where readings are available, they are used in conjunction with a profile to back fill missing data, and where readings are unavailable an estimate is created based on historic information.

Audit outcome

Compliant

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

Code reference

Clause 19(3) Schedule 15.2

Code related audit information

A reconciliation participant may use error compensation and loss compensation as part of the process of determining accurate data. Whichever methodology is used, the reconciliation participant must document the compensation process and comply with audit trail requirements set out in the Code.

Audit observation

Error and loss compensation arrangements were discussed.

Audit commentary

There are currently no error or loss compensation arrangements in place for Lodestone.

Audit outcome

Compliant

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

Code reference

Clause 19(4) and (5) Schedule 15.2

Code related audit information

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

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

19(5)(a)- the date of the correction or alteration

19(5)(b)- the time of the correction or alteration

19(5)(c)- the operator identifier for the person within the reconciliation participant who made the correction or alteration

19(5)(d)- the half-hour metering data or the non half hour metering data corrected or altered, and the total difference in volume of such corrected or altered data

19(5)(e)- the technique used to arrive at the corrected data

19(5)(f)- the reason for the correction or alteration.

Audit observation

Corrections will be processed by Pulse Energy as reconciliation agent. The correction process will be performed manually, and a journal record of the correction will be recorded within the spreadsheet used to calculate the HHR data correction.

Audit commentary

Corrections will be processed by Pulse Energy as reconciliation agent. The correction process will be performed manually. A manual journal record will be recorded when a data estimation or correction is required that will include the user performing these tasks, affected period and methodology used to produce the estimation or correction.

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

Estimations will be processed by Pulse Energy as reconciliation agent. The estimation process will be performed manually, and the affected data will be flagged as estimate within the spreadsheet used to perform the estimation.

Audit commentary

Reconciliation functions will be performed manually by Pulse Energy as reconciliation agent within standalone databases and spreadsheets including:

- Collation of volume information for each solar farm / ICP.
- Validation of data including checking for completeness and unusual data patterns.
- Correction or estimation of data including clear identification of any corrected or estimated data with accompanying journals recording methods used.
- Daylight saving adjustment.
- Formatting of data into the reconciliation manager file formats

A manual journal will be recorded when a data estimation or correction is required that will include the user performing these tasks, affected period and methodology used to produce the estimation or correction.

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

Reconciliation functions will be performed manually by Pulse Energy as reconciliation agent within standalone databases and spreadsheets.

Audit commentary

Reconciliation functions will be performed manually by Pulse Energy as reconciliation agent within standalone databases and spreadsheets including:

- Collation of volume information for each solar farm / ICP.
- Validation of data including checking for completeness and unusual data patterns.
- Correction or estimation of data including clear identification of any corrected or estimated data with accompanying journals recording methods used.
- Daylight saving adjustment.
- Formatting of data into the reconciliation manager file formats.

A manual journal will be recorded when a data estimation or correction is required that will include the user performing these tasks, affected period and methodology used to produce the estimation or correction.

I recommend that Pulse Energy explore automating some of these tasks to improve the efficiency and effectiveness of these tasks and reduce the time required to perform these tasks during the time critical period leading up to submission delivery due dates.

Description	Recommendation	Audited party comment	Remedial action
Explore Automating HHR validation steps	Recommend that Pulse Energy explore automating some of these tasks to improve the efficiency and effectiveness of reconciliation process and reduce the time required to perform these tasks during the time critical period leading up to submission delivery due dates.	This was noted by Jason Ting Pulse in the session with Bernie Cross on 27 Sep 2023. Pulse will look into in this automation process.	Identified

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

HHR data is collected by AccuCal for Lodestones solar farms.

This process will be performed by Lodestones reconciliation agent Pulse Energy.

Audit commentary

AccuCal retains raw, unrounded data. Data is provided in an unrounded format to Lodestones reconciliation agent Pulse Energy.

HHR data will retain the provided level of precision within Pulse Energy manual processes to capture data and undertake validation of the data prior to aggregating and formatting the volume information ready for submission.

