

**ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTOR AUDIT REPORT**

For

**THE POWER COMPANY LIMITED,
ELECTRICITY INVERCARGILL LIMITED,
OTAGONET JOINT VENTURE,
ELECTRICITY SOUTHLAND LIMITED
(MANAGED BY POWERNET)**

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Date audit report completed: 12 September 2019

Audit report due date: 15-Sep-19

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EXECUTIVE SUMMARY

This distributor audit was performed at the request of PowerNet as required by clause 11.10 of Part 11, to assure compliance with the Electricity Industry Participation Code 2010. PowerNet is a management company which manages the electricity network assets of:

- The Power Company Limited – TPCO
- Electricity Invercargill Limited – ELIN
- OtagoNet Joint Venture – OTPO
- Electricity Southland Limited (Trading name Lakeland Network) – LLNW

The relevant rules audited are as required by the Distributor Auditor Guidelines V7.0, issued by the Electricity Authority.

Only one non-compliance was cleared from the last audit. It is related to 2 ICPs connected without a trader requesting connection. We did not identify any occurrence of this non-compliance during the period covered by this audit.

The audit found 6 non-compliances for Electricity Invercargill and OtagoNet JV, 9 non-compliances for Lakeland Network and 8 non-compliances for The Power Company. The level of compliance has improved in the following areas:

- Quality of information in the registry
- Number of backdated updated entries in the registry decreased

The main issues identified during this audit are:

- ICPs being connected without a proposed trader recorded in the registry
- Incorrect management of “decommissioned” status in the registry
- ICPs issued for more than 24 months are not monitored effectively
- Recommendation to analyse Electricity Invercargill network was not followed up

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. Table 1 of the Guidelines for Reconciliation Participant audit provides some guidance on this matter. The Future Risk Rating score is between 13 and 19 which results in an indicative audit frequency of 12 months. We agree with the result.

We thank the PowerNet staff for their full and complete cooperation in this audit.

AUDIT SUMMARY

NON-COMPLIANCES - THE POWER COMPANY (TPCO)

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Requirement to provide complete information	2.1	11.1(1)	The Effective Date of changing ICPs status to "decommissioned" is incorrect. Incomplete information for a small number of ICPs.	Moderate	Low	2	Identified
Timeliness of information provided to the registry	3.4	7(2) of Schedule 11.1	5 ICPs were electrically connected without an ICP recorded in the registry	Weak	Low	3	Identified
Timeliness of provision of Initial Electrical Connection Date	3.5	7(2A) of Schedule 11.1	Late update of Initial Electrical Connection Date for 15 ICPs	Moderate	Low	2	Identified
Connection of ICP that is not an NSP	3.6	11.17	For 5 ICPs the connection process set out in clause 10.31 was not followed	Moderate	Low	2	Identified
Monitoring of "new" and "ready" statuses	3.14	15 of Schedule 11.1	The process for asking the trader who intends to trade at the ICP whether the ICP should continue to have that status was not followed. Number of ICPs with the status "new" and "ready" increased	Moderate	Low	2	Identified
Changes to the registry information	4.1	8 of Schedule 11.1	Registry information not updated within 3 business days	Moderate	Low	2	Identified
Distributor to provide information to the registry	4.6	7 (1) of Schedule 11.1	Lack of information in the registry for a small number of ICPs	Moderate	Low	2	Identified

Management of “decommissioned” status	4.11	20 of Schedule 11.1	Effective Date for ICPs being decommissioned is the same as the date of update of the registry	Weak	Low	3	Identified
Future Risk Rating						18	

Future risk rating	0-1	2-5	6-8	9-20	21-29	30+
Indicative audit frequency	36 months	24 months	18 months	12months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Recommendation	Description
Requirement to provide complete information	2.1	To implement some detective controls and regularly download LIS files to check accuracy and correctness of ICP information.	Some information is transferred to the registry incorrectly or not at all.
A small number of new connections are electrically connected without an ICP recorded in the registry	3.4	To have an acceptance of the ICP from traders “delivered” to a single email address, which is monitored by the administration team. Implement detective controls, which will identify new ICPs for which acceptance was not received or not actioned.	A small number of new connections are electrically connected without an ICP recorded in the registry.

ISSUES

Subject	Section	Issue	Description
		Nil	

NON-COMPLIANCES - ELECTRICITY INVERCARGILL (ELIN)

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Requirement to provide complete information	2.1	11.1(1)	The Effective Date of changing ICPs status to “decommissioned” is incorrect. Incomplete information for a	Moderate	Low	2	Identified

			small number of ICPs.				
Timeliness of provision of Initial Electrical Connection Date	3.5	7(2A) of Schedule 11.1	Late update of Initial Electrical Connection Date for 1 ICP	Moderate	Low	2	Identified
Monitoring of “new” and “ready” statuses	3.14	15 of Schedule 11.1	The process for asking the trader who intends to trade at the ICP whether the ICP should continue to have that status was not followed. Number of ICPs with the status “new” and “ready” increased	Moderate	Low	2	Identified
Changes to the registry information	4.1	8 of Schedule 11.1	Registry information not updated within 3 business days	Moderate	Low	2	Identified
Distributor to provide information to the registry	4.6	7 (1) of Schedule 11.1	Lack of information in the registry for a small number of ICPs	Moderate	Low	2	Identified
Management of “decommissioned” status	4.11	20 of Schedule 11.1	Effective date for ICPs being decommissioned is the same as the date of update of the registry	Weak	Low	3	Identified
Future Risk Rating						13	

Future risk rating	0-1	2-5	6-8	9-20	21-29	30+
Indicative audit frequency	36 months	24 months	18 months	12months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Recommendation	Description
Requirement to provide complete information	2.1	To implement some detective controls and regularly download LIS files to check accuracy and correctness of ICP information	Some information is transferred to the registry incorrectly or not at all

Creation of loss factors	6.1	We recommend investigating reasons why the UFE on Electricity Invercargill is higher than on other networks	Electricity Invercargill UFE is the highest of all networks. It is 1.5% to 2% trending up
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ISSUES

Subject	Section	Issue	Description
		Nil	

NON-COMPLIANCES - OTAGONET JV (OTPO)

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Requirement to provide complete information	2.1	11.1(1)	The Effective Date of changing ICPs status to "decommissioned" is incorrect. Incomplete information for a small number of ICPs.	Moderate	Low	2	Identified
Timeliness of provision of Initial Electrical Connection Date	3.5	7(2A) of Schedule 11.1	Late update of Initial Electrical Connection Date for 15 ICPs	Moderate	Low	2	Identified
Monitoring of "new" and "ready" statuses	3.14	15 of Schedule 11.1	The process for asking the trader who intends to trade at the ICP whether the ICP should continue to have that status was not followed. Number of ICPs with the status "new" and "ready" increased	Moderate	Low	2	Identified
Changes to the registry information	4.1	8 of Schedule 11.1	Registry information not updated within 3 business days	Moderate	Low	2	Identified

Distributor to provide information to the registry	4.6	7 (1) of Schedule 11.1	Lack of information in the registry for a small number of ICPs	Moderate	Low	2	Identified
Management of "decommissioned" status	4.11	20 of Schedule 11.1	Effective date for ICPs being decommissioned is the same as the date of update of the registry	Weak	Low	3	Identified
Future Risk Rating						15	

Future risk rating	0-1	2-5	6-8	9-20	21-29	30+
Indicative audit frequency	36 months	24 months	18 months	12months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Recommendation	Description
Requirement to provide complete information	2.1	To implement some detective controls and regularly download LIS files to check accuracy and correctness of ICP information	Some information is transferred to the registry incorrectly or not at all

ISSUES

Subject	Section	Issue	Description
		Nil	

NON-COMPLIANCES - ELECTRICITY SOUTHLAND (LLNW)

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Requirement to provide complete information	2.1	11.1(1)	The Effective Date of changing ICPs status to "decommissioned" is incorrect. Incomplete information for a small number of ICPs.	Moderate	Low	2	Identified

Timeliness of information provided to the registry	3.4	7(2) of Schedule 11.1	2 ICPs were electrically connected without an ICP recorded in the registry	Moderate	Low	2	Identified
Timeliness of provision of Initial Electrical Connection Date	3.5	7(2A) of Schedule 11.1	Late update of Initial Electrical Connection Date for 19 ICPs	Moderate	Low	2	Identified
Connection of ICP that is not an NSP	3.6	11.17	For 2 ICPs the connection process set out in clause 10.31 was not followed	Moderate	Low	2	Identified
Monitoring of “new” and “ready” statuses	3.14	15 of Schedule 11.1	The process for asking the trader who intends to trade at the ICP whether the ICP should continue to have that status was not followed. Number of ICPs with the status “new” and “ready” increased	Moderate	Low	2	Identified
Changes to the registry information	4.1	8 of Schedule 11.1	Registry information not updated within 3 business days	Moderate	Low	2	Identified
Distributor to provide information to the registry	4.6	7 (1) of Schedule 11.1	Lack of information in the registry for a small number of ICPs	Moderate	Low	2	Identified
Management of “decommissioned” status	4.11	20 of Schedule 11.1	Effective date for ICPs being decommissioned is the same as the date of update of the registry	Weak	Low	3	Identified
Updating table of loss category codes	5.1	21 of Schedule 11.1	New Loss Factor Code was recorded in the registry late by 19 days	Moderate	Low	2	Identified
Future Risk Rating						19	

Future risk rating	0-1	2-5	6-8	9-20	21-29	30+
Indicative audit frequency	36 months	24 months	18 months	12months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Recommendation	Description
Requirement to provide complete information	2.1	To implement some detective controls and regularly download LIS files to check accuracy and correctness of ICP information	Some information is transferred to the registry incorrectly or not at all
Timeliness of information provided to the registry	3.4	To have an acceptance of the ICP from traders “delivered” to a single email address, which is monitored by the administration team. Implement detective controls, which will identify new ICPs for which acceptance was not received or not actioned	A small number of new connections are electrically connected without an ICP recorded in the registry

Subject	Section	Issue	Description
		Nil	

ISSUES

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.

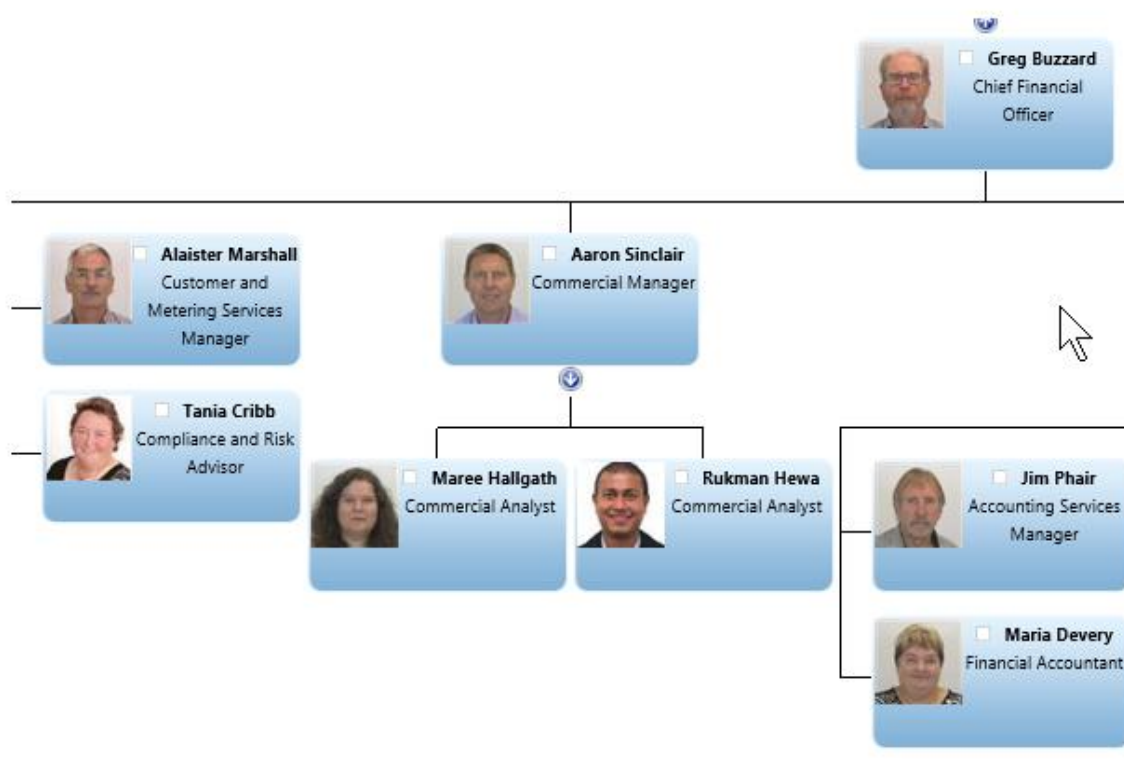
Audit observation

None of the networks audited have been granted any exemption from section 11 of the Electricity Act 2010.

