TWO-SIDED MARKET

BUILDING BLOCKS AND PARTICIPATION FRAMEWORKS

MDI FOCUS GROUP WEBINAR #3

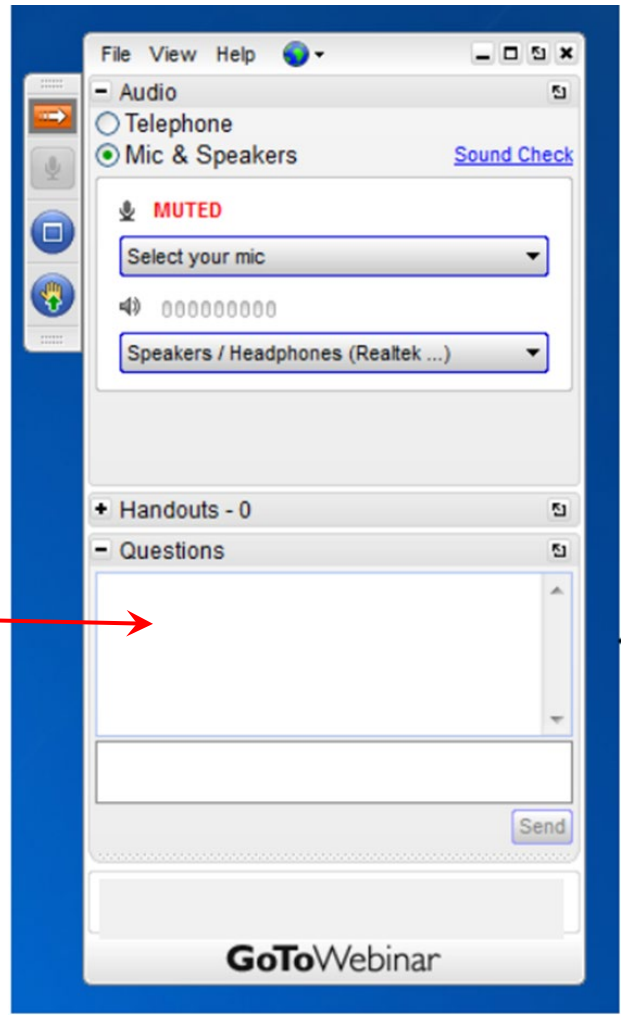
20 JULY 2020

IMPORTANT NOTES

- These slides are solely for workshop purposes only. The content provides general information to support informed stakeholder engagement and feedback.
- The presentation does not represent the official position of the Energy Security Board or any related body.
- The webinar is being recorded and a link to the recording will be provided after the webinar.
- All previous webinar recordings and slides are available here for your reference.

WEBINAR-WORKSHOP LOGISTICS

- All participants are currently in listen-only mode
- We will pause periodically for discussion. Please use the **Raised Hand** to signal that you would like to speak.
- If you would like to record a comment without discussion, feel free to type it into this field.



