

**ELECTRICITY INDUSTRY PARTICIPATION CODE  
DISTRIBUTOR AUDIT REPORT**

For

**VECTOR**

Prepared by: Ewa Glowacka

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## TABLE OF CONTENTS

Executive summary .....	4
Audit summary .....	5
Non-compliances .....	5
Recommendations .....	6
Issues 6 .....	
1. Administrative .....	7
1.1. Exemptions from Obligations to Comply with Code (Section 11) .....	7
1.2. Structure of Organisation .....	7
1.3. Persons involved in this audit .....	7
1.4. Use of contractors (Clause 11.2A) .....	8
1.5. Supplier list .....	8
1.6. Hardware and Software .....	8
1.7. Breaches or Breach Allegations .....	8
1.8. ICP and NSP Data .....	9
1.9. Authorisation Received .....	11
1.10. Scope of Audit .....	11
1.11. Summary of previous audit .....	11
2. Operational Infrastructure .....	13
2.1. Requirement to provide complete and accurate information (Clause 11.2(1) and 10.6(1)) .....	13
2.2. Requirement to correct errors (Clause 11.2(2) and 10.6(2)) .....	13
3. Creation of ICPs .....	15
3.1. Distributors must create ICPs (Clause 11.4) .....	15
3.2. Participants may request distributors to create ICPs (Clause 11.5(3)) .....	18
3.3. Provision of ICP Information to the registry manager (Clause 11.7) .....	18
3.4. Timeliness of Provision of ICP Information to the registry manager (Clause 7(2) of Schedule 11.1) .....	19
3.5. Timeliness of Provision of Initial Electrical Connection Date (Clause 7(2A) of Schedule 11.1) .....	19
3.6. Connection of ICP that is not an NSP (Clause 11.17) .....	21
3.7. Connection of ICP that is not an NSP (Clause 10.31) .....	24
3.8. Temporary electrical connection of ICP that is not an NSP (Clause 10.31A) .....	25
3.9. Connection of NSP that is not point of connection to grid (Clause 10.30) .....	25
3.10. Temporary electrical connection of NSP that is not point of connection to grid (Clause 10.30(A)) .....	26
3.11. Definition of ICP identifier (Clause 1(1) Schedule 11.1) .....	26
3.12. Loss category (Clause 6 Schedule 11.1) .....	27
3.13. Management of “new” status (Clause 13 Schedule 11.1) .....	27
3.14. Monitoring of “new” & “ready” statuses (Clause 15 Schedule 11.1) .....	28
3.15. Embedded generation loss category (Clause 7(6) Schedule 11.1) .....	28
4. Maintenance of registry information .....	30
4.1. Changes to registry information (Clause 8 Schedule 11.1) .....	30
4.2. Notice of NSP for each ICP (Clauses 7(1), (4) and (5) Schedule 11.1) .....	33
4.3. Customer queries about ICP (Clause 11.31) .....	34

4.4.	ICP location address (Clause 2 Schedule 11.1) .....	34
4.5.	Electrically disconnecting an ICP (Clause 3 Schedule 11.1) .....	35
4.6.	Distributors to Provide ICP Information to the registry manager (Clause 7(1) Schedule 11.1) .....	36
4.7.	Provision of information to registry after the trading of electricity at the ICP commences (Clause 7(3) Schedule 11.1) .....	39
4.8.	GPS coordinates (Clause 7(8) and (9) Schedule 11.1) .....	39
4.9.	Management of “ready” status (Clause 14 Schedule 11.1) .....	40
4.10.	Management of “distributor” status (Clause 16 Schedule 11.1) .....	40
4.11.	Management of “decommissioned” status (Clause 20 Schedule 11.1) .....	41
4.12.	Maintenance of price category codes (Clause 23 Schedule 11.1).....	43
5.	Creation and maintenance of loss factors .....	44
5.1.	Updating table of loss category codes (Clause 21 Schedule 11.1) .....	44
5.2.	Updating loss factors (Clause 22 Schedule 11.1) .....	44
	Creation and maintenance of NSPs (including decommissioning of NSPs and transfer of ICPs) .....	45
5.3.	Creation and decommissioning of NSPs (Clause 11.8 and Clause 25 Schedule 11.1) .....	45
5.4.	Provision of NSP information (Clause 26(1) and (2) Schedule 11.1) .....	45
5.5.	Notice of balancing areas (Clause 24(1) and Clause 26(3) Schedule 11.1) .....	46
5.6.	Notice of supporting embedded network NSP information (Clause 26(4) Schedule 11.1).....	46
5.7.	Maintenance of balancing area information (Clause 24(2) and (3) Schedule 11.1) .....	47
5.8.	Notice when an ICP becomes an NSP (Clause 27 Schedule 11.1) .....	47
5.9.	Notification of transfer of ICPs (Clause 1 to 4 Schedule 11.2) .....	48
5.10.	Responsibility for metering information for NSP that is not a POC to the grid (Clause 10.25(1) and 10.25(3)) .....	49
5.11.	Responsibility for metering information when creating an NSP that is not a POC to the grid (Clause 10.25(2)) .....	50
5.12.	Obligations concerning change in network owner (Clause 29 Schedule 11.1) .....	50
5.13.	Change of MEP for embedded network gate meter (Clause 10.22(1)(b)) .....	51
5.14.	Confirmation of consent for transfer of ICPs (Clauses 5 and 8 Schedule 11.2) .....	51
5.15.	Transfer of ICPs for embedded network (Clause 6 Schedule 11.2).....	52
6.	Maintenance of shared unmetered load .....	53
6.1.	Notification of shared unmetered load ICP list (Clause 11.14(2) and (4)) .....	53
6.2.	Changes to shared unmetered load (Clause 11.14(5)).....	53
7.	Calculation of loss factors .....	54
7.1.	Creation of loss factors (Clause 11.2).....	54
	Conclusion .....	55
	Participant response .....	55

## 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 2010. The relevant rules audited are as required by the Guidelines for Distributor Audits V7.0 issued by the Electricity Authority.

A new version of Gentrack (Velocity) was implemented on 29 April 2017. The transfer of data was successful but as is usual with having a new version of Gentrack, Vector is finding out that some data was deleted from the registry, for example, UML or solar information or that some functionality does not work. There is a long list of issues to be fixed by Gentrack and the companies slowly working through them.

The Operational Excellence Team is still in operation to lead a data clean-up project. Some of the project aims are, for example, the removal of meter serial numbers recorded in the registry "Property name" field, the population of missing Initial Electrical Connection dates and the validation of ICPs having the status of New or Ready for more than 24 months etc. Additional resources have been assigned to this project and Vector confirmed that good progress is being made. New monitoring tools were put in place to monitor accuracy and completeness of data.

Seven non-compliances (one of them cleared) were found and one issue recorded. It is more than last year. This is because a new audit template provided by the Authority was used to create this report. This template has been separating some previous non-compliances out, which resulted in two non-compliances instead one in this report. Overall the level of compliance has improved.

We thank Vector for its 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 correct errors	2.2	11.2(2) of Part 11	Incorrect data is proactively corrected but there are some outstanding issues identified in the last audit	Moderate	Low	2	Identified
Timeliness of provision of Initial Electrical Connection Date	3.5	7(2A) of Schedule 11.1	Initial Electrical Connection Date for around 100 ICPs is updated on the registry later than 10 business days	Moderate	Low	2	Identified
Connection of ICP that is not an NSP	3.6	11.17	13 ICPs were connected without a trader being recorded in the registry as accepting responsibility for the ICP	Strong	Low	1	Identified
Change to registry information	4.1	8 of Schedule 11.1	Number of updated to registry information are later than 3 business days. The most backdated transactions are related to decommissioned ICPs	Moderate	Low	2	Identified
ICP location address	4.4	2 of Schedule 11.1	Addresses for 1,439 ICPs do not allow the ICP to be readily located	Moderate	Low	2	Identified
Distributor to provide ICP information to the registry manager	4.6	7(1) of Schedule 11.1	Information is missing or incomplete for a relatively small number of ICPs, taking into	Moderate	Low	2	Identified

			account the total number of ICPs managed by Vector				
Notification of transfer of ICPs	6.7	4 of Schedule 11.2	The Authority was notified one day later than specified, of transfer of ICPs from Selwyn Village to Vector's network	Moderate	Low	2	Cleared
Future Risk Rating						13	

