

**ELECTRICITY INDUSTRY PARTICIPATION CODE  
DISTRIBUTOR AUDIT REPORT**

For

**VECTOR LTD**  
**(NZBM# 9429039215109)**

Prepared by: Ewa Glowacka of TEG & Associates

Date audit commenced: 1 September 2022

Date audit report completed: 18 October 2022

Audit report due date: 19-Oct-22

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## EXECUTIVE SUMMARY

This reconciliation participant audit was performed at the request of Vector to encompass the Authority's request for annual audits, as required in clause 11.10 of Schedule 11 of the Electricity Industry Participation Code 2010, to assure compliance with the Code. The relevant rules audited are as required by the Guidelines for Distributor Audits V7.2, issued by the Electricity Authority.

Vector has two participant codes covering two geographical areas VECT and UNET. VECT is for the Auckland region south of the Harbour Bridge and UNET is for north of the Harbour Bridge plus West Auckland.

The audit period is 01/08/2021 to 31/07/2022.

The audit identified 11 non-compliances. Overall Vectors' compliance has improved. Since the last audit the number of ICPs with the status "ACTIVE" has increased by 9,800. Vector have continued to focus on data accuracy and use the Audit Compliance Reports as part of their BAU processes.

The level of compliance has improved in the following areas:

- The number of discrepancies in the registry has decreased
- The number of ICPs which do not have Initial Electrical Connection Date (IECD) decreased by 73%. It is the result of the enhanced new connection process implemented in June 2021.
- Lower number of updates later than 5 business days.
- There is now a good process in place for updating price code changes requested by retailers; the process was changed to incorporate changes to the Code.
- There is a good regime in place to monitor compliance between audits. The relevant parts of the Audit Compliance Report are checked every month and appropriate actions are taken to remedy any identified issues by additional training.

The issues identified during this audit are:

- Missing or late updates for distributed generation; there are challenges in the area of receiving information from customers after solar installations are complete.
- An increased number of discrepancies between the Initial Electrical Connection Date and the date of first ACTIVE status assigned by traders.
- If the change to the NSP identifier is for more than 10 business days, the notification must be provided no later than the 13<sup>th</sup> business day and be backdated to the date the change took effect. In all instances Vector uses the date of update as an effective event date for the change.

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 Distributor audit provides some guidance on this matter. The Future Risk Rating score is 21 which results in an indicative audit frequency of 6 months. We have considered this in conjunction with Vector's responses and recommend that the next audit be in 12 months as Vector is addressing the main areas of non-compliance such as Initial Electrical Connection Date and distributed generation, and an earlier audit would not add any value to this.

We thank Vector's staff for their full and complete cooperation in this audit.

## AUDIT SUMMARY

### NON-COMPLIANCES

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Requirements to provide complete and accurate information	2.1	11.2	Inaccurate or missing information in the registry for distributed generation, UML, NSP, and Initial Electrical Connection Dates not populated in the Registry.	Moderate	Low	2	Identified
Requirement to correct errors	2.2.	11.2(2)	Incorrect or missing historical information in the registry across a number of areas	Moderate	Low	2	Identified
Participants may request distributors to create ICPs	3.2	11.5(3)	No notification of delay to ICP creation for 25 ICPs requested by traders	Moderate	Low	2	Identified
Provision of ICP information to the registry manager	3.3	11.7	1,029 ICPs with no initial electrical connection date	Moderate	Low	2	Identified
Timeliness of Provision of ICP Information to the registry manager	3.4	7(2) of Schedule 11.1	5 ICPs not updated on the registry (proposed trader) prior to commencement of trading	Strong	Low	1	Identified
Timeliness of Provision of Initial Electrical Connection Date	3.5	7(2A) of Schedule 11.1	2,824 late updates of initial electrical connection dates in the registry, some of them are historic updates  1,029 ICPs do not have IECD recorded	Moderate	Low	2	Identified
Management of "NEW" status	3.13	13 of Schedule 11.1	5 ICPs had incorrectly the "NEW" status recorded in the registry	Strong	Low	1	Identified

Changes to registry information	4.1	8 of Schedule 11.1	Registry event (NSP change, address, distributed generation, decommissioning) updates backdated more than three business days  Incorrect effective event date for the NSP change for longer than 10 business days	Moderate	Low	2	Identified
Notice of NSP for each ICP	4.2	7(1)(b) of Schedule 11.1	8 out of 21 ICPs sampled were mapped to incorrect NSP	Moderate	Low	2	Identified
ICP location address	4.4	2 of Schedule 11.1	1,532 ICPs with addresses that are not readily locatable	Moderate	Low	2	Identified
Distributors to provide ICP Information to the registry manager	4.6	7(1) of Schedule 11.1	Discrepancies for number of ICPs where the Initial Electrical Connection date is different to the Metering Installation Certification date or the Active date (Status Event Date)  4 ICPs (LE) incorrectly the Dedicated NSP flag set to "N"  5 ICPs (GN) incorrectly Dedicated NSP flag set to "Y"  For small number of ICPs incorrect solar kW are recorded in the registry	Moderate	Low	2	Identified
Management of "ready" status	4.9	14 of Schedule 11.1	Some ICPs are loaded to the registry with READY status before being accepted by trader in Siebel	Strong	Low	1	Identified

Future Risk Rating	21
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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
		Nil	

## 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.*

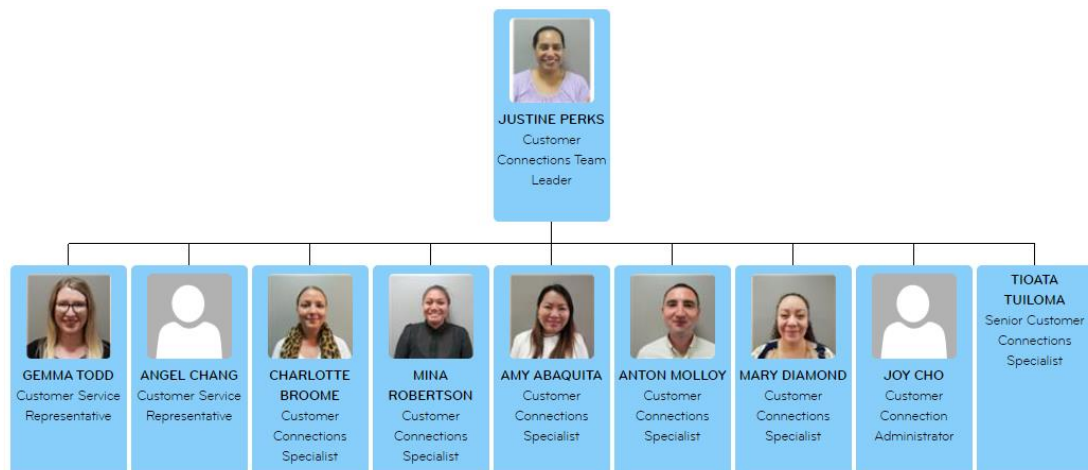
#### Audit observation

Vector confirms that there are no exemptions in place which are relevant to the scope of this audit.

#### Audit commentary

We checked the Electricity Authority website and confirm that there are no exemptions in place.

### 1.2. Structure of Organisation



### 1.3. Persons involved in this audit

Name	Title
Justine Perks	Customer Connections Team Leader
Michelle Gasson	Billing Team Leader
Tioata Tuiloma	Senior Customer Connections Specialist
Jacques de la Bat	Senior Planning Engineer
Hayden Oswin	Senior Information Specialist
Ewa Glowacka	Electricity Authority Approved Auditor

### 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

There are no contractors who assist with, or are used in, the Vector operations that were audited.

## Audit commentary

Activities covered by the scope of this audit, including fieldwork are conducted by Vector employees.

### 1.5. Supplier list

Gentrack is used by Vector for ICP creation, and the storing of information (transactions) related to ICPs is provided by Gentrack NZ.

### 1.6. Hardware and Software

Gentrack Velocity is the main software application used for both ICP creation and data maintenance. This software also handles the registry interface and the updating of ICP information in the registry. Vector also uses the CMS (Customer Management System) Siebel, which plays a pivotal role in Vectors' communication with traders. The GIS system used is called Small World. All systems are accessed by individual passwords.

### 1.7. Breaches or Breach Allegations

We confirm that there were no breaches related to areas covered by this audit.

### 1.8. ICP and NSP Data

We examined the NSP mapping table. Vector has two participant codes covering two geographical areas VECT and UNET. VECT is for the Auckland region South of the Harbour Bridge and UNET is for North of the Harbour Bridge plus West Auckland.

#### UNET

Distributor	NSP POC	Description	Parent POC	Parent Network	Balancing Area	Network type	Start date	No of active ICPs
UNET	ALB0331	ALBANY			NORTHRNUNETG	G	01/05/08	57,723
UNET	ALB1101	ALBANY			NORTHRNUNETG	G	01/05/08	3,741
UNET	HEN0331	HENDERSON			NORTHRNUNETG	G	01/05/08	44,880
UNET	HEP0331	HEPBURN ROAD			NORTHRNUNETG	G	01/05/08	46,163
UNET	SVL0331	SILVERDALE			NORTHRNUNETG	G	01/05/08	36,304
UNET	WEL0331	WELLSFORD			NORTHRNUNETG	G	01/05/08	16,181
UNET	WRD0031	WAIRAU ROAD			NORTHRNUNETG	G	14/05/13	41,002

Status	Number of ICPs (5/08/2022)	Number of ICPs (2021)	Number of ICPs (2020)	Number of ICPs (2019)	Number of ICPs (2018)	Number of ICPs (2017)
New (999)	2	3	3	1	3	6
Ready (0)	662	458	585	466	452	429
Active (2,0)	245,932	240,788	235,745	232,055	228,106	224,210
Distributor (888)	62	55	50	50	47	46
Inactive- new connection in progress (1,12)	1,082	503	360	273	341	392
Inactive – vacant (1,4)	3,346	3,330	3,206	3,171	3,097	3,164
Inactive – AMI remote disconnection (1,7)	1,041	915	781	793	796	588
Inactive – at pole fuse (1,8)	14	6	4	7	3	1
Inactive – de-energized due to meter disconnected (1,9)	274	265	254	210	236	52
Inactive – de-energized at meter box switch (1,10)	8	5	6	9	7	1
Inactive- at meter box switch (1,11)	26	13	7	4	6	2
Inactive – ready for decommissioning (1,6)	478	331	276	242	180	614
Inactive (1,0)	1	1	0	0	3	2
Inactive – reconciled elsewhere (1,5)	0	0	0	1	0	0
Decommissioned (3)	24,176	23,407	22,455	21,591	20,769	19,550

