9 February 2017

Update for distributors and traders

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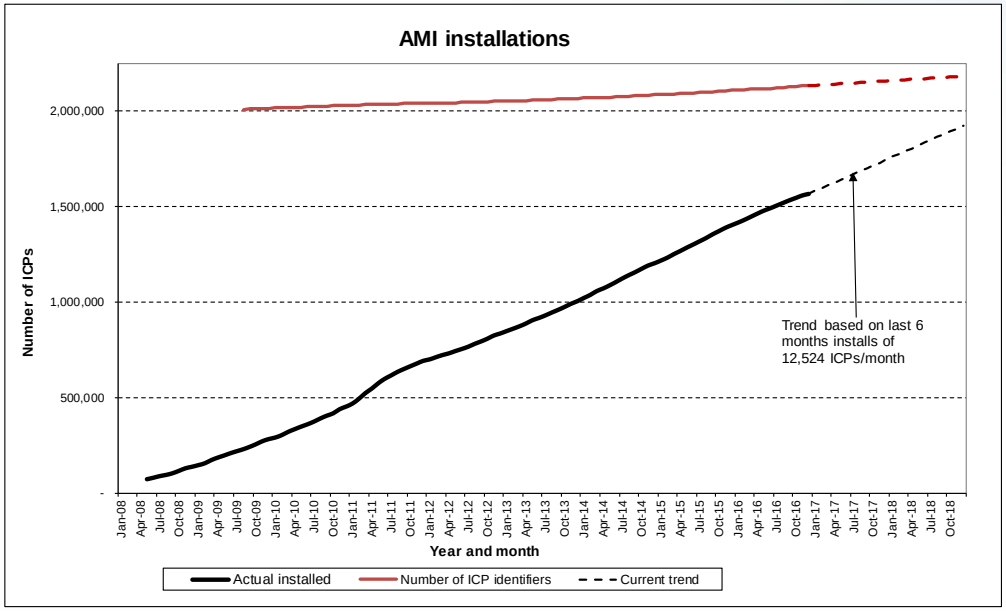
COMPETITION • RELIABILITY • EFFICIENCY

ADVANCED METERING INFRASTRUCTURE (AMI)

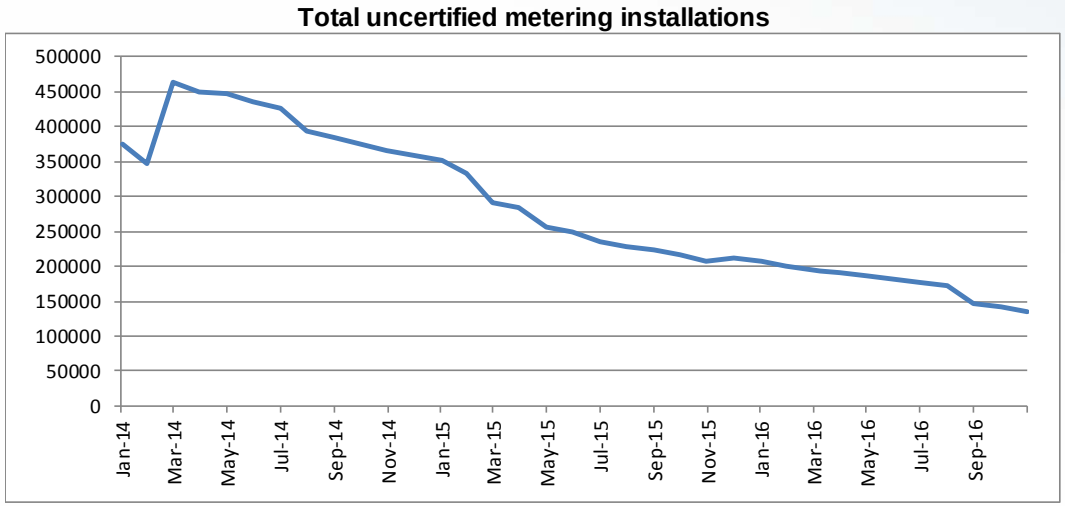


- As at 31 Dec 2016, 1,566,784 active and inactive ICP identifiers have AMI (73.45%)
- By Dec 2018, based on current trends, approx 1,867,377 (83%) ICP identifiers may have AMI