Future risk rating	1-2	3-6	7-9	10-19	20-24	25+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

## RECOMMENDATIONS

Subject	Section	Recommendation	Description
		Nil	

## ISSUES

Subject	Section	Issue	Description
Management of "decommissioned" status	4.11	Incorrect date of "decommissioned" status	Traders specify a date of meter removal as "ready for decommissioning", not actual date of physical removal of equipment

## 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.*

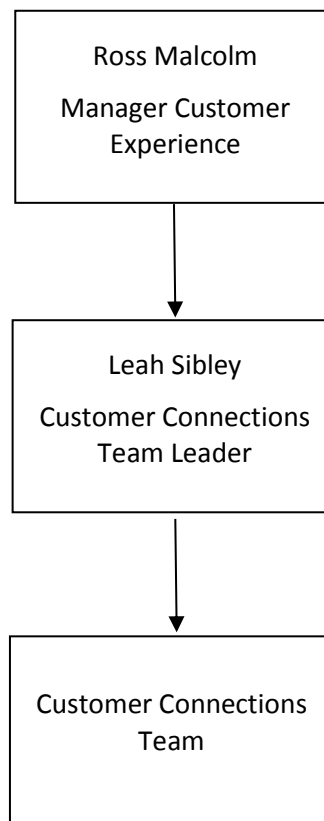
#### Audit observation

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	Company
Leah Sibley	Customer Connections Team Leader	Vector Ltd
Justine Perks	Data Specialist	Vector Ltd
Michelle Gasson	Billing Team Leader	Vector Ltd
Crispin MacLean	Solution Engineer	Vector Ltd
Nimisha Patel	Information Specialist	Vector Ltd
Ewa Glowacka	Electricity Authority Approved Auditor	TEG & Associates Ltd

#### 1.4. Use of contractors (Clause 11.2A)

##### Code reference

Clause 11.2A

##### Code related audit information

*A participant who uses a contractor*

- *remains responsible for the contractor's 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, Vector operations that were audited.

##### Audit commentary

During the audit we did not identify any contractors which assist Vector to meet their obligation.

#### 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 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.

#### 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

### UNET

Distributor	NSP POC	Description	Parent POC	Parent Network	Balancing Area	Network type	Start date	No of ICPs
UNET	ALB0331	ALBANY			NORTHRNUNETG	G	01/05/08	47,432
UNET	ALB1101	ALBANY			NORTHRNUNETG	G	01/05/08	23,669
UNET	HEN0331	HENDERSON			NORTHRNUNETG	G	01/05/08	49,524
UNET	HEP0331	HEPBURN ROAD			NORTHRNUNETG	G	01/05/08	40,934
UNET	SVL0331	SILVERDALE			NORTHRNUNETG	G	01/05/08	32,514
UNET	WEL0331	WELLSFORD			NORTHRNUNETG	G	01/05/08	15,331
UNET	WRD0031	WAIRAU ROAD			NORTHRNUNETG	G	14/05/13	20,193

Note: No. of ICPs per NSP does not include decommissioned ICPs

The total number of ICPs for Northern Region (UNET) was 249,057 as of 11/09/2017.

Status	Number of ICPs (19/08/2017)	Number of ICPs (2016)	Number of ICPs (2015)
New (999)	6	19	0
Ready (0)	429	297	138
Active (2,0)	224,210	221,272	217,340
Distributor (888)	46	44	27
Inactive- new connection in progress (1,12)	392	193	165
Inactive – vacant (1,4)	3,164	2,992	3,126
Inactive – AML remote disconnection (1,7)	588	415	4
Inactive – at pole fuse (1,8)	1	2	0
Inactive – de-energised due to meter disconnected (1,9)	52	16	1
Inactive – de-energised at meter box switch (1,10)	1	0	0
Inactive- at meter box switch (1,11)	2	0	0
Inactive – ready for decommissioning (1,6)	614	717	670
Inactive (1,0)	2	1	1
Inactive – reconciled elsewhere (1,5)	0	5	2
Decommissioned (3)	19,550	18,617	17,841

### VECT

Distributor	NSP POC	Description	Parent POC	Parent Network	Balancing Area	Network type	Start date	No of ICPs
VECT	HEP0331	Hepburn road			AUCKLNDVECTG	G	01/05/08	4,494
VECT	HOB1101	Hobson street			AUCKLNDVECTG	G	24/01/14	6,534
VECT	MNG0331	Mangere			AUCKLNDVECTG	G	01/05/08	24,823
VECT	MNG1101	Mangere			AUCKLNDVECTG	G	21/12/15	2
VECT	OTA0221	Otahuhu			AUCKLNDVECTG	G	01/05/08	17,366
VECT	PAK0331	Pakuranga			AUCKLNDVECTG	G	01/05/08	43,778
VECT	PEN0221	Penrose			AUCKLNDVECTG	G	01/05/08	12,807
VECT	PEN0331	Penrose			AUCKLNDVECTG	G	01/05/08	69,186
VECT	PEN1101	Penrose			AUCKLNDVECTG	G	01/11/14	30,909
VECT	ROS0221	Mt. Roskill			AUCKLNDVECTG	G	01/05/08	44,429
VECT	ROS1101	Mt. Roskill			AUCKLNDVECTG	G	01/04/12	22,629
VECT	TAK0331	Takanini			AUCKLNDVECTG	G	01/05/08	42,534
VECT	WIR0331	Wiri			AUCKLNDVECTG	G	01/05/08	20,195

Note: No of ICPs per NSP does not include decommissioned ICPs

The total number of ICPs for Auckland Region (VECT) was 390,286 as of 11/09/2017.

Status	Number of ICPs (19/08/2017)	Number of ICPs (2016)	Number of ICPs (2015)
New (999)	8	17	4
Ready (0)	728	333	129
Active (2,0)	332,328	330,511	327,064
Distributor (888)	103	87	79
Inactive- new connection in progress (1,12)	438	182	192
Inactive – vacant (1,4)	4,616	4,377	4,053
Inactive – AMI remote disconnection (1,7)	614	316	1
Inactive – at pole fuse (1,8)	9	2	1
Inactive – de-energised due to meter disconnected (1,9)	201	69	6
Inactive – de-energised at meter box switch (1,10)	4	0	1
Inactive- at meter box switch (1,11)	5	0	1
Inactive – ready for decommissioning (1,6)	632	667	590
Inactive (1,0)	0	0	0
Inactive – reconciled elsewhere (1,5)	2	18	3
Decommissioned (3)	50,598	48,569	47,152

### 1.9. Authorisation Received

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

### 1.10. Scope of Audit

This audit was performed at the request of Vector, as required by clause 11.10 of Part 11 to assure compliance with the Electricity Industry Participation Code 2010.

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, and
- (c) - The creation and maintenance of loss factors

The audit was carried out on the Vector premises at 101 Carlton Gore Road in Auckland, on 19/20 September 2017. We have followed the audit guidelines as published by the Authority as at the report date in the nature of this audit, in the areas that they reasonably apply under the scope of a distributor's activities.

### 1.11. Summary of previous audit

The previous audit was carried out on 3/4 October 2016 by Ewa Glowacka of TEG & Associates Ltd. The findings of the audit are shown below:

Subject	Clause	Non-compliance	Cleared
Provision of ICP information	7(1)(p) of Schedule 11.1	Lack of Initial Energisation Date for 5,257 ICPs livened after 29/08/2013	Still existing
Distributor to change ICP information in registry	8(2)(b) of Schedule 11.1	Registry updates for some ICPs backdated by more than 3 business days	Still existing
Address	2(1) of Schedule 11.1	Addresses for some ICPs do not allow the ICP to be readily located	Still existing

Subject	Clause	Issue	Cleared
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Subject	Clause	Issue	Cleared
Distributor to change ICP information in registry	8(2)(b) of Schedule 11.1	Some traders request backdating price code in the registry more than 3 business days	Still existing

## 2. OPERATIONAL INFRASTRUCTURE

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

#### Code reference

*Clause 11.2(1) and 10.6(1)*

#### Code related audit information

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

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

#### Audit observation

Compliance with these clauses were reviewed to assess if all practicable steps had been taken to provide accurate information.