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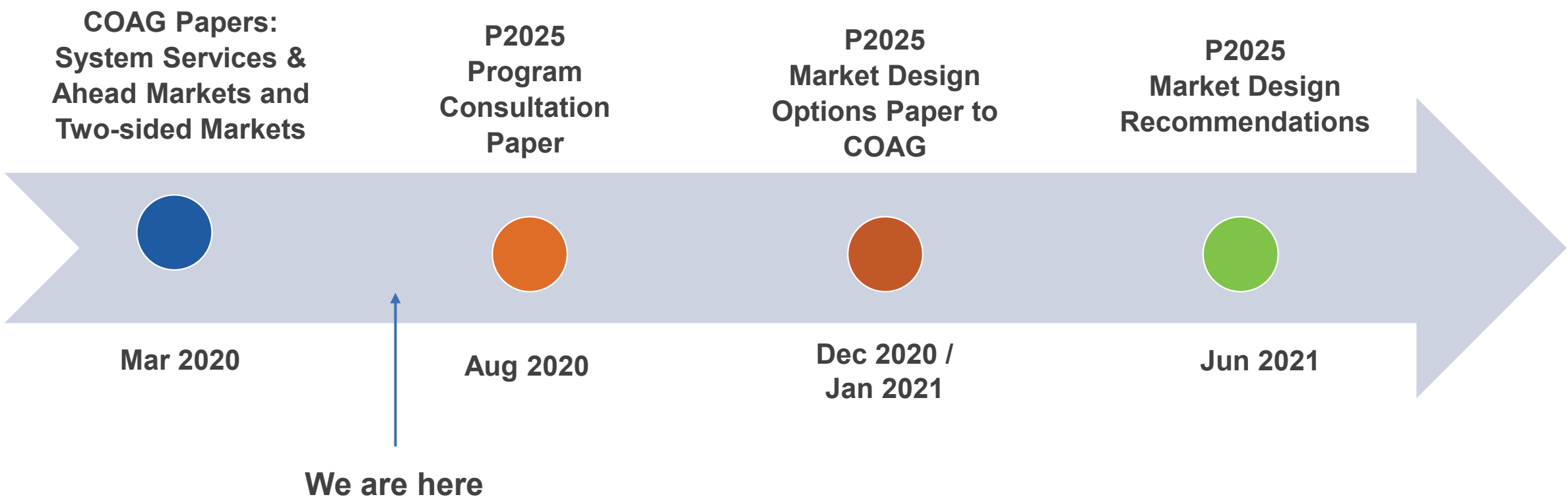
P2025 PROGRAM – KEY DELIVERABLES



OVERVIEW OF WEBINAR

1. **Overview of building blocks model**
   - Drivers for change
   - Overview of core elements and concepts
2. **Scenarios**
   - Small end user
   - Large end user
   - Trader (retailer/aggregator)
3. **Transition pathways**
4. **Next steps**

DRIVERS FOR CHANGE

DRIVERS FOR CHANGE

- There are growing numbers of new business models and new technologies in the NEM:
    - large and small-scale energy storage systems
    - aggregating end users to provide demand response (ancillary, wholesale, network)
    - virtual power plants.
- Partially driven by these changes, registration categories have grown incrementally, adding new processes to the NER. This generally adds complexity for market participants and new entrants.
- There is increasing overlap of formerly distinct categories (e.g. Market Customers can be net exporters of energy in some intervals due to solar and other DER uptake).
- An increasing number of regulatory workarounds and frequent rule changes are used to accommodate these developments, but this “bandaid” approach is becoming inefficient and may distort incentives to participate in the market.

DRIVERS FOR CHANGE

- The current arrangements, particularly for wholesale market participation, use asset focussed regulation. That is, participant categories (and the associated regulatory obligations) are based on the assets controlled as opposed to the services bought/sold.
- This approach will become more complex as the number of services and service providers increase and new asset combinations emerge (eg hybrid facilities with load, generation and storage).
- This project presents an opportunity for a holistic review.
- A new approach would look to simplify these arrangements and increase opportunities to participate in the provision of services, by focusing the regulatory framework on services rather than assets.