- AMI – Code does not contain specific definition, but clause 8 of Sch 10.6 states

*……applies when **raw meter data** can only be obtained from a **metering equipment provider's back office**….*

METERING INSTALLATION CERTIFICATION



- As at 1 April 2015 there were 291,615 (13.95%) of metering installations uncertified
- As at 31 December 2016 there were
  - 131,906 (6.18%) of metering installations uncertified
  - 13,731 (0.64%) of metering installations uncertified that had previously been fully certified and have not been recertified

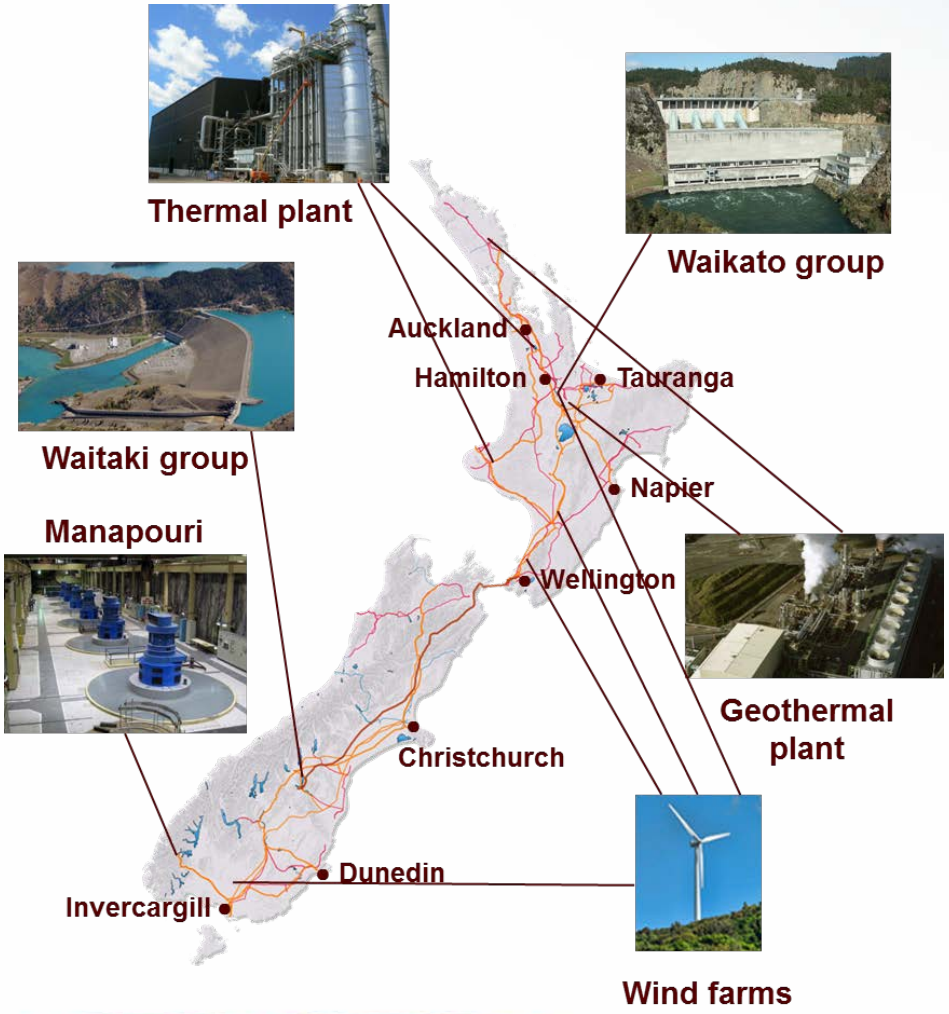
- Clause 15 of Sch 10.7 states

15 Recertification programme

*(1) A **metering equipment provider** must have a **recertification** programme for all **metering installations** for which it is responsible to ensure that each **metering installation** is **recertified** prior to the expiry date of its then current **certification** if the **metering installation** is not **decommissioned**.*