#### Audit commentary

Before the upgrade to a new version of Gentrack (Velocity), the Operational Excellence Team was established to clean-up data in Gentrack. The Team is still in place and projects which had been started last year are still being worked on. The Team develops additional reporting which regularly allows the monitoring of the accuracy and completeness of data.

Vector is committed to having complete and accurate data in the registry. There is still room for improvement but Vector have adopted a proactive attitude to reduce the number of incorrect or missing information in the registry due to the updates from Gentrack being rejected by the registry for various reasons. A Data Specialist position is now part of the Customer Connections Team. Files rejected by the registry are reviewed daily and appropriate action is taken.

#### Audit outcome

Compliant

### 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

We went through the EDA file provided by Vector for the period 16/8/16 to 31/8/17 to assess if the company identified that information provided was inaccurate, it was corrected as soon as practicable.

#### Audit commentary

As described in the previous section, Vector adopted a proactive attitude to reduce the number of incorrect or missing information in the registry. As soon as errors are identified they are corrected.

Vector is the biggest network in New Zealand therefore it deals with a significant amount of data. There are still outstanding data corrections identified in the last audit such as Initial Electrical Connection Date. Vector prioritise which corrections are most important and slowly is working through.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.2 With: 11.2(2) of Part 11  From: 16-Aug-16 To: 31-Aug-17	Incorrect data is proactively corrected but there are some outstanding issues identified in the last audit  Potential impact: Low  Actual impact: Low  Audit history: None  Controls: Moderate  Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Audit risk rating is assessed as low because Vector proactively pursue data correction. It is just matter of time and resources. No impact on settlement outcomes. The controls we assessed as moderate, many monitoring reports have been put in place but they need to be refined		
Actions taken to resolve the issue		Completion date	Remedial action status
<ul style="list-style-type: none"> <li>Daily monitoring of EA files</li> <li>Comparison reports between all Vectors systems and registry to ensure data accuracy.</li> <li>Clean up of old data discrepancies</li> <li>Dedicated resource hired to clean up data</li> </ul>		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
On Going			

### 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

A new process for creating ICPs came into effect in February 2016. This process aligns the Vector Auckland and Northern network's ICP application process and has simplified the validation step prior to the creation of a new ICP. A customer, or his/her representative, can request a new connection. There are two channels to request an ICP identifier for a new connection. The first one is to login to the Vector's website, choose the "get connected" option from the menu and fill in the requested details. The second option is to phone the Vector Call Centre (Telnet) and request an ICP identifier over the phone. The Self-serving channel (website) was used by 25% of customers in December last year. The number of customers using the website is increasing steadily. At the time of the audit 45% of customers were using it. The request for a single ICP is treated as a single job. The request for more than 5 ICPs is treated as a project. Each request has a SR (service request) number assigned. Each request for a new connection is validated by the Customer Connections Team. Once the team is satisfied with the information, an ICP identifier is created, the customer and the chosen trader is notified by email or via Vector portal (eCustomer).

The process of ICP creation is shown below:

## Create & energise



## Audit commentary

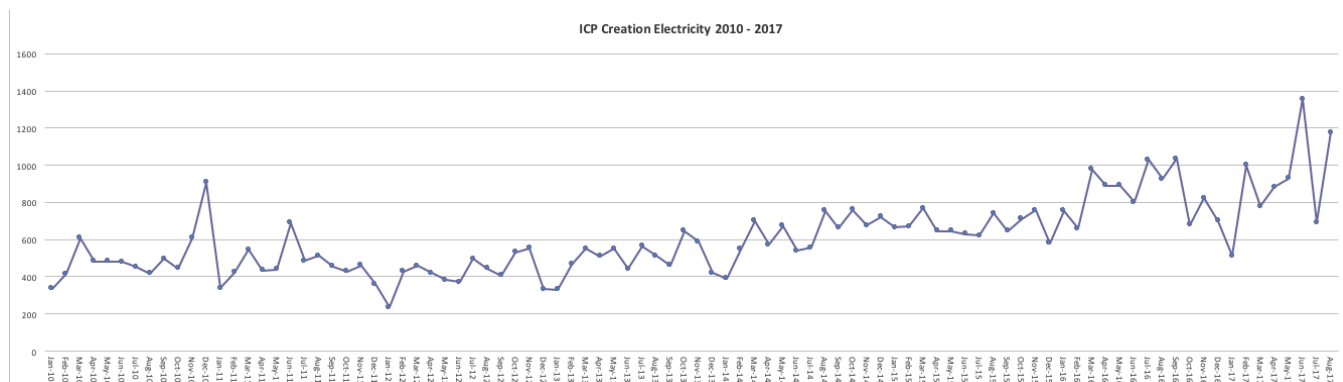
During the audit, we used the Vector's website to request a new connection. We found the process very easy to use, the questions asked are specific and clear.

To speed up the process of the creation of an ICP identifier, Vector divided requests for new connections into three groups:

- ICP energized – assets are already in place e.g. a pillar box
- Design & build standard – standard connection 1PH, 60 A, residential, less than 5 lots. A customer is asked to provide a site plan of the new connection. Vector set a fixed price per lot; once it is paid Vector goes ahead with a more detailed design
- Design & build – they are more complex, with a higher number of ICPs; these jobs are quotable. The customer is asked to provide a site plan.

It is a good seamless process, no exemptions. It allows the effective monitoring of the process of new connections. In the last 12 months, Vector created 8,857 ICPs.

The graph below shows ICP creation in the years 2010-2017



The Customer Connection Team's internal SLA is to create an ICP within 2 business days after the application is received. In August '17 they achieved 99.74%.



We randomly chose 20 applications for new connections electrically connected in last 12 months and followed them through Gentrack and Siebel. The summary from the system is shown below:

Type	Status	Assigned to	Request Type	Sub-Request	Started (ICP creation date)	Actual Completion
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	28/09/16 15:01	28/09/16 16:28
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	5/10/16 9:01	6/10/16 8:46
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	8/09/16 15:01	8/09/16 15:41
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	9/12/16 9:01	12/12/16 11:39
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	16/09/16 15:01	16/09/16 16:27
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	4/10/16 15:01	4/10/16 16:37
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	1/11/16 11:49	2/11/16 9:26
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	9/12/16 15:01	12/12/16 15:54
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	22/12/16 9:02	23/12/16 11:21
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	3/02/17 13:14	8/02/17 12:15
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	28/02/17 9:01	28/02/17 11:34
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	27/03/17 13:25	27/03/17 15:31

Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	3/04/17 15:01	3/04/17 15:47
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	19/04/17 9:01	20/04/17 14:28
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	3/05/17 11:27	5/05/17 15:16
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	8/05/17 10:57	9/05/17 9:41
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	1/05/17 15:01	4/05/17 14:34
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	30/05/17 13:22	31/05/17 12:22
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	1/08/17 16:00	2/08/17 8:32
Update Systems	Complete	VECELEC	New Supply	Create & Energise ICP	18/08/17 11:36	18/08/17 12:45

### 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

All ICPs are requested by a customer or his/her representative. Customers can use Vector's website or phone the Vector Call Centre.

#### Audit commentary

No requests are accepted from traders therefore this clause is not applicable.

Compliance was not assessed.

#### Audit outcome

Not applicable

### 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 Customer Connections Team uses Gentrack to create new ICPs. There are a number of compulsory fields to be filled in before the ICP is created. Gentrack has a built-in business rule to check for non-unique addresses. Once an ICP identifier is created, Gentrack uploads it to the registry manager every day, late afternoon.

At the time of creating a new ICP all information (including trader provided by a customer at the time of application) is known therefore the registry assigns the status “Ready” to the loaded ICP.

Vector also acts as a registry agent for a small number of embedded networks which are Auckland Airport, Westfield, 1 Hobson Street and Sentinel. The service Vector provides is restricted to uploading new ICPs to the registry and its maintenance. ICPs are created by an embedded network owner or its agent and passed to Vector with all the obligatory information needed to load it to the registry. The embedded network owner is fully accountable for the information provided. They always stipulate any registry changes to its ICPs. Vector commented that since the last audit, the only request to upload new ICPs were received from Auckland Airport. All emails are archived.