Audit commentary

We checked the Authority website and no exemptions were granted.

1.2. Structure of Organisation





1.3. Persons involved in this audit

Name	Title	Company
Alaister Marshall	Customer and Metering Services Manager	PowerNet
Angela Dixon	Operations (Distribution) Administrator	PowerNet
Helana Middlemiss	Operations (Distribution) Administrator	PowerNet
Mary Bennett	Operations (Distribution) Administrator	PowerNet
Rose Snell	Operations (Distribution) Administrator	PowerNet

Name	Title	Company
Ewa Glowacka	Electricity Authority Approved Auditor	TEG & Associates Ltd

1.4. Use of contractors (Clause 11.2A)

Code reference

Clause 11.2A

Code related audit information

A participant who uses a contractor

- *remains responsible for the contractors fulfilment of the participants Code obligations*
- *cannot assert that it is not responsible or liable for the obligation due to the action of a contractor*
- *must ensure that the contractor has at least the specified level of skill, expertise, experience, or qualification that the participant would be required to have if it were performing the obligation itself*

Audit observation

Grant Smith of Ace Computers Consultant looks after the maintenance of the ICP database and further developments.

Audit commentary

Grant's role is to assist in the overview of quality and accuracy of data in the registry.

1.5. Supplier list

ACE Computer Consultant provides support for the ICP database.

1.6. Hardware and Software

The key infrastructure required for the audited processes comprises of:

- Microsoft SQL Server 2014
- MS Access 2016
- Training database that can also be used for testing database mods
- The ICP Database runs on a virtual server running Microsoft Windows Server 2012 R2
- The virtual server runs on VMware ESX server v5.5 on a LENOVO System x3650 M5 server, connected to a V7000 SAN

PowerNet is in the process of developing a replacement for the ICP database. It was discussed during the audit that before new software is implemented, PowerNet needs to go through a material change audit.

1.7. Breaches or Breach Allegations

No breaches and alleged breaches were recorded in the period covered by this audit.

1.8. ICP and NSP Data

TPCO

Distributor	NSP POC	Description	Parent POC	Parent Network	Balancing Area	Network type	Start date	No of ICPs
TPCO	BLF0111	Bluff	INV0331	TPCO	SOUTHLDTPCOG	I	1/05/08	0
TPCO	EDN0331	Edendale			SOUTHLDTPCOG	G	1/03/16	1,833
TPCO	ELL0111	Elles Rd	INV0331	TPCO	SOUTHLDTPCOG	I	1/05/08	0
TPCO	GOR0331	GORE			SOUTHLDTPCOG	G	1/03/16	8,708
TPCO	INV0331	Invercargill			SOUTHLDTPCOG	G	1/05/08	9,964
TPCO	LEV0331	Leven St	INV0331	TPCO	SOUTHLDTPCOG	I	1/05/08	0
TPCO	NMA0331	Nth Makarewa			SOUTHLDTPCOG	G	1/05/08	17,353
TPCO	OCB0111	CB46	INV0331	TPCO	SOUTHLDTPCOG	I	1/05/08	0
TPCO	SOU0331	Southern Sub	INV0331	TPCO	SOUTHLDTPCOG	I	1/05/08	0
TPCO	STD0111	Stead St	INV0331	TPCO	SOUTHLDTPCOG	I		0

Status	Number of ICPs (19/8/19)	Number of ICPs (5/8/18)	Number of ICPs (13/7/17)
New (999,0)	1	1	23
Ready (0,0)	84	47	84
Active (2,0)	36,229	35,886	35,643
Distributor (888,0)	1	1	1
Inactive – new connection in progress (1,12)	58	33	26
Inactive – electrically disconnected vacant property (1,4)	1,381	1,442	1,505
Inactive – electrically disconnected remotely by AMI meter (1,7)	57	48	27
Inactive – electrically disconnected at pole fuse (1,8)	17	11	4
Inactive – electrically disconnected due to meter disconnected (1,9)	7	6	2
Inactive – electrically disconnected at meter box fuse (1,10)	1	1	0
Inactive – electrically disconnected at meter box switch (1,11)	0	0	0
Inactive – electrically disconnected ready for decommissioning (1,6)	21	75	202
Inactive – reconciled elsewhere (1,5)	1	0	0
Decommissioned (3)	3,721	3,581	3,256

ELIN

Distribu tor	NSP POC	Description	Parent POC	Parent Network	Balancing Area	Network type	Start date	No of ICPs
ELIN	BLF0111	Bluff	INV0331	ELIN	INVGILLELING	I	1/05/08	0
ELIN	ELL0111	Elles Rd	INV0331	ELIN	INVGILLELING	I	1/05/08	0
ELIN	INV0331	INVERCARGILL			INVGILLELING	G	1/05/08	17,839
ELIN	LEV0331	Leven St	INV0331	ELIN	INVGILLELING	I	1/05/08	0
ELIN	OCB0111	IVC_CB13	INV0331	ELIN	INVGILLELING	I	1/05/08	0
ELIN	SOU0331	Southern Sub	INV0331	ELIN	INVGILLELING	I	1/05/08	0
ELIN	STD0111	Stead St	INV0331	ELIN	INVGILLELING	I	1/05/08	0
ELIN	BLF0111	Bluff	INV0331	ELIN	INVGILLELING	I	1/05/08	0

Status	Number of ICPs (19/8/19)	Number of ICPs (5/8/18)	Number of ICPs (13/7/17)
New (999,0)	1	1	9
Ready (0,0)	20	8	14
Active (2,0)	17,416	17,421	17,380
Distributor (888,0)	0	0	0
Inactive – new connection in progress (1,12)	15	0	7
Inactive – electrically disconnected vacant property (1,4)	321	320	360
Inactive – electrically disconnected remotely by AMI meter (1,7)	47	30	22
Inactive – electrically disconnected at pole fuse (1,8)	8	10	8
Inactive – electrically disconnected due to meter disconnected (1,9)	3	1	1
Inactive – electrically disconnected at meter box fuse (1,10)	3	1	1
Inactive – electrically disconnected at meter box switch (1,11)	1	0	0
Inactive – electrically disconnected ready for decommissioning (1,6)	4	17	93
Inactive – reconciled elsewhere (1,5)	0	0	0
Decommissioned (3)	1,350	1,286	1,161

OTPO

Distribu tor	NSP POC	Description	Parent POC	Parent Network	Balancing Area	Network type	Start date	No of ICPs
OTPO	BAL0331	BALCLUTHA			BALCTHAOTPOG	G	1/01/12	9,731
OTPO	HWB0331	HALFWAY BUSH			PALMSBYOTPOG	G	7/11/14	0

OTPO	HWB1101	HALF WAY BUSH			PALMSBYOTPOG	G	1/11/14	3,553
OTPO	NSY0331	NASEBY			PALMSBYOTPOG	G	1/05/08	2,618

Status	Number of ICPs (19/8/19)	Number of ICPs (5/8/18)	Number of ICPs (13/7/17)
New (999,0)	0	0	11
Ready (0,0)	23	11	13
Active (2,0)	15,103	14,973	14,888
Distributor (888,0)	0	0	0
Inactive – new connection in progress (1,12)	22	15	12
Inactive – electrically disconnected vacant property (1,4)	661	695	713
Inactive – electrically disconnected remotely by AMI meter (1,7)	39	32	35
Inactive – electrically disconnected at pole fuse (1,8)	7	6	2
Inactive – electrically disconnected due to meter disconnected (1,9)	5	4	0
Inactive – electrically disconnected at meter box fuse (1,10)	0	0	0
Inactive – electrically disconnected at meter box switch (1,11)	0	0	1
Inactive – electrically disconnected ready for decommissioning (1,6)	43	51	40
Inactive – reconciled elsewhere (1,5)	0	0	0
Decommissioned (3)	1,860	1,816	1,776

LLNW

Distributor	NSP POC	Description	Parent POC	Parent Network	Balancing Area	Network type	Start date	No of ICPs
LLNW	FKN0331	Frankton			LAKELNDLLNWG	G	1/10/08	1,899
LLNW	NLK0111	OUTLET ROAD WANAKA	CML0331	DUNE	NLK0111LLNWE	E	12/07/17	209

Status	Number of ICPs (19/8/19)	Number of ICPs (5/8/18)	Number of ICPs (13/7/17)
New (999,0)	1	1	14
Ready (0,0)	15	15	10
Active (2,0)	2,025	1,465	959
Distributor (888,0)	0	0	0
Inactive – new connection in progress (1,12)	45	91	25

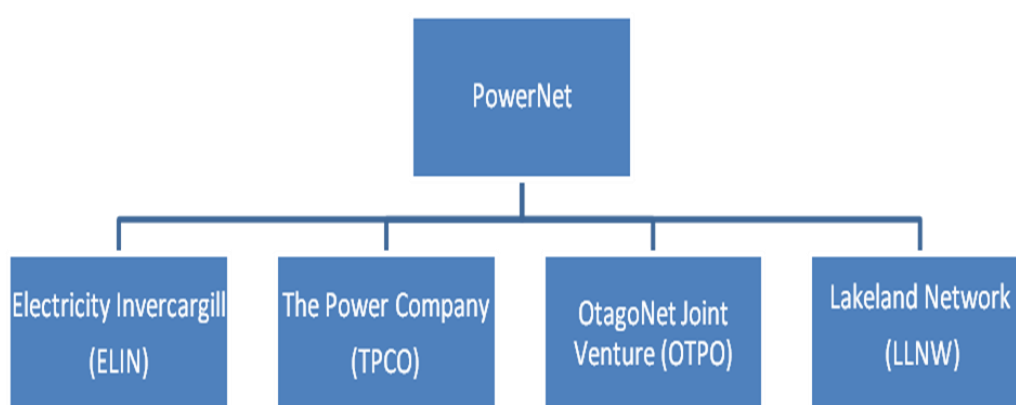
Inactive – electrically disconnected vacant property (1,4)	7	12	5
Inactive – electrically disconnected remotely by AMI meter (1,7)	2	6	0
Inactive – electrically disconnected at pole fuse (1,8)	0	0	0
Inactive – electrically disconnected due to meter disconnected (1,9)	4	3	0
Inactive – electrically disconnected at meter box fuse (1,10)	0	0	0
Inactive – electrically disconnected at meter box switch (1,11)	0	0	0
Inactive – electrically disconnected ready for decommissioning (1,6)	9	7	1
Inactive – reconciled elsewhere (1,5)	0	0	0
Decommissioned (3)	89	74	0

1.9. Authorisation Received

PowerNet provided a letter of authorisation to the auditors permitting the collection of data from other parties for matters directly related to the audit.

1.10. Scope of Audit

This audit was performed at the request of PowerNet as required by clause 11.10 of Part 11 to assure compliance with the Electricity Industry Participation Code 2010. PowerNet Limited is a joint venture company that manages the electricity reticulation networks of Electricity Invercargill Limited, The Power Company Limited, OtagoNet Joint Venture and Electricity Southland Limited (Lakeland Network.)



This audit covers the following processes under clause 11.10(4) of Part 11 performed by PowerNet on behalf of the networks listed above:

- (a) -The creation of ICP identifiers for ICPs
- (b) -The provision of ICP information to the registry and the maintenance of that information
- (c) - The creation and maintenance of loss factors

The audit was carried out on the PowerNet premises at 251 Racecourse Road in Invercargill, on the 21/22 August 2019.