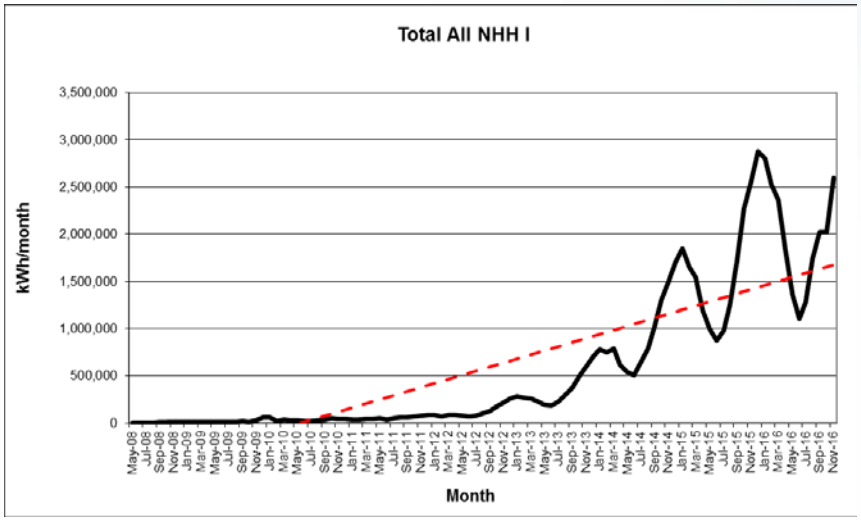
*(2) Subclause (1) does not apply to a **de-energised metering installation** for an **ICP**.*

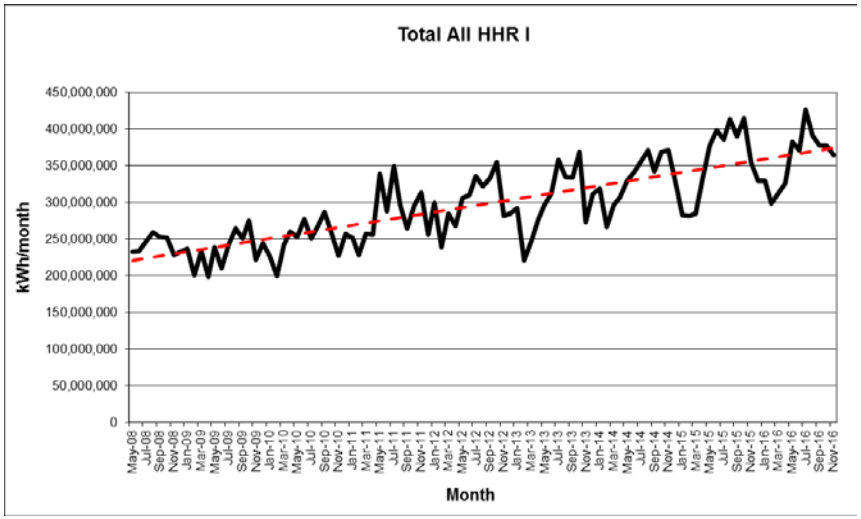
TOTAL GENERATION



- Annual generation volume = 40,674 GWh
- Installed generation capacity = 9,565 MW
- Renewable generation
  - capacity = 86.6%
  - volume generated = approx 86% (last quarter)
- Peak demand 8 Aug 2016 = 6,452 MW
- Capacity/generation
  - Hydro 5,473 MW (60% of generation)
  - Thermal 1,970 MW (14% of generation)
  - Geothermal 1,006 MW (18% of generation)
  - Wind 701.76 MW (5% of generation)
  - Cogeneration 400.4 MW (3% of generation)
  - Unknown estimated 9.7 MW
  - Backup estimated 1.9 MW
- Connected at
  - Grid approx. 8,441 MW
  - Embedded approx. 1,209 MW

