

**ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTOR AUDIT REPORT**

For

ALPINE ENERGY LIMITED

Prepared by: Steve Woods

Date audit commenced: 20 November 2018

Date audit report completed: 3 December 2018

Audit report due date: 04-Dec-18

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EXECUTIVE SUMMARY

This Distributor audit was performed at the request of **Alpine Energy Ltd (Alpine)**, to encompass the Electricity Industry Participation Code requirement for an annual audit, in accordance with clause 11.10 of part 11. The audit was carried out at Alpine's premises in Timaru, on November 20th, 2018.

The audit was conducted in accordance with the Guideline for Distributor Audits version 7.2, which was produced by the Electricity Authority.

This audit found seven non-compliances and makes two recommendations. Improvements have been made to the controls and compliance in relation to registry update timeliness and accuracy.

The published loss factors were examined in more detail during this audit, and it appears they are too high in relation to reconciliation losses. Alpine's loss factors have not been revised for many years and it is common for areas with a high percentage of AMI deployment to experience lower non-technical losses.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and contains a future risk rating score of four, which results in an indicative audit frequency of 12 months and I agree with this recommendation.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Provide complete and accurate information	2.1	11.2(1) and 10.6(1)	Information on the registry not complete and accurate	Strong	Low	1	Identified
Timeliness of Provision of Initial Electrical Connection Date	3.5	7(2A) of Schedule 11.1	Late updating of the initial electrical connection date for two ICPs	Strong	Low	1	Identified
Temporary electrical connection	3.8	10.31A	Temporary electrical connection conducted by Alpine for a purpose other than testing metering.	Strong	Low	1	Investigating
Changes to registry information	4.1	8 Schedule 11.1	Registry event updates backdated greater than three days	Moderate	Low	2	Identified
Notice of NSP for each ICP	4.2	7(1),(4) and (5) Schedule 11.1	Incorrect NSP for two ICPs One ICP	Moderate	Low	2	Identified

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			incorrectly recorded as non-dedicated				
Provide ICP Information to the Registry manager	4.6	7(1)(o)&(p) Schedule 11.1	Two ICPs with distributed generation details missing.	Moderate	Low	2	Identified
Loss factors	8.1	11.2	Loss factors are not accurate in relation to reconciliation losses.	Weak	Medium	6	Identified
Future Risk Rating						15	
Indicative Audit Frequency						12 months	

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

RECOMMENDATIONS

Subject	Section	Recommendation	Description
Changes to registry information	4.1	Regarding Clause 8 Schedule 11.1	Change registry file to ensure default event dates are not used. This is mainly relevant for solar generation details
Notice of NSP for each ICP	4.2	Regarding Clause 7(1),(4) and (5) Schedule 11.1	Check for of NSP mapping be carried out periodically

ISSUES

Subject	Section	Issue	Description
		Nil	

1. ADMINISTRATIVE

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

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

Audit observation

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

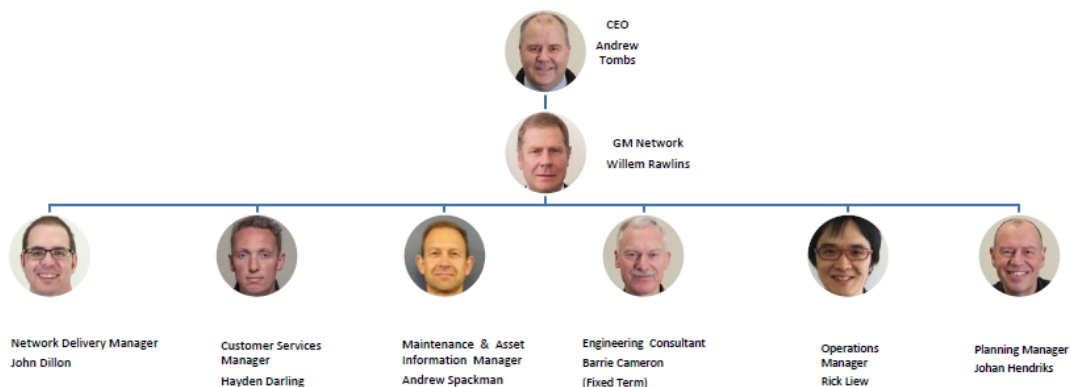
Audit commentary

Not applicable

1.2. Structure of Organisation

Network: Leadership Team

	Current Position
	Vacant Position (currently approved)
	Parental Leave Cover
	Secondment
	Fixed-Term / Contractors / Casual



1.3. Persons involved in this audit

Auditor:

Steve Woods

Veritek Limited

Electricity Authority Approved Auditor

Alpine personnel assisting in this audit were:

Name	Title
Hayden Darling	Customer Services Manager
Peter Bennett	Metering Officer
Margaret King	Registry Coordinator

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 fulfillment 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

Alpine Energy provided the list below of sub-contractors authorised to perform electrical connection activities on their network.

Audit commentary

- John Hardie- independent contractor
- Al Hurst – independent contractor
- Net Con Ltd

1.5. Supplier list

Alpine Energy has provided the list in **Section 1.4** of sub-contractors authorised to perform electrical connection activities on their network.

1.6. Hardware and Software

Alpine Energy provided the following information that details hardware and software used in the processes being audited:

- Microsoft Access database and VB application for registry maintenance
- Microsoft SQL Server and VB.Net application for the GIS. Backup arrangements are in accordance with standard industry protocols.

1.7. Breaches or Breach Allegations

Alpine has not had any breach allegations recorded by the Electricity Authority during the audit period.

1.8. ICP and NSP Data

Alpine Energy has responsibility for the NSPs in the table below. There are two embedded networks connected to Alpine Energy's network.