1.11. Summary of previous audit

The previous audit was conducted in August 2018 by Ewa Glowacka of TEG Associates. The following non-compliances were found:

TPCO

Subject	Section	Clause	Non-Compliance	Comment
Requirement to provide complete information	2.1	11.2(1)	The Effective Date of changing ICPs status to “decommissioned” is incorrect	Still exists
Timeliness of provision of IED to the registry	3.5	7(2A) of Schedule 11.1	Initial Energisation Date for a number of ICPs was uploaded later than 10 BD	Still exists
Changes to the registry information	4.1	8 of Schedule 11.1	Registry information not updated within 3 business days	Still exists
Distributor to provide information to the registry	4.6	7 (1) of Schedule 11.1	Incorrect or lack of information in the registry for a small number of ICPs	Still exists
Management of “decommissioned” status	4.11	20 of Schedule 11.1	Incorrect management of “decommissioned” status. The effective date of ICPs being decommissioned is the same as the date of update of the registry	Still exists

ELIN

Subject	Section	Clause	Non-Compliance	Comment
Requirement to provide complete information	2.1	11.2(1)	The Effective Date of changing ICPs status to “decommissioned” is incorrect	Still exists
Timeliness of provision of IED to the registry	3.5	7(2A) of Schedule 11.1	Initial Energisation Date for a number of ICPs was uploaded later than 10 BD	Still exists
Changes to the registry information	4.1	8 of Schedule 11,1	Registry information not updated within 3 business days	Still exists
Distributor to provide information to the registry	4.6	7 (1) of Schedule 11.1	Incorrect or lack of information in the registry for a small number of ICPs	Still exists
Management of “decommissioned” status	4.11	20 of Schedule 11.1	Incorrect management of “decommissioned” status. The effective date of ICPs being decommissioned is the same as the date of update of the registry	Still exists

OTPO

Subject	Section	Clause	Non-Compliance	Comment
Requirement to provide complete information	2.1	11.2(1)	The Effective Date of changing ICPs status to “decommissioned” is incorrect	Still exists
Timeliness of provision of IED to the registry	3.5	7(2A) of Schedule 11.1	Initial Energisation Date for a number of ICPs was uploaded later than 10 BD	Still exists
Changes to the registry information	4.1	8 of Schedule 11.1	Registry information not updated within 3 business days	Still exists
Distributor to provide information to the registry	4.6	7 (1) of Schedule 11.1	Incorrect or lack of information in the registry for a small number of ICPs	Still exists
Management of “decommissioned” status	4.11	20 of Schedule 11.1	Incorrect management of “decommissioned” status. The effective date of ICPs being decommissioned is the same as the date of update of the registry	Still exists

LLNW

Subject	Section	Clause	Non-Compliance	Comment
Requirement to provide complete information	2.1	11.2(1)	The Effective Date of changing ICPs status to “decommissioned” is incorrect	Still exists
Timeliness of provision of Initial Electrical Connection Date to the registry	3.5	7(2A) of Schedule 11.1	Initial Energisation Date for a number of ICPs was uploaded later than 10 BD	Still exists
Connection of ICP that is not an NSP	3.6	11.17	LLNW – for 2 ICPs the connection process set out in clause 10.31 was not followed	Still exists
Connection of ICP that is not an NSP	3.7	10.31	LLNW – 2 ICPs were connected without a trader requesting connection	Cleared
Changes to the registry information	4.1	8 of Schedule 11.1	Registry information not updated within 3 business days	Still exists
Management of “decommissioned” status	4.11	20 of Schedule 11.1	Incorrect management of “decommissioned” status. The effective date of ICPs being decommissioned is the same as the date of update of the registry	Still exists

2. OPERATIONAL INFRASTRUCTURE

2.1. Requirement to provide complete and accurate information (Clause 11.2(1) and 10.6(1))

Code reference

Clause 11.2(1) and 10.6(1)

Code related audit information

A participant must take all practicable steps to ensure that information that the participant is required to provide to any person under Parts 10 or 11 is:

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

Audit observation

We confirm that incorrect information identified in the last audit has been corrected. The ICP Database has a built-in functionality to validate information due to be uploaded to the registry.

Audit commentary

Information is uploaded to the registry every night. The data is monitored by a data administrator and an Ace Computers Consultant.

We identified, in **section 4.11**, that the incorrect date for decommissioned ICPs is recorded in the registry. While there was a non-compliance recorded in this section in the last audit, this time the cause of the non-compliance is different.

In **section 4.6** we identified incomplete information in the registry for a small number of ICPs. We identified that the issue was that some information was recorded in the ICP database but for some reason was not accepted by the registry or was incorrectly transferred. In particular, it relates to the Initial Electrical Connection Date, which was missing in the registry for some ICPs but recorded in the ICP Database. The report designed to monitor this was “looking” at the ICP Database information not at the registry.

We would recommend implementing some detective controls and regularly downloading the LIS files to check the accuracy and correctness of information.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 2.1 With: 11.2(1)</p> <p>From: 01-Aug-18 To: 15-Aug-19</p>	<p>The Effective Date for changing an ICPs status to “decommissioned” is incorrect. Incomplete information for a small number of ICPs.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Twice previously</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls are recorded as moderate because some refinement could still be made. PowerNet runs a few reports which monitor the integrity and validity of information in the registry. Audit risk rating is assigned as low because the impact on the settlement outcome is minimal.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Decommission Date – During last year’s audit we learned we had been treating this date incorrectly. We immediately change our processing to loading the correct Event Date. However is has now been discovered our data tool was ignoring the Event Date. This is being rectified.</p> <p>An error in our data processing tool resulted in a number of ICPs not populating to the registry the Initial Electrical Connection Date, even though the information was received and operators took required action with it. The error has been rectified and the missing data loaded.</p>		30/09/19	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Corrections of data processing tool as mentioned above.		30/09/19	

Recommendation	Description	Audited party comment	Remedial action
To implement some detective controls and regularly download LIS files to check accuracy and correctness of ICP information	Some information is transferred to the registry incorrectly or not at all		

2.2. Requirement to correct errors (Clause 11.2(2) and 10.6(2))

Code reference

Clause 11.2(2) and 10.6(2)

Code related audit information

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 ICP Database has built-in tools which validates the information due to be uploaded to the registry.

Audit commentary

During the audit we did not observed incorrect information in the registry, but we noted missing information.

Updates of information or corrections can come from a number of sources. They can be discovered internally or be advised by external organizations, e.g. traders or internal analyses. PowerNet's policy is to correct information as soon as it is made aware of it.

In **section 4.1**, we noted PowerNet acting on traders request to backdate the Price Code for ICPs e.g. low users. We don't consider this as data correction.

The Authority made the following comment in the review of the last audit:

Additionally there appears to be some confusion of the use of the price category code on the registry.

For clarity the price category code in the registry reflects the charges the trader at the ICP is paying the distributor. There is no Code obligation for the distributor to align its charges with what the retailer is charging the customer.

It is the distributors' responsibility to maintain the price category code and update it if it believes the information it has populated on the registry no longer matches what it is billing the retailer.

We would not expect PowerNet to be backdating its charges to retailers as a BAU activity. We would recommend you look at the policies and processes in place for allocating price category codes to ICPs and ensuring they are accurate and kept up to date.

It was discussed during this audit. PowerNet understands that the Code does not require the distributor to align its charges with what the trader is charging the customer, but it is a traders expectation/requirement. Only the Price Code recorded in the registry is used to calculate network invoices. PowerNet reiterated that there is never a situation where information populated on the registry does not match network invoices sent to traders. Price Codes are only changed as a result of a deliberate change in the physical connection configuration or classification for an ICP, which would be due a customer or retailer request. E.g. upgrade/downgrade agree to change previously General ICP to Residential or agree to change to Low User.

Audit outcome

Compliant

3. CREATION OF ICPS

3.1. Distributors must create ICPs (Clause 11.4)

Code reference

Clause 11.4

Code related audit information

The distributor must create an ICP identifier in accordance with Clause 1 of Schedule 11.1 for each ICP on the distributor's network. This includes an ICP identifier for the point of connection at which an embedded network connects to the distributor's network.

Audit observation

PowerNet uses their ICP Database to create ICPs for connections on its networks. The same process is used for all networks. The process was examined.

Audit commentary

A customer requiring a new power connection applies to PowerNet using an Installation Connection Application form for all networks. All applications, except connections on the Lakeland network, are assessed by a project manager. A project manager calculates all costs associated with a new connection. A quote, which is valid for 1 month is passed to a customer for acceptance. After the quote is accepted an ICP identifier is raised in the ICP Database. The installation owner, or their representative, is advised of the ICP identifier. An email is also sent to the trader nominated by the customer. Once an acceptance email is received from the trader, an ICP is uploaded to the registry.

We randomly chose 20 new ICPs from all networks managed by PowerNet to confirm that the documented process for creating ICP identifiers is followed.

ICP	Customer application	Trader acceptance	ICP recorded in the registry
0001220665TGFAC	3/05/19	5/06/19	7/06/19
0001370925TG51E	11/02/19	25/02/19	25/02/19
0003331635TG7FB	11/04/19	27/05/19	29/05/19
0001160686TGEF7	4/02/19	19/02/19	19/02/19
0000658033TP804	12/11/18	16/01/19	16/01/19
0000630351TPB2A	13/11/18	3/12/18	3/12/18
00005566784TP974	13/11/18	10/12/18	10/12/18
00003266335TP110	19/11/18	Auto accepted by CTCT	5/12/18
0000639138TPC2C	25/09/18	4/10/18	4/10/18

0007229595NVB47	12/10/18	Auto accepted by CTCT	5/11/18
000764729NV5AA	5/11/18	22/11/18	26/11/18
0007704087NVA54	13/11/18	27/11/18	27/11/18
0008255885NV92D	23/10/18	6/11/18	6/11/18
0008202693NV310	2/11/18	Auto accepted by CTCT	22/11/18
0007132165NVCE4	18/09/18	29/10/18	29/10/18
0000980080LN9F7	15/04/19	15/04/19	16/04/19
0000951724LN211	9/04/19	11/04/19	11/04/19
0000951783LN7C4	26/02/19	27/02/19	27/02/19
0000951781LN741	26/02/19	27/02/19	27/02/19
0000980007LN177	15/03/19	22/01/19	25/03/19

Note: There is an agreement between Contact Energy and PowerNet that all new connections for which a customer nominates Contact Energy as a proposed trader are accepted by them.

Audit outcome

Compliant

3.2. Participants may request distributors to create ICPs (Clause 11.5(3))

Code reference

Clause 11.5(3)

Code related audit information

The distributor, within 3 business days of receiving a request for the creation of an ICP identifier for an ICP, must either create a new ICP identifier or advise the participant of the reasons it is unable to comply with the request.

Audit observation

ICP identifiers are not requested by a participant, requests come from the customer, therefore while PowerNet is cognisant of clause 11.5(3), generally it does not apply.

Audit commentary

PowerNet is requested to create an ICP identifier by customers not a participant. Historically there had been situations when a trader asked for a new ICP to split an ICP with multiple metering points into separate ICPs, but these were a rare occurrence. Today this situation is also initiated by the customer lodging an application for the changes, and the participant will be advised as per all other new ICPs raised.

Audit outcome

Compliant

3.3. Provision of ICP Information to the registry manager (Clause 11.7)

Code reference

Clause 11.7

Code related audit information

The distributor must provide information about ICPs on its network in accordance with Schedule 11.1.

Audit observation

The new connection process for populating all required registry fields was examined. The LIS files dated 19/08/19 were examined for all networks.

Audit commentary

The information is recorded in the ICP database which, overnight, uploads files to the registry. We confirm the correct information was populated as required by this clause. The ICP database has a built-in functionality to ensure mandatory fields are populated before information is sent to the registry.

Audit outcome

Compliant

3.4. Timeliness of Provision of ICP Information to the registry manager (Clause 7(2) of Schedule 11.1)

Code reference

Clause 7(2) of Schedule 11.1

Code related audit information

The distributor must provide information specified in Clauses 7(1)(a) to 7(1)(o) of Schedule 11.1 as soon as practicable and prior to electricity being traded at the ICP.