## **VECT**

Distributor	NSP POC	Description	Parent POC	Parent Network	Balancing Area	Network type	Start date	No of active ICPs
VECT	HEP0331	Hepburn road			AUCKLNDVECTG	G	01/05/08	5,093
VECT	HOB1101	Hobson street			AUCKLNDVECTG	G	24/01/14	10,699
VECT	MNG0331	Mangere			AUCKLNDVECTG	G	01/05/08	26,310
VECT	MNG1101	Mangere			AUCKLNDVECTG	G	21/12/15	3
VECT	OTA0221	Otahuhu			AUCKLNDVECTG	G	01/05/08	18,880
VECT	PAK0331	Pakuranga			AUCKLNDVECTG	G	01/05/08	46,325
VECT	PEN0221	Penrose			AUCKLNDVECTG	G	01/05/08	8,651
VECT	PEN0331	Penrose			AUCKLNDVECTG	G	01/05/08	74,902
VECT	PEN1101	Penrose			AUCKLNDVECTG	G	01/11/14	28,371
VECT	ROS0221	Mt. Roskill			AUCKLNDVECTG	G	01/05/08	45,315
VECT	ROS1101	Mt. Roskill			AUCKLNDVECTG	G	01/04/12	22,965
VECT	TAK0331	Takanini			AUCKLNDVECTG	G	01/05/08	47,612
VECT	WIR0331	Wiri			AUCKLNDVECTG	G	01/05/08	20,708

Status	Number of ICPs (5/08/2022)	Number of ICPs (/2021)	Number of ICPs (2020)	Number of ICPs (2019)	Number of ICPs (2018)	Number of ICPs (2017)
New (999)	6	3	13	1	0	8
Ready (0)	1,032	740	939	1,117	553	728
Active (2,0)	355,688	351,033	345,798	341,060	336,352	332,328
Distributor (888)	146	143	134	121	105	103
Inactive- new connection in progress (1,12)	1,598	1,028	502	426	397	438
Inactive – vacant (1,4)	5,768	5,265	4,630	4,096	3,958	4,616
Inactive – AMI remote disconnection (1,7)	1,761	1,424	1,170	1,039	851	614
Inactive – at pole fuse (1,8)	25	18	12	13	19	9
Inactive – de-energized due to meter disconnected (1,9)	1,312	1,265	1,234	1,195	1,168	201
Inactive – de-energized at meter box switch (1,10)	17	15	19	15	8	4
Inactive- at meter box switch (1,11)	21	7	5	10	8	5
Inactive – ready for decommissioning (1,6)	929	745	582	477	296	632
Inactive (1,0)	0	0	2	2	0	0
Inactive – reconciled elsewhere (1,5)	2	2	0	0	2	2
Decommissioned (3)	59,369	57,733	55,511	53,972	52,292	50,598

## 1.9. Authorisation Received

Vector provided a letter of authorization to Ewa Glowacka, permitting the collection of data from other parties for matters directly related to the audit.

## 1.10. Scope of Audit

This reconciliation participant audit was performed at the request of Vector (VECT) to encompass the Authority's request for annual audits, as required in clause 11.10 of Schedule 11 of the Electricity Industry Participation Code 2010, to assure compliance with the Code. The audit was carried out remotely on 1st September 2022.

The audit covers the following processes under clause 16A.23 Part 16A performed by Vector

- (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

## 1.11. Summary of previous audit

Vector provided a copy of their previous audit report, conducted by Ewa Glowacka of TEG & Associates Limited in September 2021. This found 11 non-compliances. The status of these has been updated below:

Subject	Section	Clause	Non Compliance	Comment
Requirements to provide complete and accurate information	2.1	11.2	Inaccurate or missing information in the registry for distributed generation, UML, NSP, and Initial Electrical Connection Dates not populated in the Registry.	Still exists
Requirement to correct errors	2.2.	11.2(2)	Incorrect or missing historical information in the registry across a number of areas	Still exists
Participants may request distributors to create ICPs	3.2	11.5(3)	No notification of delay to ICP creation for 30 ICPs requested by traders	Still exists
Provision of ICP information to the registry manager	3.3	11.7	8 UML ICPs did not have details recorded in the registry 3,075 ICPs with no initial electrical connection date	Still exists
Timeliness of Provision of ICP Information to the registry manager	3.4	7(2) of Schedule 11.1	34 ICPs (11 UNET, 23 VECT) not updated on the registry prior to commencement of trading	Still exists
Timeliness of Provision of Initial Electrical Connection Date	3.5	7(2A) of Schedule 11.1	2,858 late updates initial electrical connection dates in the registry, small number of ICPs for which Vector and trader information were different	Still exists
Changes to registry information	4.1	8 of Schedule 11.1	Registry event updates backdated more than three business days	Still exists

Notice of NSP for each ICP	4.2	7(1)(b) of Schedule 11.1	13 out of 20 ICPs sampled were mapped to incorrect NSP	Still exists
ICP location address	4.4	2 of Schedule 11.1	1,535 ICPs with addresses that are not readily locatable	Still exists
Distributors to provide ICP Information to the registry manager	4.6	7(1) of Schedule 11.1	Distributed generation details incorrect for a small number of ICPs. 11 UML ICPs did not have details recorded in the registry 5 ICPs (LE) the Dedicated NSP flag incorrectly set to "N" 7 ICPs (GN) incorrectly Dedicated NSP flag set to "Y"	Still exists
Management of "ready" status	4.9	14 of Schedule 11.1	Some ICPs are loaded to the registry with READY status before being accepted by trader in Siebel	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 performed a check of the LIS files, dated 05/08/2022, and the Audit Compliance Summary Reports for the audit period, and had discussions with a number of Vector staff to assess if all practicable steps had been taken to provide accurate information.

#### Audit commentary

Vector monitors the registry NOT files on a weekly basis. Many processes are automated therefore the amount of incomplete and inaccurate information is decreasing. The new connection process requires retailers to accept an ICP in Siebel and nominate a warranted person from the list provided by Vector. It has had a significant impact on Vectors non-compliance relating to the Initial Electrical Connection Dates (IECD). The number of missing IECD has decreased by 73%. The warranted person is required to provide the IECD to Vector within 5 business days after livening.

The table below shows a summary of our findings:

Section	Registry discrepancy
3.3	<ul style="list-style-type: none"><li>1,016 ICPs with no initial electrical connection date populated</li></ul>
3.4	<ul style="list-style-type: none"><li>5 ICPs not updated on the registry prior to commencement of trading</li></ul>
3.5	<ul style="list-style-type: none"><li>2,824 late updates of initial electrical connection dates in the registry, some of them are historic updates</li></ul>
3.13	<ul style="list-style-type: none"><li>5 ICPs had incorrectly assigned "NEW" status recorded in the registry</li></ul>
4.1	<ul style="list-style-type: none"><li>Registry event (NSP change, address, distributed generation, decommissioning) updates backdated more than three business days</li><li>Incorrect effective event date for the NSP change for longer than 10 business days</li></ul>
4.2	<ul style="list-style-type: none"><li>8 out of 21 ICPs sampled were mapped to incorrect NSP</li></ul>
4.4	<ul style="list-style-type: none"><li>1,532 ICPs with addresses that are not readily locatable</li></ul>
4.6	<ul style="list-style-type: none"><li>Distributed generation details incorrect for a small number of ICPs.</li><li>4 ICPs (LE) have the Dedicated NSP flag set incorrectly to "N"</li><li>5 ICPs (GN) Dedicated NSP flag set incorrectly to "Y"</li></ul>

	<ul style="list-style-type: none"> <li>For small number of ICPs incorrect solar kW are recorded in the registry</li> </ul>
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### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref 2.1 With: 11.2(1)  From: 01-Aug-21 To: 31-Jul-22	Inaccurate or missing information in the registry of status, distributed generation, and Initial Electrical Connection Dates not populated in the Registry  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 overall but some opportunities for further improvements are in progress which will strengthen controls once in place. The audit risk rating is low as the incorrect information has a small or no effect on reconciliation.		
Actions taken to resolve the issue		Completion date	Remedial action status
Refer actions noted in audit ref tables 3.3, 3.4, 3.5, 3.13, 4.1, 4.2, 4.4 and 4.6.			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As above			

## 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

Compliance with these clauses was reviewed to assess if all practicable steps had been taken to provide accurate information. The registry LIS files and the Audit Compliance reports were examined to confirm compliance. Processes were discussed with Vector staff.

### Audit commentary

Vector have processes in place to identify and resolve registry discrepancies. Many processes are automated such as ICP creation and decommissioning. There was evidence of historical data discrepancies being corrected in the registry during the audit period, for example addresses, IECDs and decommissioned ICPs.

Not all discrepancies are being corrected as soon as practicable. Missing registry information is building up daily as IECDs and distributed generation information, for example, is not updated within the required timeframes causing non-compliance. These errors then need to be identified using the exception reports for remedial action. Vector runs the Audit Compliance reports to identify discrepancies.

### Audit outcome

#### Non-compliant

Non-compliance	Description		
Audit Ref 2.2 With: 11.2(2)  From: 01-Aug-21 To: 31-Jul-22	Incorrect or missing historical information in the registry across a number of areas  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 overall but some opportunities for further improvements are in progress which will strengthen controls once in place. The audit risk rating is low as the incorrect information has a small or no effect on reconciliation.		
Actions taken to resolve the issue		Completion date	Remedial action status
Distributed Generation: Increase frequency of follow up with customers for missing COCs to be monthly at a minimum and issue deadline to customer for response.  IECD: Increase frequency of follow up with the warranted person for missing IECD to weekly.  We will continue to use the audit compliance report to pick up missing data.		30/11/2022	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
N/A			

### 2.3. Removal or breakage of seals (Clause 48(1A) and 48(1B) of Schedule 10.7)

#### Code reference

*Clause 48(1A) and 48(1B) of Schedule 10.7*



### Code related audit information

If the distributor provides a load control signal to a load control switch in the metering installation, the distributor can remove or break a seal without authorisation from the MEP to bridge or unbridge the load control device or load control switch – as long as the load control switch does not control a time block meter channel.

If the distributor removes or breaks a seal in this way it must:

- ensure personnel are qualified to remove the seal and perform the permitted work and they replace the seal in accordance with the Code
- replace the seal with its own seal
- have a process for tracing the new seal to the personnel
- notify the metering equipment provider and trader

### Audit observation

This was discussed with Northpower during the audit.

### Audit commentary

It is Vector's policy to not work on the customers' installation. If there is a problem with the meter, customers are advised to contact their retailer or their electrician.

### Audit outcome

Compliant

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

### Code reference

Clause 11.30A

### Code related audit information

*A distributor must provide clear and prominent information about Utilities Disputes:*

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

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

### Audit observation

This was discussed during the audit.

### Audit commentary

We examined the Vector website and confirmed that information about Utilities Disputes is present in a complaints section is present.

At the bottom of the email sent to customers there is the following text:

*"If you have a complaint we can't resolve, you can contact Utilities Disputes, a free and independent dispute resolution service. Details are available on our webpage at [vector.co.nz](http://vector.co.nz)"*

### 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 and discussed with the Connection Team.

We randomly selected 33 new connection applications lodged during the audit period. We checked them from the point of application through to when the ICP identifiers were created. The sample included ICPs with:

- various meter categories
- various proposed traders
- connected to different NSPs
- unmetered load

##### Audit commentary

The customer, or their chosen agent, logs an application for a new ICP (or retailer if a BTS to permanent conversion is required). The application is reviewed by the Vector Connections team and approved if all information is accurate and capacity is available. Applications are validated using the following parameters:

- Check all necessary details have been provided
- Check that a network supply point has been installed and has sufficient capacity available
- Ensure it's not a duplicate and address is approved
- Populate the price plan and connection details
- Set the status of the "Validate Data" activity to "Complete" in Siebel

When Vector receives an application, the request is validated to confirm if the requested supply is available. If the supply is available, then Vector creates the ICP straight into "READY" status and then passes it through to the retailer for acceptance.