Distributor	NSP POC	Description	Parent POC	Parent Network	Balancing Area	Network type	Start date	No of ICPs
ALPE	ABY0111	ALBURY			CENTRALALPEG	G	1/01/2012	
ALPE	BPD1101	Bells Pond			CENTRALALPEG	G	1/01/2012	
ALPE	STU0111	STUDHOLME			CENTRALALPEG	G	1/01/2012	
ALPE	TIM0111	TIMARU			CENTRALALPEG	G	1/01/2012	
ALPE	TKA0331	TEKAPO A			TKA0331ALPEG	G	1/05/2008	
ALPE	TMK0331	TEMUKA			CENTRALALPEG	G	1/01/2012	
ALPE	TWZ0331	TWIZEL			TWZ0331ALPEG	G	1/05/2008	
MOPO	MMP0111	MACKENZIE PARK	TWZ0331	ALPE	MMP0111MOPOE	E	1/05/2008	
MOPO	MMT0111	MANUKA TERRACE	TWZ0331	ALPE	MMT0111MOPOE	E	1/05/2008	

Alpine Energy provided a list of all ICPs as at November 2018 by way of a registry "list file". A summary of this data by "ICP status" is as follows:

Status	Number of ICPs 2018	Number of ICPs 2017	Number of ICPs 2016
New (999,0)	0	3	4
Ready (0,0)	36	61	75
Active (2,0)	32,576	32,299	32,101
Distributor (888,0)	2	2	2
Inactive – new connection in progress (1,12)	26	21	30
Inactive – electrically disconnected vacant property (1,4)	499	524	581
Inactive – electrically disconnected remotely by AMI meter (1,7)	55	39	1
Inactive – electrically disconnected at pole fuse (1,8)	9	6	2
Inactive – electrically disconnected due to meter disconnected (1,9)	0	1	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)	14	53	54
Inactive – reconciled elsewhere (1,5)	0	0	0
Decommissioned (3)	2,441	2,226	2,221

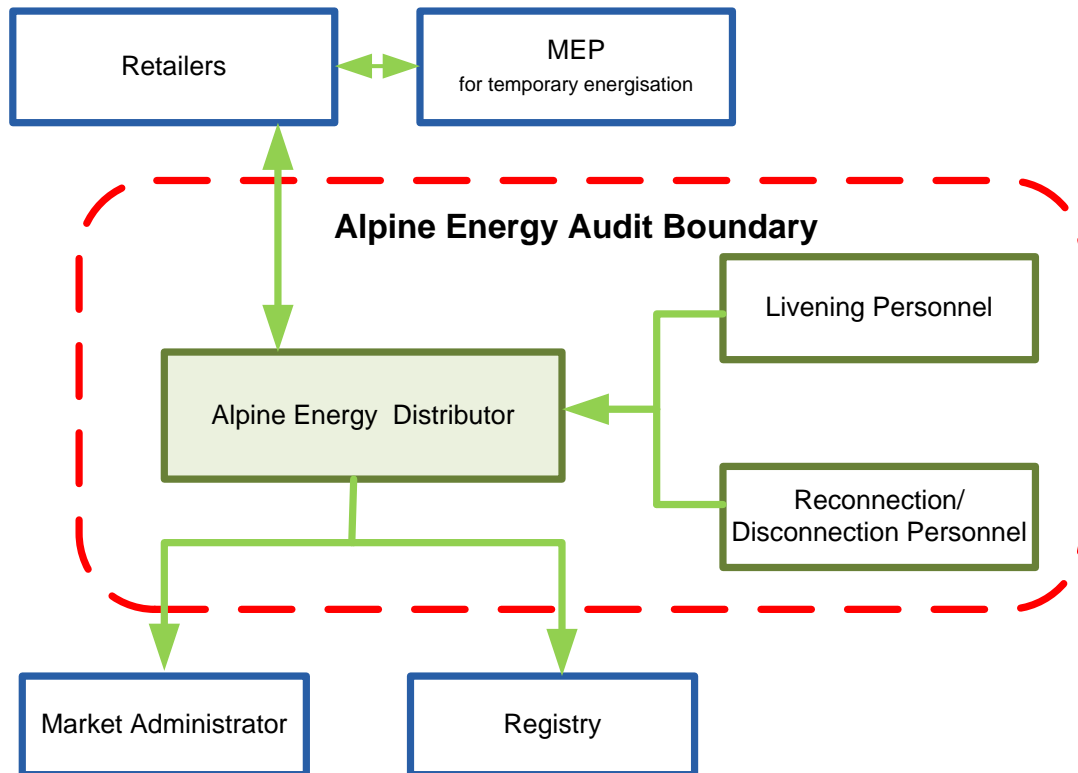
1.9. Authorisation Received

Alpine Energy provided authorisation to Veritek, permitting the collection of data from other parties for matters directly related to the audit.

1.10. Scope of Audit

This Distributor audit was performed at the request of Alpine Energy, to encompass the Electricity Industry Participation Code requirement for an audit, in accordance with clause 11.10 of part 11. The audit was carried out at Alpine's premises in Timaru, on November 20th, 2018.

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



1.11. Summary of previous audit

Alpine provided a copy of the previous audit report, conducted in November 2017 by Rebecca Elliot of Veritek Limited. The findings are detailed in the table below:

Table of Non-Compliance

Subject	Section	Clause	Non compliance	Status
Provide complete and accurate information	2.1	11.2(1) and 10.6(1)	Information on the registry not complete and accurate	Still existing
Requirement to correct errors	2.2	11.2(2) and 10.6(2)	Errors not corrected as soon as practicable	Cleared
Timeliness of Provision of Initial Electrical Connection Date	3.5	7(2A) of Schedule 11.1	Late updating of the initial electrical connection date for 32 ICPs	Still existing
Monitoring of “new” & “ready” statuses	3.14	15 Schedule 11.1	Seven ICPs at ICPs at “New” and 25 at “Ready” for more than 24 months not monitored	Cleared
Changes to registry information	4.1	8 Schedule 11.1	Registry event updates backdated greater than three days Two ICPs change of NSP not updated within the required timeframe	Still existing
Notice of NSP for each ICP	4.2	7(1),(4) and (5) Schedule 11.1	Incorrect NSP for some ICPs	Still existing
Provide ICP Information to the Registry manager	4.6	7(1)(o)&(p) Schedule 11.1	Four active ICPs with no initial electrical connection date incorrectly recorded. Three ICPs with an initial electrical connection date incorrectly recorded. Three ICPs with distributed generation details missing.	Still existing

Table of Recommendations

Subject	Section	Recommendation	Status
Changes to registry information	4.1	Change registry file to ensure default event dates are not used. This is mainly relevant for solar generation details	Still existing
Notice of NSP for each ICP	4.2	Check for of NSP mapping be carried out twice yearly.	Still existing
Provide ICP Information to the Registry manager	4.6	A check for all ICPs with injection metering is added to the registry discrepancy validation	Cleared
		Adopt the recommended unmetered load format	Cleared
Management of “decommissioned” status	4.11	Check with traders to confirm if the ICPs at “ready for decommissioning” are at the correct status.	Cleared
Creation of Loss Factor	8.1	Review loss factors	Still existing

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

I walked through the process to ensure that registry information is complete, accurate and not misleading or deceptive, including viewing reports used to resolve discrepancies.