Audit observation

The EDA files for the period 01/08/18 to 15/08/19 were examined.

Audit commentary

The analysis of the EDA files confirmed that PowerNet uploaded ICP information to the registry as soon as a trader acceptance was received. The registry assigned the status "ready".

The analysis of the EDA file also identified a few exemptions. Below are listed ICPs which were electrically connected without an ICP recorded in the registry.

ICP	Network	ICP recorded in the registry	ICP electrically connected	Days	Trader
0009904258LN66C	LLNW	12/07/19	01/07/19	11	TRUS
0000981574LNC4F	LLNW	15/08/19	07/08/19	8	TRUS
0001609255TP811	TPCO	17/05/19	09/05/19	16	TRUS
0001173457TPF60	TPCO	27/11/18	21/11/18	6	TRUS
0001576849TP4C5	TPCO	15/10/18	11/10/18	4	TRUS

0004141185TP19C	TPCO	20/09/18	18/09/18	2	TRUS
0001173457TPF60	TPCO	27/11/18	21/11/18	6	TRUS

During the audit it was discussed, in depth, how to remedy this situation. During the discussion it was identified that for 5 new connections on The Power Company network and 2 connections on Lakeland, the company received the ICPs acceptance from Trustpower but due operator error in a time of high workload it was not recorded, and the ICP were not uploaded to the registry in time. Another reason for a delay is that the acceptance of ICPs is received by project managers who do not always pass them to the administration team for action.

We have two recommendations. The first recommendation is to have the acceptance of the ICP from traders “delivered” to a single email address, which is monitored by the administration team. We would call it a preventative control. As this non-compliance has already been identified in two audits, our recommendation is to implement detective controls to look for ICPs which were issued but no acceptance received.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.4 With: 7(2) of Schedule 11.1 From: 15-Oct-18 To: 09-May-19	LLNW –2 ICPs were electrically connected without an ICP recorded in the registry TPCO -5 ICPs were electrically connected without an ICP recorded in the registry Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are recorded as weak. Power Net implemented preventative controls in 2017 by altering the new connection process so that new ICPs would only be populated to the registry once acceptance of the ICP was received from the trader. There is a good process in place which has not been followed. Non-compliance has been recorded in a few audits. Audit risk is assigned as low because it is related to a small number of ICPs.		
Actions taken to resolve the issue		Completion date	Remedial action status
A report is being developed to monitor ICP numbers generated in the PowerNet database, but not yet populated to the Registry.		30/9/19	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Finalize reports as above and fully implement regular review of ICP number not yet on the Registry		30/09/19	

Recommendation	Description	Audited party comment	Remedial action
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<p>To have an acceptance of the ICP from traders “delivered” to a single email address, which is monitored by the administration team.</p> <p>Implement detective controls, which will identify new ICPs for which acceptance was not received or not actioned</p>	<p>A small number of new connections are electrically connected without an ICP recorded in the registry</p>	<p>In previous audits occurrences of ICPs electrically connected with no Proposed Trader were discovered. Therefore processes were changed to withhold the ICP from the Registry until the trader had accepted the ICP. Expectation had been traders would be prevented from progressing the ICP without the Registry record. This has proven not to be the case for particularly TrustPower and resulted in a greater non-compliance</p>	<p>Implement reporting as outlined, and investigate other process changes to create a safeguard from this situation.</p>
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3.5. Timeliness of Provision of Initial Electrical Connection Date (Clause 7(2A) of Schedule 11.1)

Code reference

Clause 7(2A) of Schedule 11.1

Code related audit information

The distributor must provide the information specified in subclause (1)(p) to the registry manager no later than 10 business days after the date on which the ICP is initially electrically connected.

Audit observation

PowerNet provided the EDA files for the period of 01/08/18 to 15/08/19 for all networks.

Audit commentary

The Electrical Connection Date for new connections is provided to PowerNet by the person responsible for inserting fuses into fuse holders. This is generally the MEP’s metering technician, who hold PowerNet authorisation for accessing the network fuses and carrying out this action.

We analysed the EDA files for each network individually. The results are shown below:

TPCO – 328 new connections were electrically connected in the period covered by this audit. Initial Electrical Connection Date was uploaded late for 15 ICPs (4.5%). The most delayed was ICP 0000637567TPF3B by 69 business days.

LLNW - 464 new connections were electrically connected in the period covered by this audit. Initial Electrical Connection Date was uploaded late for 19 ICPs (4.09%). The most delayed was ICP 0000990380LN215 by 86 business days. PowerNet stated there are delays getting paperwork back from the field.

ELIN – 49 new connections were electrically connected in the period covered by this audit. Initial Electrical Connection Date was uploaded late for 1 ICPs (2.04%). The most delayed was ICP 0000880395NVD80 by 27 business days. It is a metering installation of category 4, due to a late notification from the field.

OTPO – 121 new connections were electrically connected in the period covered by this audit. Initial Electrical Connection Date was uploaded late for 13 ICPs (10.8%). The most delayed was ICP 0001010011TG409 by 90 business days. It is metering installation of category 4, due to a late notification from the field.

The level of compliance is the same as last year. PowerNet commented during the last audit that it would have a weekly report run to identify any ICPs that have become “active”, but for which PowerNet has not yet received the completed form from the field as this is the main reason for late updates. The report was not run as frequently as previously planned which effected compliance with this clause and non-compliance in **section 4.6** (Initial Electrical Connection Date not populated for “active” ICPs).

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.5 With: 7(2A) of Schedule 11.1 From: 01-Aug-18 To: 15-Aug-19	LLNW – late update of Initial Electrical Connection Date for 19 ICPs TPCO – late update of Initial Electrical Connection Date for 15 ICPs ELIN – late of Initial Electrical Connection Date for 1 ICP OTPO – late update of Initial Electrical Connection Date for 13 ICPs Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as moderate because there are some improvements that can be made to them. The number of late updates is the same as identified last year. Audit risk rating assigned as low because the impact on settlement outcomes is low		
Actions taken to resolve the issue		Completion date	Remedial action status
Reporting of ICPs to identify anywhere Initial Electrically Connected Date has not been recorded is being reviewed to create improvements. This includes the regularity of running the report, which it appears has fallen away over the year, due to some changes of staff/roles.		30/09/19	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
ICPs identified with no IEC Date are investigated with the connecting agent to ensure future compliance with policy and timely forwarding of information from the field.		Ongoing	

3.6. Connection of ICP that is not an NSP (Clause 11.17)

Code reference

Clause 11.17

Code related audit information

A distributor must, when connecting an ICP that is not an NSP, follow the connection process set out in Clause 10.31.

The distributor must not connect an ICP (except for an ICP across which unmetered load is shared) unless a trader is recorded in the registry as accepting responsibility for the ICP.

In respect of ICPs across which unmetered load is shared, the distributor must not connect an ICP unless a trader is recorded in the registry as accepting responsibility for the shared unmetered load, and all traders that are responsible for an ICP on the shared unmetered load have been advised.

Audit observation

The new connection process was described in **section 3.1**. The EDA files were analysed.

Audit commentary

We identified 2 new connections on the Lakeland network and 5 new connections on The Power Company network, which were connected without a trader recorded in the registry as accepting responsibility for the ICP.

The ICPs were identified during the audit. PowerNet explained that it was caused by a high workload for the connection team at the time.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.6 With: 11.17 From: 01-Jul-17 To: 31-Jul-18	LLNW – for 2 ICPs the connection process, as set out in clause 10.31, was not followed TPCO - for 5 ICPs the connection process, as set out in clause 10.31, was not followed Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are recorded as weak because the process for new connections was not followed for 7 ICPs and it was identified during the audit. The Audit risk is assigned as low because it is related to a small number ICPs.		
Actions taken to resolve the issue		Completion date	Remedial action status
Same comments as 3.5		30/09/19	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Same comments as 3.5		Ongoing	

3.7. Connection of ICP that is not an NSP (Clause 10.31)

Code reference

Clause 10.31

Code related audit information

A distributor must not connect an ICP that is not an NSP unless requested to do so by the trader trading at the ICP, or if there is only shared unmetered load at the ICP and each trader has been advised.

Audit observation

The new connections process was described in **section 3.1**. We analysed the EDA files provided by PowerNet for all networks for which they manage their operation.

Audit commentary

PowerNet does not connect ICPs unless requested by a trader. It was discussed during this audit. According to the process once an ICP identifier is created PowerNet notifies, via email, the trader nominated by the customer. As soon as the traders' acceptance is received, the ICP is uploaded to the registry and the registry assigns the status "ready". There is an automatic acceptance process in place with Contact Energy.

During analysis of the EDA files we identified a few anomalies which were described in **section 3.4**. 2 ICPs on the Lakeland network were electrically connected without an ICP recorded in the registry and 5 ICPs on The Power Company's network. PowerNet confirmed that acceptance of the ICPs was received but not actioned due to a high workload which was experienced at the time.

In the last audit we observed that for LLNW, PowerNet uses the date that an ICP was requested by a customer and a notification sent by email to a trader as the creation date. It did not use the date of receiving the acceptance email. This process was changed and the date of ICP acceptance is used as the date of ICP creation. The evidence is provided in **section 3.1**.

Audit outcome

Compliant

3.8. Temporary electrical connection of ICP that is not an NSP (Clause 10.31A)

Code reference

Clause 10.31A

Code related audit information

A distributor may only temporarily electrically connect an ICP that is not an NSP if requested by an MEP for a purpose set out in clause 10.31A(2), and the MEP:

- *has been authorised to make the request by the trader responsible for the ICP; and*
- *the MEP has an arrangement with that trader to provide metering services.*

If the ICP is only shared unmetered load, the distributor must advise the traders of the intention to temporarily connect the ICP unless:

advising all traders would impose a material cost on the distributor, and

in the distributor's reasonable opinion the advice would not result in any material benefit to any of the traders.

Audit observation

This was covered during the audit. PowerNet stated that no such request was made by any MEP in relation to ICPs located on networks managed by them.

Audit commentary

Compliance confirmed based on a statement from PowerNet.

Audit outcome

Compliant

3.9. Connection of NSP that is not point of connection to grid (Clause 10.30)

Code reference

Clause 10.30

Code related audit information

A distributor must not connect an NSP on its network that is not a point of connection to the grid unless requested to do so by the reconciliation participant responsible for ensuring there is a metering installation for the point of connection.

The distributor must, within 5 business days of connecting the NSP that is not a point of connection to the grid, advise the reconciliation manager of the following in the prescribed form:

- *the NSP that has been connected*
- *the date of the connection*
- *the participant identifier of the MEP for each metering installation for the NSP*
- *the certification expiry date of each metering installation for the NSP.*

Audit observation

The NSP mapping table stored in the registry was reviewed.

Audit commentary

No new NSP that was not a point of connection to the grid was created on any network since the last audit. This clause is not applicable.

Audit outcome

Not applicable

3.10. Temporary electrical connection of NSP that is not point of connection to grid (Clause 10.30(A))

Code reference

Clause 10.30(A)

Code related audit information

A distributor may only temporarily electrically connect an NSP that is not a point of connection to the grid if requested by an MEP for a purpose set out in clause 10.30A(3), and the MEP:

- *has been authorised to make the request by the reconciliation participant responsible for the NSP; and*
- *the MEP has an arrangement with that reconciliation participant to provide metering services.*

Audit observation

The NSP mapping table stored in the registry was reviewed.

Audit commentary

No new NSP that it was not a point of connection to the grid was created on any network since the last audit. This clause is not applicable.

Audit outcome

Not applicable

3.11. Definition of ICP identifier (Clause 1(1) Schedule 11.1)

Code reference

Clause 1(1) Schedule 11.1

Code related audit information

Each ICP created by the distributor in accordance with Clause 11.4 must have a unique identifier, called the “ICP identifier”, determined in accordance with the following format:

xxxxxxxxxxccc where:

- *xxxxxxxxxx is a numerical sequence provided by the distributor*
- *xx is a code that ensures the ICP is unique (assigned by the Authority to the issuing distributor)*
- *ccc is a checksum generated according to the algorithm provided by the Authority.*

Audit observation

We reviewed the LIS files provided by PowerNet for the networks they manage, Electricity Invercargill, The Power Company, Lakeland, and Otago Net JV.