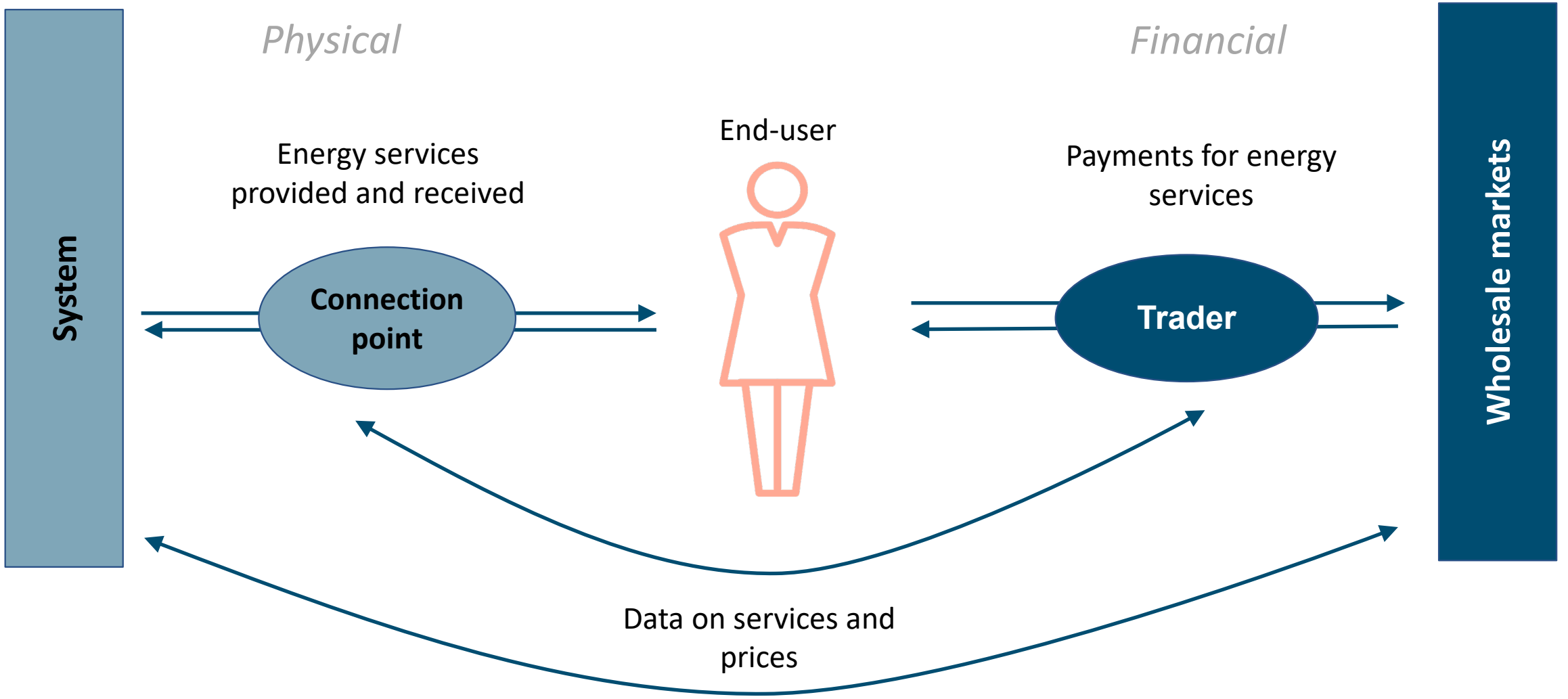
OUTLINE OF PROPOSED MODEL

KEY PARTIES AND CORE ELEMENTS

Element	Description
End user	The party who provides or receives services at a connection point is an end user. This category includes people who consume and generate energy. End users pay for the services they use, and are paid for the services they provide, through a contract with a trader.
Trader	Traders perform all trading of energy market services within the market, on behalf of end users. This simple concept captures the diverse arrangements that exist today – including retailers, generators, different types of aggregators, and special arrangements for storage and other devices – but without specific market rules and participant categories for each, as exist today.
Connection points	Parties obtain access to the system via a connection point. A connection point is where: • connection to and disconnection from the system occurs • flows of energy are measured and accounted for • the party with obligations regarding the flow of energy to and from the system is established.
Market services	A range of energy services are provided through the system and traded in the energy market, including wholesale energy, FCAS, and potential new system security services.* The building blocks design should allow innovations in technical standards and services, without linking services back to physical types of generators, loads or storage devices.

*these are being determined as part of the Essential System Services MDI

KEY PARTIES AND CORE ELEMENTS



TRADER REGISTRATION AND SERVICE PROVISION

- Traders are the parties registered to participate and trade in the market
- A trader goes through a single, simple registration process, then specifies which market services it wants to trade in
- Market services can be a range of things including the provision of wholesale energy, FCAS and potential new system security services
- Traders may be supported in the delivery of some market services by accredited parties
    - Accreditation is a process whereby a party providing services to a trader (e.g. metering services) demonstrates an ability to deliver the service in accordance with technical standards, specifications and requirements, supported and maintained through an assurance regime