Audit outcome

Compliant

9.4. Half hour estimates (Clause 15 Schedule 15.2)

Code reference

Clause 15 Schedule 15.2

Code related audit information

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

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

Audit observation

Estimation will be processed by Pulse Energy as reconciliation agent. The estimation process will be performed manually, and a journal record of the estimation will be recorded within the spreadsheet used to calculate the missing HHR data.

Audit commentary

Estimation will be processed by Pulse Energy as reconciliation agent. The estimation process will be performed manually, and a journal record of the estimation will be recorded within the spreadsheet used to calculate the missing HHR data.

No HHR estimations have been processed for Lodestone ICPs.

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

Lodestone intends to submit all volume information as HHR.

Audit commentary

Lodestone intends to submit all volume information as HHR.

Audit outcome

Not applicable

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 the meter and data storage device event log for any event that could have affected the integrity of metering data

17(4)(g) – a review of the relevant metering data where there is an event that could have affected the integrity of the metering data

If there is an event that could affect the integrity of the metering data (including events reported by MEPs, but excluding where the MEP is responsible for investigating and remediating the event) the reconciliation participant must investigate and remediate any events.

If the event may affect the integrity or operation of the metering installation the reconciliation participant must notify the metering equipment provider.

Audit observation

This process will be performed by Lodestones reconciliation agent Pulse Energy.

Pulse Energy completes validation as an agent and the process was reviewed as part of this audit. AccuCal also reviews event logs to identify potential defects and advise Pulse Energy of any issues found as Lodestones agent. AccuCal also provides full meter event logs to Pulse Energy to enable a second review of this information.

Audit commentary

Pulse Energy's process for validating HHR data is described below:

Pulse Energy have implemented a number of manual processes for performing tasks for Lodestone.

Reconciliation functions will be performed manually within standalone databases and spreadsheets including:

- Collation of volume information for each solar farm / ICP.
- Validation of data including checking for completeness and unusual data patterns.

- Correction or estimation of data including identification of any corrections and estimations with accompanying journals recording methods used.
- Daylight saving adjustment.
- Formatting of data into the reconciliation manager file formats.

The manual HHR data checks will include:

- incoming interval data file format checks to ensure the data is able to be uploaded,
- a monthly check is performed against the PR255 and Event Detail Analysis (EDA) reports to ensure all ICPs are captured,
- any gaps in interval data that will require an estimation or correction to be performed,
- a consumption pattern check looking for any unexpected consumption profiles inconsistent with the operation of each solar farm.

AccuCal scans meter event logs at regular intervals to identify any events that may have impacted data accuracy and notifies the reconciliation participant and agent. AccuCal also provides full meter event logs to the reconciliation participants agent to enable an additional review of these logs.

Where possible AccuCal also sets up email alerts for critical events (power outages, phase failure etc) so that these can be identified, investigated and where necessary resolved as soon as possible.

Audit outcome

Compliant

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

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

Code reference

Clause 13.136

Code related audit information

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

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

Audit observation

This process is managed by EMS for Lodestone and was assessed as part of their agent audit.

Audit commentary

Generation data will be sent to EMS directly from the EDS system, according to a system schedule. EMS will monitor to ensure that the data is received on time.

Testing of the process to extract data from EDS and deliver this to EMS is about to commence. No test results were available at the time of this audit.

Audit outcome

Compliant

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

Code reference

Clause 13.137

Code related audit information

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

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

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

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

Audit observation

This process is managed by EMS for Lodestone and was assessed as part of their agent audit.

Audit commentary

Generation data will be sent to EMS directly from the EDS system, according to a system schedule. EMS will monitor to ensure that the data is received on time.

Testing of the process to extract data from EDS and deliver this to EMS is about to commence. No test results were available at the time of this audit.

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 1000 hours on a trading day for each trading period of the previous trading day.

The generator must provide the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of the generator's volume information.

Audit observation

This process is managed by EMS for Lodestone and was assessed as part of their agent audit.

Audit commentary

This process is managed by EMS on behalf of Lodestone. Review of the EMS audit report confirmed that this process is managed in a compliant manner.

In most instances, EMS collects the data as an agent for generators. Interrogation begins at midnight and is complete before 1000 on each day. If actual data is not available, an estimate will be automatically generated and sent to EMS, and Lodestone will check for actual data and send an update later that morning.