EMBEDDED GENERATION TRENDS





Embedded generation			
Fuel type	ICP identifiers	Installed capacity in MW	% of total capacity
Bio-mass	5	8.00	0.66%
Fresh water	95	288.24	23.85%
Geothermal	6	144.30	11.94%
Industrial processes	9	137.70	11.39%
Liquid fuel	123	103.40	8.56%
Natural gas	11	95.90	7.94%
Other	29	119.76	9.91%
Solar	12,215	46.86	3.88%
Undefined	10	0.02	0.00%
Wind	79	264.34	21.87%
Electric vehicle	-	-	0.00%
Tidal	1	0.00	0.00%
Total	12,583	1,209	

- Part 6 of the Code regulates connection requirements
- The Code requires all electricity conveyed to be measured (unless gifted)

AUTHORITY HAS CONSULTED ON CODE DEFINITION CHANGES

- Revoke definitions of ‘connection’ and ‘disconnection’ so these words have their ordinary meanings, consistent with other legislation
- Revoke definitions of ‘electrically connecting’ and ‘temporary energisation’
- Amend definition of ‘commissioning’ and ‘decommissioning’, to include the commissioning and decommissioning of an ‘asset’ and a ‘point of connection’
- Replace ‘energisation’ with ‘electrically connect’
- Replace ‘de-energisation’ with ‘electrically disconnect’
- Replace ‘connected’ and ‘energised’ with ‘electrically connected’
- Replace ‘disconnected’ and ‘de-energised’ with ‘electrically disconnected’
- Replace ‘disestablished’, ‘electrically isolated’, and ‘interconnect’ with, respectively, ‘decommissioned’, ‘electrical conductors’, ‘electrical separation’ and ‘connect’
- Clarify that ‘electrically unsafe’ has the meaning given to it in the Electricity (Safety) Regulations.
- Refer to http://www.ea.govt.nz/development/work-programme/operational-efficiencies/code-review-programme/

TRADER NOTIFICATIONS TO THE REGISTRY

- For every point of connection (POC), a reconciliation participant is responsible for ensuring that there is an MEP and that for each energised ICP all electricity conveyed is quantified in accordance with the Code (clause 10.24)
- Reconciliation participants can energise an ICP only if 1 or more metering installations are certified (clause 10.33)
- Where an MEP accepts responsibility for a POC, it must provide a metering installation compliant with the Code (clause 10.20)
- Any participant must not directly or indirectly interfere with a metering installation for which it is not the metering equipment provider, unless
  - it is instructed or permitted to do so by the MEP responsible for the metering installation; or
  - the participant has an arrangement with the trader responsible for the metering installation as the gaining MEP who will be responsible for the metering installation (clause 10.12)

TRADER NOTIFICATIONS TO THE REGISTRY

- Registry will not allow an MEP to update registry metering records unless
  - the current trader has notified the registry of the MEP, and
  - the MEP has accepted the notification before another MEP is notified

- If a trader requests an MEP to provide a metering installation, and fails to notify the registry then
  - the trader has breached clause 10 of sch 11.1
  - the MEP cannot update registry metering records and has a consequential Code breach of clause 2 of sch 11.4
  - if the ICP identifier switches to another trader, the losing trader can no longer notify the registry of the MEP it provided the request to

- If a trader does not provide a notification to the registry MEPs should follow up with the trader, correction get more painful as time goes on