Audit commentary

We confirm that all networks have a unique identifier.

Audit outcome

Compliant

3.12. Loss category (Clause 6 Schedule 11.1)

Code reference

Clause 6 Schedule 11.1

Code related audit information

Each ICP must have a single loss category that is referenced to identify the associated loss factors.

Audit observation

PowerNet provided the LIS files dated 19/08/19 for all networks.

Audit commentary

All ICPs with the status of “Ready”, “Active”, and “Inactive” have a single loss category code assigned. The loss category code is assigned to an ICP when it is first uploaded to the registry.

Audit outcome

Compliant

3.13. Management of “new” status (Clause 13 Schedule 11.1)

Code reference

Clause 13 Schedule 11.1

Code related audit information

The ICP status of “New” must be managed by the distributor to indicate:

- the associated electrical installations are in the construction phase (Clause 13(a) of Schedule 11.1)
- the ICP is not ready for activation (Clause 13(b) of Schedule 11.1).

Audit observation

The process for new connections was analysed in section 3.1. We also reviewed the EDA files to see if the status “new” is used for newly created ICPs.

Audit commentary

According to the new connections process the status “new” is not used by PowerNet. The review of the EDA files confirmed that all ICPs were uploaded to the registry with all information necessary and the registry assigned the status “ready”.

Audit outcome

Compliant

3.14. Monitoring of “new” & “ready” statuses (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 has had the status of “Ready” for 24 months or more:

- the distributor must ask the trader who intends to trade at the ICP whether the ICP should continue to have that status (Clause 15(2)(a) of Schedule 11.1)
- the distributor must decommission the ICP if the trader advises that the ICP should not continue to have that status (Clause 15(2)(b) of Schedule 11.1).

Audit observation

At the time of audit, the registry LIS files dated 19/08/19 were examined.

Audit commentary

The table below shows the number of ICPs with the status “new” and “ready” for more than 24 months for each distributor managed by PowerNet.

Distributor	NEW (2019)	NEW (2018)	NEW (2017)	NEW (2016)	NEW (2015)
TPCO	1	0	2	2	1
ELIN	1	1	1	0	0
OTPO	0	0	2	3	3
LLNW	1	0	1	0	0

Distributor	READY(2019)	READY(2018)	READY (2017)	READY (2016)	READY (2015)
TPCO	7	6	49	45	42
ELIN	2	0	2	2	4
OTPO	2	2	3	5	17
LLNW	1	0	0	0	0

ELIN – The number of ICPs with the status “ready” increased by 2 since the last audit. PowerNet did not confirm with Contact Energy if these ICPs were still required. One ICP with the status “new” was requested by the City Council for festive lights. The lights were never installed.

LLNW - The ICP with the status “new” (0000952067LN196) was decommissioned during the audit. The ICP with the status “ready” needs to be followed up.

OTPO – The ICP with the status “ready” 0001481217TG05A was followed up one year ago and decommissioned during this audit. There is another ICP (0002211318TGBE8) with the same status, which has not been followed up.

TPCO – The number of ICPs with the status “ready” increased by one since the last audit. No follow up was made with proposed traders to check if these ICPs are still required.

In the last report we noted “A monthly report is run to check for ICPs which have had the status “ready” for 12/24 months”. They are followed up with respective customers/traders”. We observed that the process was not followed up on since the last audit.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.14 With: 15 of Schedule 11.1 From: 01-Aug-18 To: 15-Aug-19	LLNW, ELIN, TPCO, and OTPO – the process of asking the trader who intends to trade at the ICP whether the ICP should continue to have that status was not followed. Number of ICPs with the status “new” and “ready” increased Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are recorded as moderate because the process of checking with traders has not been followed. Audit risk rating is recorded as low because a small number of ICPs is affected.		
Actions taken to resolve the issue		Completion date	Remedial action status
In previous years a purge has been carried out which removed a backlog of aged ICPs.		Historic	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Review procedures to ensure this review aged ICPs is carried out regularly		30/11/19	

3.15. Embedded generation loss category (Clause 7(6) Schedule 11.1)

Code reference

Clause 7(6) Schedule 11.1

Code related audit information

If the ICP connects the distributor's network to an embedded generating station that has a capacity of 10 MW or more (clause 7(1)(f) of Schedule 11.1):

- *The loss category code must be unique; and*
- *The distributor must provide the following to the reconciliation manager:*
 - *the unique loss category code assigned to the ICP*
 - *the ICP identifier of the ICP*
 - *the NSP identifier of the NSP to which the ICP is connected*
 - *the plant name of the embedded generating station.*

Audit observation

The LIS files dated 19/08/19 were analysed.

Audit commentary

Electricity Invercargill and Lakeland do not have an embedded generation station that has a capacity of 10MW or more.

White Hill wind farm (0000315340TPEFC) is located on The Power Company network with a capacity of 58M, with Loss Factor Code “PNL42”.

Paerau-Patearoa Power Station(0002751984TGB5D) is located on the OtagoNet JV network with capacity of 12.25MW with Loss Factor Code “2751984”

Both ICPs are confirmed as having individual loss category codes.

Audit outcome

Compliant

3.16. Electrical connection of a point of connection (Clause 10.33A)

Code reference

Clause 10.33A(4)

Code related audit information

No participant may electrically connect a point of connection or authorise the electrical connection of a point of connection, other than a reconciliation participant.

Audit observation

The new connections process was examined in **section 3.1**.

Audit commentary

PowerNet does not electrically connect a point of connection or authorise the electrical connection of a point of connection. They are electrically connected by an MEP/traders metering technician who are authorised to work on the networks managed by PowerNet. PowerNet provides its authorisation to that agent by requiring they have on-site the approved PowerNet application form (which is normally provided by the electrician)

Audit outcome

Compliant

4. MAINTENANCE OF REGISTRY INFORMATION

4.1. Changes to registry information (Clause 8 Schedule 11.1)

Code reference

Clause 8 Schedule 11.1

Code related audit information

If information held by the registry that relates to an ICP for which the distributor is responsible changes, the distributor must give written notice to the registry manager of that change.

Notification must be given by the distributor within 3 business days after the change takes effect, unless the change is to the NSP identifier of the NSP to which the ICP is usually connected (other than a change that is the result of the commissioning or decommissioning of an NSP).

In those cases, notification must be given no later than 8 business days after the change takes effect.

If the change to the NSP identifier is for more than 10 business days, the notification must be provided no later than the 13th business day and be backdated to the date the change took effect.

In the case of decommissioning an ICP, notification must be given by the later of 3 business days after the registry manager has advised the distributor that the ICP is ready to be decommissioned, or 3 business days after the distributor has decommissioned the ICP.

Audit observation

PowerNet provided the Event Detail files for all networks managed by them for the period 01/08/18 to 15/08/19

The process for monitoring compliance with clause 8 (4) of Schedule 11.1 was examined. PowerNet has a process in place to monitor weekly logs from System Control, which includes NSP changes. PowerNet provided a copy of the report dated 8/7/19. The report records the transfer of all Riverdale sub customers from GOR00331 to NMA0331.

Audit commentary

The results of the analysis of the Event Detail files are shown in the table below.

Network	Activity	Total number of updates		No of updates later than 3BD		Date range of updates [BD]	
		2018	2019	2018	2019	2018	2019
ELIN	Address	106	145	0	2(1.3%)	0	Up to 35
ELIN	Network	161	169	7 (9.2%)	10 (5.9%)	11 to 1237	Up to 88
ELIN	Pricing	1,273	1,962	1,185 (93.1%)	1,1171 (56.3%)	6 to 42	Up to 223
LLNW	Address	960	647	0	7 (1.1%)	0	Up to 40*
LLNW	Network	559	1,065	36 (6.44%)	22 (2.1%)	12 to 150	Up to 1298**
LLNW	Pricing	836	792	217 (26%)	231 (29.2%)	7 to 72	Up to 120
OTPO	Address	170	216	2	0	6	Up to 3
OTPO	Network	134	327	24 (17.9%)	9 (2.8%)0	12 to 755	Up to 22
OTPO	Pricing	14,249	1,089	11,236 (78.8%)	759 (69.7%)	Up to 48	Up 251
TPCO	Address	964	1,177	0	9 (0.8%)	0	Up to 40*
TPCO	Network	1,869	3,078	936 (50%)	871 (28.3%)	Up to 1750	Up to 246
TPCO	Pricing	1,145	3,455	952 (85.8%)	2,606 (75.4%)	Up to 127	Up to 119

* - database was deleted and later some entries were populated with a delay

** - populated type of embedded generation for one ICP

As we noted in the previous audit, the pricing updates are driven by traders, which ask to change a customer to a low user and backdate. PowerNet restricted backdating pricing to a maximum of two months. In most cases, the pricing updates are uploaded within the same billing month as the traders' requests for changes. It means that there is no financial impact. Traders are always billed using the Price Code recorded in the registry.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.1 With: 8 of Schedule 11.1 From: 01-Aug-18 To: 15-Aug-19	Registry information not updated within 3 business days by all networks (ELIN, TPCO, LLNW, OTPO) Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating

Low	Controls are recorded as moderate. Compliance in this is improved due to stricter processes. Our audit risk rating is low because backdating of price codes has no financial impact, most of them occur within the same billing month. There is no impact on settlement outcomes.		
Actions taken to resolve the issue		Completion date	Remedial action status
Some updates have been outside of required timeframes due to correction of database processing errors covered in other sections of this audit. PowerNet is cognisant of required timeframes and makes ever endeavor to meet them. In some instances backdating takes precedent for the correctness of data.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As above			

4.2. Notice of NSP for each ICP (Clauses 7(1),(4) and (5) Schedule 11.1)

Code reference

Clauses 7(1), 7(4) and 7(5) Schedule 11.1

Code related audit information

Under Clause 7(1)(b) of Schedule 11.1, the distributor must provide to the registry manager the NSP identifier of the NSP to which the ICP is usually connected.

If the distributor cannot identify the NSP that an ICP is connected to, the distributor must nominate the NSP that the distributor thinks is most likely to be connected to the ICP, taking into account the flow of electricity within its network, and the ICP is deemed to be connected to the nominated NSP.

Audit observation

We reviewed the LIS files provided by PowerNet and we also reviewed the process for new connections.

Audit commentary

Each ICP loaded into the registry has the NSP identifier assigned. It is a mandatory field in the ICP Database. The functionality of the database asks an operator to assign a transformer, which is “connected” to a NSP. The ICP Database has a network model built in, which shows parent-child relationships between transformers and NSPs.

Audit outcome

Compliant

4.3. Customer queries about ICP (Clause 11.31)

Code reference

Clause 11.31

Code related audit information

The distributor must advise a customer (or any person authorised by the customer) or embedded generator of the customer or embedded generator's ICP identifier within 3 business days after receiving a request for that information.

Audit observation

This was covered during the audit.

Audit commentary

Any request from a customer for advice on an ICP for an existing connection is actioned immediately, while the customer is on the phone or at the office.

Audit outcome

Compliant

4.4. ICP location address (Clause 2 Schedule 11.1)

Code reference

Clause 2 Schedule 11.1

Code related audit information

Each ICP identifier must have a location address that allows the ICP to be readily located.

Audit observation

PowerNet provided the LIS file dated 19/08/2019 for all networks to assist in the assessment of compliance.

Audit commentary

The analysis of the LIS file showed that the addresses of all ICPs on all networks allow any ICP to be readily located.

Audit outcome

Compliant

4.5. Electrically disconnecting an ICP (Clause 3 Schedule 11.1)

Code reference

Clause 3 Schedule 11.1

Code related audit information

Each ICP created after 7 October 2002 must be able to be electrically disconnected without electrically disconnecting another ICP, except for ICPs that are the point of connection between a network and an embedded network, or ICPs that represent the consumption calculated by the difference between the total consumption for the embedded network and all other ICPs on the embedded network.