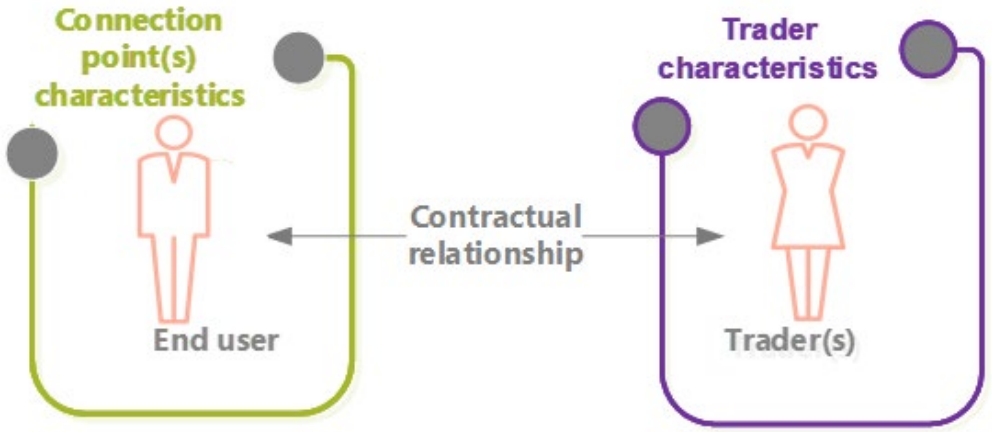
	Buy wholesale energy	Sell wholesale energy	Sell FCAS	Sell essential system service
$Trader_A$	✓	✓		
$Trader_B$			✓	✓
$Trader_X$		✓	✓	

END USER – TRADER RELATIONSHIP

End users can choose which traders they engage and which services they obtain, or provide. The services a trader can provide to an end user, and the market services an end user can obtain or sell via a trader, are affected by the characteristics of the connection point and the services the trader is registered to provide.

Connection point characteristics include:

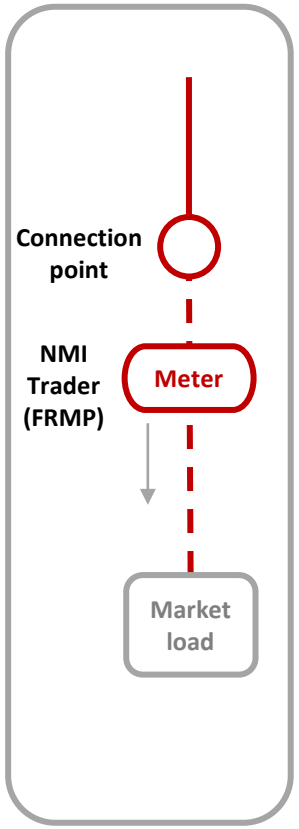
- Number of connection points
- Metering installation type(s)
- Electrical installations behind the meter (DER; hot water load etc.)
- Activities undertaken behind the meter (consuming or providing energy services)