#### **Audit commentary**

Vector implemented a new version of Gentrack (Velocity) last year. A new training guide was written. It is a very well written document with clear instructions and screenshots.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 7(2) of Schedule 11.1*

#### **Code related audit information**

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

#### **Audit observation**

Vector provided the EDA file for the period 16/8/16 to 31/8/17 to assess compliance. As soon as an ICP is created in Gentrack it is uploaded to the registry manager the same day, late afternoon. As the ICP is created, it is visible in Siebel, which is used to communicate with traders and follow the ICP life cycle, from the day of its creation up to it being electrically connected.

#### **Audit commentary**

An ICP identifier is not created unless it is requested by a customer or his/her representative. It is a fully automated process within Gentrack to upload ICPs to the registry manager every day. We did not come across any instances where an ICP was created before an installation was electrically connected.

Vector provided two examples of requests from Auckland Airport to upload new ICPs to the registry. New ICPs were 0003133792AA2DE and 0003133797AAF91. We confirm that ICPs were uploaded to the registry the following day.

#### **Audit outcome**

Compliant

3.5. Timeliness of Provision of Initial Electrical Connection Date (Clause 7(2A) of Schedule 11.1)

#### **Code reference**

*Clause 7(2A) of Schedule 11.1*

### Code related audit information

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

### Audit observation

Vector does not electrically connect new installations. It is done by traders by their contractors. Vector's contractors prepare a network connection but they do not electrically connect. According to UoSA between traders and Vector, traders agreed to populate Initial Electrical Connection Date in Siebel once an installation is electrically connected. Once the date is in Siebel, it is uploaded to the registry.

### Audit commentary

In theory the process implemented by Vector should work but it does not. Contact, Mercury, Meridian, and Genesis use VircomEMS as a living agent on their behalf. Part of the agreement with the traders is that VircomEMS will provide information on their behalf. Vector has created a special file format to allow the bulk upload of Initial Electrical Connection Dates to Siebel. VircomEMS sends files on behalf of traders but quite often these files are rejected, mostly because SRs are not quoted. Vector runs a report to monitor error messages and advises VircomEMS but basically they receive no response. Trustpower recently decided to start sending notification files themselves.

Other traders populate the date themselves or not at all or only some of them.

The Auckland City network had 4,566 new connections; for 1,798 (39.4%) ICPs no Initial Electrical Connection Date is populated in the registry. The majority of ICPs with no Initial Electrical Connection Date are traded by Mercury and Trustpower. It is interesting to see that even small traders such as PRME, PUNZ, ELKI do not meet their obligations agreed with Vector at the time of signing UoSA.

The Northern Region network had 4,291 new connections; for 1,231(28.7%) ICPs no Initial Electrical Connection Date is populated in the registry. Overall for both parts of the Vector network only 50% of new connections traded by big retailers are effected.

Analysis of the EDA files for VECT and UNET showed that for about 80 ICPs located on the Auckland City network and about 30 ICPs on the Northern network the Initial Electrical Connection Dates were uploaded later than 10 business days. The numbers are approximated because the EDA file is not very friendly to the analysis of network transactions. Some of late updates are the correction of entries which were deleted by Gentrack.

### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.5 With: 7(2A) of Schedule 11.1  From: 16-Aug-16 To: 31-Aug-17	Initial Electrical Connection Date for around 100 ICPs is updated on the registry later than 10 business days.  Potential impact: Low  Actual impact: Low  Audit history: Multiple times  Controls: Moderate  Breach risk rating: 2
<b>Audit risk rating</b>	<b>Rationale for audit risk rating</b>

<b>Low</b>	It is the company policy that traders are obligated to inform Vector when an installation is electrically connected. Some traders do not fulfil their obligation therefore Vector is non-compliant because Initial Electrical Connection Date is not populated or it is provided later than 10 business days. We have recorded the controls as moderate. The company monitors this area regularly but the outcomes are not as desired. The impact on participants is none, therefore audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
<ul style="list-style-type: none"> <li>Continual monitoring and notification of missing data.</li> <li>Escalated to retailer's multiple times for energisation data.</li> <li>Monitoring of EA Registry for when these sites are made Active with no data received.</li> <li>2 x automatic reminders sent to retailers requesting the data.</li> </ul>		Ongoing	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.*

#### Audit observation

According to the process adopted by Vector for new connections, a customer applies for a connection. At the time of application, a customer specifies a proposed trader. An ICP is created and uploaded to the registry.

Once the SR is created in Siebel, it is visible to the trader, which was specified by the customer at the time of application. An individual SR, which is linked to an ICP, is created for each new connection

Vector does not electrically connect installations. Vector requests that traders nominate a so -called warranted person, who can electrically connect installations (ICPs) to its network. Only this warranted person can work on behalf of a trader.

Below is shown the Siebel's screen, which gives the trader an option to reject (not accept) an ICP. The default for a new ICP is its acceptance by a trader.

The screenshot shows the Siebel CRM interface. At the top, there are tabs for 'Home', 'Service', and 'Gas'. Below this is a navigation bar with 'Activity' and a 'Menu' dropdown. A 'Save' button and a 'Query' button are visible. The main area displays a service request with the following details: Status: Rejected, SR Number: 1-1856551340, Type: Install & Energise ICP, Sub-Status: Rejected. Below this, there is a table with columns: Activity Status, Completed, Activity Type, Sub Status, Assigned To, Account, Start, Planned Completion, and Descripti Comments. The table contains two rows: one for 'Update Systems' with a status of 'Pending' and assigned to 'VECELEC', and another for 'Install & Energise ICP' with a status of 'Rejected' and assigned to 'RETAILER'. The 'Install & Energise ICP' row has a comment: 'JOB WAS CANCELLED 14/06/2016. WE HAVE ALREADY NOTIFIED VECTOR TO DECOMMISSION'.

Once a new ICP is created then it is the traders' responsibility to nominate a MEP and notify its warranted person to electrically connect a new installation. All contractors working on the Vector network have strict guidelines not to connect and electrically connect installations without an ICP assigned and authorisation from the trader.

### Audit commentary

The current process works well but we found a small number of ICPs which were connected without a trader being recorded in the registry. It is a mixture of Gentrack not uploading information to the registry and other issues. From our point of view there is no problem with the process. It is more the result of a significant number of new connections, which had to be handled using a number of systems.

ICP	Ready		Active		Trader	Notes
	Effective Date	Input Date	Effective Date	Input Date		
0002023165UN302	2/05/17	5/07/17	29/06/17	5/07/17	MEEN	
1001294524UN4D6	5/08/16	29/03/17	17/08/16	30/03/17	CTCT	
1001298296UN263	4/09/16	27/01/17	5/09/16	3/02/17	CTCT	billing clean-up
1001304208UN637	27/04/17	27/04/17	23/06/17	15/08/17	GENE	
1001277283UN19C	28/04/15	18/10/16	5/05/15	14/11/16	GENE	Vector used to electrically connect, notified Genesis, but GENE never confirmed acceptance
1001302776LCA20	1/01/16	23/03/17	1/07/16	20/06/17	MEEN	
1001287164LCA67	15/02/16	23/02/17	9/02/17	6/03/17	GENE	
0002022886LC7C5	1/05/17	5/05/17	16/08/17	22/08/17	MEEN	GT issue not sending file to registry
1001287702LC21E	29/02/16	10/01/17	20/07/16	12/01/17	MEEN	GT issue not sending file to registry
1001293765LCE45	15/07/16	7/09/16	10/08/16	8/09/16	GENE	GT issue not sending file to registry

1001293878LC4BC	20/07/16	13/10/16	5/08/16	14/10/16	CTCT	GT issue not sending file to registry
0002023134LCD5B	1/05/17	21/09/17	8/05/17	22/09/17	CTCT	
1001302351LC6BE	13/03/17	21/09/17	6/06/17	22/09/17	CTCT	

We examined the LIS files to assess how quickly ICPs change the status from “ready” to “active”.

On the Auckland City network, within last 12 months 4,565 ICPs were created. 4,534 ICPs (99.3%) were made active and only 31 of them had the status “001”. 2 ICPs were decommissioned.

On the Northern network, within 12 months 4,290 ICPs were created. 4,241 ICPs (98.8%) were made active and 49 of them had the status “001”. 17 ICPs were decommissioned.