The registry list file was examined to confirm compliance.

Audit commentary

Alpine Energy has a fully automated registry update process to ensure all information listed in this clause is provided to the registry. Alpine Energy data is contained in their connection management system, which is validated against the registry on a regular basis, error logs are created if any fields are different, and these are then investigated.

There were some examples recorded in following sections where “not all practicable steps” have been taken to ensure information accuracy. They are as follows:

- **Section 4.1** – DG information incorrect for two ICPs.
- **Section 4.2** – incorrect NSPs for two ICPs.

I also found some examples of incorrect event dates for initial electrical connection and price category updates. The data dictionary in the registry defines the event date as follows:

The Event Date defines the date from which the attribute values of the event should apply.

Therefore, the event date should be the same date as the initial electrical connection date for these updates and for price category updates for new connections.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: 11.2(1) and 10.6(1) From: 01-Dec-17 To: 28-Nov-18	Information on the registry not complete and accurate Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls have been strengthened during the audit period and are now considered to be strong. The audit risk rating is low as the errors have no direct impact on reconciliation		
Actions taken to resolve the issue		Completion date	Remedial action status
The DG with information was a result of the process not working and was picked up in our 2017 audit which is still outstanding by parties other than Alpine. These are being monitored and will be resolved/completed. Also to note is one DG had been removed from the house but we hadn't been informed until the retailer queried us about it. (something we and others need to be aware of with some of the solar companies and the contracts they are offering make homeowners take it with them when they shift houses)		Prior to 2019 Audit	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Processes changes have occurred so now and in the future this won't result		Already completed	

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

Alpine's data management processes were examined. The registry list file was examined to confirm compliance.

Audit commentary

As detailed in **Section 2.2**, Alpine have registry validation in place, which has improved during the audit period. All errors identified were corrected as soon as practicable.

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

The new connection process was examined in detail and is described in **section 3.2** below. 20 new connection applications of the 288 ICPs created were checked from the point of application through to when the ICP was created.

Audit commentary

Alpine Energy creates ICPs as required by clause 1 of schedule 11.1. All relevant points of connection have an ICP.

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

The new connection process was examined in detail. 25 new connection applications of the 288 ICPs created during the audit period were checked from the point of application through to when the ICP was created. These were selected using the typical characteristic methodology to confirm the process and controls worked in practice. The event detail report for the 12 months of December 2017 - November 2018 was examined to identify backdated "Ready" statuses.

Audit commentary

Alpine Energy receives new connection requests from customers' agents, normally electricians, who provide a completed Network Application form on which a retailer is nominated. Network engineers evaluate each application to ensure network capacity is available at the requested location. The application is then returned to the new connections personnel where an ICP identifier is created in the connection management system with a status of "New". The application for connection is then sent to the nominated trader for their approval. Two traders respond to Alpine for individual ICPs. Other traders have provided blanket approval. Once the notification is sent to traders, the ICP status is changed to "Ready" in the connection management system. The registry is automatically populated from this system.

The sample checked found all were created within three business days.

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 list file was examined for all ICPs created during the audit period.

Audit commentary

Alpine Energy has a fully automated registry update process to ensure all information listed in this clause is provided to the registry. The data is contained in their connection management system, which is validated against the registry on a regular basis, error logs are created if any fields are different, and these are then investigated. All ICPs created during the audit period were compliant.

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 new connection process was examined. The event detail report for the period December 2017 - November 2018 was examined. 288 ICPs were made "Ready" during that period. These were checked to confirm that they were updated prior to electricity being traded.

Audit commentary

The date being used as the "ready" event date is the date the customer signed and dated the paperwork. This is not necessarily the date the paperwork was received by Alpine. Analysis found 36 ICPs that have backdated ready dates greater than three days from the registry action date. All were found to have been updated prior to electricity was traded and are compliant.

Alpine Energy has a fully automated registry update process to ensure all information listed in this clause is provided to the registry. Alpine Energy data is contained in their connection management system, which is validated against the registry on a regular basis, error logs are created if any fields are different, and these are then investigated.

Audit outcome

Compliant

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

The process for populating of the initial electrical connection date was examined. The event detail report for the period from 12 months of December 2017 -November 2018 was examined to identify late updates.

Audit commentary

After the metering and electrical connection fieldwork is complete, a completed form is provided back to Alpine Energy, and any necessary corrections are made to registry fields, for example, connection capacity or price category code. The initial electrical connection date is populated at this stage.

The initial electrical connection date was populated for 288 ICPs. To calculate the accuracy of updates I have measured the initial electrical connection date against the registry update date. Only two ICPs had late updates and both were due to late field notification. Alpine now checks registry notification files on a daily basis to identify changes to "Active" status, which alerts them that they haven't yet received electrical connection notification from the field. Compliance in this area is significantly improved since the last audit, where there were 56 late updates.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.5 With: 7(2A) of Schedule 11.1 From: 12-Dec-17 To: 28-Mar-18	Late updating of the initial electrical connection date for two ICPs Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	Rationale for audit risk rating
Low	The controls are recorded as strong because they mitigate risk to an acceptable level and they have been improved to include an extra validation step. The impact on and participants is minor because this field is used to validate other fields against; therefore, the audit risk rating is low.
Actions taken to resolve the issue	
Completion date	Remedial action status

We have reviewed our system from earlier in the year and have added in checks from the notification tool to assist with monitoring	Has Started	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
Continue with daily checks and being verified by a the registry coordinator	Has started	

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.

Audit observation

The new connection process was examined. The event detail report for the period December 2017 - November 2018 was examined. The list file was examined to confirm that all ICPs at the status of “ready” have a trader nominated.

Audit commentary

The new connections process was examined, and the process includes a “trader responsibility” step. During the previous audit, traders sent livening requests to the livening agent, who was also the metering agent. This process has changed during the audit period because the Approved Test House has changed from VEMS to Wells and Wells metering technicians are not approved to work on Alpine’s network. Alpine now conducts connection using their own personnel and the “trader responsibility” step is met because all network connection applications (NCA) have the trader recorded on them and there is “blanket approval” in place, where traders will accept ICPs where they are nominated in the NCA.

All ICPs at “Ready” have a proposed trader populated in the registry.

Audit outcome

Compliant

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.

Audit observation

The new connection process was examined. A registry list was received to identify any new connections of ICPs that are also NSPs.

Audit commentary

The new connections process is designed to include a “retailer responsibility” step. All ICPs at “Ready” have a proposed trader populated in the registry.