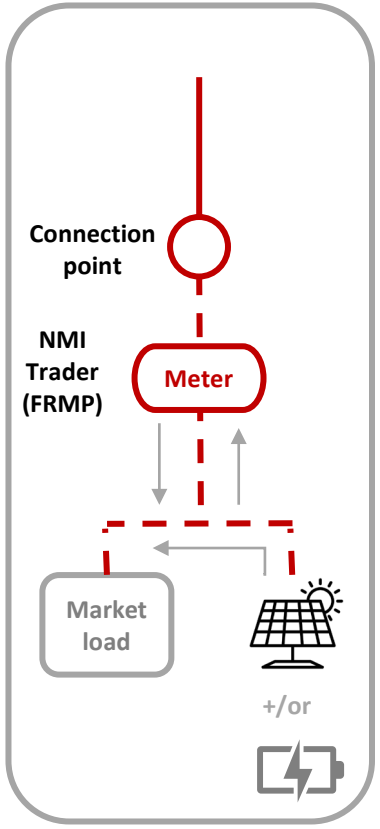


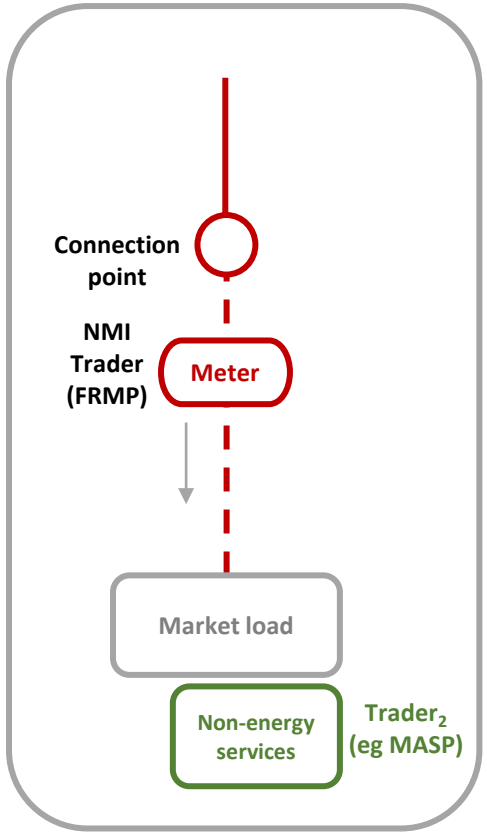
Trader service registration is governed by:

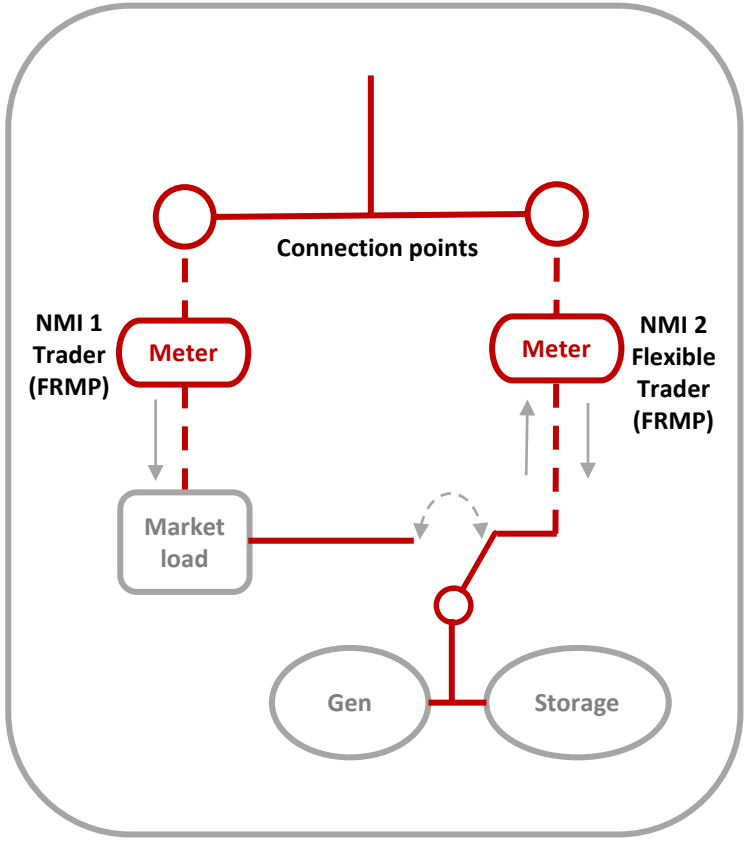
- Trader's ability to meet technical specifications
- Trader's compliance with market rules

PARTICIPATION MODEL EXAMPLES









BENEFITS OF CHANGE

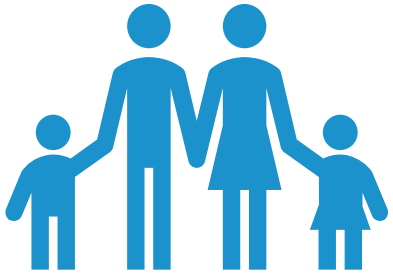
- Simplify the regulatory arrangements related to registration and classification, and provide a level playing field for entry to the market across traders who provide a range of services.
- An easier registration process makes it easier for new traders to enter the market and easier for existing traders to provide new services.
- Allow the regulatory framework to be more adaptable to change and facilitate innovation.
- Allow innovations in technical standards and services, without rigid market designs linking services back to physical types of generators, loads or storage devices.
- Remove the generator/consumer separation that is becoming outdated and presents a barrier to traders, particularly aggregators, participating in the market with a combination of load, generation and storage assets.
- Increased customer choice regarding degree of interaction with the wholesale market, including increased choice of service providers in relation to different services the customer can receive from, or provide to, the market.

