

# Agenda

1	5 min	ACCES Project update
2	25 min	Connection agent/Channel trader model overview
3	20 min	Discussion and feedback on model
4	10 min	Mapping the consumer journey under the model
5	10 min	Potential pilot of the Connection agent/Channel trader model
6	15 min	Discussion and feedback on potential pilot

## Agenda Item 1: Project Timeline

## Agenda Item 2: Our preferred model to facilitate additional consumer choice of electricity services

### **Initial use cases for consumer choice of additional electricity services**

- 1.1 While there is potential for many different kinds of new electricity services to come to market in future, there is significant uncertainty over what form the services will take.
- 1.2 We have focused on developing a model that supports two specific use cases:
  - (a) A consumer with an electric vehicle (EV) purchases energy and services for the EV separately from the rest of its household supply. This would facilitate the commercial model of an electric vehicle provider supplying fuel (ongoing charging) as part of up-front purchase, and/or managing EV charge/discharge activity for the benefit of the market as well as the consumer. Nissan is currently piloting a variant of this approach overseas, through partnerships with existing retailers. Whilst Tesla is offering customers limited free charging with purchase of a vehicle.
  - (b) A consumer with onsite generation sells excess energy (grid injection) to a different party than the retailer they purchase their supply (grid offtake) from. This ability would facilitate new commercial models including distributed generation aggregation, community solar, and electricity gifting. A growing number of incumbent retailers and new entrants offer both community solar and electricity gifting
- 1.3 Under current Code arrangements, these use cases are only possible where:
  - (a) the retailer responsible for the ICP facilitates the process of allowing another provider to provide the services; or

(b) the EV or onsite generation is electrically separated from other household supply, has a separate point of connection to the grid at a dedicated ICP, and attracts a separate set of distribution and metering costs.

1.4 Efficient access to additional electricity services under these use cases requires a model where the EV or onsite generation can be separately measured and supplied, while remaining a part of the same electrical installation, 'behind the meter'. A model that enables this will also enable other use cases, and can be extended to meet further developments as they emerge.

### **Design criteria shaped our thinking on the model**

1.5 In the development of the design of the model to facilitate additional consumer choice the Authority adopted four key design criteria:

1.6 The criteria are that the model:

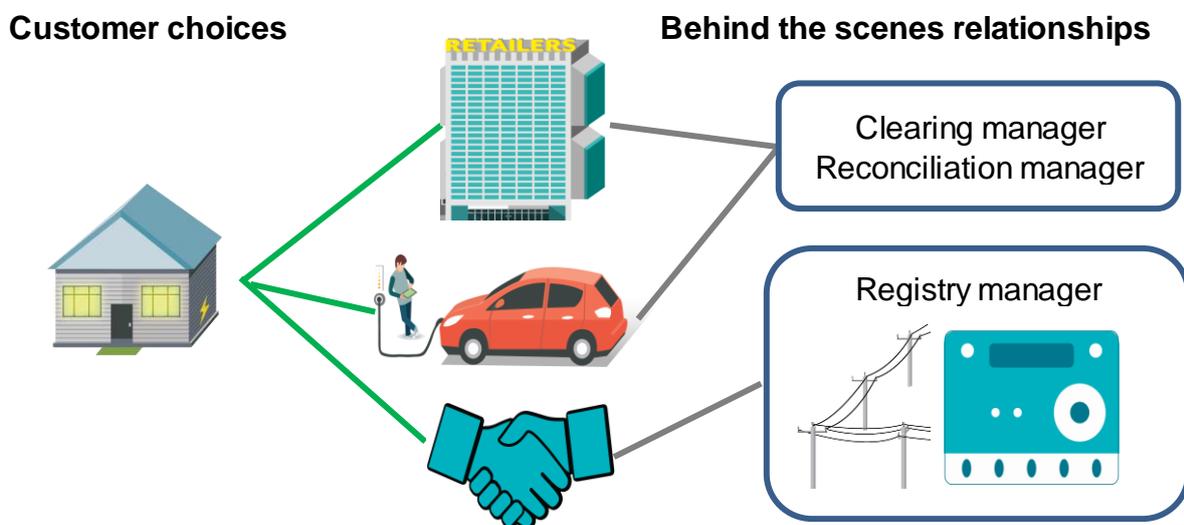
1. not impose unreasonable costs on customers or service providers – by operating on an opt-in basis and not forcing a particular structure of commercial relationships
2. establishes a single set of robust rules that apply equally to incumbents and new entrants
3. provides a single point of truth for sub-ICP metadata for all parties – including customers, service providers, MOSPs and EDBs, by including this information in central MOSP systems
4. is equally effective regardless of how data is stored and shared within the industry.