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.*

Audit observation

The new connection process was examined in relation to ICPs that are not also NSPs to Alpine’s network.

Audit commentary

This process has changed during the audit period. Metering, inspection, connection and electrical connection used to be conducted by Alpine contractors operating under the VEMS ATH. Most new connections have SMCO metering now and SMCO has engaged Wells at the ATH and Wells hasn’t approved Alpine contractors to operate under their ATH. Wells metering technicians are not approved to work on Alpine’s network so there are now two visits to each new connection. Alpine experienced difficulty coordinating livening dates and times with Wells, so they now visit the site as soon as it’s ready for livening and they temporarily electrically connect to conduct their safety testing, then they leave the fuse out, so Wells can re-connect when they have installed metering.

Whilst this practice ensures the best outcome for customers, because they are not delayed by scheduling issues, and it achieves the best outcome from a safety perspective, the Code only allows temporary electrical connection to occur if requested by the MEP for testing metering and when Alpine is there the metering is not installed. Therefore, this practice appears to be non-compliant.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.8 With: Clause 10.31A From: 01-Jan-18 To: 28-Nov-18	Temporary electrical connection conducted by Alpine for a purpose other than testing metering. Potential impact: None Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as strong, because the intention of this process is to ensure safety and customer experience outcomes are met. There is only a positive impact on other parties; therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
We used the ESR and the Act which allows our process to be compliant. It was all to ensure a complete inspection by the AEL living agent, we will look to the EA for advice on this, as well as review other Networks to consider the inspection/metering/livening process. We also had an email from the EA, which is inserted below this table.		Jan/Feb	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Will be an outcome of the review, no hasty decision can be made that misses out safety just to comply		2019	Further information was provided after the audit, including an extract from the Act which allows the adopted practice. I have inserted this below.

From: Jonathon Staite [<mailto:Jonathon.Staite@ea.govt.nz>]

Sent: Friday, 16 March 2018 11:13 a.m.

To: Peter Bennett

Cc: Market Operations; Hayden Darling; Ron Beatty

Subject: FW: New Connections

Hi Peter,

Sorry have been slowly working through my e-mails and did not see this one when I responded to your earlier e-mail on the same topic.

It sounds like you understand the connection and electrical connection process, and have proposed a solution that differs from common network practice.

To cover the basics of the process it is:

1. Distributor is responsible for the **connection** of the ICP (Clause 10.31) – Only the distributor (or its agent) can connect an ICP to the network. It can only be done if the trader has requested the connection.
2. Distributor can ‘temporarily’ **electrically connect** an ICP – Only if an MEP has requested it for meter certification purposes. Otherwise it is the trader that must **electrically connect** the ICP. The trader has to make sure that the meter is certified within 5BDs of **electrical connection**.

The “common” process:

One party (usually an electrician or test house) is doing the following on behalf of the following parties:

1. Connection (warranted by the distributor)
2. Electrical Connection (on behalf of the trader)
3. Meter installation and certification (on behalf of the MEP, and under an ATH approval)

The one party (wearing 3 hats) gets this all done on the same day, and then sends paperwork back to each participant they are doing work for to verify it has been done (and be compensated for the work they have done for that party).

Commercial contracts are used to manage the contracts doing work on behalf of each participant.

From my understanding you are proposing an alternative process that you expect will comply with the Code.

1. Alpine Energy contractor goes to site and **connects** the ICP.
2. MEP contractor goes onsite and hangs the meters. – Alpine Energy can **electrically connect** the ICP (temporarily) or the trader can **electrically connect** the ICP (permanently)
3. ATH contractor (which may be same as MEP contractor) certifies the meters
4. If not already done so, the trader can permanently **electrically connect** the ICP, so power can flow and electricity is recorded by the meters.

There is no limit to how long there needs to be between point 1 (connection) and point 2 (electrical connection), however Alpine Energy needs systems and processes in place to get back information regarding when the ICP was electrically connected for the first time (temporarily or permanently) and record this information in the registry.

Please note:

Connect has the “plain English” meaning which is: *bring together or into contact so that a real or notional link is established.* (i.e. the wires are in place but the power is not flowing)

electrically connect means to operate a device so that **electricity** is able to flow, including through a **point of connection**, and **electrically connected**, **electrically connecting**, **electrical connection**, and similar phrases have corresponding meanings

I hope this helps and if you would like to discuss this further please let me know.

Kind regards



Jonathon Staite

Adviser Market Operations

As mentioned in the non-compliance table above, Alpine referred to the Electricity Regulations and the Electricity Act before implementing their new connections process. The Electricity Regulations require certain tests be conducted as part of the connection process, including polarity tests. The Electricity Act appears to allow temporary electrical connection for testing purposes. Both relevant sections are shown below.

Connection to power supply after prescribed electrical work

Heading: inserted, on 1 July 2013, by [regulation 11](#) of the Electricity (Safety) Amendment Regulations 2012 (SR 2012/279).

73A Before connecting installations to power supply

- (1) Before connecting to a power supply a low or extra-low voltage installation or part installation on which prescribed electrical work has been done, the person doing the connection must—
 - (a) be satisfied that the installation or part installation is safe to connect; and
 - (b) be satisfied that the testing required by these regulations has been done; and
 - (c) if a certificate of compliance is required for the work, either issue or sight a certificate of compliance issued no earlier than 6 months before the installation or part installation is connected; and
 - (d) if the work is required to be inspected, either inspect the work and complete a record of inspection or sight a record of inspection given by another person no earlier than 6 months before the installation or part installation is connected; and
 - (da) if the work is required to be inspected and a certificate of compliance is required for the work, attach the certificate of compliance or a copy of the certificate of compliance to the record of inspection; and
 - (e) in the case of a low voltage installation or part installation, do all of the following:
 - (i) ensure that the polarity and phase rotation of the supply are correct;
 - (ii) ensure that the protection of the supply is correctly rated;
 - (iii) ensure that the installation or part installation to be connected is compatible with the supply system;
 - (iv) if the supply is from a MEN system, verify that there is a main earthing system.

Testing, certification, and inspection

Heading: inserted, on 1 April 2010, by section 13 of the Electricity Amendment Act 2006 (2006 No 70).