TOPICS FOR DISCUSSION

1. What do TWG members think about the building blocks model?
2. Do TWG members agree with the drivers for and benefits of a building blocks model?
3. Are there other ways an end user might want to engage with a trader or other participation models that we haven’t considered?

SCENARIOS: END USERS AND TRADERS

SCENARIO 1: SMALL END USER – THE CHANS



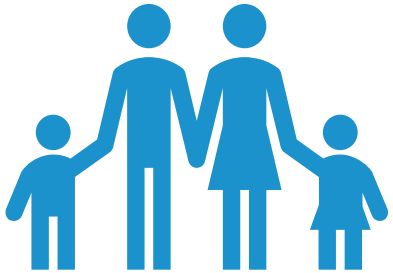
The Chans are a family with two young children:

- They are interested in **value for money** for their electricity supply, buy energy-efficient appliances, and occasionally use price comparator websites
- Life is busy with two young children - they have **limited interest in further engaging** with the energy market
- They are **considering installing solar panels**, for environmental reasons, and given rebates are available

Current experience:

- While they think they have a reasonable electricity rate, their current retailer doesn't offer the best solar feed-in tariff
- Their retailer has not offered them any plans that incentivise them to shift their discretionary consumption away from peak periods
- Other than solar panels, the value of DER and controlling the timing of their electricity use is not clear to them
- Their hot water is currently controlled by their distributor – low cost heating at night, but no flexibility

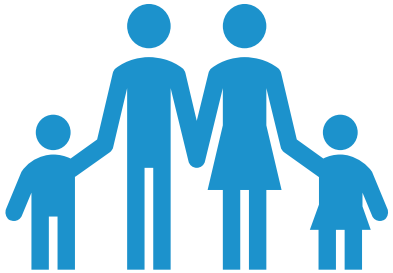
SCENARIO 1: SMALL END USER – THE CHANS



In a two-sided market, with the building blocks model:

- When researching solar panels, the Chans receive a bundled offer from a business to install the panels and buy excess energy produced (to onsell into the wholesale market), which is more attractive than their primary trader's offer
- The Chans become more interested in gaining value from shifting their consumption to off-peak periods, now they work from home part of the time and generate some of their own power
    - Their trader offers a new program for their hot water load, which automatically heats the water from the solar panels and/or during the cheapest time of the day
    - As it's now easier for new entrants to enter the energy market and provide tailored services (eg using information provided through the Consumer Data Right for energy portal), and traders have stronger incentives to predict their customers' energy consumption, the Chans are also able to get competitive quotes on time-of-use tariffs for the remainder of their load

SCENARIO 1: SMALL END USER – THE CHANS



Outcomes:

- The Chans can get value for money from their solar PV generation, whether used or exported, and from shifting their energy consumption away from peak periods, without needing to register with AEMO or participate directly in the wholesale market themselves
- They have a wider choice of services and service providers, in a competitive market, supported by greater availability of tools and services to help them make decisions
- They are able to enter into arrangements for these services on competitive terms, with their preferred trader:
  - protected by the ACL against faulty solar panels and unfair contract terms for the sale of the solar power
  - receiving the full set of energy-specific consumer protections for the energy they consume
  - informed by easy-to-use, personalised energy advisory services.