Audit observation

This was covered with PowerNet during the audit.

Audit commentary

There are no known situations where an ICP could not be electrically disconnected without electrically disconnecting another ICP.

Audit outcome

4.6. Distributors to Provide ICP Information to the Registry manager (Clause 7(1) Schedule 11.1)

Code reference

Clause 7(1) Schedule 11.1

Code related audit information

For each ICP on the distributor's network, the distributor must provide the following information to the registry manager:

- *the location address of the ICP identifier (Clause 7(1)(a) of Schedule 11.1)*
- *the NSP identifier of the NSP to which the ICP is usually connected (Clause 7(1)(b) of Schedule 11.1)*
- *the installation type code assigned to the ICP (Clause 7(1)(c) of Schedule 11.1)*
- *the reconciliation type code assigned to the ICP (Clause 7(1)(d) of Schedule 11.1)*
- *the loss category code and loss factors for each loss category code assigned to the ICP (Clause 7(1)(e) of Schedule 11.1)*
- *if the ICP connects the distributor's network to an embedded generating station that has a capacity of 10MW or more (Clause 7(1)(f) of Schedule 11.1):*
 - a) *the unique loss category code assigned to the ICP*
 - b) *the ICP identifier of the ICP*
 - c) *the NSP identifier of the NSP to which the ICP is connected*
 - d) *the plant name of the embedded generating station*
- *the price category code assigned to the ICP, which may be a placeholder price category code only if the distributor is unable to assign the actual price category code because the capacity or volume information required to assign the actual price category code cannot be determined before electricity is traded at the ICP (Clause 7(1)(g) of Schedule 11.1)*
- *if the price category code requires a value for the capacity of the ICP, the chargeable capacity of the ICP as follows (Clause 7(1)(h) of Schedule 11.1):*
 - a) *a placeholder chargeable capacity if the distributor is unable to determine the actual chargeable capacity*
 - b) *a blank chargeable capacity if the capacity value can be determined for a billing period from metering information collected for that billing period*
 - c) *if there is more than one capacity value at the ICP, and at least one, but not all, of those capacity values can be determined for a billing period from the metering information collected for that billing period-*
 - (i) *no capacity value recorded in the registry field for the chargeable capacity; and*
 - (ii) *either the term "POA" or all other capacity values, recorded in the registry field in which the distributor installation details are also recorded*
 - d) *if there is more than one capacity value at the ICP, and none of those capacity values can be determined for a billing period from the metering information collected for that billing period-*
 - (i) *the annual capacity value recorded in the registry field for the chargeable capacity; and*
 - (ii) *either the term "POA" or all other capacity values, recorded in the registry field in which the distributor installation details are also recorded*
 - e) *the actual chargeable capacity of the ICP in any other case*

- *the distributor installation details for the ICP determined by the price category code assigned to the ICP (if any), which may be placeholder distributor installation details only if the distributor is unable to assign the actual distributor installation details because the capacity or volume information required to assign the actual distributor installation details cannot be determined before electricity is traded at the ICP (Clause 7(1)(i) of Schedule 11.1)*
- *the participant identifier of the first trader who has entered into an arrangement to sell or purchase electricity at the ICP (only if the information is provided by the first trader) (Clause 7(1)(j) of Schedule 11.1)*
- *the status of the ICP (Clause 7(1)(k) of Schedule 11.1)*
- *designation of the ICP as "Dedicated" if the ICP is located in a balancing area that has more than 1 NSP located within it, and the ICP will be supplied only from the NSP advised under Clause 7(1)(b) of Schedule 11.1, or the ICP is a point of connection between a network and an embedded network (Clause 7(1)(l) of Schedule 11.1)*
- *if unmetered load, other than distributed unmetered load, is associated with the ICP, the type and capacity in kW of unmetered load (Clause 7(1)(m) of Schedule 11.1)*
- *if shared unmetered load is associated with the ICP, a list of the ICP identifiers of the ICPs that are associated with the unmetered load (Clause 7(1)(n) of Schedule 11.1)*
- *if the ICP is capable of generating into the distributors network (Clause 7(1)(o) of Schedule 11.1):*
 - a) *the nameplate capacity of the generator; and*
 - b) *the fuel type*
- *the initial electrical connection date of the ICP (Clause 7(1)(p) of Schedule 11.1).*

Audit observation

PowerNet provided the LIS files and PR-255, for all networks which they manage, to assist in the assessment of compliance with this clause. The incorrect or missing entries identified in the last audit were corrected.

Audit commentary

The results of analysis for each network is shown below:

ELIN – 6 ICPs did not have details of unmetered load populated. Contact Energy populated this information in Nov'18.

LLNW – 19 ICPs did not have Initial Electrical Connection Date populated. Traders had the status "active" for all of them.

OTPO – lack of embedded generation details for ICP 0001130430TG4B9. The ICP has import/export meter installed, and the profile used by the trader is RPS/PV1. PowerNet did not receive an application for embedded generation.

9 ICPs did not have Initial Electrical Connection Date populated. Traders had the status "active" for all of them.

TPCO – ICP 0000191373TP4B9 did not have unmetered load details populated.

8 ICPs did not have Initial Electrical Connection Date populated. Traders had the status "active" for all of them. For two ICPs (0000387667TPFE2 and 0000245312TP169) Initial Electrical Connection date was deleted by a subsequent entry.

The level of compliance in this area has improved. The issue of not having details for embedded generation has been addressed. Only one ICP was identified on the Otago Net JV, a customer did not request permission from PowerNet to install solar panels on his/his house.

The non-compliance of not having the Initial Electrical Connection Date recorded for some ICPs was again caused by an incorrect update of the registry by the ICP Database.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 4.6</p> <p>With: 7(1) of Schedule 11.1</p> <p>From: 01-Aug-18</p> <p>To: 15-Aug-19</p>	<p>TPCO, ELIN, OTPO - Lack of information in the registry for a small number of ICPs</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Twice previously</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls are recorded as moderate because some refinement could still be made. PowerNet run a number of reports which monitor integrity and validity of information in the registry. Audit risk rating is assigned as low because the impact on settlement outcomes is minimal (a small number of ICPs)</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>6 ELIN ICPs Where trader had added UML – Queried the trader re this data update. They advise a purge of their system found these UML records which were not fully implemented, hence their updating populated the registry. PowerNet’s original population of UML was from traders’ records as we had none of our own. These records did not come from the trader at the time. They are being verified between ourselves and the trader, once confirmed the registry will be updated accordingly.</p> <p>OTPO ICP with Import/Export Meter but code L. – Through trader have established there has been DG installed at this ICP without application to PowerNet for network approval, therefore our code of Load Only has been correct based on our knowledge of the ICP. Through the trader contact has now been made with the customer and they will be making a retrospective application for network approval.</p> <p>TPCO – ICP with UML – This ICP was used from time to time for short term supply to a circus, it has never had UML, therefore it is correct to have no UML on the registry. Presently there is no meter box in place therefore it has no meter and is completely disconnected. The trader has left it with status Active, which is incorrect it should be Inactive. It was last used in 2009, and indications are it is no longer required therefore will be Decommissioned.</p> <p>See also comments in 2.1 regarding an error in our database affecting IED population to the registry. This error has been resolved.</p>		In progress	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
Issues are noted and consideration will be given to any safeguards that can be developed to alert for these or similar situations.	Ongoing	

4.7. Provision of information to registry after the trading of electricity at the ICP commences (Clause 7(3) Schedule 11.1)

Code reference

Clause 7(3) Schedule 11.1

Code related audit information

The distributor must provide the following information to the registry manager no later than 10 business days after the trading of electricity at the ICP commences:

- *the actual price category code assigned to the ICP (Clause 7(3)(a) of Schedule 11.1)*
- *the actual chargeable capacity of the ICP determined by the price category code assigned to the ICP (if any) (Clause 7(3)(b) of Schedule 11.1)*
- *the actual distributor installation details of the ICP determined by the price category code assigned to the ICP (if any) (Clause 7(3)(c) of Schedule 11.1).*

Audit observation

The new connection process was reviewed in **section 3.1**.

Audit commentary

According to the process, PowerNet provides the actual price code for each ICP when it is first uploaded to the registry.

Audit outcome

Compliant

4.8. GPS coordinates (Clause 7(8) and (9) Schedule 11.1)

Code reference

Clause 7(8) and (9) Schedule 11.1

Code related audit information

If a distributor populates the GPS coordinates (optional), it must meet the NZTM2000 standard in a format specified by the Authority.

Audit observation

The LIS files dated 19/08/19 were checked to assess compliance

Audit commentary

No GPS coordinates are loaded into the registry for any network managed by PowerNet.

Audit outcome

Compliant

4.9. Management of “ready” status (Clause 14 Schedule 11.1)

Code reference

Clause 14 Schedule 11.1

Code related audit information

The ICP status of “Ready” must be managed by the distributor and indicates that:

- *the associated electrical installations are ready for connecting to the electricity supply (Clause 14(1)(a) of Schedule 11.1); or*
- *the ICP is ready for activation by a trader (Clause 14(1)(b) of Schedule 11.1)*

Before an ICP is given the “Ready” status in accordance with Clause 14(1) of Schedule 11.1, the distributor must:

- *identify the trader that has taken responsibility for the ICP (Clause 14(2)(a) of Schedule 11.1)*
- *ensure the ICP has a single price category (Clause 14(2)(b) of Schedule 11.1).*

Audit observation

The new connection process was reviewed in **section 3.1**. We also reviewed the EDA and LIS files.

Audit commentary

According to the process, PowerNet does not upload ICPs to the registry unless a written confirmation of acceptance is received from a trader. The outcome of the new process is that all new ICPs have the status “ready” assigned by the registry.

The review of the registry files confirmed that only “ready” status is assigned by the registry to new ICPs.

Audit outcome

Compliant

4.10. Management of “distributor” status (Clause 16 Schedule 11.1)

Code reference

Clause 16 Schedule 11.1

Code related audit information

The ICP status of “distributor” must be managed by the distributor and indicates that the ICP record represents a shared unmetered load installation or the point of connection between an embedded network and its parent network.

Audit observation

The LIS files were examined.

Audit commentary

The Power Company has one ICP with the status “distributor”, it is 0004031015TP9AA. It is a gate meter ICP assigned to the embedded network in Te Anau.

Audit outcome

Compliant

4.11. Management of “decommissioned” status (Clause 20 Schedule 11.1)

Code reference

Clause 20 Schedule 11.1

Code related audit information

The ICP status of “decommissioned” must be managed by the distributor and indicates that the ICP is permanently removed from future switching and reconciliation processes (Clause 20(1) of Schedule 11.1).

Decommissioning only occurs when:

- *electrical installations associated with the ICP are physically removed (Clause 20(2)(a) of Schedule 11.1); or*
- *there is a change in the allocation of electrical loads between ICPs with the effect of making the ICP obsolete (Clause 20(2)(b) of Schedule 11.1); or*
- *in the case of a distributor-only ICP for an embedded network, the embedded network no longer exists (Clause 20(2)(c) of Schedule 11.1).*

Audit observation

The process for ICP decommissioning was examined. The last audit identified non-compliance because the Effective date in the registry of the status “decommissioned” was the same as the Input Date. PowerNet changed the process by recording, in the ICP Database, the physical date of the ICP being physically removed.

The EDA files were examined to confirm compliance and PowerNet provided ten examples.

Audit commentary

PowerNet decommissions an ICP upon retailer instruction (email) or owner’s instruction. Before the ICP status is changed to “decommissioned”, a contractor goes on site and physically disconnects the installation.

The analysis of the EDA files showed that the Effective date in the registry of the status “decommissioned” was the same as the Input Date. The ICP Database contained the correct date of decommissioning but it was not replicated in the registry. The probable cause of this non-compliance is the effective date is hard-coded “the effective date=input date”.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.11 With: 20 of Schedule 11.1 From: 01-Aug-18 To: 15-Aug-19	ELIN, TPCO, LLNW, OTPO - effective date of ICPs being decommissioned is the same as the date of update of the registry Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are recorded as weak. The process was corrected but it was not followed up to check if the information sent to the registry was correct. Audit risk rating is recorded as low because the impact on the settlement outcome is small		
Actions taken to resolve the issue		Completion date	Remedial action status
See Comments in 2.1			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
See Comments in 2.1			

4.12. Maintenance of price category codes (Clause 23 Schedule 11.1)

Code reference

Clause 23 Schedule 11.1

Code related audit information

The distributor must keep up to date the table in the registry of the price category codes that may be assigned to ICPs on each distributor's network by entering in the table any new price category codes.