Lodestone will be responsible for up to five embedded generators (Kaitaia 0010001026TEB59 (KOE0331), Edgecumbe 1000028721BP000 (EDG0331), Dargaville, Waiotaha Valley, Whitianga) where the capacity exceeds 10MW and the distributor has published a loss code and factor specific for these stations.

The generation loss factors are recorded in Lodestone's EDS system and applied to the generation data as part of the pricing manager file (EMB file) creation process within EDS.

Testing of the process to extract data from EDS and deliver this to EMS is about to commence. No test results were available at the time of this audit.

Audit outcome

Compliant

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

Code reference

Clause 13.140

Code related audit information

If the generator provides half-hourly metering information to a grid owner under clauses 13.136 to 13.138, or 13.138A, it must also, by 1000 hours of that day, advise the relevant grid owner.

Audit observation

This process is managed by EMS for Lodestone and was assessed as part of their agent audit.

Audit commentary

EMS is the agent to the grid owner and conducts this notification.

Compliance is confirmed in the EMS audit report.

Audit outcome

Compliant

11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

11.1. Buying and selling notifications (Clause 15.3)

Code reference

Clause 15.3

Code related audit information

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

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

Audit observation

Processes to create buying and selling notifications were reviewed.

Audit commentary

All ICPs will have HHR profile applied, and trading notifications are not required.

Audit outcome

Compliant

11.2. Calculation of ICP days (Clause 15.6)

Code reference

Clause 15.6

Code related audit information

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

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

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

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

Audit observation

Pulse Energy will prepare ICP days submissions as Lodestones reconciliation agent.

Audit commentary

Pulse Energy will manually prepare ICP days submission information based on the ICP level HHR metering information provided from the Lodestone solar farms.

Audit outcome

Compliant

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

Code reference

Clause 15.7

Code related audit information

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

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

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

Audit observation

Lodestone is the customer for the ICPs associated with the solar farms, and no electricity supplied information is required or supplied until Lodestone begins to provide retail services to customers.

Audit commentary

Not applicable

Audit outcome

Not applicable

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

Code reference

Clause 15.8

Code related audit information

Using relevant volume information, each retailer or direct purchaser (excluding direct consumers) must deliver to the reconciliation manager its total monthly quantity of electricity consumed 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 prepares HHR volumes and aggregates submissions as Lodestones reconciliation agent.

Audit commentary

Pulse Energy will manually prepare HHR aggregates submission information based on the ICP level HHR metering information provided from the Lodestone solar farms.

Audit outcome

Compliant

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

HHR data is collected by AccuCal for Lodestones solar farms.

Audit commentary

Data received from AccuCal is in standard time and each interval is recorded with a trading period ending time. AccuCal provides the correct number of intervals for each daylight saving month. For the transition months AccuCal provides 1442 lines of data during April and 1438 lines of data during September. Pulse applies specific scripts (one for each daylight saving transition) to the data provided by AccuCal to adjust the data from the transition date and time and ensures the transition days have the correct number of intervals (46 intervals for the September transition and 50 intervals for the April transition).

For the full months of daylight saving AccuCal provides a complete month of data but starts at the last hour of the last day of the prior month and ends an hour prior to the end of the current month. Pulse maps this data into the full month of daylight saving trading periods.

Period (October 2022)	AccuCal File Datetime NZST	Daylight Savings Datetime NZDT
01/10/2022 00:00	30/09/2022 23:00 NZST	01/10/2022 00:00 NZDT
31/10/2022 24:00	31/10/2022 23:00 NZST	31/10/2022 24:00 NZDT

The approach Pulse applies is consistent with the trading period run on method to adjust interval data.

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

Submission information will be created by Pulse Energy as Lodestones reconciliation agent.

Audit commentary

Pulse Energy will manually prepare submission information based on the ICP level HHR metering information provided from the Lodestone solar farms.

Pulse Energy have yet to test their manual processes to ensure that the files are well formed and accurate.

No submissions have been performed at the time of this audit.

Audit outcome

Compliant

12.3. Allocation of submission information (Clause 15.5)

Code reference

Clause 15.5

Code related audit information

In preparing and submitting submission information, the reconciliation participant must allocate volume information for each ICP to the NSP indicated by the data held 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

Submission information is created by Pulse Energy as Lodestones reconciliation agent.