Once the application is validated the system automatically generates the ICP. The ICP is uploaded to the registry overnight.

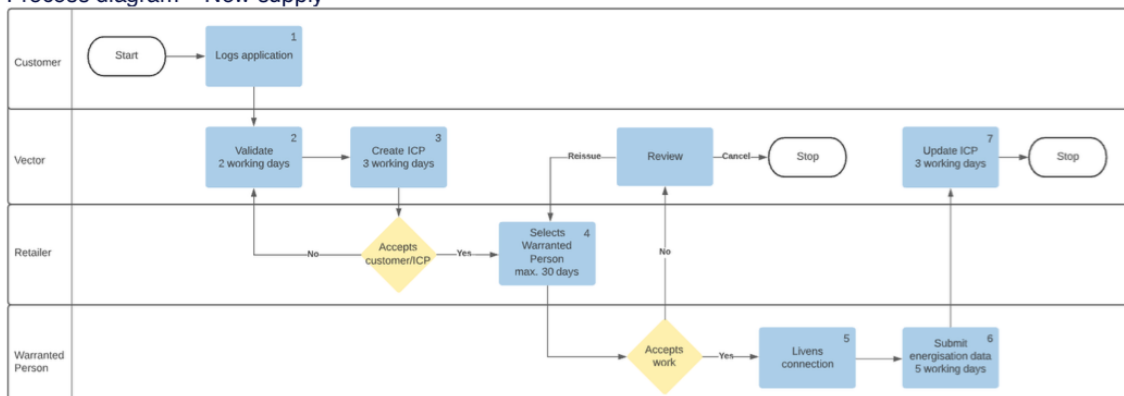
The next steps are conducted by a retailer to accept the ICP as described below:

- Contacts the customer and decides if accepts the ICP
- Select the warranted person in Siebel
- Set the status of the Retailer Confirmation activity to "Complete" in Siebel
- Arrange meter installation with the meter owner and/or warranted person

The warranted person arranges the livening and provides Vector with the energisation data. Vector updates the ICP information in the registry.

The “process diagram” shows the process.

### 3. Process diagram – New supply



The sampling conducted confirms Vector is in compliance with this clause.

If the supply is not available, Vector does further assessment:

- If the ICP is needed as the customer requires CTs from their retailer, then the ICP is released in a NEW status, the retailer is notified that it is only being released for CT purposes and that the network supply point is not yet installed.
- If the ICP is not needed for CTs, the request is put on hold and the customer is notified that the ICP will not be released until the network supply point has been installed.
- If further changes are required to the network to provide the customers requested supply the job sent for quoting

### 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

In the majority of cases ICPs are requested by a customer or his/her representative. In some situations ICPs are requested by traders. During this audit period 250 ICPs were created at the retailers request. We reviewed all ICPs. The EDA files were reviewed to assess if any LE ICPs (gate meters of embedded networks) were backdated.

#### Audit commentary

250 ICPs were requested by the trader. These ICPs were examined and found 54 of the 250 ICPs were not created within three business days of request. In 25 cases the trader was not advised of the delay, 14 ICPs were connections to embedded networks. It is recorded as non-compliance.

The creation of LE ICPs (gate meters of embedded networks) was discussed. 14 LE ICPs were created during the audit period and were reviewed. No ICPs were created within the three business days of the

request as these ICPs generally require engineering approval. However, this was communicated to the participant (or their designated agent) in all instances.

We reviewed the EDA files and confirmed that no LE ICPs were backdated.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref 3.2 With: 11.5(3)  From: 01-Aug-21 To: 31-Jul-22	No notification of delay to ICP creation for 25 ICPs requested by traders  Potential impact: Low  Actual impact: Low  Audit history: Multiple times  Controls: Moderate  Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are assessed as moderate. They will mitigate non-compliance most of the time but there is room for improvement. Audit risk rating is assigned as low. No impact on settlement outcomes.		
Actions taken to resolve the issue		Completion date	Remedial action status
N/A			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Further training to be provided to staff to ensure requestor is always included in any communications regarding delays.  Spot checking of late or on hold requests will be carried out to ensure notifications are being sent.		30/11/2022	

### 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 LIS files and the Audit Compliance reports were examined to determine compliance. The new connection process for populating all required registry fields was examined and discussed with Vector's staff.

#### Audit commentary

As per the new connection process an application is received for all new connections. Vector accepts applications for unmetered loads such as traffic cameras, payphones. During the audit period Vector issued 20 UML ICPs on the Northern network and 54 UML ICPs on the Auckland network.

At present, UML information is not yet incorporated into the new connection application form as it is still under development. The detailed information is exchanged via email. Vector provided a copy of such an email.

The process for updating the registry is fully automated. Updates to the registry are twice daily, once at midday and once in the evening (10pm).

During the audit period 7,041 ICPs were created on the Northern network (UNET). At the time of this audit 5,423 ICPs had the “Active” status, 31 ICPs were decommissioned.

8,348 on the Auckland network (VECT). At the time of this audit 5,951 ICPs had the “Active” status, 53 ICPs were decommissioned.

All the required information for these ICPs was populated excluding the population of the initial electrical connection date for 1,029 ICPs (391 UNET 638 VECT) in the registry because the warranted person did not record the Initial Energisation Date in Siebel therefore it has not been uploaded to the registry by Vector. It was discussed during the audit. Vector followed up with traders asking to for an explanation for why the IECN wasn't updated in Siebel when the ICP was livened.

There has been a decrease of missing IECN entries by 73% in comparison with the last audit. It is the result of the new processes implemented by Vector, which requires the warranted person who arranges the livening to provide Vector with the energisation data which is uploaded to the registry.

All UML ICPs have distributor information populated in the registry. It was noted as non-compliance in the last audit.

#### **Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref 3.3 With: 11.7  From: 01-Aug-21 To: 31-Jul-22	1,029 ICPs with no initial electrical connection date populated  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 overall but some opportunities for further improvements are in progress which will strengthen controls once in place. The audit risk rating is low as the incorrect information has a small or no effect on reconciliation.		
Actions taken to resolve the issue		Completion date	Remedial action status
IECD: Refer to notes on audit ref 2.2. Follow up frequency to be increased.		30/11/2022	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
UML: Online application form to be updated to require UML details to be supplied upon application.		31/07/2023	

### 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

Vector provided the EDA files for the audit period to assess compliance. We reviewed the new connections process and discussed it with Vector's staff.

#### Audit commentary

The customer, or their chosen agent, logs an application for a new ICP (or retailer if a BTS to permanent conversion is required). The application is reviewed by the Vector Connections team and approved if all the information is accurate and capacity is available. As soon as an ICP is created the trader and the customer/agent are notified. The trader is asked to nominate a warranted person for the connection.

We assessed the timeliness of providing information to the registry prior to electricity being traded at the ICP using the Audit Compliance reports for VECT and UNET. We found some ICPs for which information

was not provided to the registry before the trader changed the status to “Active”. The findings are tabled below:

Update type	Late updates	Comment
“READY” status	1002155085LCDF2 1002154541LCFB2 1002146829LCCFF 1002147057LCB94	Information required by this clause was not uploaded prior to electricity being traded at the ICP  The date of initial electrical connection was later than the input date of Status “READY”.
Change of ICP creation date	1002144710UN30D	It was created on 10/08/21, on 23/08/21 the effective date was changed to 13/07/21. IECD is 12/08/21.

It was discussed with the Connection Team. Some of these ICPs were originally created with the Status “NEW” and an update to “READY” was delayed. In the majority of these cases, Vector was requested to create the ICPs prior to an installation supply point being installed for the purpose of obtaining CTs. The Connection Team has improved the process as, in the last audit, we recorded 34 ICPs.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref 3.4  With: 7(2) of Schedule 11.1  From: 01-Aug-21 To: 31-Jul-22	5 ICPs not updated on the registry prior to commencement of trading  Potential impact: Low  Actual impact: Low  Audit history: Twice times  Controls: Strong  Breach risk rating:1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as strong. Significant decrease since the last audit. The audit risk rating is low as the incorrect information for 5 residential ICPs has a small or no effect on reconciliation.		
Actions taken to resolve the issue		Completion date	Remedial action status
N/A			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Process to be implemented to track status of ICPs created in NEW to ensure change to READY status is completed as soon as installation of the network supply point has been completed and is ready for livening.		30/11/2022	

### 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 new connection process was examined. The LIS files and the Audit Compliance reports for the audit period were examined to identify all ICPs for which Initial Electrical Connection dates (IECD) were not updated within 10 business days of electrical connection. We sampled 30 ICPs created during the audit period.

## Audit commentary

The Audit Compliance Report recorded 11,769 ICPs (7,151 VECT, 4,618 UNET) which had been moved to the status "ACTIVE" after 29/08/13 that did not have an initial electrical connection date populated. We would like to note that a high percentage of the 11,523 ICPs, without IECD are ICPs livened in the past and their volumes have already been submitted for reconciliation, by traders, to the RM. There is no impact on settlement outcomes.

During the audit period 15,389 ICPs (7,041 VECT, 8,348 UNET) were created. The initial electrical connection date for 1,029 ICPs (391 UNET 638 VECT) was not populated.

We sampled 10 ICPs with missing initial electrical connection dates for each network and asked for comments from Vector. For all listed ICPs Vector had not received information from traders. The UoSA agreement between Vector and traders put the obligation on traders to populate Siebel with the Initial Electrical Connection Date (IECD).

In June 2021 Vector implemented a modified new connection process. According to the new process, the trader must accept the ICP in Siebel by clicking a box and nominating a warranted person from a list provided by Vector. The warranted person is allowed to connect and electrically connect an installation on the Vector network. Vector manages a list of warranted people who are allowed to work on their network. The warranted person is notified by Vector that they were selected as the warranted person for this connection. The new process put the obligation on the warranted person to enter the following information, which includes IECD, into Siebel:

The screenshot displays the Siebel system interface for managing ICPs. It features a top navigation bar with tabs: Activites, Energisation Data, Attachments, Audit Trail, Orders, Solutions, Field Details, More Info, B2B Interface History, Related Requests, and Bulk Premise Creation. Below the navigation bar is a 'Menu' and 'Query' section. The main content area is divided into two sections: 'Warranted Person Information' and 'Installation Data'. The 'Warranted Person Information' section includes fields for Company Name (Sels Electrical Services), Name (nick smith), and Unique Id (e252050). The 'Installation Data' section includes fields for Energisation Date (16/08/2021), RoI Number (sels44119), ESC Number (ns44119), CoC Number (lin mayne mt albert), Phase Installed (1), Fuse Installed (60), kVA (13.8), Line Voltage (233), Cable Size (16), Mains Type (O), Unmetered Supply (checkbox), Tariff (Uncontrolled), Connection Point (Pole), and Test Results (233v 076a 0.34ohm).