Above statistics show that the current process works effectively.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.6 With: 11.17  From: 16-Aug-16 To: 31-Aug-17	13 ICPs were connected without a trader being recorded in the registry as accepting responsibility for the ICP Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	We have recorded the controls as Strong in this area because a very small number of ICPs did not meet compliance. There is always room for improvement, especially if on a monthly basis Vector creates close to 1,000 ICPs. Minor impact on settlement outcomes therefore audit risk rating is low		
Actions taken to resolve the issue		Completion date	Remedial action status
<ul style="list-style-type: none"> <li>Report is being built to monitor the registry status of New.</li> </ul>		Within 6 months	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
On Going			

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

#### Code reference

Clause 10.31

#### Code related audit information

*A distributor must not connect an ICP that is not an NSP unless requested to do so by the trader trading at the ICP.*

#### Audit observation

The process adopted by Vector is to create an ICP identifier and pass it to a trader chosen by a customer. Once the ICP is created it is visible to the trader, which was specified by the customer at the time of application. The default for a new ICP is its acceptance by a trader. There is a mechanism for the trader to reject an ICP.

#### Audit commentary

It is a process similar to the “blank acceptance of ICPs” as adopted by other networks. This clause is linked to clause 11.17, which was discussed in the previous section. Strictly speaking traders do not request an ICP to be connected. Once an ICP is in Siebel a trader takes a full control of the ICP, which means both, its connecting and electrically connecting. As we said before, they always have an option to reject it. do not rejected an ICP in Siebel.

#### Audit outcome

Compliant

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

#### Code reference

Clause 10.31A

#### Code related audit information

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

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

#### Audit observation

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

#### Audit commentary

The compliance with this clause was not assessed because Vector does not electrically connect any connections.

#### Audit outcome

Not applicable

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

### Code reference

Clause 10.30

### Code related audit information

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

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

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

### Audit observation

The only NSP connections that are not point of connection to the grid are embedded networks within the Vector network.

### Audit commentary

It is the embedded network owner's responsibility to comply with this clause. Compliance not assessed.

### Audit outcome

Not applicable

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

### Code reference

Clause 10.30(A)

### Code related audit information

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

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

### Audit observation

The only NSP connections that are not point of connection to the grid are embedded networks within the Vector network.

### Audit commentary

It is the embedded network owners' responsibility to comply with this clause. Compliance not assessed.

### Audit outcome

Not applicable

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

### Code reference

Clause 1(1) Schedule 11.1

### Code related audit information

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

*xxxxxxxxxxccc where:*

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

### Audit observation

We examined the LIS files. There is a unique distributor code “LC” used within the Auckland City and “UN” within the Northern Region. Gentrack can use ICPs with these two distributor codes.

### Audit commentary

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. If an ICP does not meet the requirements of the algorithm, it is rejected.

### Audit outcome

Compliant

## 3.12. Loss category (Clause 6 Schedule 11.1)

### Code reference

Clause 6 Schedule 11.1

### Code related audit information

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

### Audit observation

The LIS registry file was examined and we confirm compliance. It has to be noted that the registry design prohibits the assigning of more than a single loss category to an ICP.

### Audit commentary

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**

According to the process described in section 3.1, ICPs are uploaded to the registry with all information including a trader chosen by a customer and the registry assigns the status “ready”. If the status is “new” it is a mistake, it means that some error occurred in data transmission.

#### **Audit commentary**

The LIS files dated 11 September 2017 were examined. We identified 7 ICPs with the status of “new” on the Northern network and 6 ICPs on the Auckland City network. 2 of those ICPs were created many years ago. We checked all ICPs, except the 2 old ones in all cases it was an incorrect upload by Gentrack, which “lost” the proposed trader.

#### **Audit outcome**

Compliant

### **3.14. Monitoring of “new” & “ready” statuses (Clause 15 Schedule 11.1)**

#### **Code reference**

*Clause 15 Schedule 11.1*

#### **Code related audit information**

*If an ICP has had the status of “New” or has had the status of “Ready” for 24 months or more:*

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

#### **Audit observation**

At the time of audit, the following number of ICPs held in the registry held the status “new” and “ready” for longer than 24 months.

Network Code	READY	NEW
VECT	30	0
UNET	22	2

The oldest “ready” ICP was created in 2011, and “new” in 2013. Vector is in contact with traders to confirm if these ICPs are still required. It is an on-going process.

#### **Audit commentary**

The number of ICPs in this category looks like it had not changed since the last audit. It is not evident because another year passed which means additional ICPs were added to the list.

During the checking of ICPs older than 24 months with the status “ready”, we came across 2 ICPs 1001163966UN7B2 (proposed trader GENE) and 1001259620UN84F (proposed trader PSNZ), which

according to Gentrack are electrically connected but so far they have not been claimed by traders. Vector bills network charges every month to the respective traders.

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

#### **Audit observation**

Vector does not have an embedded generation station that has a capacity of 10 MW or more on its network.

#### **Audit commentary**

Compliance was not assessed because Vector does not have an embedded generation station that has a capacity of 10 MW or more on its network.

#### **Audit outcome**

Not applicable

## 4. MAINTENANCE OF REGISTRY INFORMATION

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

#### Code reference

Clause 8 Schedule 11.1

#### Code related audit information

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

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

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

*If the change to the NSP identifier is for more than 14 days, the time within which notification must be effected in accordance with Clause 8(3) of Schedule 11.1 begins on the 15th day after the change.*

#### Audit observation

We examined the EDA file for the period of 16/8/16 to 31/8/17 to assess compliance. The results are shown below:

Distributor Code	Activity	No of updates	No of updates later than 3BD	Date range of updates [BD]	Comment
VECT	Address	19,907	178 (0.9%)	5 to 362	Exceptions - 1001299889LC6AE back 3941 days, difficult to explain why 1001258705LCAE5 and 1001258712LCD82 (1049 days) – Waterview tunnel, change to “Directly billed “ in the Property Name field
VECT	Network	17,152	959 (5.6%)	5 to 606	
VECT	Pricing	46,823	9,444 (20.2%)		
VECT	Status (0)	4,264			Gentrack problem not uploading data, refer to other section for comments
VECT	Status (999)	40			50 % of ICPs were decommissioned
VECT	Status (3)	2,384	2,209 (92.7%)	4 to 1,475	

UNET	Address	14,194	2,335 (16.45)	4 to 1991	
UNET	Network	3,239	360 (11.1%)	4 - 4512	The further updates are related to re-entering solar information, which were removed by Gentrack
UNET	Pricing	20,609	5,097 (24.5%)	4 to 1459	
UNET	Status (0)	3,970			
UNET	Status (999)	22			14 ICPs were decommissioned, remaining loaded within up to 7BD, before electrically connected
UNET	Status (3)	1,064	936 (88%)	4 to 3652	

We reviewed the process of changes to the NSP notified. The process has not changed since the last audit.

There are two reasons why ICPs could be fed from different NSP. One of them is a fault, another one is planned maintenance work. For any planned shutdown an HV switching procedure is created, which is passed to the Control Room. The Control Room notifies the Strategic Analyst Team after 10 days of a change. One of the analysts changes the status of switches in GIS. At night the Feeder Tool picks up the changes, a report is created and checked. Once it is approved it is downloaded to Gentrack. Vector provided two examples showing audit trail. One of them was changed from ROS0221 to HOB1101 on 27 July and the second one TAK0331 to WIR0331 on 23 July 2017.

### Audit commentary

Network updates– most of updates happen within four business days. Many late updates were done as a part of clean-up project to populate missing Initial Electrical Connection Date.

Pricing updates– most of pricing is updated within 5 business days. There are slightly better results (lower number of late updates) than identified by the previous audit.

Pricing changes are instigated by traders. Some traders send big files, some of them small; the frequency of requests varies. Some changes to price code are revenue neutral e.g. BTS to permanent. If a request is related to the current billing month, the date provided by a trader is accepted. Vector refuses to backdate PC for more than one month unless special circumstances occur.

It is a well defined billing process conducted by Vector. We discussed with the company what is the impact on traders of late updates of price code in the registry. Their comment was that it was probably not significant. The biggest impact is created by provision of incorrect data, late data, and late switches.

Vector does not control how a customer is charged therefore it is difficult to ascertain what the impact of late price code changes on customers is. Vector receives volumes data twice per months as per UoSA. The biggest change of volumes provided by traders occurs at 3-month wash-up. Vector also conducts a 14-month wash-up. It was discussed to also do 7-month wash-ups but it would be significant increase in workload and not necessary delivering expected results.

Status “3” - Many late updates. Vector philosophy is to have correct entry in the registry than upload update within 3 business days.