### **We prefer a Connection Agent/Channel Trader model**

1.7 Drawing on feedback from targeted interviews we have developed a preferred model for facilitating additional customer choice of electricity services.

1.8 The preferred model is a Connection Agent/Channel Trader model, which separates the whole-of-ICP services currently provided by retailers from the sub-ICP services, and allows sub-ICP services to be reconciled through central market processes.

**Figure 1: Overview of Connection Agent trader model**



1.9 It includes elements of the three models initially identified:

- (a) “Channel Traders” can trade sub-ICP volumes in central processes, but they must be associated with a specific channel on the meter
  - (b) Switching at sub-ICP level is facilitated by a central record of who is providing services for each meter channel
  - (c) A single participant (the “Connection Agent”) deals with ICP-level responsibilities including engagement with the MEP and Distributor, and consumer obligations. The Connection Agent can also be a Channel Trader.
  - (d) Arrangements for sharing the cost of input services (network and metering) is currently being considered by the Innovation and Participation Advisory Group.
- 1.10 The core market feature introduced that is not possible under current arrangements is the reconciliation of sub-meter quantities. This means that service providers can participate in central market processes without taking on responsibility for every service provided at the ICP.
- 1.11 It would operate on an opt-in basis; existing retailers would not be forced to facilitate Channel Trading at any ICP, but may choose to do so. As a result, it would require very limited changes for existing market participants who choose not to become a Connection Agent.
- 1.12 It would require moderate changes to the Code and moderate changes to the central Registry system, but avoids the cost of centralising sub-ICP reconciliation, and the need to define default arrangements for sharing the costs of input services (though these could be accommodated at a later stage).
- 1.13 Finally, it provides a structure for new commercial models to build on, without precluding any of the options available today – participants who want to engage via the contractual model can still do so.

## **The Connection Agent/Channel Trader model in detail**

### **Participant responsibilities**

- 1.14 Under the Connection Agent/Channel Trader model:
- (a) A customer can designate an agent (“Connection Agent”) for its ICP, and a service provider (“Channel Trader”) for each meter channel
  - (b) Any sub-ICP volume to be reconciled in market processes must have data recorded on a meter channel<sup>1</sup>
  - (c) The registry would be amended to allow a Channel Trader to be recorded for each meter channel
  - (d) The Connection Agent would:
    - (i) manage relationships (including procurement and ongoing commercial arrangements) with the MEP and the Distributor serving the ICP (input services)

<sup>1</sup>

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Solar and battery storage service providers are already using alternative measurement devices to manage and bill their services. Such devices are an order of magnitude cheaper than the smart meters used to supply market data. Recognising alternative devices for use in market reconciliation would require significant work on EIPC metrology standards and processes.

- (ii) use channel-level meter data to allocate and on-charge the costs of input services to Channel Traders
  - (iii) use channel-level meter data to determine the split of ICP-days to each Channel Trader
  - (iv) bear responsibilities relating to medically dependent and financially vulnerable customers.
  - (v) have control over disconnection and reconnection of the ICP
  - (vi) be allowed (but not required) to be a Channel Trader on one or all meter channels<sup>2</sup>.
- (e) The MEP for the ICP would:
- (i) Provide each Channel Trader with the HHR data for the channels they are responsible for<sup>3</sup>
  - (ii) Provide the Connection Agent with the HHR data for all channels
  - (iii) Validate that the sum of channel data matches the total metered volume for the ICP<sup>4</sup>
- (f) Each Channel Trader would:
- (i) Be a Reconciliation Participant, meeting the amended Code requirements
  - (ii) Use channel level meter data to reconcile its sales through the central reconciliation processes
  - (iii) Reconcile any channel trading using half-hour data only, without using profiles.
- (g) The Reconciliation Manager would:
- (i) Accept ICP-days submissions containing non-integer values
  - (ii) Otherwise continue to reconcile wholesale volumes using current processes

1.15 The Authority is not currently proposing a default method of pricing input services shared across multiple suppliers. This means that the Channel Trader must have a commercial agreement with the Connection Agent before commencing supply, and both the Channel Trader and the Connection Agent must approve channel switches. Default arrangements for pricing of these services may be considered by IPAG in its Input Services project.