Examination of the Audit Compliance Report found 2,824 Initial Electrical Connection Dates (IECD) were updated more than 10 business days after initial electrical connection:

Code	Number of ICPs			
	2022	2021	2020	2019



VECT	1,535	1,795	29,428	5,098
UNET	1,289	1,063	20,479	4,153
Total	2,824	2,858	50,177	9,251

Out of 1,535 VECT late updates of IECD, 482 (31%) relate to ICPs electrically connected **outside** this audit period, which are historic updates.

Out of 1,289 UNET late updates of IECD, 463 (36%) relate to ICPs electrically connected **during** this audit period, which are historic updates.

Overall 2,824 IECD (33.4%) were later than 10 business days and were related to historic ICPs. Vector is progressively populating IECD for ICPs electrically connected in the past. It is a slow process to gather information from various sources. They work closely with traders and MEPs to find the IECD for each ICP. The fact that historic information is populated has the flow on effect of an increased number of late updates which impacts compliance with this clause. From Vectors' point of view, it is more important to have correct information in the registry as per clause 11.2 even if updates are later than 10 BD.

The sampling of 38 late updates of IECD populated during this audit period identified the following causes :

- 13 ICPs (35%) - due to the delay in the trader providing the information to Vector
- 25 ICPs (65%) - due to delay in the warranted person providing the information to Vector

The Audit Compliance reports also showed that 1,029 ICPs (638 VECT, 391 UNET) do not have IECD recorded as information was not provide by the warranted people specified by traders.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref 3.5  With: 7(2A) of Schedule 11.1  From: 01-Aug-21 To: 31-Jul-22	<ul style="list-style-type: none"> <li>2,824 late of updates initial electrical connection dates in the registry, some of them are historic updates</li> <li>1,029 ICPs do not have IECD recorded</li> </ul> Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating:2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are rated as moderate. The warranted person (livening person) has an obligation to provide IECD information to Vector, on behalf of the trader. The audit risk rating is low as this has no direct impact on reconciliation.		
Actions taken to resolve the issue		Completion date	Remedial action status
IECD: Refer to notes on audit ref 2.2. Follow up frequency to be increased.		30/11/2022	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As above			

### 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

To assess compliance of the new connections, process the EDA files and the Audit Compliance reports were reviewed. It was discussed with the Connection Team. We sampled 33 new connections.

Vector has no known shared unmetered load recorded and does not allow shared unmetered load to be connected.

### Audit commentary

According to the new connection process, the trader must accept the ICP in Siebel by clicking a box and nominating a warranted person from a list provided by Vector. The warranted person is allowed to connect and electrically connect an installation on the Vector network.

We reviewed 33 new connections to assess compliance. A review of these ICPs showed that Vector is compliant with this clause because it follows the process set out in clause 10.31 (**section 3.7**).

As soon as an ICP is generated it is uploaded to the registry. At the time that a warranted person is on site for connection and is electrically connecting the ICP (both happen at the same time), the trader is recorded in the registry as accepting responsibility for the ICP.

### 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, or if there is only shared unmetered load at the ICP and each trader has been advised.*

### Audit observation

To assess compliance of the new connections, process the EDA files and the Audit Compliance reports were reviewed. It was discussed with the Connection Team. 33 new connections were sampled.

Vector has no known shared unmetered load recorded and does not allow shared unmetered load to be connected. A diverse characteristics sample of 30 new connections created during the audit period were checked to determine if compliance was met.

### Audit commentary

According to the new connection process, as soon as an ICP is created, a customer and a specified by a customer trader, is notified via email. The trader must accept the ICP in Siebel by clicking a box and nominating a warranted person from a list provided by Vector who goes on site and electrically connects the ICP at the request of the trader.

We found the process compliant with this clause because by clicking a box in Siebel the trader requests the ICP connection by accepting the ICP. Some traders accept an ICP within a few days, some take a little longer. It was decided between Vector and traders that ICPs will be uploaded to the registry before it is accepted by traders in Siebel. It allows the process of new connections to run smoothly. The traders still have an option to reject an ICP.

Some traders started using the “New connection in progress” status, which is also another way to accept responsibility for the ICP.

### 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

The new connection process was discussed.

##### Audit commentary

Vector does not electrically connect any installation. According to the Vector User System Agreement, a trader nominates a warranted person from the list provided by Vector, who is approved to electrically connect a new point of connection to its network.

##### 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 trader responsible for ensuring there is a metering installation for the point of connection.*

*The distributor that initiates the connection under Part 11 and connects the NSP 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 only NSP connections that are not point of connection to the grid are embedded networks within the Vector network. Vector did not create any new NSPs during the audit period.

##### Audit commentary

It is the embedded network owner's responsibility to comply with this clause.

##### Audit outcome

Compliant

### 3.10. Electrical connection of NSP that is not point of connection to grid (Clause 10.30A and 10.30B)

#### Code reference

*Clause 10.30A and 10.30B*

#### 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.*

*A distributor may only electrically connect an NSP if:*

- *each distributor connected to the NSP agrees*
- *the trader responsible for delivery of submission information has requested the electrical connection*
- *the metering installations for the NSP are certified and operational metering*

#### Audit observation

The only NSP connections that are not point of connection to the grid are embedded networks within the Vector network. Vector did not create any new NSPs during the audit period.

#### Audit commentary

It is the embedded network owner's responsibility to comply with this clause.

#### Audit outcome

Compliant

### 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 examined the new connection process and LIS files.

#### Audit commentary

There is a unique distributor code "LC" used within the Auckland City network and "UN" within the Northern network. Gentrack creates ICPs based on a sequential number, unique distributor code and

checksum, which is generated according to the algorithm. The algorithm was provided by the Market Administrator.

#### **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**

Vector provided the LIS files dated 05/08/2022. We examined them to confirm all active ICPs have a single loss category code.

#### **Audit commentary**

At the time of an ICP identifier creation, a single loss category code is assigned. The registry design prohibits the assigning of more than a single loss category to an ICP. All ICPs recorded in the registry have a single loss category code except ICPs with the status “decommissioned”.

#### **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 and discussed with Vector’s staff. The registry LIS files were reviewed.

#### **Audit commentary**

The majority of requests for new connections are received from the customer or its representative. If supply is available an ICP identifier is created straight away. If the supply is not available, Vector does further assessment:

- If the ICP (large installation) is needed as the customer requires CTs from their retailer, then the ICP is released with the status “NEW”. The retailer is notified that it is only being released for CT purposes and that the network supply point is not yet installed. This causes issues when the customer wants to live their service installation on the same day as Vector install the physical network supply point. In these instances, Vector issues an ICP with the status NEW, in advance

(prior to the network supply point being installed), so that the customer can organise the CTs through their retailer in advance.

- If the ICP is not needed for CTs, the request is put on hold and the customer is notified that the ICP will not be released until the network supply point has been installed.
- If further changes are required to the network to provide the customers requested supply it is sent the job for quoting.

If an ICP was originally created with the status NEW, Vector uses the network installation date as the effective date for READY status (date when the pit, pillar, transformer or HV supply are installed).

The LIS files showed a number of ICPs with the status “NEW”. We discussed them with the Vector staff.

ICP number	Reason for NEW status
1002152113UN4EA	Was created in RD. Was changed to NEW as customer requested to cancel. Should have been set to DE but this last step was missed. This has since been corrected.
1002153828UN56F	Was created in RD. Was changed to NEW as customer requested to cancel. Should have been set to DE but this last step was missed. This will be corrected.
1002144057LC974	Created in NEW for retailer for CT metering. POS has not been installed yet.
1002147221LC541	Created in NEW for retailer for CT metering. POS has not been installed yet.
1002148937LC40D	Mis-understanding of the process. Created in advance in error. It didn't require CTs. We will get this corrected.
1002148938LCBD3	Mis-understanding of the process. Created in advance in error. It didn't require CTs. We will get this corrected.
1002156735LC2A2	Created in NEW for retailer for CT metering. POS has since been installed but ICP status change has not been updated. We will get this corrected.
1002158415LC434	Created in NEW for retailer for CT metering. POS has since been installed and ICP status is currently Active.

5 ICPs had “NEW” status applied incorrectly. These have been corrected during the audit.

Changing the status from READY back to NEW to allow an ICP to be decommissioned is always done manually via the registry web interface. We examined 10 examples, the process was followed.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref 3.13 With: 13 of Schedule 11.1  From: 01-Aug-21 To: 31-Jul-22	5 ICPs had the "NEW" status incorrectly recorded in the registry  Potential impact: Low  Actual impact: Low  Audit history: None  Controls: Strong  Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as strong. Additional process for retailer requiring early release of ICPs to issue CTs. The audit risk rating is low as it is a small number ICPs.		
Actions taken to resolve the issue		Completion date	Remedial action status
Setup report for monitoring ICPs with a status of New to be reviewed weekly and ICPs updated where required.		30/11/2022	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
N/A			

### 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 process to monitor ICPs with "NEW" and "READY" status was reviewed. The LIS files and the Audit Compliance reports were examined to determine compliance. The process was discussed with Vector's staff.

#### Audit commentary

At the time of audit, the following number of ICPs held in the registry held the status "READY" for longer than 24 months. There were no ICPs with the status "NEW" for longer than 24 months.



Distributor Code	READY (2022)	READY (2021)	READY (2020)	READY (2019)	READY (2018)	READY (2017)
UNET	38	20*	18	60	9	22
VECT	83	26	20	55	19	30

Vector sends an email, monthly, to a list of ICPs unclaimed for longer than 24 months, asking them to confirm if still they still require these ICPs or whether they can be decommissioned - setup in error.

#### 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

The registry files were examined and discussed with the Vector team.

#### Audit commentary

VECT does not have any ICP with a generation capacity over 10 MW.

UNET has one ICP (0001442868UN4DC) with generation capacity over 10 MW, which has an individual loss factor of RDVL.

#### 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 connection process was reviewed. It was discussed with Vector's staff.

### Audit commentary

According to the Vector new connection process, only reconciliation participants can authorise the electrical connection of an installation. Once a new ICP is created, a nominated trader is notified and asked for acceptance of the ICP. Once the ICP is accepted, the reconciliation participant is asked to select the warranted person in Siebel and arrange the ICP electrical connection.

We reviewed 30 new connections created during the audit period and confirmed compliance with this clause.

### Audit outcome

Compliant

## 3.17. Electrical disconnection of a point of connection (Clause 10.30C and 10.31C)

### Code reference

*Clause 10.30C and 10.31C*

### Code related audit information

*A distributor can only disconnect, or electrically disconnect an ICP on its network:*

- *if empowered to do so by legislation (including the Code)*
- *under its contract with the trader for that ICP or NSP*
- *under its contract with the consumer for that ICP*

### Audit observation

This was discussed during the audit with Vectors' staff.

### Audit commentary

Vector uses Northpower and Electrix to electrically disconnect installations which can't be disconnected remotely. Any disconnections are done at the request of the retailer recorded on the registry. If the ICP needs to be permanently disconnected (decommissioned) it can be requested by a customer or the retailer. If the request was made by a customer, the retailer is notified.