SCENARIO 2: LARGE END USER – AUSTRALIAN CEMENT PTY LTD

Australian Cement Pty Ltd is a large cement manufacturing company with several plants across Australia

Current arrangements:

- Australian Cement's plants are **energy intensive**, so the **price** of electricity is a key factor for doing business
- Different plants have **different capabilities** to control and shift their load
- Some plants have **rooftop solar**, usually used behind the meter but with export to the grid on weekends
- Australian Cement is interested in promoting its green credentials, e.g. using renewable energy and reducing the lifecycle emissions intensity of its cement, provided this **doesn't increase operating costs**

A changing landscape:

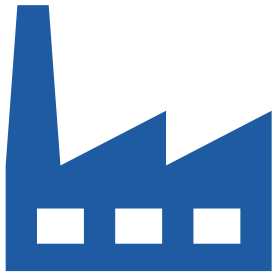
- **Spot prices** in the middle of the day, during **manufacturing hours**, are decreasing, sometimes negative
- Remains hard to **navigate the market** and know which services are available to buy (e.g. green energy) and sell without engaging traders to engage directly with the market

SCENARIO 2: LARGE END USER – AUSTRALIAN CEMENT PTY LTD

In a two-sided market with the building blocks model:

- A service provider assesses Australian Cement's sites and advises which sites are good candidates to separate out controllable load, and where batteries to store solar PV output for use during high-price periods might make sense
- Australian Cement decides to become its own trader for easily controllable parts of the load and its rooftop PV, so it installs load control devices and registers as a trader
- This suits Australian Cement because:
    - with the right software, it can increase consumption and charge its batteries during the middle of the day when spot prices are forecast to be negative, and reduce or delay consumption or draw on its batteries when prices are high – this saves money, while the business remains in control of its energy use to ensure it can manufacture cement when required/profitable
    - it is no longer paying a trader's margin on that portion of the energy it consumes or sells to the system
    - it can earn additional income from providing FCAS and system security services
    - it is a quick and simple process to become registered as a trader
    - it can maximise its use of its rooftop solar power, improving its green credentials

SCENARIO 2: LARGE END USER – AUSTRALIAN CEMENT PTY LTD



Outcomes:

- As with the Chans, it is more straightforward for Australian Cement to get value for money from its solar PV generation, whether used, stored or exported, and from shifting its energy consumption when wholesale prices are high
- Given the simpler registration process, Australian Cement can more easily engage directly in the wholesale market in relation to parts of its load, reducing its costs
- It is able to engage different traders for different market services, and take advantage of an ecosystem of "behind the connection point" service providers to help it trade on its own behalf for some services

SCENARIO 3: TRADER – NEW ENERGY PTY LTD

Current arrangements:

- New Energy provides retail offers to a range of different types of end users, including residential end users and small commercial and industrial (C&I) businesses across two NEM jurisdictions.
- It manages wholesale price risk through purchasing derivative contracts and investing directly in generation, while a small portion of its portfolio remains spot-price exposed.
- It has signed up some of its small and mid-size customers to demand response arrangements triggered by high spot prices.

A changing landscape:

- Advances in **behind the meter technology** and growing government-backed support for **DER** and **demand responsive capability** result in rapid end user uptake across both households and C&I businesses.
- End users seek out ways to **take control of their energy costs** by engaging traders who help them save on energy costs, optimise their demand-side profile, and deliver additional revenue through access to markets.
- DREDs, EVs, and smart technology enable traders to **optimise and manage** end users' import and export patterns in direct response to the market price.
- Increasing opportunities to trade **demand response** in the wholesale market from price-responsive withdrawals and storage.

SCENARIO 3: TRADER – NEW ENERGY PTY LTD

In a two-sided market:

- All traders are competing on the same terms (**level playing field**)
- Traders have **flexibility to adapt** or extend services as end users' needs and technologies change
- Market participation requirements are **proportionate** to the service offering
- Lower barriers to provide services, including establishing new connection points to provide energy services distinct from the current FRMP-customer relationship

Through a better understanding of the **connection point arrangements** and **price-responsiveness** of its end users, New Energy can:

- Trade energy from non-market load in direct response to the spot price, charging the end users' behind the meter storage system or EV when market prices are low; or injecting energy into the market during peaks
- Aggregate capability across connection points within its portfolio to provide services into different markets (e.g. network services markets; distribution level markets)
- Manage some of its customers' loads in direct response to market prices, reducing costs for its customers

SCENARIOS: TOPICS FOR DISCUSSION

1. Reflections on use of scenarios – are there any other issues or benefits you think a small end user, large end user or trader might experience under a building blocks model?
2. Can you suggest any specific considerations for small and large end users in designing the building blocks model?
3. Can you suggest any specific considerations for traders in designing the building blocks model?