Each entry must specify the date on which each price category code takes effect, which must not be earlier than 2 months after the date the code is entered in the table.

A price category code takes effect on the specified date.

Audit observation

The Price Category table in the registry was examined for all networks managed by PowerNet.

Audit commentary

There were no new Price Categories recorded in the registry since the last audit.

Audit outcome

Compliant

5. CREATION AND MAINTENANCE OF LOSS FACTORS

5.1. Updating table of loss category codes (Clause 21 Schedule 11.1)

Code reference

Clause 21 Schedule 11.1

Code related audit information

The distributor must keep the registry up to date with the loss category codes that may be assigned to ICPs on the distributor's network.

The distributor must specify the date on which each loss category code takes effect.

A loss category code takes effect on the specified date.

Audit observation

The Loss Category Codes table in the registry was examined for all networks managed by PowerNet.

Audit commentary

New Loss Factor Code (LLNWGXP) was recorded for Lakeland. The new Loss Factor Code took effect on 01/04/2019. The registry was notified on 19/02/2018. It constitutes non-compliance because 2 months' notice is required.

No new Loss Factor Codes were recorded for Electricity Invercargill, The Power Company, and Otago JV.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 5.1 With: 21 of Schedule 11.1 From: 01-Feb-19 To: 09-Feb-19	LLNW – New Loss Factor Code was recorded in the registry late by 19 days Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are recorded as moderate. Only one network has been effected by this non-compliance. New Loss Factor has been late, but it has not been used by the reconciliation manager. Audit risk rating is recorded as low.		
Actions taken to resolve the issue		Completion date	Remedial action status
			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
The requirements of the code are noted to ensure compliance in future.		Ongoing	

5.2. Updating loss factors (Clause 22 Schedule 11.1)

Code reference

Clause 22 Schedule 11.1

Code related audit information

Each loss category code must have a maximum of 2 loss factors per calendar month. Each loss factor must cover a range of trading periods within that month so that all trading periods have a single applicable loss factor.

If the distributor wishes to replace an existing loss factor on the table in the registry, the distributor must enter the replaced loss factor on the table in the registry.

Audit observation

The Loss Category Codes table in the registry was examined for all networks managed by PowerNet.

Audit commentary

PowerNet updated loss factors for The Power Company and Electricity Invercargill. They were valid from 01/05/19 to 30/04/19 and 1/10/19 and 30/04/20. The registry was updated 19 and 20 February'19. Each year PowerNet updates loss factors in the registry for these two networks.

Audit outcome

Compliant

6. CREATION AND MAINTENANCE OF NSPS (INCLUDING DECOMMISSIONING OF NSPS AND TRANSFER OF ICPS)

6.1. Creation and decommissioning of NSPs (Clause 11.8 and Clause 25 Schedule 11.1)

Code reference

Clause 11.8 and Clause 25 Schedule 11.1

Code related audit information

If the distributor is creating or decommissioning an NSP that is an interconnection point between 2 local networks, the distributor must give written notice to the reconciliation manager of the creation or decommissioning.

If the embedded network owner is creating or decommissioning an NSP that is an interconnection point between 2 embedded networks, the embedded network owner must give written notice to the reconciliation manager of the creation or decommissioning.

If the distributor is creating or decommissioning an NSP that is a point of connection between an embedded network and another network, the distributor must give written notice to the reconciliation manager of the creation or decommissioning.

If the distributor wishes to change the record in the registry of an ICP that is not recorded as being usually connected to an NSP in the distributor's network, so that the ICP is recorded as being usually connected to an NSP in the distributor's network (a "transfer"), the distributor must:

- give written notice to the reconciliation manager*
- give written notice to the Authority*
- give written notice to each affected reconciliation participant*
- comply with Schedule 11.2.*

Audit observation

The NSP mapping table in the registry was reviewed to assess compliance.

Audit commentary

Since the last audit PowerNet did not create or decommission any NSP that is an interconnection point between two local networks.

Audit outcome

Compliant

6.2. Provision of NSP information (Clause 26(1) and (2) Schedule 11.1)

Code reference

Clause 26(1) and (2) Schedule 11.1

Code related audit information

If the distributor wishes to create an NSP or transfer an ICP as described above, the distributor must request that the reconciliation manager create a unique NSP identifier for the relevant NSP.

The request must be made at least 10 business days before the NSP is electrically connected, in respect of an NSP that is an interconnection point between 2 local networks. In all other cases, the request must be made at least 1 month before the NSP is electrically connected or the ICP is transferred.

Audit observation

The NSP mapping table in the registry was reviewed. PowerNet did not create an NSP for any network managed by them.

Audit commentary

There are no plans to create a new NSP in the foreseeable future. When such a need arises PowerNet will follow the process specified by the Code.

Audit outcome

Compliant

6.3. Notice of balancing areas (Clause 24(1) and Clause 26(3) Schedule 11.1)

Code reference

Clause 24(1) and Clause 26(3) Schedule 11.1

Code related audit information

If a participant has notified the creation of an NSP on the distributor's network, the distributor must give written notice to the reconciliation manager of the following:

- *if the NSP is to be located in a new balancing area, all relevant details necessary for the new balancing area to be created and notification that the NSP to be created is to be assigned to the new balancing area*
- *in all other cases, notification of the balancing area in which the NSP is located.*

Audit observation

The NSP mapping table in the registry was reviewed. No new NSP was created on any network managed by PowerNet since the last audit.

Audit commentary

There are no plans to create a new NSP in the foreseeable future therefore no new balancing area will be created or notification to existing balancing areas.

Audit outcome

Compliant

6.4. Notice of supporting embedded network NSP information (Clause 26(4) Schedule 11.1)

Code reference

Clause 26(4) Schedule 11.1

Code related audit information

If a participant notifies the creation of an NSP, or the transfer of an ICP to an NSP that is a point of connection between a network and an embedded network owned by the distributor, the distributor must give notice to the reconciliation manager at least 1 month before the creation or transfer of:

- *the network on which the NSP will be located after the creation or transfer (Clause 26(4)(a))*
- *the ICP identifier for the ICP that connects the network and the embedded network (Clause 26(4)(b))*
- *the date on which the creation or transfer will take effect (Clause 26(4)(c)).*

Audit observation

The NSP mapping table in the registry was reviewed.

Audit commentary

No new NSP has been created nor has any ICP been transferred to an NSP since the last audit.

Audit outcome

Compliant

6.5. Maintenance of balancing area information (Clause 24(2) and (3) Schedule 11.1)

Code reference

Clause 24(2) and (3) Schedule 11.1

Code related audit information

The distributor must give written notice to the reconciliation manager of any change to balancing areas associated with an NSP supplying the distributor's network. The notification must specify the date and trading period from which the change takes effect and be given no later than 3 business days after the change takes effect.

Audit observation

The NSP mapping table in the registry was reviewed to assess compliance.

Audit commentary

There were no changes to balancing areas associated with NSP supplying four networks managed by PowerNet.

Audit outcome

Compliant

6.6. Notice when an ICP becomes an NSP (Clause 27 Schedule 11.1)

Code reference

Clause 27 Schedule 11.1

Code related audit information

If a transfer of an ICP results in an ICP becoming an NSP at which an embedded network connects to a network, or in an ICP becoming an NSP that is an interconnection point, in respect of the distributor's network, the distributor must give written notice to any trader trading at the ICP of the transfer at least 1 month before the transfer.

Audit observation

There was no transfer of an ICP which resulted in an ICP becoming an NSP at which an embedded network connected to a network or an ICP becoming an NSP that is an interconnection point.

Audit commentary

Compliance confirmed based on a statement from PowerNet.

Audit outcome

Compliant

6.7. Notification of transfer of ICPs (Clause 1 to 4 Schedule 11.2)

Code reference

Clause 1 to 4 Schedule 11.2

Code related audit information

If the distributor wishes to transfer an ICP, the distributor must give written notice to the Authority in the prescribed form, no later than 3 business days before the transfer takes effect.

Audit observation

There was no transfer of ICPs, since the last audit, on any network managed by PowerNet.

Audit commentary

Compliance confirmed based on a statement from PowerNet.

Audit outcome

Compliant

6.8. Responsibility for metering information for NSP that is not a POC to the grid (Clause 10.25(1) and 10.25(3))

Code reference

Clause 10.25(1) and 10.25(3)

Code related audit information

A network owner must, for each NSP that is not a point of connection to the grid for which it is responsible, ensure that:

- *there is 1 or more metering installations (Clause 10.25(1)(a)); and*
- *the electricity is conveyed and quantified in accordance with the Code (Clause 10.25(1)(b))*

For each NSP covered in 10.25(1) the network owner must, no later than 20 business days after a metering installation at the NSP is recertified advise the reconciliation manager of:

- *the reconciliation participant for the NSP*
- *the participant identifier of the metering equipment provider for the metering installation*
- *the certification expiry date of the metering installation*

Audit observation

There is one NSP that is not a point of connection to the grid, HER0111. It is for the Aurora embedded network established in 2008.

There are also 6 interconnections between the two networks which are recorded in the registry as network type "I":

- STD0111 TPCO/STD0111ELIN
- ELL0111 TPCO/ELL0111ELIN
- OCB0111 TPCO/OCB0111ELIN
- BLF0111 TPCO/BLF0111ELIN
- LEV0331TPCO/LEV0331ELIN
- SOU0331 TPCO/SOU0331 ELIN

Audit commentary

All interconnections between the two networks are metered except the interconnection ELL0111 TPCO/ELL0111 ELIN, which is the back-up supply (emergency) to Southland Hospital. The exemption #167 was granted on 11 April 2013. The MEP for interconnections is PowerNet (PWNT) and for HER0111 is AMCI.

We confirm that the name of the MEP and the certification expiry date of the metering installation was notified to the reconciliation manager.

Audit outcome

Compliant

6.9. Responsibility for metering information when creating an NSP that is not a POC to the grid (Clause 10.25(2))

Code reference

Clause 10.25(2)

Code related audit information

If the network owner proposes the creation of a new NSP which is not a point of connection to the grid it must:

- *assume responsibility for being the metering equipment provider (Clause 10.25(2)(a)(i)); or*
- *contract with a metering equipment provider to be the MEP (Clause 10.25(2)(a)(ii)); and*
- *no later than 20 business days after identifying the MEP advise the reconciliation manager in the prescribed form of:*
 - a) the reconciliation participant for the NSP (Clause 10.25(2)(b)(i)); and*
 - b) the MEP for the NSP (Clause 10.25(2)(b)(ii)); and*
 - c) no later than 20 business days after the data of certification of each metering installation, advise the reconciliation participant for the NSP of the certification expiry date (Clause 10.25(2)(c)).*

Audit observation

The NSP mapping table in the registry was reviewed to assess compliance.

Audit commentary

No new NSP has been created since the last audit.

Audit outcome

Compliant

6.10. Obligations concerning change in network owner (Clause 29 Schedule 11.1)

Code reference

Clause 29 Schedule 11.1

Code related audit information

If a network owner acquires all or part of a network, the network owner must give written notice to:

- *the previous network owner (Clause 29(1)(a) of Schedule 11.1)*
- *the reconciliation manager (Clause 29(1)(b) of Schedule 11.1)*
- *the Authority (Clause 29(1)(c) of Schedule 11.1)*
- *every reconciliation participant who trades at an ICP connected to the acquired network or part of the network acquired (Clause 29(1)(d) of Schedule 11.1).*

At least 1 month notification is required before the acquisition (Clause 29(2) of Schedule 11.1).

The notification must specify the ICPs to be amended to reflect the acquisition and the effective date of the acquisition (Clause 29(3) of Schedule 11.1).