Decommissions and temporary disconnections can both be carried out by Vector (Northpower or Electrix) at customers or retailers (recorded in the registry) request. The difference is that the work they do is completed on the Vector network side (the fuse isolation point in pit, pillar or on the pole). Vector does not disconnect or touch the metering. Metering is the responsibility of the retailer and MEP.

### Audit outcome

Compliant

## 3.18. Meter bridging (Clause 10.33C)

### Code reference

*Clause 10.33C*

### Code related audit information

*An distributor may only electrically connect an ICP in a way that bypasses a meter that is in place ("bridging") if the distributor has been authorised by the responsible trader.*

*The distributor can then only proceed with bridging the meter if, despite best endeavours:*

- *the MEP is unable to remotely electrically connect the ICP*

- *the MEP cannot repair a fault with the meter due to safety concerns*
- *the consumer will likely be without electricity for a period which would cause significant disadvantage to the consumer*

*If the distributor bridges a meter, the distributor must notify the responsible trader within 1 business day, and include the date of bridging in its advice.*

#### **Audit observation**

This was discussed during the audit with the Vector staff.

#### **Audit commentary**

Vector stated that their policy is not to bridge meters. It is always done by MEPs, however if for hot water issues it is not possible to fix, they are carried out on the network side i.e. in pillar, pole etc

If the problem is with the meter, customers are advised to contact their retailer.

#### **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 13<sup>th</sup> 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

The management of registry updates and NSP changes was reviewed. The process was discussed with Vector's staff.

The LIS files, Audit Compliance reports, and the EDA files for the audit period were reviewed to determine compliance. A diverse sample of 10 backdated events, by event type, were reviewed to determine the reasons for the late updates.

#### Audit commentary

Any changes to ICP information are done in Gentrack. The updates to the registry are uploaded twice per day, at mid-day and at 10pm. A small number of updates are made directly in the registry as required e.g. changing the ICP status from "READY" to "NEW" before it is decommissioned.

The Audit Compliance reports were analysed to identify backdated event updates. The summary of late updates is below:

#### Pricing events

Traders send price change requests. The Vector UoSA allows the back dating of a price code as far as a year or to the latest price plan change event (whichever is the most recent).

On 01/12/2021 the Code was changed in relation to pricing events in the registry. As long the registry is updated within 3 business days of receiving a notification, there is no non-compliance of the backdated price code. We sampled 436 ICPs and confirm that the registry was updated within 3 business days.

#### Decommissioning Status events

ICP decommissioning is requested by a customer/agent. Details provided by the customer are validated by Vector against the registry information then a job is raised in Siebel. The job is issued to Electrix (UNET) or Northpower (VECT). A trader and a MEP (to remove a meter) are notified via email. Once the job is complete it is confirmed with the trader and they are asked to change the registry status to "inactive-ready for decommissioning". If traders do not update the registry status within 5-10 days of decommissioning, an automated follow up notification is sent. Repetitive reminders to traders speed up the process and ensure that traders do not use ICPs that are physically decommissioned.

The Audit Compliance Reports recorded that 94.62% of all VECT status updates to decommissioned status' were made on time with an average of 5.45 business days between Status Inactive Event Date and Status Event input date, and 95.95% of all UNET status updates to decommissioned were made on time with an average time of 4.28 business days to update the registry.

The level of compliance has improved again since the last audit. For example for the Northern network has changed from 85.61% to 95.95%. The process is automated as much as possible and persistent reminders sent to traders help Vector decommission ICPs in a timely manner.

### Network events

We reviewed network event updates recorded in the Audit Compliance Reports.

The overall compliance of the VECT network updates was 62.25% with 5,437 late network update events with an average of 49.50 business days to update. 1,763 were more than 100 business days after the event date and 38 updates were more than 1,000 business days after the event date.

We sampled 16 late updates to check the reasons for late updates. 10 of them were part of a bulk upload sent to the registry as a part of a "clean-up" project.

- 10 updates were related to the "clean-up" project
- 2 updates were related to NSP correction sent on 05/11/2021
- 1 update related to moving an ICP from one platform to another
- 3 updates related to original files not accepted by the registry

The overall compliance of the UNET network updates was 65.79% with 3,963 late network update events with an average of 36.70 business days to update. 951 were more than 100 business days after the event date and 21 updates were more than 1,000 business days after the event date.

We sampled 16 late updates to check the reasons for late updates. All of them were part of a bulk upload sent to the registry as a part of a "clean-up" project.

### Change of NSP

The process for NSP changes was examined. It has not changed during the audit period. The Audit Compliance Reports are monitored by the Connection Team and are used to identify potential discrepancies which are passed on to the Information Team for action.

The Audit Compliance Reports identified 858 (447 VECT and 411 UNET) late NSP changes. They are ICPs where the NSP was changed in the registry later than 8 business days. A sample of 10 late updates for each network code were examined and it was found that these were all corrections required due to the review of the NSP Discrepancy report.

If the change to the NSP identifier is for more than 10 business days, the notification must be provided no later than the 13<sup>th</sup> business day and be backdated to the date the change took effect. The Operations Team provide notifications of NSP changes that are for longer than 14 days. These are then updated in GIS and then this is uploaded to Gentrack, which updates to the registry. Vector provided three examples for shifting ICPs between NSPs, which we reviewed in the registry.

In all instances Vector used an incorrect effective event date for the change. The Code stated that the notification to the registry must be backdated to the date the change took effect. It was discussed with Vectors' staff. Some preliminary work was done by VECT on the Effective Date issue in September 2022 and some more work is scheduled to be done near the end of October 2022 including documenting a solution. Realistically they would be looking at implementing a solution either in Q3 (Jan to Mar 2023) or Q4 (Apr to Jun 2023).

### Distributed generation

14.05 % of all VECT distributed generation network updates were made on time with an average time to update the registry of 71.85 business days. There were 575 late network updates.

13.72 % of all UNET distributed generation network updates were made on time with an average time to update the registry of 58.79 business days. There were 547 late network updates. All of them were as a result of late notification of the installation from the field.

We sampled 32 late updates. All of them were as a result of late notification of the installation from the field.

#### Address events

The Audit Compliance Reports recorded that 99.80% of all VECT address updates were made on time with an average time to update the registry of less than a day (0.14). There were 29 late address updates. All late updates were related to adding GSP coordinates. Incorrect Event Date was used it was a date of the previous update.

99.83% of all UNET address updates were made on time with an average time to update the registry of less than a day (0.09). There were 19 late address updates. All late updates were related to adding GSP coordinates. Incorrect Event Date was used it was a date of the previous update.

The backdating of events to the registry is recorded as non-compliance.

#### **Audit outcome**

Non-compliant

Non-compliance	Description		
<p>Audit Ref 4.1</p> <p>With: 8 of Schedule 11.1</p> <p>From: 01-Aug-21</p> <p>To: 31-Jul-22</p>	<ul style="list-style-type: none"> <li>Registry event (NSP change, address, distributed generation, decommissioning) updates backdated more than three business days</li> <li>Incorrect effective event date for the NSP change for longer than 10 business days</li> </ul> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>The controls are rated as moderate as the checks in place will mitigate risk most of the time. A new process for pricing events was introduced. Overall number of late updates significantly decreased in comparison with the last audit period. Audit risk rating is recorded as low, level of compliance is high.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Distributed Generation: Refer to notes on audit ref 2.2. Follow up frequency to be increased.</p> <p>NSP: Data analysis is completed to identify the ICP records with incorrect effective network event dates for NSP changes. These dates are appropriately remediated in Gentrack.</p>		<p>30/11/2022</p> <p>31/03/2023</p>	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Address: We will no longer backdate address changes. The process for the co-ordinate changes has been altered to ensure updates are processed same day and not backdated.</p> <p>NSP: Business analysis work is completed, and a system solution implemented in order to prevent ICP incorrect network event dates going forward.</p>		<p>Completed</p> <p>30/06/2023</p>	

#### 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, the Audit Compliance reports and the process for the creation of ICP identifiers. It was discussed with Vector's staff. We sampled 21 ICPs.

#### Audit commentary

The process for allocating new ICPs to the correct transformer (platform) was examined. Each ICP is reviewed in GIS to determine the correct transformer based on the ICP location. The transformer maps back to the NSP.

The Operational Information and Insights Team monitors potential NSP discrepancies using the Audit Compliance reports. If any discrepancies are noted, information is passed to the Connections Team.

The Audit Compliance reports found some active ICPs where 10%, or fewer, ICPs on a street have a different NSP, and there are fewer than three ICPs with a different NSP. The table below shows the number of ICPs with incorrectly assigned NSPs.

Code	Number of ICPs			
	2022	2021	2020	2019
VECT	176	110	179	308
UNET	161	99	110	250
Total	337	209	289	558

The number of ICPs has increased since last year. At the same time Vector's network grows rapidly, which could be one of a reason for an increased number of ICPs identified in the Audit Compliance reports.

We sampled 21 ICPs from the Audit Compliance Reports identified as being on an incorrect NSP. We asked Vector for comment. In summary:

- 8 ICPs – the registry was corrected by Vector (orange)
- 4 ICPs the Audit Compliance report was incorrect (green), the registry information is correct
- 8 ICPs – the registry information is correct (grey)
- 1 ICP – retailer to be contacted (blue)

ICP	NSP used by ICP	Vector comment
0042263883LC24B	PAK0331	Corner property being fed from different GXP than all other properties in Accent Drive.



0053148754LC367	PEN0221	Challenging to locate physical location (vague address) and connected via Streetlight cable. Remediated 14/09/2022
0210009047LC999	PEN0331	Corner property being fed from different GXP than most other properties in Arney Road.
0210194049LC38A	PEN0331	Corner property being fed from different GXP than most other properties in Arney Road.
1001255102LCB09	ROS1101	It appears the Audit Compliance report is getting confused between Arthur Street, Ponsonby with Arthur Street, Onehunga.
0323013440LC8B5	PAK0331	"Registry Failed Acknowledge" for NSP change on the 11/10/2000.
0417277067LCB33	TAK0331	It appears the Audit Compliance report is getting confused between Second Avenue, Kingsland with Second Avenue, Onetangi.
0116061030LC7F0	ROS1101	Corner property being fed from different GXP than most other properties in Sheehan Street.
0140893091LC939	ROS1101	Corner property being fed from different GXP than most other properties in Sheehan Street.
0368987841LC294	OTA0221	Very large property being fed from different GXP than all other properties in Smales Road.
0000100118UNB37	ALB1101	Master ICP for the RNZAF Whenuapai site. Remediated 14/09/2022.
0000967921TUD31	HEP0331	Property has two street names - Arawa Street & The Close. NSP HEP0331 is correct for this ICP and all others in Arawa Street, New Lynn.
0000193746UN386	ALB1101	Cnr Tristram Avenue and Wairau Road. ICP is on the correct Platform (4733) which is going to the ALB1101 NSP.
0000588419UN9ED	ALB1101	Physical address doesn't exist in any landbase. Being queried with Retailer as actual ICP premise address appears to be 1116 Takatu Rd, Warkworth which is located in Waikarau Bay.