Audit commentary

Pulse Energy will manually prepare submission information based on the ICP level HHR metering information provided from the Lodestone solar farms and the registry information related to these ICPs for each consumption period.

Pulse Energy have yet to test their manual processes to ensure that the files are well formed and accurate.

Audit outcome

Compliant

12.4. Grid owner volumes information (Clause 15.9)

Code reference

Clause 15.9

Code related audit information

The participant (if a grid owner) must deliver to the reconciliation manager for each point of connection for all of its GXPs, the following:

- submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.9(a))
- revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period. (clause 15.9(b))

Audit observation

Review of the NSP table confirmed that Lodestone is not a grid owner.

Audit commentary

Review of the NSP table confirmed that Lodestone is not a grid owner and is not required to submit grid owner volume information.

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

Review of the NSP table confirmed that Lodestone does not own any local or embedded networks.

Audit commentary

Lodestone is not required to provide NSP submission information.

Audit outcome

Not applicable

12.6. Grid connected generation (Clause 15.11)

Code reference

Clause 15.11

Code related audit information

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

- submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.11(a))

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

Audit observation

Review of the NSP table confirmed that Lodestone is not a grid connected generator.

Audit commentary

Lodestone is not required to provide grid connected generation submission information.

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

Submission information is created by Pulse Energy as Lodestones reconciliation agent.

Audit commentary

Pulse Energy will manually prepare submission information based on the ICP level HHR metering information provided from the Lodestone solar farms and the registry information related to these ICPs for each consumption period.

Pulse have yet to test their manual processes to ensure that the files are well formed and accurate.

No submissions have been performed at the time of this audit.

Audit outcome

Compliant

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

Code reference

Clause 4 Schedule 15.2

Code related audit information

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

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

Lodestone intends to submit all volume information as HHR and all data submitted is expected to be actual.

Audit commentary

Lodestone intends to submit all volume information as HHR and all data submitted is expected to be actual.

Audit outcome

Compliant

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

Code reference

Clause 2 Schedule 15.3

Code related audit information

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

- *half hour volume information for the total metered quantity of electricity for each ICP notified in accordance with clause 11.7(2) for which there is a category 3 or higher metering installation (clause 2(1)(a)) for each ICP about which information is provided under clause 11.7(2) for which there is a category 1 or category 2 metering installation (clause 2(1) (ac) to 2(1)(ae)):*
 - a) *any half hour volume information for the ICP; or*
 - b) *any non half hour volumes information calculated under clauses 4 to 6 (as applicable).*
 - c) *unmetered load quantities for each ICP that has unmetered load associated with it derived from the quantity recorded in the registry against the relevant ICP and the number of days in the period, the distributed unmetered load database, or other sources of relevant information. (clause 2(1)(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 use volume information (clause 2(3))*
- *to calculate volume information the reconciliation participant must apply raw meter data:*
 - a) *for each ICP, the compensation factor that is recorded in the registry (clause 2(4)(a))*
 - b) *for each NSP the compensation factor that is recorded in the metering installations most recent certification report. (clause 2(4)(b))*

Audit observation

Submission information is created by Pulse Energy as Lodestones reconciliation agent.

Audit commentary

Compliance is recorded in the Pulse Energy RP audit report:

- all Lodestones ICPs are expected to be submitted as HHR,
- no ICPs with unmetered load are supplied,

- no profiles requiring a certified control device are used,
- no loss or compensation arrangements are required, and
- aggregation of the AV090 and 140 reports was confirmed to be compliant in **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 techniques described in clauses 4 to 7 to create historical estimates and forward estimates.

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

Lodestone intends to submit all volume information as HHR.

Audit commentary

Lodestone intends to submit all volume information as HHR.

Audit outcome

Not applicable

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 historical estimates of volume information for each ICP when the relevant seasonal adjustment shape is available, and the reconciliation participant is not using an approved profile in accordance with clause 4A.