82 Testing, certification, and inspection

- (1) If any prescribed electrical work is carried out, that work or, as the case may require, the works or electrical installation or electrical appliance in respect of which that work is carried out must not be connected to a power supply unless the testing, certification, and inspection that is required by regulations has been carried out.
- (2) A person must not sell, or offer for sale, any works or electrical installation or electrical appliance that has not been tested and certified in accordance with regulations.
- (3) A person must not supply electricity to any works or electrical installation unless that person is satisfied that any inspection and certification required in respect of those works or that installation by regulations has been carried out.
- (4) This section does not prevent the connection, to any power supply, of any works, electrical installation, or electrical appliance, or the supply of electricity to any works or electrical installation, if that connection or supply is solely for the purposes of carrying out any testing, inspection, or certification required by any regulations.

Section 82: substituted, on 1 April 2010, by section 13 of the Electricity Amendment Act 2006 (2006 No 70).

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 table was examined and found no new NSPs have been created by Alpine and are not expected to be in the near future

Audit commentary

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 table was examined and found no new NSPs have been created by Alpine and are not expected to be in the near future

Audit commentary

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

The process for the creation of ICPs was examined. This was checked as part of the other new connection ICPs checked detailed in this section.

Audit commentary

The process for the creation of ICPs was examined, and all ICPs are created in the appropriate format.

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

The process of allocation of the loss category was examined. The list file was examined to confirm all active ICPs have a single loss category code.

Audit commentary

This is known at the time of the ICP creation and this is assigned at the time of the ICP creation. Each active ICP only has a single loss category, which clearly identifies the relevant loss factor.

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 new connection process was examined. The list and event detail files were examined in relation to the use of the “New” status.

Audit commentary

The new connections process was examined during the audit and it was found that ICPs are created at “Ready” and the new status is only present if another event is reversed.

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

The management of ICPs at the “new” and “ready” statuses was examined. The list file as at 30th September 2017 was examined.

Audit commentary

The list file contained no ICPs at “New” and two at “Ready” for more than 24 months. There is a process in place to send check with traders as to whether an ICP is still required. Alpine demonstrated appropriate communication with regard to the two Ready ICPs, showing that the ICPs are still required. This process has been improved during the audit period.

Audit outcome

Compliant

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:*
 - o *the unique loss category code assigned to the ICP*
 - o *the ICP identifier of the ICP*
 - o *the NSP identifier of the NSP to which the ICP is connected*
 - o *the plant name of the embedded generating station.*

Audit observation

This requirement was discussed, and the list file was examined.

Audit commentary

There are no embedded generators with a capacity greater than 10MW that require specific loss category codes.

Audit outcome

Not applicable

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 14 days, the time within which notification must be effected in accordance with Clause 8(3) of Schedule 11.1 begins on the 15th day after the change.

Audit observation

The process to manage ICP changes was examined. The event detail report for the period December 2017 -November 2018 was examined. I used the extreme case methodology examining a sample of ten late updates or less if there were fewer for any change where the initial analysis could not determine the cause.

NSP changes were examined.

Audit commentary

Registry data changes are made in the connection management system, which automatically updates the registry. The table below shows the compliance level of registry updates.

Event type	Total	Compliant	Late	% compliance	Average
Network unmetered format updates	28	2	26	7.1%	3,727
Network DG updates	78	62	16	79.5%	28.5
Remaining network events	352	257	95	73.0%	23
Pricing	2,641	2,021	620	76.5	10.7
Decommissioning	138	123	15	89.1%	14.9

A large number of the DG updates appeared late because the approval date was used as the event date rather than the date the DG was connected. There were many other examples of the event date not being changed, which gives the appearance of a late event. For the genuinely late updates the most common reason was late field notification for network events and late notification from traders for

pricing events. There was a clean-up of ICPs at the status of “Inactive, Ready for decommissioning” which led to a large number of backdated status events.

As reported in the last audit, registry data changes made in the connection management system automatically updates the registry, except for status changes. If the file does not contain an event date, the date of the previous update for that field remains as a default. Some of the backdated distributed generation additions are due to this issue. I repeat the last audit’s recommendation that the registry file is changed to include an event date to prevent inadvertent “backdating”.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 8 Schedule 11.1	Change registry file to ensure default event dates are not used. This is mainly relevant for solar generation details.	Event Date is the date of inspection/approval for the connection of DG to the Network. Metering can be delayed or installed well after by other parties. Alpine advise the Trader of the approval for the connection.	Investigating

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.1 With: 8 Schedule 11.1 From: 01-Dec-17 To: 28-Nov-18	Registry event updates backdated greater than three days Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	I have rated the controls as moderate as the controls in place will mitigate the risk most of the time. There is a potential minor impact on settlement, hence the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
The late paperwork from FSP has been highlighted as an issue as it's a very paper based process. In the short term more monitoring of paperwork/ outstanding paperwork is being done. To ensure it doesn't go overdue.		Happening Now	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We are currently working with our IT Team to move forward with a automated new connection process which will start with online applications and right through to the FSP with a tablet completing all required parts on a tablet in the field and sending instantly back on completion of the job		Would like to say 2019	

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

The new connection process was examined and is described in detail in **Section 3**. The accuracy of NSP information was checked by identifying ICPs with a particular NSP where all other ICPs on the same road had a different NSP.

Audit commentary

The transformer is selected when creating the ICP connection point in the GIS system. The operator selects the transformer based on the surrounding ICPs' transformer. The analysis carried out identified 14 roads with 16 ICPs with a potential incorrect NSP. Two ICPs were confirmed as incorrect and the other 14 were correct. Both ICPs were newly created within the last 14 months.

As mentioned last year, I recommend a periodic check of NSP mapping be put in place to ensure that any human errors are picked up. This check could include checking GIS information including the GXP/feeder/ICP relationships.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 7(1),(4) and (5) Schedule 11.1	Check for of NSP mapping be carried out periodically	We would like to complete six monthly	Identified

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.2 With: 7(1),(4) and (5) Schedule 11.1 From: 01-Sep-17 To: 20-Nov-18	Incorrect NSP for two ICPs Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate as the process will mitigate errors most of the time. The volume of potentially mismapped ICPs is low therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
We need to go right back to the start with this to ensure we capture all parts-identify the process and the monitoring /reporting of it		Jan to Mar	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We need to have layers on our GIS system to show the NSP for each location, sounds simple but does require other departments and good GIS connectivity to ensure its correct		Before May	

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

The management of customer queries was examined.

Audit commentary

Alpine Energy does receive direct requests for ICP identifiers and these are provided immediately.

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

The process to manage address accuracy was examined and the list file was analysed. The list file was checked to confirm ICP location addresses are readily locatable and a sample of 10 ICPs were checked using the typical case methodology.