0000100108UN19A	ALB1101	Streetlight ICP for parking outside Waiwera Thermal Pools. Remediated 14/09/2022.
0000100066UN4F5	ALB1101	Streetlight ICP that is unmetered. Remediated 14/09/2022.
1002110416UN475	HEN0331	The Audit Compliance report getting confused between Green Road, Westgate and Green Road in Matakana.
1002110417UN830	HEN0331	The Audit Compliance report getting confused between Green Road, Westgate and Green Road in Matakana.
1002105608UN885	HEN0331	This only appeared in the NSP Discrepancy received on the 23/08/2022. ICP on incorrect Platform in Gentrack. Remediated 14/09/2022.
1002091629UNCBD	ALB1101	ICP was on the PENDING_UNET Platform. Remediated 12/08/2022.
1002080719UNB00	ALB1101	Private Transformer not labelled in the field. This is being reviewed and to be resolved by Vector Electricity Operations.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.2 With: 7(1)(b) of Schedule 11.1 From: 01-Aug-21 To: 31-Jul-22	8 out of 21 ICPs sampled were mapped to an incorrect NSP Potential impact: Low Actual impact: Low Audit history: Multiple times previously Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as moderate overall but some opportunities for further improvements are in progress which will strengthen controls once in place. Historic ICPs that are potentially mis-mapped are continually being worked through. Vector uses the Audit Compliance report to correct historic incorrect mapping. The risk rating is low as Vector has one balancing area per network and therefore an incorrect NSP has no direct impact on settlement outcomes.		
Actions taken to resolve the issue		Completion date	Remedial action status
To mitigate the number of errors, the EA "Registry Audit Comparison Report – NSP Discrepancies" report is run for VECT and UNET monthly and the required remediations are completed. There are other reports set up by Vector that show ICPs on Pending Transformers. These reports are run on a weekly basis and the required remediations are completed.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Same as above		Ongoing	

#### 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 discussed with Vector during the audit.

##### Audit commentary

Customer queries for ICP information can be received by phone call or email. Where information is requested by phone, details can be provided immediately while the customer is on the line. Where information is requested via email, Vector has a 3 working days SLA which aligns with the requirement.

#### **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 determine correct and unique addresses was examined. The Audit Compliance reports for the audit period were reviewed to determine compliance. This was discussed during the audit.

##### **Audit commentary**

At the time of application, a customer agent provides an installation address. Validation of the application includes checking for duplicate addresses. GPS co-ordinates have been added to the majority of the ICPs. Vector continues to work through the historically hard to locate addresses and the volume of these continues to decrease.

The Audit Compliance reports show 774 ICPs on the Auckland network (VECT) and 758 ICPs on the Northern network (UNET) where all address fields are the same or where one or more GPS coordinates and street number and property name are null. The number of ICPs identified this year is almost identical to the number recorded in the last audit report.

##### **Audit outcome**

Non-compliant

Non-compliance	Description		
Audit Ref 4.4 With: 2 of Schedule 11.1 From: 01-Aug-21 To: 31-Jul-22	1,532 ICPs with addresses that are not readily locatable 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 as Vector is still working through historic ICPs. The audit risk rating is low as this has no direct impact on settlement outcomes.		
Actions taken to resolve the issue		Completion date	Remedial action status
This is an ongoing piece of work. Vector continue to work on trying to identify and correct these historical address issues and are requesting help from the traders to resolve these.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Further training to be provided to staff to ensure duplicates are not created.		30/11/2022	

#### 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 discussed with Vector during the audit.

##### Audit commentary

##### Audit outcome

Vector stated that there are no known situations where an ICP could not be de-energised without the de-energisation of another ICP. The company policy precludes such a situation.

##### 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 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**

The LIS files, Audit Compliance reports, and the EDA files for the audit period were reviewed to determine compliance. A diverse sample of 10 data discrepancies was checked. It was discussed with the Connection Team.

#### **Audit commentary**

The analyses of registry files confirm the accuracy of ICP information uploaded to the registry by Vector. There are some exceptions in the area of Dedicated NSP flag in the registry, distributed generation and Initial Electrical Connection Date (IECD), where it was identified that some information was incorrect. Each type of network information category is analysed in the following separate sections.

##### Distributor ICPs "LE"

The analysis of the LIS files showed that Vector has 146 ICPs with the status of "distributor" on the Auckland network, and 62 ICPs on the Northern network. They are ICPs assigned to a so called gate meter between the Vector network and an embedded network located on its network, and the reconciliation type is "LE".

During the audit period Vector created 7 ICPs for new embedded networks located on the Northern network and 7 ICPs on the Auckland network. Gate meters ICPs (reconciliation type flag in the registry is LE) are always created at the request of embedded network owners.

We noted that 4 ICPs (1002158523LCB47, 1002158524LC68D, 1002157610UN008, and 1002157611UNC4D) had the Dedicated Flag incorrectly assigned in the registry. It was set to "N", it should be "Y".

##### Dedicated vs non-dedicated NSPs

We reviewed the dedicated and non-dedicated flag recorded for each ICP in the registry. All of Vector's GN ICPs are expected to be set to "N" and LE ICPs are expected to be set to "Y". The table below shows some irregularities.

ICP	Reconciliation type	Dedicated Flag
1002150167UN3FD	GN	Y
1002154647UN72A	GN	Y
1002161299UN3FE	GN	Y
1002161300UNB4C	GN	Y
1002146220LC8A4	GN	Y

### Distributed Generation

Vector requires an application for all distributed generation. All applications have to be approved before allowing distributed generation to be connected to their network but Vector is reliant on customers following the process.

Once the application has been received a service request is created in Siebel. An application for up to 10 kW is approved automatically; more than 10 kW must be approved by a planning engineer. Siebel manages workflow and sends automated reminders to the applicant after ten business days of approval. Information is loaded to Gentrack and the registry, once the Code of Compliance (COC) has been received back from the contractor to confirm that the installation was electrically connected. As noted previously COC are slow in being returned and causes Vector to be late in updating this information to the registry.

We sampled the embedded generation information populated on the registry against the paperwork provided for a sample of 15 ICPs. The process used by Vector is as follows:

When Vector receives the COC, they check the kW on the COC against what the customer applied for.

- If it matches, the registry is updated with the kW on the COC
- If it's different, Vector asks to submit a new application and assuming their new capacity is approved, the registry is updated with the COC kW.
- If kW are not on the COC, Vector asks for confirmation for kW they installed and get them to update the COC
- The COC date is recorded as the Effective Date in the registry

The sampling shows that in some instances the kW on the COC are lower than on the application form. It appears that some solar companies, on an application form, use a maximum rated inverter kW output as a total generation installation output which is not always a case. In some instances kW of solar panels are smaller than the inverter kW. Some customers later on decide to install more solar panels up to the inverter kW.

ICP	Effective date of EG installation in the registry	COC date	Generation Capacity in application [kW]	Generation Capacity in CoC [kW]	Generation Capacity in the registry [kW]
0167526790LC9C3	01/01/2022	01/01/2022	3.85	3.85	5.0
1002149903LC35F	02/02/2022	02/02/2022	5.0	3.2	5.0
1002149906LCE10	02/02/2022	02/02/2022	5.0	2.7	5.0



1002156628UN444	07/05/2022	07/05/2022	5.0	3.5	5.0
1002156629UN801	07/05/2022	07/05/2022	5.0	3.5	5.0
1002156631UN0B8	07/05/2022	07/05/2022	5.0	3.5	5.0

The LIS files showed that there are 4,078 UNET and 3,805 VECT active ICPs with generation capacity. In a small number of ICPs we found an incorrect Installation flag in the registry, or 0 kW recorded in the Generation Capacity field for three ICPs.

ICP	Installation type	Comment
0158157028LCFAA	L	Install type was B but was later changed to L in error - now corrected
0303925043LC693	L	Install type was B but was later changed to L in error - now corrected
1001300286LCC72	L	Install type was B but was later changed to L in error - now corrected
1002052679LC8F1	L	Install type was B but was later changed to L in error - now corrected

ICP	Generation Capacity [kW]	Comment
0800537068LC12B	0	It was noted during the last audit. It is Auckland Uni, to be discussed with trader.  Currently still pending investigation with the trader.
0000167444UN31C	0	Solar was on site but decommissioned back in 2020 so the ICP was updated from B to L
1002063525UNA7C	0	Generation capacity was 5 but was later changed to 0 in error - now corrected

Profile used by traders indicate distributed generation installed, none recorded by Vector

The Audit Compliance Reports identified 430 ICPs (179 VECT and 251 UNET) where the trader has indicated that distributed generation is present, and Vector have none recorded. Vector provided comments for all ICPs with discrepancies. The summary is below:

- 76 ICPs - the registry record was corrected
- 257 ICPs – follow up sent to a customer
- 62 ICPs - follow up sent to a retailer
- 14 ICPs – solar installation was cancelled
- 1 ICP – additional investigation by a solar team is required
- 6 ICPs – solar not installed yet
- 13 ICPs – follow up sent to a retailer; solar company is out of business

#### IECD is different to that of the first active date and/or the meter certification date

The Audit Compliance Reports identified 268 (136 VECT & 132 UNET) ICPs where the initial electrical connection date is different to that of the first active date and/or the meter certification date. There is a significant increase in the number of discrepancies since the last audit. Vector does not have any control over when metering is installed as it is managed by the retailers/MEPs.

The table below shows the summary of findings;

#### VECT

Number of ICPs	Type of discrepancies	Comment
65	Metering certification date and first ACTIVE date are the same. IECD is one or more days earlier before an ICP has the ACTIVE status	Vector to confirm with a warranted person
34	Metering certification date and IECD the same, first ACTIVE date is later	To be checked during traders' audit. Vector to confirm that IECD is correct as recorded by a warranted person
28	Metering certification date and first ACTIVE date are the same. IECD is much earlier, even up to 30 days	Vector to confirm that IECD is correct as recorded by a warranted person
1	No metering info, the first ACTIVE date is later than IECD	MEP to upload information to the registry
8	IECD the same as the first ACTIVE date, metering date later or earlier	To be confirmed by MEPs

#### UNET

Number of ICPs	Type of discrepancies	Comment
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58	Metering certification date and first ACTIVE date are the same. IECD is one or more days earlier before an ICP becoming ACTIVE	Vector to confirm with a warranted person
22	Metering certification date and IECD the same, first ACTIVE date is later	To be checked during traders' audit. Vector to confirm that IECD is correct as recorded by a warranted person
31	Metering certification date and first ACTIVE date are the same. IECD is much earlier, even up to 127 days	Vector to confirm that IECD is correct as recorded by a warranted person
11	No metering info, the first ACTIVE date is later than IECD, up to 115 days	MEP to upload information to the registry
10	IECD the same as the first ACTIVE date, metering date later or earlier	To be confirmed by MEPs

#### IECD recorded by Vector, not yet Active status in the registry

The Audit Compliance Reports identified 117 (40 VECT & 77 UNET) ICPs that are not yet active but have IECD recorded. These were examined and found:

- 51 ICPs - Email sent to traders to request registry status update as liveness data was entered by warranted person
- 66 ICPs - Retailer made it ACTIVE before the audit report was finalised