If the Authority has approved a profile for the purpose of apportioning volume information (in kWh) to part or full consumption periods, a reconciliation participant may use the profile despite the relevant seasonal adjustment shape being available; and if it uses the profile, must otherwise prepare the historical estimate in accordance with the methodology in clause 4.

*If a seasonal adjustment shape is not available, and the **reconciliation participant** is not using an approved **profile** under clause 4A, 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

Lodestone intends to submit all volume information as HHR.

Audit commentary

Lodestone intends to submit all volume information as HHR.

Audit outcome

Not applicable

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

Lodestone intends to submit all volume information as HHR.

Audit commentary

Lodestone intends to submit all volume information as HHR.

Audit outcome

Not applicable

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

Lodestone intends to submit all volume information as HHR.

Audit commentary

Lodestone intends to submit all volume information as HHR. No profile changes are expected to occur.

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

Submission information is created by Pulse Energy as Lodestones reconciliation agent.

Audit commentary

Pulse Energy will manually prepare submission information based on the ICP level HHR metering information provided from the Lodestone solar farms.

Submission information will be provided to the reconciliation manager in the appropriate format and will be aggregated to the following level:

- NSP code,
- reconciliation type,
- profile,
- loss category code,
- flow direction,
- dedicated NSP; and
- consumption period.

Pulse Energy have yet to test their manual processes to ensure that the files are well formed and accurate.

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

Submission information is created by Pulse Energy as Lodestones reconciliation agent.

Audit commentary

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

Pulse Energy have yet to test their manual processes to ensure that the files are well formed and accurate.

No submissions have been performed at the time of this audit.

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

Lodestone intends to submit all volume information as HHR.

Audit commentary

Lodestone intends to submit all volume information as HHR.

Audit outcome

Not applicable

CONCLUSION

Lodestone is building a portfolio of solar farms in New Zealand commencing with the generation installation in Kaitaia on the Top Energy network. Lodestone is a 100% New Zealand owned with their offices based in Takapuna Auckland. The Kaitaia solar farm is the first of five planned solar farms and is scheduled to go live in October 2023. This plant has a 55 GWh capacity so will be required to meet dispatch instructions.

Lodestones compliance is reliant on the compliance of Pulse Energy as registry, switching and reconciliation agent to Lodestone. While Pulse Energy audit report record compliance in relation to the activities that will be performed on behalf of Lodestone, Pulse Energy's systems for registry management, switching and reconciliation functions are configured for single participant code use only therefore are unable to be used for the management of Lodestone ICPs and data.

Pulse Energy have implemented a number of manual processes for performing tasks for Lodestone.

- Registry Management and switching will be undertaken using direct updates in the registry.
- Reconciliation functions will be performed manually within standalone databases and spreadsheets including:
 - Collation of volume information for each solar farm / ICP.
 - Validation of data including checking for completeness and unusual data patterns.
 - Correction or estimation of data including identification of any corrections and estimations with accompanying journals recording methods used.
 - Daylight saving adjustment.
 - Formatting of data into the reconciliation manager file formats.

This audit reviewed the monthly reconciliation process document between Lodestone and Pulse Energy setting out responsibilities for the expected tasks and timeframes. The manual processes were discussed with both Lodestone and Pulse to ensure the manual processes were well understood and sufficient controls will be in place.

The audit identified three recommendations relating to the extent of the manual reconciliation processes being implemented by Pulse to manage Lodestones reconciliation functions.

At the time of the audit Lodestone has not begun trading and no live or test data was available for the audit, the audit has been conducted using reviews of relevant documentation and interviews with key personnel and Lodestones agents. Agent, MEP and reconciliation participant audit reports relating to the agents used by Lodestone were also reviewed.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. While compliance was noted for all relevant parts of the code based on the process reviews and interviews of key personnel, the absence of data available to fully test these processes means compliance cannot be confirmed until Lodestone commences trading and datasets are available for testing and review. I recommend that the next audit is conducted in six months from when trading has commenced. This will ensure that sufficient data is available to fully assess Lodestones compliance with its code obligations and the effectiveness of the processes and interactions with their agents.

PARTICIPANT RESPONSE

Noraini Kamaruddin has reviewed this document on behalf of Lodestone Energy Limited. Participant's responses are contained in specific section of the report, where required.