1.16 Proposed data and financial flows are shown in Figure 2 and Figure 3.

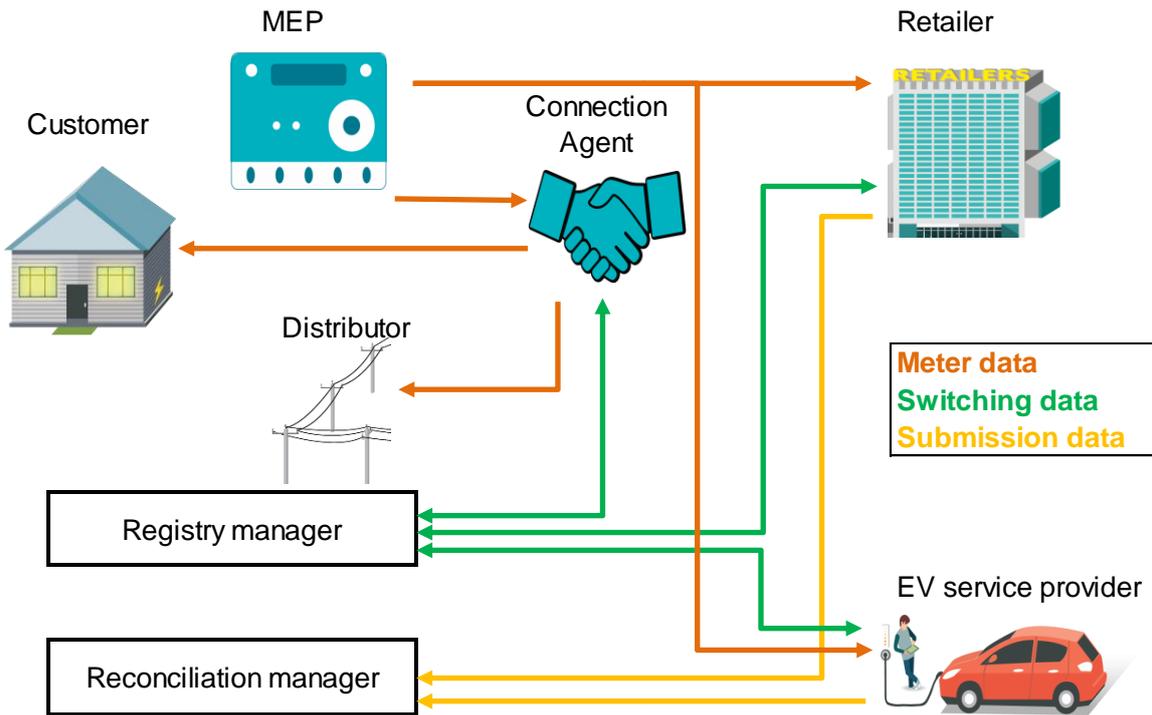
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<sup>2</sup> Where an ICP continues to be managed by a single retailer, the retailer will be both the Connection Agent and the Channel Trader for all channels.