Audit observation

No network managed by PowerNet acquired all or part of a network.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

6.11. Change of MEP for embedded network gate meter (Clause 10.22(1)(b))

Code reference

Clause 10.22(1)(b)

Code related audit information

If the MEP for an ICP which is also an NSP changes the participant responsible for the provision of the metering installation under Clause 10.25, the participant must advise the reconciliation manager and the gaining MEP.

Audit observation

This was discussed during the audit.

Audit commentary

There are no plans to change the MEP for the Heritage network (HER0111). There are also no plans to change the MEP for interconnections between Electricity Invercargill and The Power Company.

If such a situation occurs, which is very unlikely, PowerNet will advise the reconciliation manager.

Audit outcome

Compliant

6.12. Confirmation of consent for transfer of ICPs (Clauses 5 and 8 Schedule 11.2)

Code reference

Clauses 5 and 8 Schedule 11.2

Code related audit information

The distributor must give the Authority confirmation that it has received written consent to the proposed transfer from:

- *the distributor whose network is associated with the NSP to which the ICP is recorded as being connected immediately before the notification (unless the notification relates to the creation of an embedded network) (Clause 5(a) of Schedule 11.2)*
- *every trader trading at an ICP being supplied from the NSP to which the notification relates (Clause 5(b) of Schedule 11.2).*

The notification must include any information requested by the Authority (Clause 8 of Schedule 11.2).

Audit observation

None of the networks managed by PowerNet created a new embedded network.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

6.13. Transfer of ICPs for embedded network (Clause 6 Schedule 11.2)

Code reference

Clause 6 Schedule 11.2

Code related audit information

If the notification relates to an embedded network, it must relate to every ICP on the embedded network.

Audit observation

None of the networks managed by PowerNet created a new embedded network.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

7. MAINTENANCE OF SHARED UNMETERED LOAD

7.1. Notification of shared unmetered load ICP list (Clause 11.14(2) and (4))

Code reference

Clause 11.14(2) and (4)

Code related audit information

The distributor must give written notice to the registry manager and each trader responsible for the ICPs across which the unmetered load is shared of the ICP identifiers of those ICPs.

A distributor who receives notification from a trader relating to a change under Clause 11.14(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 of the addition or omission of the ICP.

Audit observation

Networks managed by PowerNet do not have shared unmetered load. We validated this by analysis of the LIS file.

The company policy is not to allow shared unmetered load.

Audit commentary

This cause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

7.2. Changes to shared unmetered load (Clause 11.14(5))

Code reference

Clause 11.14(5)

Code related audit information

If the distributor becomes aware of a 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 or decommissioning as soon as practicable after the change or decommissioning.

Audit observation

Networks managed by PowerNet do not have shared unmetered load. We validated this by analysis of the LIS file

The company policy is not to allow shared unmetered load.

Audit commentary

This cause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

8. CALCULATION OF LOSS FACTORS

8.1. Creation of loss factors (Clause 11.2)

Code reference

Clause 11.2

Code related audit information

A participant must take all practicable steps to ensure that information that the participant is required to provide to any person under Part 11 is:

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

Audit observation

PowerNet is still using PSS/Adept software to calculate the technical loss for its network. Loss factors were revised many years ago by a team reporting to the Chief Engineer. There are two major components of technical losses which were taken under consideration: loss of zone substations and distribution transformers, and variable components of delivery conductors. Technical loss factors were calculated at different voltages.

Loss Factors for each network are listed on PowerNet's website.

Audit commentary

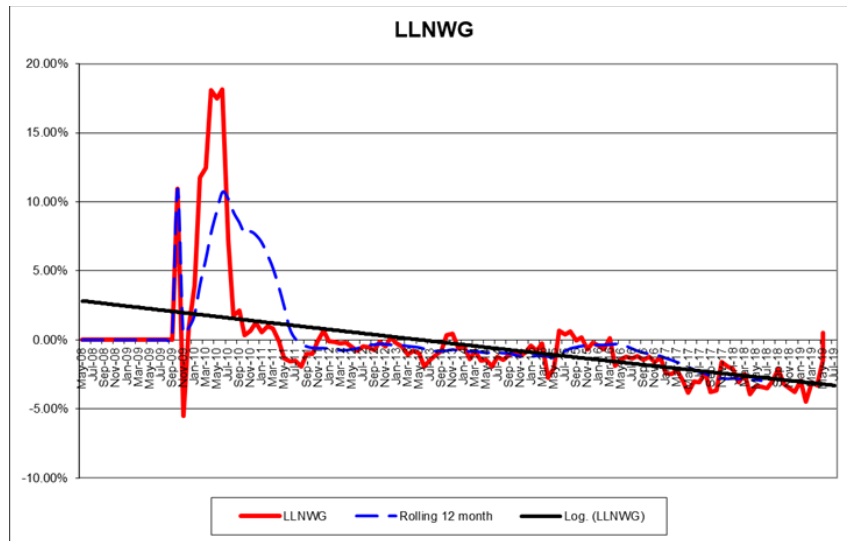
The loss factors have not been recalculated since the last audit. The company commented that loss factors have not been recalculated in the last few years because there have not been any significant changes to the networks configuration. For bigger customers, an individual loss factor (ICC) is calculated every year.

Below are shown graphs of UFE on each network managed by PowerNet. UFE is influenced by many factors, not all of them could be controlled by PowerNet. The UFE figures are different for each network. UFE for Lakeland, the Power Company, and Otago Net JV is negative, for Electricity Invercargill it is positive.

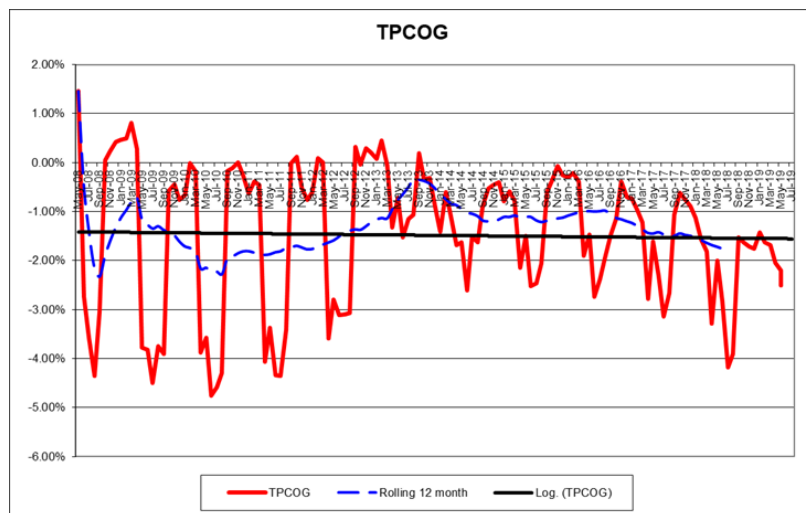
UFE is defined in the Guidelines as

UFE is calculated from the difference between reported energy injected into a network and the reported energy extracted from the network after it has been adjusted for losses. Conceptually, it is the inevitable difference between distributors' predictions and reported reality (volumes as measured by meters). UFE accounts for the difference between actual and calculated technical losses, and actual and estimated non-technical losses.

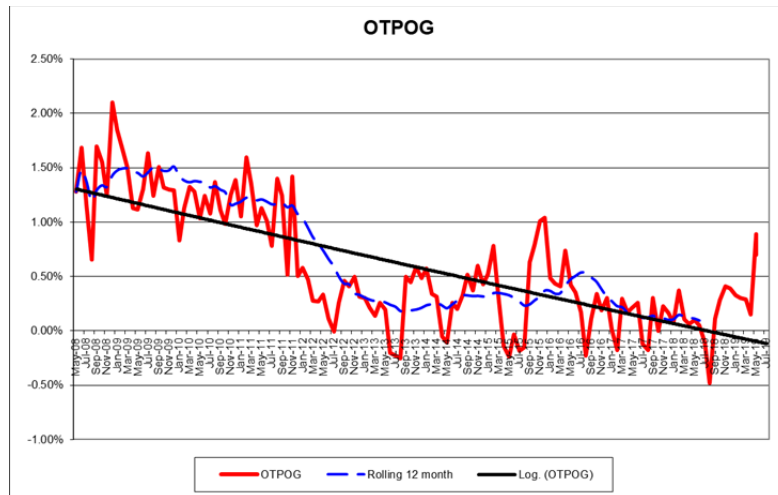
The Guidelines recommend reviewing RLF every 2 years if a 12 months UFE trend is outside +/-1 %. PowerNet actively monitors reconciliation losses but not UFE on individual networks. The company believes that the loss factor for each network is accurate. There are no intentions to mislead or deceive other participants.



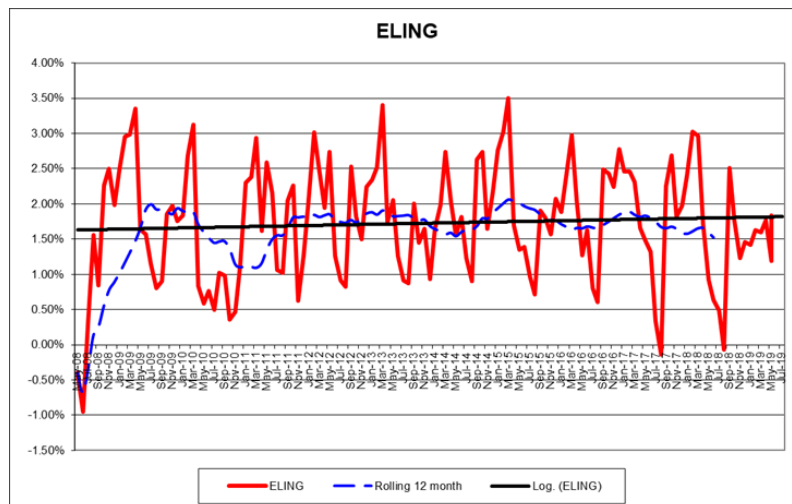
14-month UFE approx. -1% (trending down). Negative UFE occurs when traders understate volume purchased and/or distributor under estimate loss factors.



14-month UFE approx. -1.4%. It has not changed over a number of years. Negative UFE occurs when traders understate volume purchased and/or distributor under estimate loss factors.



14-month UFE approx. 0.35% (sharply trending down). Negative UFE occurs when traders understate volume purchased and/or distributor under estimate loss factors.



14-month UFE approx. +1.5% to +2% (trending up). Positive UFE occurs when traders overstate volume purchased and/or distributor overestimate loss factors. It is the same percentage since 2008, slightly trending up. Electricity Invercargill has a high number of smart meters installed. We expect that installation of smart meters would influence the UFE value as it was noted on other networks in NZ but somehow it has not.

We would again like to recommend investigating reasons why the UFE on Electricity Invercargill is trending up to +2%.

Audit outcome

Compliant

Recommendation	Description	Audited party comment	Remedial action
<p>We recommend investigating reasons why the UFE on Electricity Invercargill is higher than on other networks</p>	<p>Electricity Invercargill UFE is the highest of all networks. It is 1.5% to 2% trending up</p>	<p>Electricity Invercargill has a high percentage of smart meters installed, which will in due course assist the process of calculating loss factors. However at present the systems are not ready to accept the volume of data efficiently. The cost to ELIN customers to improve the accuracy of current loss factors is very high. PowerNet is in the process of implementing a new engineering tool which will, amongst other improvements, much improve the ability to calculate Loss Factors efficiently. This has taken longer than originally anticipated, therefore delayed a review of particularly the ELIN Loss Factors.</p>	

CONCLUSION

PARTICIPANT RESPONSE

As always we welcome the opportunity to review compliance during these audits. This year it was particularly disappointing to find two areas we had given attention due to previous non-compliance still having issues, i.e. ICPs electrically connected prior to being on the Registry and Effective date for Decommissioned ICPs.

ICPs electrically connected without first being populated to the Registry points to human error within our administrative processes. There is no obvious automated facility which can be implemented to safeguard this.

Decommissioned ICPs Effective Dates is indicating an error in our data processing tool which was unknown. Once confirmed this can readily be corrected.

We continue to strive for full compliance and will apply effort towards that.