#### **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-21</p> <p>To: 31-Jul-22</p>	<ul style="list-style-type: none"> <li>Discrepancies for a number of ICPs where the Initial Electrical Connection date is different to the Metering Installation Certification date or the Active date (Status Event Date)</li> <li>4 ICPs (LE) incorrectly had the Dedicated NSP flag set to “N”</li> <li>5 ICPs (GN) incorrectly had Dedicated NSP flag set to “Y”</li> <li>For small number of ICPs incorrect solar kW are recorded in the registry</li> <li>Potential impact: Low</li> </ul> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>Controls are rated as moderate. Vector continues to improve monitoring of inaccuracies.</p> <p>The audit risk rating is assessed to be low as the discrepancies have only a minor impact to the market.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p><b>NSP Flag:</b> All errors have been fixed.</p> <p><b>Distributed Generation:</b> For kW discrepancies between the inverter and plan generation, please refer notes below in preventative actions box.</p> <p>We are currently investigating the discrepancies with L and 0 in the registry and will have these fixed immediately.</p> <p><b>IECD discrepancies:</b> Checking with warranted persons and traders to confirm the correct date and will update registry where necessary.</p>		Completed	Identified
		Not applicable	
		19/10/2022	
		30/11/2022	
Preventative actions taken to ensure no further issues will occur		Completion date	

<p><b>NSP Flag:</b> ICPs were originally correctly flagged as Y. They were changed to N due to a system error. We are currently investigating a fix for the issue. In the meantime, we will run a report to identify any with issues and will resolve.</p> <p><b>Distributed Generation:</b> Vector always use the inverter rating for the nameplate capacity due to the following reasons:</p> <ol style="list-style-type: none"> <li>1. The output can never be greater than the inverter rating.</li> <li>2. As an extreme case, even if we have no panels/energy sources sitting behind the inverter, it can still absorb/inject reactive power up to its rating. This will have an effect on the Vector Network voltage.</li> <li>3. A customer may install additional panels/energy sources and not notify Vector.</li> <li>4. A customer may attach a DIY battery to the inverter increasing the potential maximum kW output of the system.</li> </ol> <p>In the cases where there are oversized inverters, it is usually to meet their reactive power requirements (4777.2) whilst still outputting 100% of the available energy from the source. The inverter therefore operates at 100% of its MVA rating which is more than the maximum MW of the plant.</p> <p>We believe this approach of using the inverter rating is more conservative/less risky than using the MW of the plant.</p> <p><b>Missing distributed generation:</b> Audit compliance report to be used to identify ICPs where trader has indicated DG monthly. Retailers and customers to be contacted to follow up on applications and COCs.</p> <p><b>IECD discrepancies:</b> Audit compliance report to be used to identify discrepancies and warranted person and traders to be contacted on a monthly basis.</p>	<p>Unknown – pending investigation</p> <p>Not applicable</p> <p>02/11/2022</p> <p>07/11/2022</p>	
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#### 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

We reviewed the new connection process and the Audit Compliance reports to assess compliance. It was discussed with Vector staff.

### Audit commentary

As a part of the new connections process, Vector assigns the actual price category code and the actual changeable capacity of the ICP at the time an ICP is created. The price category code is assigned based on capacity information given by the customer.

### 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 were examined. We checked that the GPS coordinates used meet the NZTM2000 standard; We mapped 10 ICPs to check accuracy.

### Audit commentary

We checked GPS-Easting and GPS-Northing for 10 ICPs by converting their coordinates using the NZ Coordinates Conversion tool on Land Information NZ website and comparing the locations to the ICP address to Google Maps. The sampling showed that coordinates recorded in the registry are correct.

Vector have worked with external agencies to match their addresses to GPS co-ordinates. More progress has been made since the last audit. There are approximately 64,500 (36,000 VECT, 28,500 UNET) ICPs still to have co-ordinates added. Some of the addresses are proving difficult to determine.

### 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 examined. The EDA files and the Audit Compliance reports were analysed. It was discussed with VECT staff. 33 new connections were sampled.

## Audit commentary

The price category field in Gentrack ensures each ICP can only have a single price category. Examination of the LIS files confirmed that all ICPs with the "READY" status had a single price category assigned and proposed trader identified.

The majority of ICP requests come directly from customers or their agents. The proposed retailer is a mandatory field on an application for supply. The ICP creation process is automated. The current process is to create all ICPs with the status "READY".

When Vector receives an application, the request is validated to confirm if the requested supply is available. If the supply is available, then Vector creates the ICP straight into "READY" status and then passes it through to the retailer for acceptance. The sampling of 33 new connections that showed that in the majority of cases traders accept the responsibility for ICPs in Siebel the next day or within the next few days. In exceptional circumstances it takes longer, for examples two weeks. Some traders use the "New connection in progress" status, which is also another way to accept responsibility for the ICP.

Strictly speaking Vector is not fully compliant with clause 14(a),(a) of Schedule 11.1. It was discussed with Vector during the audit. It is Vector's business decision to use the process, which was discussed with traders. It was agreed that forcing the trader to accept the job prior to releasing the ICP would result in delays for the retailer and will extend the time it takes for a customer's site to be lived in. The trader still has the opportunity to decline.

Non-compliance	Description		
Audit Ref: 4.9 With: 14 of Schedule 11.1  From: 01-Jul-21 To: 31-Jul-22	Some ICPs are loaded to the registry with the status READY before being accepted by trader in Siebel. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are recorded as strong. There is a new connections process preventing traders from electrically connecting an ICP before accepting any responsibility. The audit risk rating is low because a timing issue has no direct impact on settlement outcomes		
Actions taken to resolve the issue		Completion date	Remedial action status
Vector believe that our current process provides quicker service and delivery of ICPs and livening for both retailers and consumers. Retailers still have an opportunity to decline any ICPs they do not wish to take responsibility for. We believe that obtaining consent prior to ICP creation will add unnecessary delays and workload to all parties with little benefit.		Not applicable	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.			

#### 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 and the Audit Compliance reports were examined. The process was discussed with Vector’s staff. Vector’s policy is to not accept shared unmetered load. The only ICPs that are created with the “distributor” (888) status are ICPs of the point of connection between an embedded network and the Vector network.



Vector provided a list of all ICPs with the status “distributor” created during the audit period.

#### Audit commentary

The analysis of the LIS files showed that Vector has 146 ICPs with the status of “distributor” on the Auckland network and 62 ICPs on the Northern network. They are ICPs assigned to gate meters between the Vector network and an embedded network located on its network.

During the audit period Vector created 7 ICPs for new embedded networks located on the Northern network, and 7 ICPs on the Auckland network. Gate meters ICPs (Reconciliation Type flag in the registry is LE) are always created at the request of the embedded network owner.

We viewed all newly created ICPs and confirmed that all of them were recorded in the registry and none of them were backdated. We observed that 4 ICPs (002158523LCB47, 1002158524LC68D, 1002157610UN008, and 1002157611UNC4D) had an incorrectly assigned Dedicated Flag in the registry. It was set to “N”, it should be “Y”. It is identified as non-compliance in **section 4.6**.

#### 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 decommissioning process was examined. The registry files and the Audit Compliance reports were analysed. We reviewed 30 ICPs across two networks for which updates of the registry were later than 5 business days.

#### Audit commentary

A customer requests the decommissioning of an ICP via the website by filling in a form. A Call Centre also accepts requests for decommissioning. Vector asks a customer to quote an ICP, a meter number, a trader, a date. All these details are validated by Vector against the registry information then a job is raised in Siebel. The job is issued to Electrix (UNET) or Northpower (VECT). A trader and a MEP (to remove a meter) are notified via email. Once the job is complete it is confirmed with the trader and they are asked to change the registry status to “inactive-ready for decommissioning”. Once the registry is updated to “inactive – ready for decommissioning”, Vector is automatically notified so the status can be updated in Gentrack, which updates the registry overnight. The process is automated as much as possible.

Vector's system checks for an open job in Siebel for any ICPs that are set to "Ready for decommissioning" in the registry by a trader. If no request has been lodged, a notification is followed up with a trader to verify the accuracy of registry information.

The number of ICPs at "inactive-ready for decommissioning" status has increased since the last audit. This was discussed with VECT staff. There are two reasons for increases in the number of ICPs with the status "inactive-ready for decommissioning". The first reason is a significant development on its network. The second reason is the fact that a lot of work has to be done manually by the Connection Team. Vector has streamlined the process as much as possible (automated). Unfortunately there are some instances where traders incorrectly assign the "ready for decommissioning" status to an ICP or an MEP uploads a date of meter removal. Such instances need to be analysed one by one by the team.

Code	Number of ICPs					
	2022	2021	2020	2019	2018	2017
VECT	979	745	582	477	296	632
UNET	478	331	276	242	180	614
Total	1,457	1,076	858	719	476	1,246

We sampled 30 ICPs which were decommissioned during the audit period. For all of them Vector uses the actual date of physical removal of the connection as the date of decommissioning. In all cases Vector updated the registry the next or following day after a retailer assigned the status "inactive-ready for decommissioning".

#### 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 Codes table in the registry was examined. It was discussed with VECT staff.

##### Audit commentary

Two new Price Category Codes were added to the registry during the audit period, WZSH and AZST. The registry was notified on 21/01/2022. The effective start date was 01/04/2022.

**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

We examined the Loss Factor Codes table in the registry. It was discussed with VECT staff.

#### Audit commentary

Vector has not created any new loss category codes for UNET or VECT during the audit period.

#### Audit outcome

Compliant

### 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

We examined the Loss Factor Codes table in the registry. It was discussed with VECT staff.

#### Audit commentary

Vector updated four loss factors both for UNET and VECT. Clause 22(5) of Schedule 11.1 prescribes that the date that a loss factor takes effect must not be earlier than 2 months after the date on which the loss factor is entered in the table.

Vector meets the requirements of this subclause. The updates to the eight loss factors were entered on 21/01/2022, it took effect on 01/04/2022.

#### 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.*

*The notice provided to the reconciliation manager must be provided no later than 30 days prior to the intended date of creation or decommissioning.*

*If the intended date of creation or decommissioning changes the distributor must provide an updated notice as soon as possible.*

*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

We examined the NSP mapping table in the registry. It was discussed with Vector's staff.

#### Audit commentary

Based on an examination of the NSP mapping table in the registry it was confirmed that no new NSP was created and no NSP has been decommissioned since the last audit.

The company has a process in place if such a situation arises. It is a long, well planned process which requires coordination with Transpower. The company indicated that due to a significant growth of Auckland city, there are plans to create one new NSP on the Auckland network and three new NSPs on the Northern network.

#### 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

We examined the NSP mapping table in the registry. It was discussed with Vector's staff.

Vector has not created a new NSP, as described in the previous section, the reconciliation manager was not asked to create a unique NSP identifier.

### Audit commentary

No NSPs have been created or decommissioned during the audit period.

### 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

We examined the NSP mapping table in the registry. It was discussed with Vector's staff.

### Audit commentary

Based on examination of the NSP mapping table in the registry and a discussion with Vector staff, it was confirmed that no new NSP was created.

### 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**

We examined the NSP mapping table in the registry. It was discussed during the audit. Vector has not established any embedded network since the last audit.

#### **Audit commentary**

Vector has not established any embedded network since the last audit and there are no plans to do it in the future.