Audit commentary

The address is captured at the time of ICP creation and the GIS co-ordinates are recorded for all but 20 ICPs. These all have locatable addresses recorded. There were no duplicates. The sample checked using “google earth” and its “streetview” functionality confirmed compliance.

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 examined as part of the new connection process and proof of process was checked as part of the sample of new connections examined.

Audit commentary

For new connections, this clause is well understood, and the policy is to allow shared service mains, but individual fusing is required. A section in the “network connection form” requires that isolation information be notified.

Audit outcome

Compliant

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 from metering information*
 - c) *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
 - c) the initial electrical connection date of the ICP (Clause 7(1)(p) of Schedule 11.1).

Audit observation

The new connection and updating of ICP information processes for populating all required registry fields was examined. The list file was examined to check for the population of all required information and its alignment with the trader where appropriate e.g. distributed generation, unmetered load if known and shared unmetered load. All variances were examined in relation to initial electrical connection and distributed generation.

Audit commentary

Date of ICP Initial Electrical Connection

I found 18 ICPs where the initial electrical connection date was different to either the certification date or the trader's Active date. In all cases the initial electrical connection date was confirmed as correct by examining the field records. The reason for the difference is due to the change to the new connections process, as recorded in Section 3.8 and which is repeated below:

This process has changed during the audit period. Metering, inspection, connection and electrical connection used to be conducted by Alpine contractors operating under the VEMS ATH. Most new connections have SMCO metering now and SMCO has engaged Wells at the ATH and Wells hasn't approved Alpine contractors to operate under their ATH. Wells metering technicians are not approved to work on Alpine's network so there are now two visits to each new connection. Alpine experienced difficulty coordinating livening dates and times with Wells, so they now visit the site as soon as it's ready for livening and they temporarily electrically connect to conduct their safety testing, then they leave the fuse out, so Wells can re-connect when they have installed metering.

Alpine correctly uses the temporary electrical connection date and the traders should also use that date. The certification date will normally be later than the initial electrical connection date and there was no evidence the certification date was incorrect.

Distributed Generation

Applications are received and processed and once approved this is notified to the applicant and the trader. Once the installation is installed it must be inspected and if compliant the inspector will connect it. This is then updated on the registry.

Examination of the list file found 58 ICPs with distributed generation recorded by Alpine but where the trader did not have a PV1 or HHR profile. 14 of the 58 did not have an "I" flow channel. I checked 20 of the 58 ICPs and in 19 cases DG was definitely installed. ICP 0003063704AL3D9 had DG removed on 28/02/18 and the registry was only updated during the audit.

There were six ICPs where the trader had a PV1 profile but Alpine had the ICPs recorded as load only. These were all checked, and it was found that ICP 0006654412ALB81 had DG recorded in the registry, but it was inadvertently removed. It has now been reinstated. Alpine intends to check the registry list file regular to identify discrepancies.

Unmetered Load

Unmetered load is recorded where known by Alpine Energy but not always in a format where the loads can be compared between Alpine Energy and the trader. It was recommended during the last audit that the Electricity Authority's recommended format be adopted where possible. Alpine updated three recently created ICPs during the audit where the details were populated but the format wasn't as recommended. These were updated during the audit. The relevant format is shown below in an extract from the unmetered load guidelines on the Authority's website.

The field definitions are:

Information	Format
Connected load	Watts, 4 digits, zero decimal places. Eg 1565
Semi colon separator	;
Running hours per day	Hours to 2 digits, and decimal hours to 1 decimal place Eg 02.5 (ie two and one half hours)
Semi colon separator	;
Other text	Free form as required

Example strings:

- 0110;10.5; Street light corner Rons Rd and Beatty St

This is a 110 watt connected capacity street light that runs for 10.5 hours per day.

- 1525;01.0; Sewage pump outside 76 Guthries Rd

This is a 1525 watt connected capacity sewage pump that runs for 1 hour per day.

The dedicated field was examined, and the following table shows how this is populated per GXP.

Distributor	NSP POC	Description	Balancing Area	Network Type	Qty Non Dedicated	Qty Dedicated
ALPE	ABY0111	ALBURY	CENTRALALPEG	G	1590	16
ALPE	BPD1101	Bells Pond	CENTRALALPEG	G	607	15
ALPE	STU0111	STUDHOLME	CENTRALALPEG	G	3198	13
ALPE	TIM0111	TIMARU	CENTRALALPEG	G	17783	136
ALPE	TKA0331	TEKAPO A	TKA0331ALPEG	G	0	908
ALPE	TMK0331	TEMUKA	CENTRALALPEG	G	6569	196
ALPE	TWZ0331	TWIZEL	TWZ0331ALPEG	G	1	1544

The ICPs connected to the Twizel GXP should all be dedicated, and one is recorded as non-dedicated. The ICPs within balancing area CENTRALALPEG are mostly non-dedicated and it's unclear whether the ICPs recorded as dedicated are correct. Alpine is in the process of investigating these.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.6 With: 7(1)(o)&(p) Schedule 11.1 From: 01-Dec-17 To: 28-Nov-18	Two ICPs with distributed generation details missing. One ICP incorrectly recorded as non-dedicated Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate as they will mitigate risk most of the time. The audit risk rating is low as this information does not have a direct impact on reconciliation.		
Actions taken to resolve the issue		Completion date	Remedial action status
We need to go right back to the start with this to ensure we capture all parts-identify the process and the monitoring /reporting of it		Jan to March	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We need to have layers on our GIS system to show the NSP for each location, sounds simple but does require other departments and good GIS connectivity to ensure its correct		Before May	

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 examined in detail.

Audit commentary

The price category and chargeable capacity (if any) are known at the time of the ICP being created therefore these are recorded correctly in the first instance. Examination of the backdated price events found none related to new connections.

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

Alpine Energy record ICP GPS co-ordinates. The list file was examined, and the GIS co-ordinates are recorded for all but 20 ICPs. These 20 ICPs are discussed in **Section 4.4**. A sample of five ICPs co-ordinates were checked to confirm the correct format is used.

Audit commentary

The sample checked confirmed the correct GPS co-ordinate format is used.

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 management of ICPs in relation to the use of the “ready” status was examined. The list file and event detail report period December 2017 -November 2018 were examined in relation to the use of the “ready” status.

Audit commentary

Alpine Energy’s new connections process is well designed, and as noted in **Section 3.2**, Alpine Energy’s process ensures that a trader has taken responsibility for ICPs before the status is changed to “Ready”.

The connection management system will only allow one price category; therefore, the requirement to ensure that an ICP has a single price category will always be met.