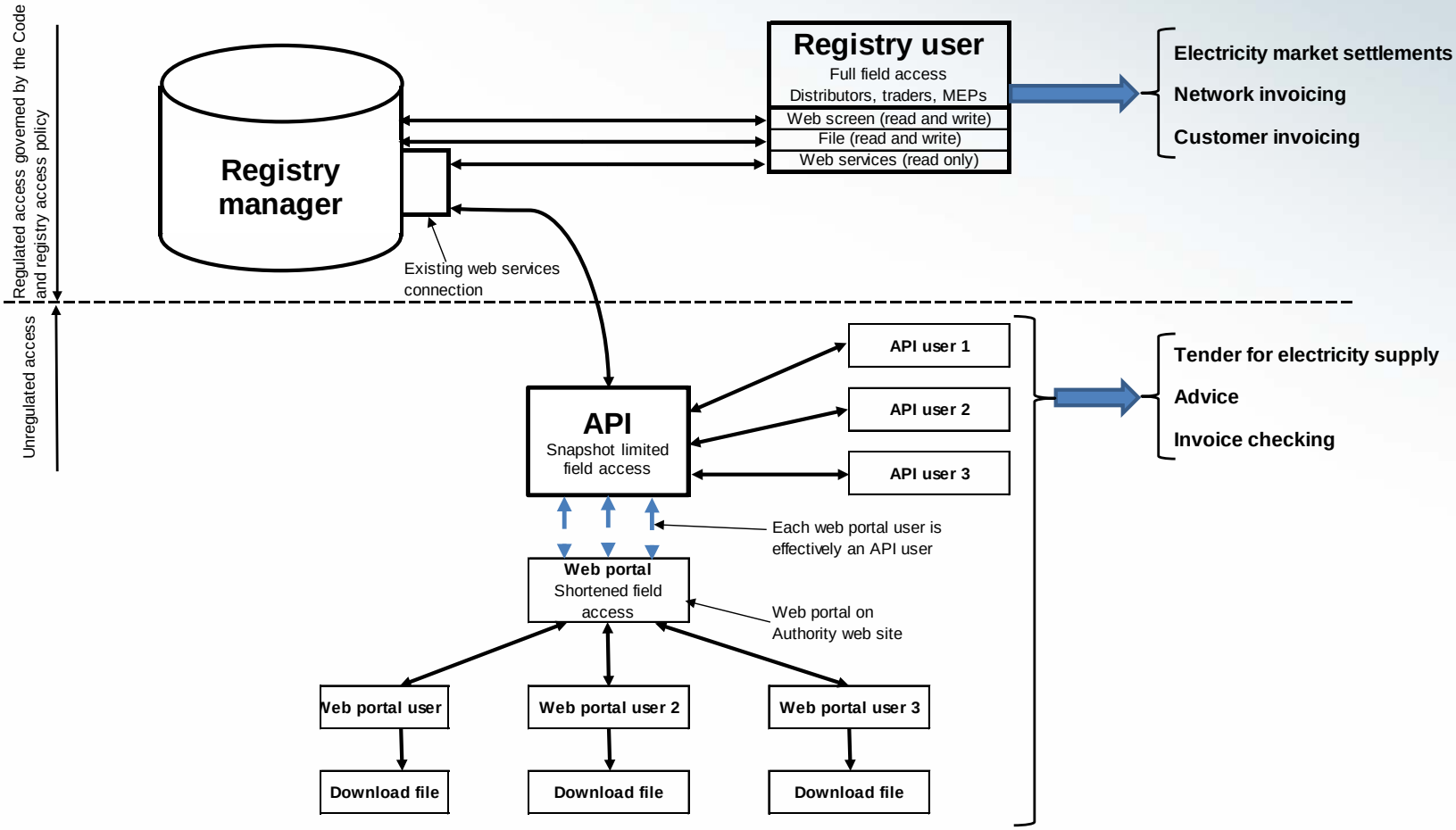
PUBLICATION OF RECONCILIATION AND UFE INFO

- Authority uses EMI to publish information http://www.emi.ea.govt.nz/
- Additional information to be published is
  - aggregated reconciliation information by NSP that will provide
    - total electricity conveyed information
    - generation
  - UFE information for all NSPs

ACCESS TO THE REGISTRY

- Participants must apply to the Authority for access
- Authority usually only grants full access to those parties that require it for Code purposes
  - registry access policy contains the Authority's terms and conditions at http://www.ea.govt.nz/dmsdocument/16031
  - participants must comply with the terms and conditions specified by the Authority (clause 11.28(2A)
- Access is by any one of the following – user choice
  - web browser screen
  - SFTP
  - web services