As previously mentioned Vector acts as an agent for four embedded networks. One of the services, which Vector provides is ICPs maintenance.

Auckland Airport asked Vector to update address for ICP 0344845028LC28F. The request was received on 19 September 2017, the registry was updated on 21 September 2017. Another request was to decommission six ICPs, it was also done in timely manner.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.1 With: 8 of Schedule 11.1  From: 16-Aug-16 To: 31-Aug-17	Number of updated to registry information are later than 3 business days. The most backdated transactions are related to decommissioned ICPs  Potential impact: Low  Actual impact: Low  Audit history: Multiple times  Controls: Moderate  Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are recorded as moderate. Vector has processes and guidelines, which are followed. It is a dilemma to comply with clause 11.2 or clause 8 of Schedule 11.1. Audit risk rating in this area is recorded as low. For number of years Vector is always found non-compliant because of late updates of price codes requested by traders. It is believed that overall the impact is minimal on traders. Incorrect data provided by traders caused more changes to amount paid by them		
Actions taken to resolve the issue		Completion date	Remedial action status
Currently running a decommission improvement project. <ul style="list-style-type: none"> <li>Once registry is updated to Inactive – ready for decommissioning Vector will be automatically notified so we can immediately update status.</li> <li>Automatic follow ups to retailers where they haven't updated the registry status within 5 &amp; 10 days of decommission notification.</li> </ul>		Nov 2017	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

On going		
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#### 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

At the time an ICP identifier is created, it is assigned a transformer, to which it will be electrically connected. Gentrack has a table which links transformers and NSPs together. We examined the LIS files and all ICPs have NSPs assigned.

##### Audit commentary

During the creation of an ICP, an NSP (indirectly) is assigned and uploaded to the registry. There are no situations where Vector cannot identify the NSP to which an ICP will be connected.

##### Audit outcome

Compliant

#### 4.3. Customer queries about ICP (Clause 11.31)

##### Code reference

*Clause 11.31*

##### Code related audit information

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

##### Audit observation

Any request from a customer for advice on an ICP for an existing connection is answered immediately, while the customer is on the phone.

##### Audit commentary

Calls from customers are answered by the Call Centre who have access to Gentrack, which stores connections information. Calls from customers do not happen often but Vector receives many phone calls from traders or electricians asking to confirm an ICP or asking for additional information.

##### 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

To assess compliance, we analysed the LIS files provided by Vector.

We identified 487 ICPs (VECT) and 520 ICPs(UNET) that do not have readily locatable addresses. Additionally, there were duplicate addresses for 378 ICPs (UNET) and 487 ICPs (VECT), which makes them not able to be readily located. This issue was resolved many years ago. It was discovered that a new version of Gentrack (Velocity) does not upload the property name field. The most recent development is that the issue with Gentrack has been fixed so the property name field now flows up to the registry successfully. Vector is currently working through the address changes made prior to the fix being implemented and are pushing them back up to the registry.

##### Audit commentary

In the previous audit we identified that in 2002 Vector put meter serial numbers in some ICP address fields to meet uniqueness of address requirements, which was required under the “old” Code. Vector set up a special project to address it. The most recent count of ICPs with the “METER ID AS AT..” description in the registry “Property name” field is down from 6,350 to 2,992 ICPs (UNET) and from 7,020 to 2,284 (VECT). It is an on-going project.

##### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.4 With: 2 of Schedule 11.1  From: 16-Aug-16 To: 31-Aug-17	Addresses for 1,439 ICPs do not allow the ICP to be readily located.  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	We have recorded the controls as moderate based on the project in place to address it. It has been a long term project and hopefully it will be finished within the next 12 months. The implementation of Velocity did not help but problems are expected when new software is implemented. The impact on customers is minor, no impact on settlement outcomes. We identified audit risk rating as low because the impact on participants or settlement is minor.		
Actions taken to resolve the issue		Completion date	Remedial action status

<ul style="list-style-type: none"> <li>Dedicated resource continues to clean this data up and correct the addresses.</li> <li>Reports built to monitor the data between all systems</li> </ul>	Nov 2018	Identified
<b>Preventative actions taken to ensure no further issues will occur</b>	<b>Completion date</b>	
As Above		

#### 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

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 commentary

This clause has been in place for a number of years and Vector was always found compliant. Before a new ICP is created, a connection is validated (visually) in GIS, which stores all connections on the network.

##### Audit outcome

Compliant

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

##### Code reference

Clause 7(1) Schedule 11.1

##### Code related audit information

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

- *the location address of the ICP identifier (Clause 7(1)(a) of Schedule 11.1)*
- *the NSP identifier of the NSP to which the ICP is usually connected (Clause 7(1)(b) of Schedule 11.1)*
- *the installation type code assigned to the ICP (Clause 7(1)(c) of Schedule 11.1)*
- *the reconciliation type code assigned to the ICP (Clause 7(1)(d) of Schedule 11.1)*

- *the loss category code and loss factors for each loss category code assigned to the ICP (Clause 7(1)(e) of Schedule 11.1)*
- *if the ICP connects the distributor's network to an embedded generating station that has a capacity of 10MW or more (Clause 7(1)(f) of Schedule 11.1):*
  - a) *the unique loss category code assigned to the ICP*
  - b) *the ICP identifier of the ICP*
  - c) *the NSP identifier of the NSP to which the ICP is connected*
  - d) *the plant name of the embedded generating station*
- *the price category code assigned to the ICP, which may be a placeholder price category code only if the distributor is unable to assign the actual price category code because the capacity or volume information required to assign the actual price category code cannot be determined before electricity is traded at the ICP (Clause 7(1)(g) of Schedule 11.1)*
- *if the price category code requires a value for the capacity of the ICP, the chargeable capacity of the ICP as follows (Clause 7(1)(h) of Schedule 11.1):*
  - a) *a placeholder chargeable capacity if the distributor is unable to determine the actual chargeable capacity*
  - b) *a blank chargeable capacity if the capacity value can be determined from metering information*
  - c) *the actual chargeable capacity of the ICP in any other case*
- *the distributor installation details for the ICP determined by the price category code assigned to the ICP (if any), which may be placeholder distributor installation details only if the distributor is unable to assign the actual distributor installation details because the capacity or volume information required to assign the actual distributor installation details cannot be determined before electricity is traded at the ICP (Clause 7(1)(i) of Schedule 11.1)*
- *the participant identifier of the first trader who has entered into an arrangement to sell or purchase electricity at the ICP (only if the information is provided by the first trader) (Clause 7(1)(j) of Schedule 11.1)*
- *the status of the ICP (Clause 7(1)(k) of Schedule 11.1)*
- *designation of the ICP as "Dedicated" if the ICP is located in a balancing area that has more than 1 NSP located within it, and the ICP will be supplied only from the NSP advised under Clause 7(1)(b) of Schedule 11.1, or the ICP is a point of connection between a network and an embedded network (Clause 7(1)(l) of Schedule 11.1)*
- *if unmetered load, other than distributed unmetered load, is associated with the ICP, the type and capacity in kW of unmetered load (Clause 7(1)(m) of Schedule 11.1)*
- *if shared unmetered load is associated with the ICP, a list of the ICP identifiers of the ICPs that are associated with the unmetered load (Clause 7(1)(n) of Schedule 11.1)*
- *if the ICP is capable of generating into the distributors network (Clause 7(1)(o) of Schedule 11.1):*
  - a) *the nameplate capacity of the generator; and*
  - b) *the fuel type*
  - c) *the initial electrical connection date of the ICP (Clause 7(1)(p) of Schedule 11.1).*

#### **Audit observation**

The LIS and Metering Information files (PR-255) dated 8 September 2017 was examined to assess compliance.