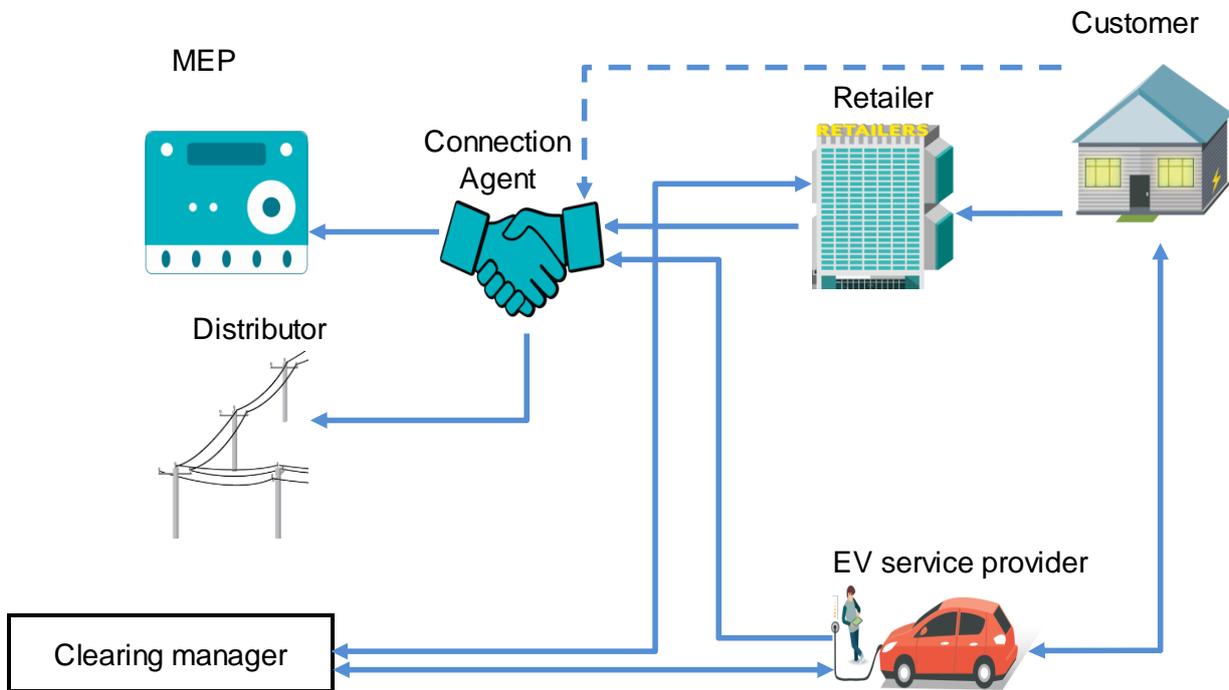
<sup>3</sup> Potentially directly from the services access interface

<sup>4</sup> Alternatively, the Connection Agent could validate and provide the data to each Channel Trader.

**Figure 2: Data flows for Connection Agent model**



**Figure 3: Financial flows for Connection Agent model<sup>5</sup>**



<sup>5</sup>

We expect that most customers would pay (or be paid by) each Channel Trader separately. Some may prefer to pay the Connection Agent for input services (instead of the agent recovering costs from Channel Traders) or to pay a single bill to one party who aggregates bills for all channels. This is a commercial decision for market participants, and does not need to be specified in the Code.

**This model enables the identified use cases and reduces identified barriers**

1.17 The Connection Agent/Channel Trader model:

- (a) establishes a single set of robust rules that apply equally to incumbents and new entrants
- (b) provide a single point of truth for sub-ICP data for all parties including customers, service providers, MOSPs and EDBs, by including this information in central MOSP systems
- (c) does not impose unreasonable costs on customers or service providers, by operating on an opt-in basis, and by not forcing a particular structure of commercial relationships on the customer, the agent, or any service provider.

1.18 The model delivers the use cases identified, enabling customers to:

- (a) Sell injected energy to a participant other than the one from whom they purchase energy
- (b) Have their EV charging and discharging managed and billed separately from other electricity supply without having to install a new ICP.

1.19 Table 1 shows how the proposed model addresses the barriers identified in MTR consultation submissions.

**Table 1: The proposed model addresses identified barriers**

Identified barrier	Consequence of proposal
<p>Access to multiple electricity services at a single point of connection is likely to require an accurate record of <b>what supplier(s) are supplying services at an installation control point (ICP)</b> and for what time period, so as to:</p> <ul style="list-style-type: none"> <li>• facilitate reconciliation and settlement by providing a record of who is responsible for purchases at the ICP</li> <li>• facilitate the switching of suppliers</li> <li>• avoid doubling-up of supplier and service.</li> </ul>	<p>The registry changes would allow the trader responsible for each channel to be identified.</p> <p>Reconciliation participants would be required to update the registry for any changes and switching.</p> <p>The registry would also track the demand response provider.</p>
<p>Access to multiple electricity services at a single point of connection may require changes to <b>reconciliation and market settlement processes</b>. Accurate reconciliation and market settlement is required to maintain confidence that payments for services across the supply chain are correct.</p>	<p>Each channel trader would be responsible for reconciliation of their purchases and sales for all channels (or whole ICPs) for which they are recorded as the traders, using current reconciliation and settlement processes.</p> <p>Accuracy is supported by using only data from certified meters.</p>
<p>Access to multiple electricity services at a single point of connection will require consideration of <b>assignment of</b></p>	<p>Consumer related obligations will lie with the Connection Agent.</p>