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 management of ICPs in relation to the use of the “distributor” status was examined. The list file and event detail report for the period December 2017 -November 2018 were examined in relation to the use of the “distributor” status.

Audit commentary

Alpine Energy’s list file shows two ICPs that have an ICP status of “Distributor” and both of these are for embedded networks.

Alpine Energy confirms that there is no shared unmetered load on their network.

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 management of ICPs in relation to the use of the “decommissioned” status was examined. The list file and event detail report for the period December 2017 -November 2018 were examined in relation to the use of the “decommissioned” status. A sample of ten ICPs at the “ready for decommissioning” status using the typical case methodology was checked.

Audit commentary

ICP decommissioning processes are well documented. Requests are made directly to Alpine Energy where decommissioning is required. The fieldwork is then carried out and notification comes back to Alpine Energy on standard documentation. The registry is then updated to the decommissioned status. Alpine Energy monitors ICPs that have been physically decommissioned to ensure the retailer changes the status to “ready for decommissioning” so that Alpine Energy can change the status to “decommissioned”. As is evidenced in **Section 4.1**, there are often delays in the trader updating their status and this can lead to physically decommissioned ICPs being on the registry as active or de-energised vacant because Alpine Energy is unable to decommission until the trader has updated their status.

There were 11 ICPs with a status of “ready for decommissioning” in the list file, down from 53 in the last audit. 10 of these are now decommissioned and one is still required by the trader, indicating that the status of “ready for decommissioning is probably incorrect.

Audit outcome

Compliant

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 code table on the registry was examined and Alpine have not created any new price category codes during the audit period.

Audit commentary

The price category code table on the registry was examined and Alpine have not created any new price category codes during the audit period.

Audit outcome

Not applicable

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 code table on the registry was examined and Alpine have not created any new loss category codes during the audit period.

Audit commentary

The loss category code table on the registry was examined and Alpine have not created any new loss category codes during the audit period.

Audit outcome

Not applicable

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 code table on the registry was examined and Alpine have not created updated any loss factors during the audit period.

Audit commentary

The loss category code table on the registry was examined and Alpine have not created updated any loss factors during the audit period.

Audit outcome

Not applicable

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 table on the registry was examined. No NSPs were created or decommissioned during the audit period, therefore this was not assessed as part of this audit.

Audit commentary

The NSP table on the registry was examined. No NSPs were created or decommissioned during the audit period, therefore this was not assessed as part of this audit.

Audit outcome

Not applicable

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 table on the registry was examined. No NSPs were created or decommissioned during the audit period therefore this was not assessed as part of this audit.

Audit commentary

The NSP table on the registry was examined. No NSPs were created or decommissioned during the audit period therefore this was not assessed as part of this audit.

Audit outcome

Not applicable

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 table on the registry was examined. No new balancing areas were created during the audit period; therefore, this was not assessed as part of this audit.

Audit commentary

The NSP table on the registry was examined. No new balancing areas were created during the audit period; therefore, this was not assessed as part of this audit.

Audit outcome

Not applicable

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 table on the registry was examined. No new NSPs were created during the audit period, therefore this was not assessed as part of this audit.

Audit commentary

The NSP table on the registry was examined. No new NSPs were created during the audit period, therefore this was not assessed as part of this audit.

Audit outcome

Not applicable

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 table on the registry was examined. No balancing areas were changed during the audit period; therefore, this was not assessed as part of this audit.

Audit commentary

The NSP table on the registry was examined. No balancing areas were changed during the audit period; therefore, this was not assessed as part of this audit.

Audit outcome

Not applicable

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

The NSP table on the registry was examined. Alpine has not had any ICPs that have changed to become an NSP during the audit period, therefore this was not assessed as part of this audit.

Audit commentary

The NSP table on the registry was examined. Alpine has not had any ICPs that have changed to become an NSP during the audit period, therefore this was not assessed as part of this audit.

Audit outcome

Not applicable

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

Alpine has not acquired any networks therefore this was not assessed as part of this audit.

Audit commentary

Alpine has not acquired any networks therefore this was not assessed as part of this audit.

Audit outcome

Not applicable

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

All NSPs are connections to the grid, therefore this clause does not apply.

Audit commentary

All NSPs are connections to the grid, therefore this clause does not apply.

Audit outcome

Not applicable

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

All NSPs are connections to the grid, therefore this clause does not apply.

Audit commentary

All NSPs are connections to the grid, therefore this clause does not apply.

Audit outcome

Not applicable

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

Alpine has not acquired any networks therefore this was not assessed as part of this audit.

Audit commentary

Alpine has not acquired any networks therefore this was not assessed as part of this audit.

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

Alpine has not created any new embedded networks; therefore, this was not assessed as part of this audit.

Audit commentary

Alpine has not created any new embedded networks; therefore, this was not assessed as part of this audit.

Audit outcome

Not applicable

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

Alpine do not own any embedded networks therefore this was not examined.

Audit commentary

Alpine do not own any embedded networks therefore this was not examined.

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

Alpine has not acquired any networks therefore this was not assessed as part of this audit.

Audit commentary

Alpine has not acquired any networks therefore this was not assessed as part of this audit.

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

Alpine Energy has no existing shared unmetered load and does not intend to allow any new shared unmetered load connections.

Audit commentary

Alpine Energy has no existing shared unmetered load and does not intend to allow any new shared unmetered load connections.

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

Alpine Energy has no existing shared unmetered load and does not intend to allow any new shared unmetered load connections.

Audit commentary

Alpine Energy has no existing shared unmetered load and does not intend to allow any new shared unmetered load connections.