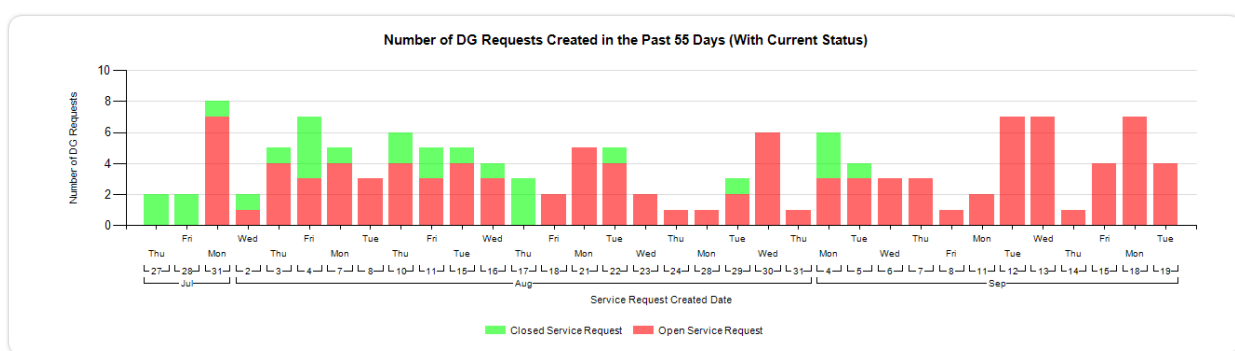
We identified the following areas, where information was incomplete or missing:

- 21 ICPs (UNET) and 94 ICPs (VECT) no details in the “Unmetered Load Details – Distributor”. Information was previously populated but after the introduction of Velocity it removed it. Vector is working with Gentrack to resolve it. It is important to note that some ICPs marked as UML by traders are metered.
- 21 ICPs “LE” (UNET) and 29 ICPs “LE” (VECT) – the Dedicated Flag is “N” instead of “Y”. It was also identified in the previous audit.
- 1,798 ICPs (VECT) and 1,231 ICPs (UNET) do not have Initial Electrical Connection Date populated.
- The Initial Electrical Connection Date is incorrect for 162 ICPs (UNET) and 128 ICPs (VECT); most likely it is the date that solar panels were installed.
- We ran an additional query during this audit “Different ICPs on the same street”. We don’t have enough geographical knowledge of Vector’s network to fully evaluate. Randomly we checked a very small number of ICPs and it appears that there could be some incorrect information. The query was passed to Vector, the company decided to add to a programme of work to clean it up. One of the reasons could be that Gentrack was incorrectly uploading data to the registry. In the previous audit it was mentioned that Vector frequently ran a report to compare Gentrack and registry data but it looks as if this report was possibly not reliable. Further investigation is required; it is too early to draw a conclusion.
- 351 ICPs (UNET) and 423 ICPs (VECT) have import/export meters installed but Vector has not populated the capacity or fuel type.

### Audit commentary

Vector setup a special project to follow-up with customers who applied for permission to install solar but did not notify Vector when it was electrically connected. The only indication that solar panels were installed is that an import/export meter was installed. Vector will be writing letters to all customers asking for updates.

The graph below shows ICPs for which a request for DG was made but there have been no updates from customers as to whether it was electrically connected. Vector proactively follows it up. How to capture information when DG is electrically connected is a problem not only for Vector. It is nationwide problem.



### Audit outcome

Non-compliant

Non-compliance	Description
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Audit Ref: 4.6 With: 7(1) of Schedule 11.1  From: 16-Aug-16 To: 31-Aug-17	Information is missing or incomplete for a relatively small number of ICPs, taking into account the total number of ICPs managed by Vector.  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	Information is missing or incomplete for a relatively small number of ICPs. Vector is working proactively to address it but it takes time. We have recorded the controls as moderate based on the projects in place to address it. No impact on customers and minor impact on traders therefore audit risk rating is low.	
Actions taken to resolve the issue	Completion date	Remedial action status
<ul style="list-style-type: none"><li>Report being built to show us these customers</li><li>Letter being drafted to send to these customers.</li></ul>	Ongoing	Choose an item.
Preventative actions taken to ensure no further issues will occur	Completion date	
As above		

#### 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

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.

##### Audit commentary

The actual price category code is assigned based on capacity information given by a customer. It is simple for standard residential connections and more complex for customers with higher capacity. It is discussed with a customer before an ICP is created.

#### **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**

Vector did not populate GPS coordinates in the registry. This is not a mandatory filed as per the Registry Specification version 22.21.

##### **Audit commentary**

GPS coordinates are not populated in the registry. Compliance was not assessed.

##### **Audit outcome**

Not applicable

#### **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**

As a rule, Vector uploads all ICP information to the registry including a proposed trader and a single price category. The registry assigns the status "ready". From Vectors' point of view, an ICP is ready to be connected by a trader.

##### **Audit commentary**

Once a trader is notified about a new ICP, it takes control of the ICP.

##### **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

Vector does not have shared unmetered load on its network. Since the last audit 18 new embedded networks were created. According to the LIS files dated 11 September 2017, there were 140 ICPs of the status “distributor”.

##### Audit commentary

At the time a new embedded network is created, an owner requests Vector for an ICP for a gate meter, which is the point of connection between an embedded network and its parent network. The reconciliation flag for this ICP in the registry is “LE”.

##### 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

Vector has an Application for the permanent disconnection of electricity supply. It can be found on their website <https://www.vector.co.nz/personal/help-safety/near-our-network/service-disconnections>. It has to be filled in by a customer before any action is taken to permanently remove the ICP from future switching and reconciliation processes. The process implemented by Vector is as follows:

- Work request (SR) is created, which is passed to contractors authorised to work on the Vector network.
- A contractor goes on site and physically disconnects the installation.

- Once Vector receives confirmation from a contractor that it has been physically disconnected, then the installation is dismantled and the ICP status in Gentrack is changed.
- Trader is notified.
- Registry updated, often traders slow to update the status to “1,6”

We sampled 26 requests for decommissioning, the results are shown below:

ICP	Created	Complete on site	Registry updated	Retailer date	Notes
0452030439LC5F2	13/01/17	17/01/17	25/01/2017	20/01/2017	CTCT said it was disc 20/1/17 because a meter was removed
0396542735LC33B	21/02/17	22/02/17	22/02/2017	22/02/2017	Decommission
0466200188LC282	23/02/17	27/02/17	27/02/2017	27/02/2017	Decommission
0410060046LC75A	02/03/17	10/03/17	15/03/2017	15/03/2017	Decommission
0737659401LC2D6	03/03/17	08/03/17	08/03/2017	08/03/2017	Decommission
1001279829LC3CC	09/03/17	11/03/17	11/03/2017	10/03/2017	Decommission
0179741322LC1D1	26/03/17	01/04/17	01/04/2017	27/03/2017	Decommission
0438348044LCF66	14/04/17	04/05/17	27/04/2017	27/04/2017	MEP event 26/04/25017 - Decommission
1001288589LCAE7	18/04/17	19/04/17	22/05/2017	19/04/2017	MEP event 22/05/2017 - Decommission
0154004006LC3A1	25/04/17	26/04/17	15/05/2017	15/05/2017	MEP event 15/05/2017 - Decommission
0325427763LCBA9	27/04/17	28/04/17	28/04/2017	28/04/2017	Decommission
0445368956LC9BF	05/05/17	08/05/17	01/06/2017	01/06/2017	MEP event 01/06/2017 - Decommission
0112550037LC58E	11/05/17	23/05/17	29/05/2017	23/05/2017	MEP event 29/05/2017 - Decommission
0802735172LC6F9	18/05/17	30/05/17	30/05/2017	30/05/2017	Decommission
0143559001LC147	22/05/17	25/05/17	25/05/2017	25/05/2017	Decommission
0421964030LCB31	25/05/17	06/06/17	07/06/2017	27/05/2017	MEP event 07/06/2017 - Decommission
1001239853LCF95	12/06/17	13/06/17	13/06/2017	04/06/2017	Decommission
0153972009LC53B	15/06/17	17/06/17	20/06/2017	20/06/2017	MEP event 19/06/2017 - Decommission
0175461481LC848	20/06/17	21/06/17	21/06/2017	21/06/2017	Decommission

0413964930LC8D7	21/06/17	21/06/17	03/07/2017	03/07/2017	MEP event 03/07/2017 - Decommission
0851739218LC077	06/07/17	08/07/17	11/07/2017	11/07/2017	MEP event 10/07/2017 - Decommission
0329700723LCF28	07/07/17	10/07/17	11/07/2017	30/05/2017	Decommission
0300408986LCBBE	13/07/17	17/07/17	20/07/2017	20/07/2017	Decommission
0121484009LC306	28/07/17	28/07/17	28/07/2017	28/07/2017	Decommission
0317617028LCBC1	03/08/17	03/08/17	12/08/2017	12/08/2017	Decommission
0300629028LC986	17/08/17	17/08/17	17/08/2017	17/08/2017	Decommission

### Audit commentary

In the table above we highlighted two issues. The first issue, dates are highlighted in red, a trader uses a different date for “ready for decommissioning” than the date provided by Vector. The second issue, ICPs are highlighted in yellow, is that Vector could not use a correct date of dismantling installation. Often an installation is dismantled and then meters are removed not necessarily on the same day. Traders use a date of meter removal as “ready for decommissioning”, which is incorrect. The registry design does not allow a participant to “slide” a new entry with the correct date.