Identified barrier	Consequence of proposal
<p><b>responsibility for consumer-related obligations</b> at an ICP. For example, how might disconnection be managed when there are multiple suppliers?</p>	<p>It is likely to be necessary to develop standards (e.g. market facilitation measures) to provide guidance to suppliers about what obligations and expectations they face.</p>
<p>Access to multiple electricity services at a single point of connection may require new arrangements relating to <b>procurement of metering services, and access to market data</b> (ie certified consumption data used as an input to market services).</p> <p>Market data is obtained from certified meters. Metering services are currently obtained by the trader under a contract with the MEP (the MEP is the agent of the trader). The Code and the existing MEP/trader contracts may inhibit other suppliers obtaining metering services from the MEP.</p>	<p>The Connection Agent will procure metering services.</p> <p>MEPs will supply channel-level meter data to Channel Traders.</p> <p>IPAG will consider whether more specific arrangements are required.</p>
<p>Access to multiple electricity services at a single point of connection may require new arrangements relating to <b>access to non-market data</b>, ie consumption data, voltage data etc used as an input for non-market services.</p> <p>This barrier is separated from access to market data because non-market data can be obtained from three sources:</p> <ul style="list-style-type: none"> <li>• the meter</li> <li>• from a third-party device plugged in to the meter</li> <li>• from a current transformer device clamped to the cable running into the meter.</li> </ul>	<p>The proposal only deals with market data, requiring that only data from the meter can be used for market reconciliation and settlement, and every sub-ICP level service must be associated with a meter channel.</p> <p>IPAG will consider access to non-market data, as well as how data from devices other than the meter could be used for market processes.</p>
<p>Access to multiple electricity services at a single point of connection may require new arrangements relating to the <b>pricing of the distribution service and metering service</b> when it is shared between multiple suppliers</p>	<p>The Connection Agent and Channel Traders will have to agree contractual terms for the pricing of input services.</p> <p>IPAG will consider the potential for default pricing arrangements.</p>

Identified barrier	Consequence of proposal
Access to multiple electricity services at a single point of connection will lead to more data being exchanged and more parties handling the data. This may increase the risks associated with managing <b>data privacy and cyber-security</b> .	Data privacy and cyber-security are an overarching consideration and expectation for design and operation of systems.

### Changes required, costs, and risks to benefits

1.20 Changes necessary to facilitate the Connection Agent/Channel Trader model are:

- (a) Code changes to:
  - (i) introduce the Connection Agent role,
  - (ii) separate Reconciliation Participant and Trader functions from Connection Agent functions
  - (iii) introduce arrangements for channel switching
  - (iv) place obligations on MEPS<sup>6</sup> to validate and distribute meter channel data
- (b) Registry changes to:
  - (i) record traders for each channel
  - (ii) implement channel switching processes (preliminary switching process set out in Appendix A)
- (c) Reconciliation system changes to amend ICP-days calculations to account for non-integer ICP-days submissions.
- (d) Amendments to EIEPs for channel level data

1.21 Costs of this model arise from changes to the Code, Registry and Reconciliation systems. The model requires no changes for reconciliation participants who do not wish to participate in sub-ICP level trading.

1.22 The risks associated with this model are:

- (a) For benefits to be realised, at least one entity must begin to provide Connection Agent services to other service providers.
- (b) The lack of a default method of cost allocation for input services means that a Connection Agent does not have to allow any channel switching. As a result, there may be a limited effect on incumbent traders' incentive to block access to MEP services, or to create 'walled gardens' of exclusively bundled service providers.

## Agenda Item 5: What the customer journey/experience like under model?

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<sup>6</sup> Or Connection Agents

## Agenda Item 6: We are considering establishing a pilot/trial of the Connection Agent/Trader Model

### **Objective:**

- 1.23 To test the viability of sub-ICP trading as envisaged by the Connection agent/Channel trader model via a geographically restricted trial.