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.*

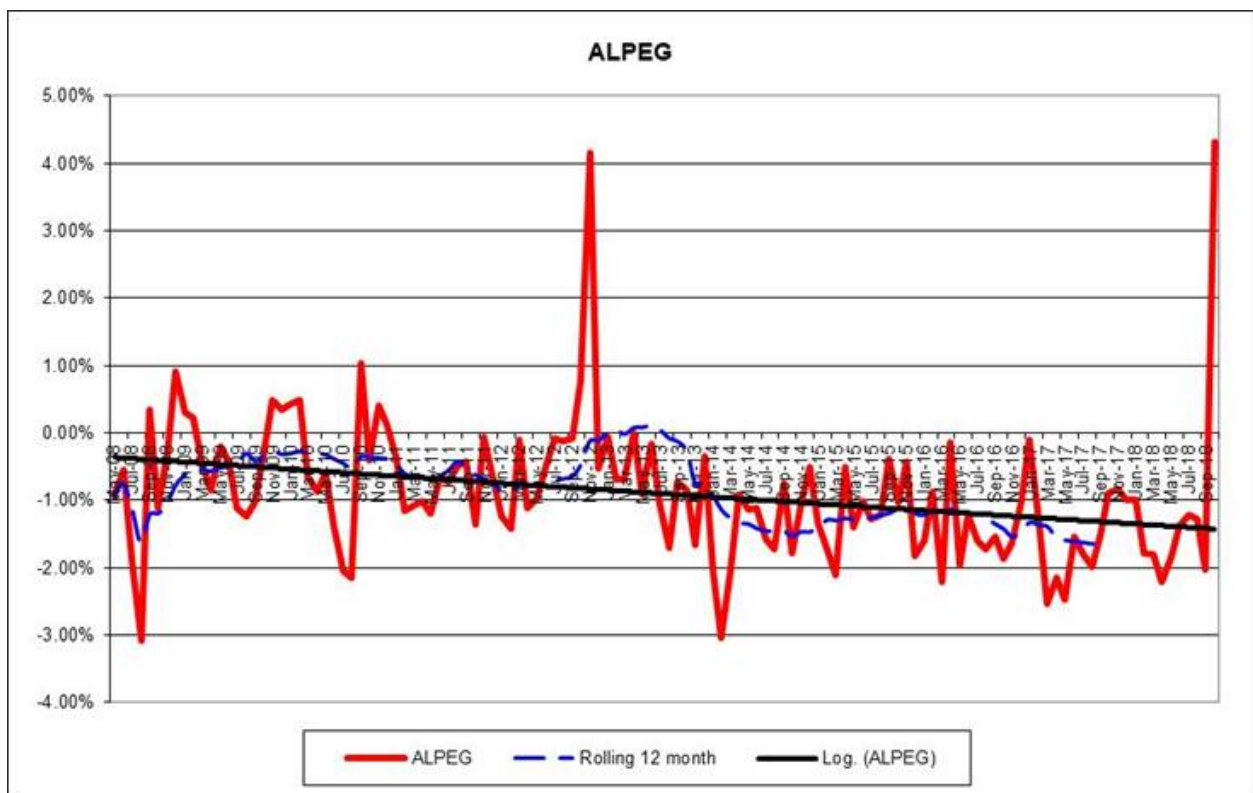
Audit observation

The “Guidelines on the calculation and the use of loss factors for reconciliation purposes” was published on 26/06/18. I checked Alpine’s process against the guideline and I reviewed the rolling UFE report.

Audit commentary

Alpine Energy has four different factors; AOP (generation), LV, HV (11kV) and HV (33 kV). As noted in Section 5, there have been no changes made to these during the audit period.

Alpine has not reviewed or changed their loss factors for several years and the graph below shows that the combined loss factors for all connection types are likely to be too high by a little over 1%. The graph below is based on the most recent revisions for any given month.



The guideline contains the following section outlining the Authority's expectations:

Determining reconciliation loss factors

109. When distributors have calculated **RLFs** appropriately, the result should (notwithstanding any unexpected changes in network configuration) be that average unaccounted for electricity (UFE) for the **network study area** is within +/-1 % over the course of any 12 month period.
110. Distributors should review **RLFs** every two years or if a 12 month UFE trend is outside of +/-1 %. If there is a significant change in network configuration and/or load within the two year period, the **RLFs** should be reviewed and updated.
111. The distributor's calculation of **RLF** should use 12 months of:
 - (a) submission information provided by traders into the reconciliation process that has undergone the seven month revision¹⁴ (as reported by the reconciliation manager to distributors in the GR-260¹⁵ file or obtained directly from traders)
 - (b) network input data (eg, Transpower data, embedded generator data, interconnection point data).
112. Distributors should determine **RLFs** for each **network segment** by calculating **technical losses** and apportioning **non-technical losses**.

The Code also requires information to be "complete and accurate". The loss factors have not changed since 1999 and the difference between reconciliation losses and loss factors indicates the loss factors are not "complete and accurate". The unaccounted-for electricity (UFE) is allocated to retailers so there is no adverse impact on reconciliation, however Retailers will make pricing decisions based on published loss factors and if the factors are not accurate this may have an impact. New Retailers in particular may rely more on published loss factors because they will not have their own history.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 8.1 With: Clause 11.2 From: 01-Dec-17 To: 28-Nov-18	Loss factors are not accurate in relation to reconciliation losses. Potential impact: Medium Actual impact: Medium Audit history: None Controls: Weak Breach risk rating: 6
Audit risk rating	Rationale for audit risk rating
Medium	The controls are recorded as weak because loss factors are not changed to reflect reconciliation losses. UFE is allocated to participants; therefore, there is no adverse impact on settlement; however retailers may use published losses in pricing decisions, therefore the use of inaccurate loss factors could lead to incorrect pricing, which is considered a moderate impact.

Actions taken to resolve the issue	Completion date	Remedial action status
Locate the Loss Factor owner at AEL and start the process of addressing the review. Our Regulatory Team a looking at altering the billing system which is planned for March. I have requested that with this alteration loss factors to be included and reviewed. I have offered assistance to engage the required staff.	March/April	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
Change the review date in the registry to annually to ensure its reviewed and not an open ended date	Jan	

CONCLUSION

This audit found seven non-compliances and makes two recommendations. Improvements have been made to the controls and compliance in relation to registry update timeliness and accuracy.

The published loss factors were examined in more detail during this audit, and it appears they are too high in relation to reconciliation losses. Alpine's loss factors have not been revised for many years and it is common for areas with a high percentage of AMI deployment to experience lower non-technical losses.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and contains a future risk rating score of four, which results in an indicative audit frequency of 12 months and I agree with this recommendation.

PARTICIPANT RESPONSE

As a Team here at Alpine we felt a lot more comfortable with the audit and where we are at with all of our processes. I believe this was shown throughout the audit. It did highlight some sections we were lacking on which I believe is the learning process. As it was Peter's and my second audit and Margaret's first we are still certainly new to a lot even though we do have many years' experience in the distribution sector.

All in all it gives us some areas to look at and focus on now and next year. With a couple of IT changers here I think we can assist the processes even further to improve on where we are at and make it easier for staff and FSP's.

We will also look forward to discussions around the new connections process with all relevant parties. We had completed and discussed this a lot internally to ensure safety and compliance at the time and believed it to be compliant.

Thanks to Steve for his assistance throughout the audit and providing more insight to certain compliance areas.