### Audit outcome

Compliant

Issue	Description	Remedial action
Incorrect date of “decommissioned” status	Traders specify a date of meter removal as “ready for decommissioning” not actual date of physical removal of equipment	Vector proposes to fix this issue that the meter event data should not affect the network status change.

## 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. New price category codes were added as from April 2016, which was covered in the previous audit. It was a compliant update.

**Audit commentary**

The last update of the Price Category Code was in January 2016, start date 1 April 2016. Four new price category codes for UNET and VECT and they were related to Residential users with gas (low and high users).

**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. The date that loss factor takes effect must be not earlier than 2 months after the date on which the loss category code is entered in the table.*

#### Audit observation

We examined the Loss Factor Codes table in the registry. There were no new entries for UNET since 1999 and for VECT since 2005.

#### Audit commentary

VECT has 7 Loss Factor Codes in the registry, only four of them are currently used. UNET has 25 Loss Factor Codes recorded in the registry, only four of them are currently used.

#### 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.*

*The date that loss factor takes effect must be not earlier than 2 months after the date on which the loss category code is entered in the table*

#### Audit observation

We examined the Loss Factor Codes table in the registry. Loss factors for both UNET and VECT have a single value for a whole year, which cover a range of trading periods. There are no separate loss factors for summer or winter.

#### Audit commentary

Vector has not changed loss factors for a number of years. The losses were re-calculated in the past but Vector considers that what is recorded in the registry is accurate.

#### Audit outcome

Compliant

## CREATION AND MAINTENANCE OF NSPS (INCLUDING DECOMMISSIONING OF NSPS AND TRANSFER OF ICPS)

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

#### Code reference

*Clause 11.8 and Clause 25 Schedule 11.1*

#### Code related audit information

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

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

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

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

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

#### Audit observation

We examined the NSP mapping table in the registry. Since the last audit Vector did not decommission or create any new NSPs.

#### Audit commentary

Based on examination of the NSP mapping table in the registry it was confirmed that no new NSP was created and no NSP was decommissioned since the last audit. In the past Vector created a new NSP such as WRD0331 in 2013 or decommissioning POR0221 in 2012. The company has a process in place if such a situation arises. It is a long, well planned process which requires coordination with Transpower.

#### Audit outcome

Compliant

### 5.4. 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**

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

#### **Audit commentary**

This clause is not applicable because Vector has not created a new NSP since the last audit. It has been done in the past. Compliance was not assessed.

#### **Audit outcome**

Not applicable

### 5.5. 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**

Vector has not created any new NSP since the last audit.

#### **Audit commentary**

Vector has not created any new NSP. New NSPs were created in the past but not in the last 12 months. The process which needs to be followed is known.

#### **Audit outcome**

Compliant

### 5.6. 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**

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. Compliance was not assessed.

#### **Audit outcome**

Not applicable

### 5.7. 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**

Vector has two balancing areas NORTHNRUNETG (North Shore) and AUCKLNDVECTG (Auckland City) according to the NSP mapping table in the registry.

#### **Audit commentary**

Examination of the NSP mapping table in the registry showed that there were no changes to balancing areas in the last 12 months.

#### **Audit outcome**

Compliant

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

#### **Code reference**

Clause 27 Schedule 11.1

#### **Code related audit information**

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

#### **Audit observation**

There were 16 new embedded networks setup on the Vector network. Two embedded networks on North Shore and 16 in Auckland City. Vector itself did not establish any embedded network.

#### **Audit commentary**

Vector has not transferred any ICP which resulted in an ICP becoming an NSP.

#### Audit outcome

Compliant

#### 5.9. 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

On 1 June 2017 the Selwyn Village embedded network was disestablished. ICPs were transferred back to Vector. Vector notified the Authority on 29 May 2017.

#### Audit commentary

Vector notified the Authority using the form "Application for transfer of ICPs between distributor's networks" (including embedded networks). It is identified as non-compliance because the form specifies that applications are required to be submitted three business days before the transfer of ICPs takes effect. This notification period does not include the business day the notification is sent to the Authority or the business day the ICPs are transferred.

We decided to clear this non-compliance because it was a one-off and not very likely to happen in the future. Vector commented that they are losing ICPs to embedded networks not gaining them back.

#### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.7 With: 4 of Schedule 11.2  From: 29-May-17 To: 31-May-17	The Authority was notified one day later than specified, of the transfer of ICPs from Selwyn Village to the Vector's network.  Potential impact: Low  Actual impact: Low  Audit history: None  Controls: Moderate  Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating

<b>Low</b>	<p>Transfer of ICPs back to the Vector network because of an embedded network being disestablished does not happen often. There is no written process in place. In this case Vector relied on assistance from the Authority, which was very helpful. Our comment is that overall the process as such is very cumbersome and for “new comers” very confusing.</p> <p>The impact on other participants is none; the audit risk rating is low. The controls we recorded as moderate because they are not documented but working together with EA resulted in very minor non-compliance.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<ul style="list-style-type: none"> <li>Ensure process is followed accurately in the future.</li> </ul>		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As Above			

5.10. 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 are 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

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

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

**Code reference**

*Clause 10.25(2)*

**Code related audit information**

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

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

**Audit observation**

Vector does not have 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. It is their responsibility to have a contract with the MEP

**Audit commentary**

In the last 12 months 18 embedded networks were established on the Vector network. Vector is not their owner. Compliance was not assessed.

**Audit outcome**

Not applicable

**5.12. 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**

In the last 12 months, Vector did not acquire all or part of a network.

### Audit commentary

This clause is not applicable to Vector because the situation did not occur. Compliance was not assessed.

### Audit outcome

Not applicable

## 5.13. 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

There are many embedded networks on the Vector network (149) but they are not the responsible participant. Vector as such does not have any embedded network outside of its network.

### Audit commentary

Vector does not have plans to create its own embedded network in the future. The number of ICPs for which the company is responsible is significant enough. Compliance was not assessed.

### Audit outcome

Compliant

## 5.14. 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

Vector transferred ICPs from Selwyn Village back to their network on the request of Smart Power.

### Audit commentary

Vector provided copies of written consents from every trader trading at an ICP on Selwyn Village's network.

### Audit outcome

Compliant

5.15. 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**

Vector has not established any embedded network since the last audit.

**Audit commentary**

This clause is not relevant to Vector because it has not established any embedded network. Compliance was not assessed.

**Audit outcome**

Not applicable

## 6. MAINTENANCE OF SHARED UNMETERED LOAD

### 6.1. 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

We examined the LIS file dated 11 September 2017. We identified a number of ICPs with the status of “distributor” but all of them were ICPs of gate meters to embedded networks.

#### Audit commentary

There are shared unmetered loads connected to the Vector network. Vector does not allow new ICPs to have shared unmetered load.

#### Audit outcome

Compliant

### 6.2. 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

There are no shared unmetered load ICPs on the Vector network.

#### Audit commentary

This clause is not applicable because there is no shared unmetered load on the Vector network.

#### Audit outcome

Not applicable

## 7. CALCULATION OF LOSS FACTORS

### 7.1. 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

Vector provided the document “Loss Factor Calculation Process” to assist to assess compliance.

Vector calculates both technical and non-technical loss. The methodology used by Vector is based on the EA Guidelines, which are still in draft format (v2.1, published 14 February 2013).

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

In December last year Vector has worked through a new set of loss factors and intends to update those loss factors on 1 April 2018. This date has been chosen to align with our electricity price change as a matter of convenience for retailers in managing their retail price change process.

#### Audit commentary

In our view, Vector take all practicable steps that their loss factor calculations are accurate and complete. The current loss factors are published on Vector’s website

#### Audit outcome

Compliant

## CONCLUSION

## PARTICIPANT RESPONSE