#### **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**

We examined the NSP mapping table in the registry. It was discussed with Vector's staff.

#### **Audit commentary**

Vector has two balancing areas NORTHNRUNETG (Northern network) and AUCKLNDVECTG (Auckland City). There were no changes to balancing areas during the audit period.

#### **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

We examined the NSP mapping table in the registry. It was discussed with Vector's staff.

### Audit commentary

Vector stated that no existing ICPs became NSPs during the audit period.

### 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 were one ICPs transfer to the Vector network:

- 13 ICPs transferred between the SPOR and VECT network. SPOR was an embedded network which was decommissioned

### Audit commentary

There were 12 ICPs transferred between the SPOR and VECT network.

These were corrections as detailed below:

ICP	Original NSP & Network	New NSP& Network	Date EA notified	Date of transfer
0000000102SPBB5	SPO0011 SPOR	HOB1101 VECT	14/09/2021	01/10/2021
0037177323LC26C	SPO0011 SPOR	HOB1101 VECT	14/09/2021	01/10/2021
0132756475LC3A1	SPO0011 SPOR	HOB1101 VECT	14/09/2021	01/10/2021
0140083951LC44F	SPO0011 SPOR	HOB1101 VECT	14/09/2021	01/10/2021
0270686977LCF70	SPO0011 SPOR	HOB1101 VECT	14/09/2021	01/10/2021
0277591158LC4E3	SPO0011 SPOR	HOB1101 VECT	14/09/2021	01/10/2021
0291266730LC702	SPO0011 SPOR	HOB1101 VECT	14/09/2021	01/10/2021
0422896021LC4A2	SPO0011 SPOR	HOB1101 VECT	14/09/2021	01/10/2021
0478082584LC1E4	SPO0011 SPOR	HOB1101 VECT	14/09/2021	01/10/2021
0588237015LCD44	SPO0011 SPOR	HOB1101 VECT	14/09/2021	01/10/2021
0647561428LC6EB	SPO0011 SPOR	HOB1101 VECT	14/09/2021	01/10/2021



0841287694LC3B3	SPO0011 SPOR	HOB1101 VECT	14/09/2021	01/10/2021
0947788550LC76F	SPO0011 SPOR	HOB1101 VECT	14/09/2021	01/10/2021

Vector provided copies of notifications, DS-010 (transfer) file and retailers' consent sent to the EA.

#### 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

We examined the NSP mapping table in the registry. Vector does not have any NSPs that are not connections to the grid, for which they are responsible. The ownership of NSPs on its network, which are not a point of connection to the grid, lies with embedded network owners.

##### Audit commentary

This clause is not applicable to Vector because they do not have responsibility for an NSP that is not a point of connection to the grid. Compliance was not assessed.

#### 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 the reconciliation participant for the NSP (Clause 10.25(2)(b)); and
- no later than 5 business days after the date of certification of each metering installation, advise the reconciliation manager of
  - a) the MEP for the NSP (Clause 10.25(2)(c)(i)); and
  - b) the NSP of the certification expiry date (Clause 10.25(2)(c)(ii)).

#### **Audit observation**

We examined the NSP mapping table in the registry. It was discussed with VECT staff.

#### **Audit commentary**

As described in the section above, Vector does not have any NSPs that are not connections to the grid for which they are responsible. This clause is not applicable to Vector. Compliance was not assessed

#### **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**

We examined the NSP mapping table in the registry. It was discussed with VECT staff.

#### **Audit commentary**

Vector have not initiated any changes of network owner.

#### **Audit outcome**

Compliant

### **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**

We examined the NSP mapping table in the registry. It was discussed with VECT staff. Vector as such does not have any embedded network outside of its network.

#### **Audit commentary**

There are many embedded networks on the Vector network, but they are not the responsible participant. This clause is not applicable.

#### **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**

We identified 13 ICPs that have been transferred to the Vector network during the audit period (**section 6.7**). We examined the registry information.

#### **Audit commentary**

Permission from the trader was gained in all instances prior to the transfer of the ICPs. Vector provided a copy of correspondence.

#### **Audit outcome**

Compliant

### **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**

We examined the NSP mapping table in the registry. It was discussed with VECT staff.

**Audit commentary**

There were no ICPs transferred to an embedded network.

**Audit outcome**

Compliant

## 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

The LIS file was reviewed to identify any ICPs with shared unmetered load connected. It was discussed with Vector staff.

#### Audit commentary

There is no shared unmetered load connected to the Vector network. Vector does not allow new ICPs to have shared unmetered load.

#### Audit outcome

Compliant

### 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

The LIS file was reviewed to identify any ICPs with shared unmetered load connected. It was discussed with Vector staff.

#### Audit commentary

There is no shared unmetered load connected to the Vector network. This clause is not applicable to Vector. 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

This was discussed during the audit. The Guidelines on the calculation and the use of loss factors for reconciliation purposes published on 26/06/2018 are used to calculate loss factors on the Auckland and Northern networks. We reviewed the documentation relating to the loss factor review methodology.

#### Audit commentary

To calculate technical loss, Vector uses DigSILENT PowerFactory for network modelling and power system studies. A load flow analysis is executed in PowerFactory to calculate the line and transformer losses during peak loads. Technical loss is separately calculated for the Auckland network and the Northern network.

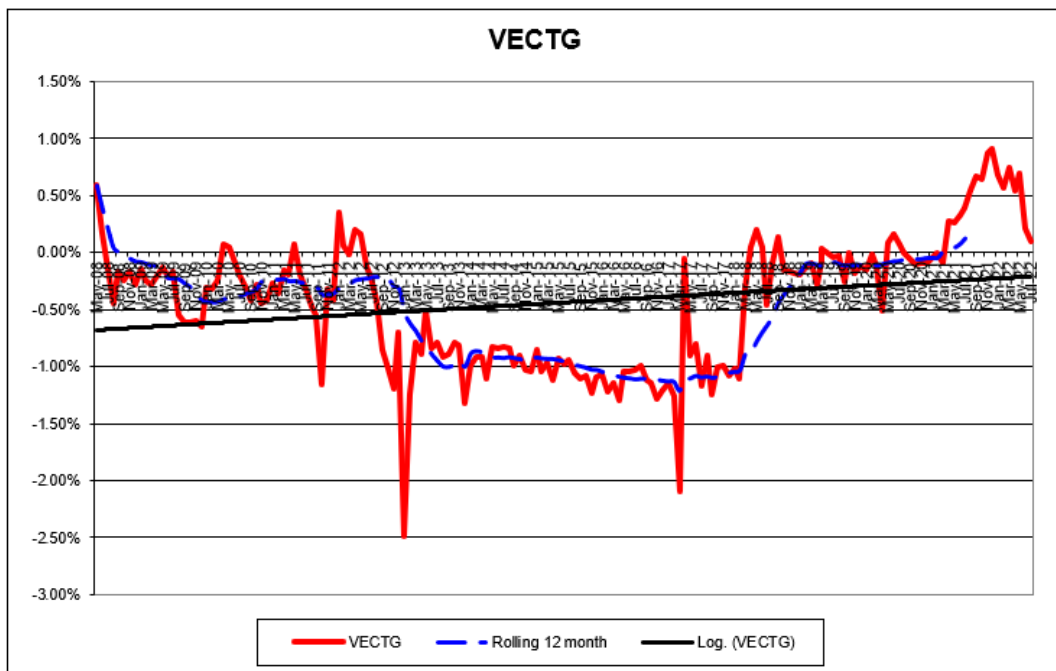
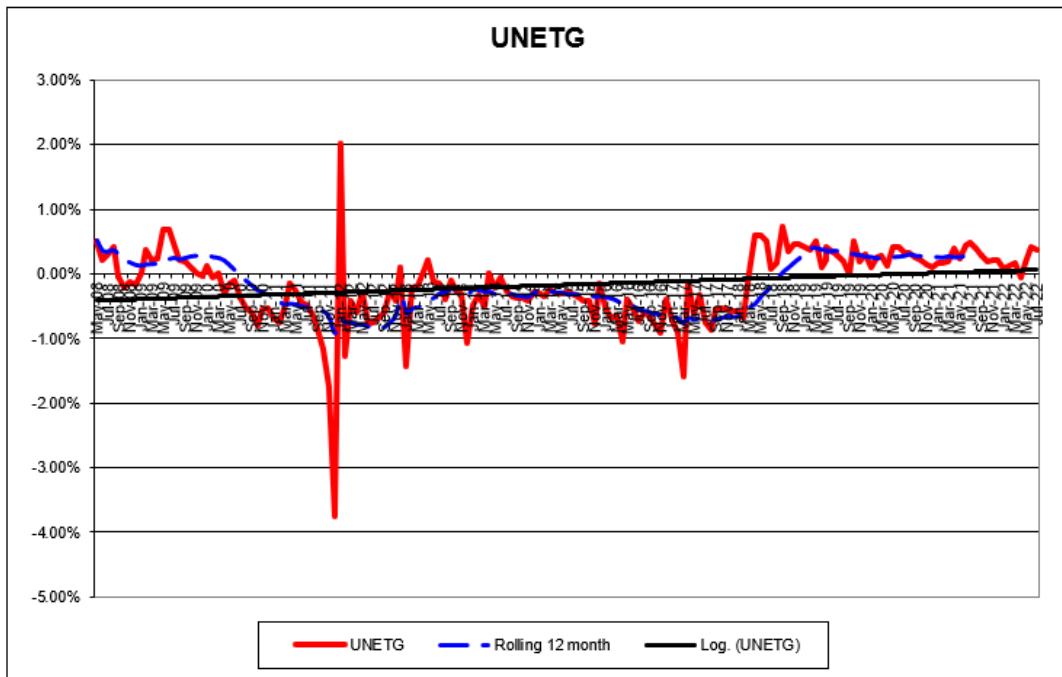
To calculate non-technical loss, Vector uses the “technical Loss” method which allocates non-technical losses to each level proportional to the technical loss at that level.

Vector recalculated loss factors for both networks last year. New loss factors are published on their website and also were uploaded to the registry.

Loss Factor Code	2022	2021	2020
VECA1	1.0413	1.0383	1.0413
VECA2	1.0305	1.0276	1.0303
VECA3	1.0305	1.0276	1.0303
VECA4	1.0153	1.0140	1.0148
VECW1	1.0555	1.0518	1.0514
VECW2	1.0431	1.0410	1.0408
VECW3	1.0431	1.0410	1.0408
VECW4	1.0226	1.0213	1.0208

Vector commented that loss factors for the Vector networks increased due to a change of distribution of the load caused by Covid. More people work from homes, which are connected to the LV network, connections are further from transformers therefore losses are higher. Additionally, there has been significant increase of domestic connection on the Northern network due to establishing new suburbs.

The Authority provided the following UFE graphs for the VECT and UNET networks, which showed both were within the  $\pm 1\%$  threshold.



### Audit outcome

Compliant

## CONCLUSION

### PARTICIPANT RESPONSE

Vector thanks Ewa for her assistance with the audit. We are committed to improving our processes and will continue to correct and populate missing information identified.

We will continue to work on further improvements and more frequent monitoring data to enable us to improve on data accuracy and reduce instances of missing information.