REGISTRY ACCESS



- M2M connect via public API https://emi.portal.azure-api.net/
- M2C connect via http://www.ea.govt.nz/consumers/your-power-data-in-your-hands/my-meter/

EXTENDED RESERVES AKA AUFLS

- Authority is implementing an extended reserve scheme
  - selection of the most economic demand units
  - 4 blocks instead of 2
  - requires asset owners to provide the following to a new MOSP, the extended reserve manager
  - HHR load profile of demand units less any IL
  - % of load profile that is allocated to 6 customer classes
  - solve for economic selection uses customer classes and vol as follows

K	Customer Class	IC(k) = Expected Interruption Cost ($/MWh)
1	Residential	15,900
2	Light industrial & primary industry	8,200
3	Heavy industrial	19,500
4	Commercial	37,200
5	Public health and safety	100,000
6	User submitted (>25GWh/yr)	Unique value provided in response to Schedule 1, Part 2, Item 23

EXTENDED RESERVES AKA AUFLS

- Authority has amended part 12A of the Code to allow distributors to request and use EIEP 1 and 3 information for ER purposes
- Distributors may rely on EIEP information and registry ANZSIC information to provide information into the extended reserve process

EXTENDED RESERVES AKA AUFLS

- Part 11 of the Code

11.2 Requirement to provide complete and accurate information

*(1) A **participant** must take all practicable steps to ensure that information that the **participant** is required to provide to any person under this Part is—*

(a) complete and accurate; and

(b) not misleading or deceptive; and

(c) not likely to mislead or deceive.

*(2) If a **participant** becomes aware that the information the **participant** provided under this Part does not comply with subclause (1)(a) to (c), even if the **participant** has taken all practicable steps to ensure that the information complies, the **participant** must, as soon as practicable, provide such further information as is necessary to ensure that the information complies with subclause (1)(a) to (c).*

10 (Sch 11.1) Traders to change ICP information provided to registry

*(1) If information about an **ICP** provided to the **registry** in accordance with clause 9 changes, the **trader** who trades at the **ICP** must notify the **registry** of the change.*

*(2) The **trader** must give the notification no later than 5 **business days** after the change…….*

11.32 Reliance on registry

*A **participant** does not breach this Code just because the **participant** does something relying on an incorrect record in the **registry**.*

EVENT DATES AND METER READINGS

- Part 1 of the Code

  ***switch event meter reading**, in relation to a **meter** or **data storage device** that is located at an **ICP** that is being switched under Schedule 11.3, means—*

  *(a) a **validated meter reading**, if one is available; or*

  *(b) a reasonable estimate of the **meter reading** based on the **meter reading** contained in the final information provided in the switch file that the losing **trader** received when it gained the **ICP** if—*

  *(i) a **validated meter reading** is not available; and*

  *(ii) the losing **trader** has been recorded in the **registry** as being responsible for the **ICP** for a period of less than 3 months; or*

  *(c) in every other case, a **permanent estimate***

- Schedule 11.3 of the Code

  5 Losing trader must provide final information

  *If the losing **trader** has provided information under clause 3(a)(i) rather than under clause 3(a)(ii), no later than 5 **business days** after the **event date**, the losing **trader** must complete the switch by providing final information to the **registry**, including—*

  *(a) the **event date**; and*

  *(b) a **switch event meter reading** as at the **event date** for each **meter** or **data storage device** that is recorded in the **registry** with an accumulator type of C and a settlement indicator of Y; and*

  *(c) if the **switch event meter reading** is not a **validated meter reading**, the date of the last **meter reading** of the **meter** or **data storage device** described in paragraph (b).*

EVENT DATES AND METER READINGS

- Schedule 11.3 of the Code

6 Traders must use same reading

*(1) The losing **trader** and the gaining **trader** must both use the same **switch event meter reading** for the **event date** as determined by the following procedure:……*