### **Location:**

- 1.24 Geographical constrained to a single network (directly approached), or on a smaller scale ie a subdivision or gated community. Limiting the trial to a single distributor will simplify the splitting of distribution pricing.
- 1.25 Choosing a defined geographical area will assist in ICP recruitment as service providers will be able to better target marketing campaigns and expenditure.
- 1.26 Potential networks include those with higher proportion penetration of EVs and PVs such as Tasman & Nelson (1150PVs 500 Evs) or WEL & Waipa (1500PVs 687 EV).

### **Initial timeframe:**

- 1.27 2 years (with 6 monthly reviews)

### **Trial design:**

- 1.28 The scope of trial will be limited to 1000 ICPs. Recruitment of ICPs will be the responsibility of service providers. All participating ICPs must have HHR meters. Every ICP must have at least one retailer assigned.
- 1.29 The Authority will call for expression of interested participants including:
- Connection agents
  - Retailers
  - Service providers
- 1.30 Service providers must be or willing to become accredited reconciliation participants.
- 1.31 Should there be no suitable connection agents identified through the expression of interest process, the role of connection agent to be fulfilled by the Authority (or tendered out).
- 1.32 The registry will record those ICPs participating in the trial.
- 1.33 The Authority will maintain a registry of all ICPs and channels participating. This is to be maintained in a cloud based SQL database (to be confirmed). The Authority may outsource the switching of registers to the registry manager or another party.
- 1.34 The viewing rights to this database will be given to all participants and registered pilot participants.
- 1.35 Switch messages (NT, NW, AC, CS, RR) will be developed by the Authority to complement the current whole of ICP switching messages.
- 1.36 A standard distribution and metering agreement will need to be reached with MEPs and distributor. The Authority will develop a standard Network Use of System Agreement (DDA) and metering services agreement for connection agents.
- 1.37 Under the standard fixed metering and distribution charges to be split evenly between all participants at the ICP. kWh usage charges to be split between all service providers based on their share of measured consumption kWh at each half hour period.

- 1.38 The connection agent will receive and verify metering data for each the ICP before disseminating it to channel traders.

### **Resourcing:**

#### **Internal Staffing:**

To be confirmed

#### **Capital Expenditure:**

To be confirmed

#### **Procurement and Legal**

To be confirmed

### **Monitoring and evaluation**

- 1.39 The Authority to review and report on the pilot at following project gateways, receipt of EOs, two months, six months, one year and two years.
- 1.40 Authority to track and publish monthly reports, on the number of participating ICPs, channels, entry and exit of ICPs from the pilot, number of traders with offers, volume of import/export.
- 1.41 Connection agents will be required to provide Authority total kWh and HHR data by channel for each ICP (could be stored in SQL database).
- 1.42 Pilot providers will be required to supply to the Authority the average selling and buy back prices (to quantify savings).
- 1.43 Connection agents will be required to supply average cost to serve figures to Authority.
- 1.44 The Authority will undertake a survey after 12 months and at the end of the trial for customers, network, service providers and connection agent.

## Appendix A Channel Trader Switching process

- A.1 Changes to the Code are yet to be defined, some assumptions have been made
- the current MEP is responsible for maintenance of metering information
  - the Connection Agent is responsible for the Channel Trader
  - avoid where possible development cost for new entrants (Channel Traders)
  - avoid where possible development costs for existing participants
- A.2 Switch timers will provide compliance boundaries and visibility.
- A.3 Channel Trader switching relationships with potentially concurrent Trader and Channel Trader switching.
- A.4 The Channel Trader switch process will function in a similar manner to existing Trader switch; that is:
1. Connection Agent notifies Registry of a Channel Trader switch
  2. Registry notifies existing Channel Trader and affected participants (distributor, MEP)
  3. MEP responds accepting the Channel Trader switch providing completion information
    - a. Registry completes switch
    - b. Registry notifies affected participants (Connection Agent, Distributor, new and previous Channel Trader)
    - c. Persists or removes switch breach timers
  4. MEP responds rejecting the switch
    - a. Registry ends switch cycle
    - b. Persists or removes switch breach timers