(2) Despite subclause (1), subclause (3) applies if—

*(a) the losing **trader** trades **electricity** at the **ICP** through a **metering installation** with a submission type of non **half hour** in the **registry**; and*

*(b) the gaining **trader** will trade **electricity** at the **ICP** through a **metering installation** with a submission type of **half hour** in the **registry**, as a result of the gaining **trader's** arrangement with the **customer** or **embedded generator**; and*

*(c) a **switch event meter reading** provided by the losing **trader** under subclause (1) has not been obtained from an **interrogation** of a **certified metering installation** with an AMI flag of Y in the **registry**.*

*(3) No later than 5 **business days** after receiving final information from the **registry** under clause 22(d),— **Electricity Industry Participation Code 2010 Schedule 11.3** 40 1 February 2016*

*(a) the gaining **trader** may provide the losing **trader** with a **switch event meter reading** obtained from an **interrogation** of a **certified metering installation** with an AMI flag of Y in the **registry**; and*

*(b) the losing **trader** must use that **switch event meter reading.***

EVENT DATES AND METER READINGS

- Schedule 15.2 of the Code

6 When non half hour meter readings apply

*Non **half hour meter readings** are deemed to apply—*

*(a) if the non **half hour meter reading** is also a **switch event meter reading—***

*(i) for the gaining **trader**, from 0000 hours on the day of the relevant **event date**; and*

*(ii) for the losing **trader**, at 2400 hours at the end of the day before the relevant **event date**; or*

*(b) in all other cases, from 0000 hours on the day after the last **meter interrogation** up to and including 2400 hours on the day of the **meter interrogation**.*

EVENT DATES AND METER READINGS

- Note that the switch event meter reading required by clause 5(b) of Schedule 11.3 is the reading ‘as at’ the event date (i.e., on the day of the switch and not before)

- Where an actual read is used as a switch event meter reading, and is taken on the
  - previous day, the losing retailer may not have complied with the Code. A HHR AMI retailer may request a correction under clause 6(2) of Sch 11.3
  - day of the switch event, a HHR AMI retailer may not request a correction under clause 6(2) of Sch 11.3 and will need to take the switch meter reading into account

ELECTRICALLY CONNECTING A NEW POC THAT IS AN ICP

- A distributor is not obligated to electrically connect an ICP on its network.
- A distributor may respond to queries for a new ICP connection to its network from a new customer, the customers agent, or a trader.
- The Code requires a GN or EN ICP created after 7 October 2002 to be able to be de-energised without de-energising any other ICP (Clause 3 of Schedule 11.1)
- A distributor must only electrically connect an ICP to its network, if the electrical connection is requested by (Clause 10.28(4) and (5))
  - the trader trading at the ICP, (note that only the trader that accepts responsibility for trading at the ICP can request that a distributor electrically connect an ICP (Clause 10.32(a)) or
  - an MEP who has an arrangement with the trader above (Clause 10.31)
- Note that EV Chargers should be treated as a POC to a network, and follow the new connection process

ENERGISING A POC THAT IS AN ICP

- Only a participant responsible for the ICP identifier in the registry may energise a point of connection, or authorise the energisation of a point of connection (Clause 10.33(4))
- A reconciliation participant must not authorise the energisation of an ICP if the energisation would breach the Electricity (Safety) Regulations 2010
- A reconciliation participant may energise a point of connection, or authorise a point of connection to be energised (Clause 10.33), if
  - the reconciliation participant is recorded in the registry as being responsible for the ICP and 1 or more certified metering installations are in place in accordance with this Part; and
  - in the case of an ICP that has not previously been energised, the owner of the network to which the point of connection is connected has given written approval

ACCESS TO METERING INSTALLATIONS

- Domestic consumer terms and conditions must have requirements for access
- Clause 10.7 requires traders to provide MI access to MEPs
- Is there an issue where consumers will not provide access to metering installations?

- Discussion
  - How big an issue is it
  - Do we need a best practice guide – EA or ERANZ?
  - What are possible solutions?