TRANSITION PATHWAYS

POTENTIAL TRANSITION PATHS

Transitioning the regulatory framework towards a building blocks model:

- Short-term: AEMO will review process for registering market participants and classifying units
- Short-term: AEMO and AEMC to consider appropriate treatment of technical requirements for services and market interface requirements, with rule changes to be developed as necessary
- Medium/long-term: Structure of NER chapter 2 (with changes throughout the NER) to simplify arrangements for traders to become registered and provide services

Specific near-term initiatives and activities:

- Integrating storage rule change process
- DER Access & Pricing rule changes to improve integration of DER
- Flexible trading arrangements model, described on next slide – to be developed into a rule change request
- VPP trials
- Continued work on other 2SM design elements (participation in dispatch; consumer protections)

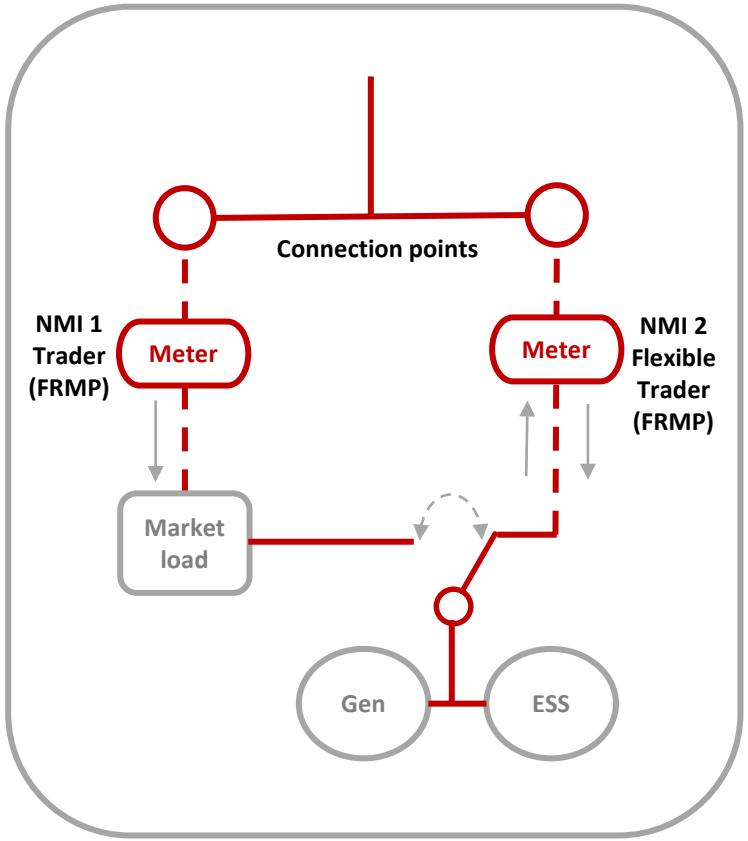
FLEXIBLE TRADING ARRANGEMENTS MODEL

Trends:

- **Evolving technology** and **falling costs** advance opportunities to deploy small scale storage systems (batteries; EV) at connection points ranging from residential to C&I connections.
- Greater number of connection points across the NEM with **bi-directional flows**
- Expansion in the use of the SGA framework

Model:

- Minor amendments to the SGA framework
- Direct alignment with 2SM principles (i.e. encouraging greater 2-way trading; adopting changes in technology and digitalisation)
- Model designed for small end users



TRANSITION PATHWAYS: TOPICS FOR DISCUSSION

1. Will it be easier for market participants to have a series of changes over some years, or a more abrupt change at a later date?
2. Do you consider the transition pathways we have discussed are likely to provide interim benefits (in addition to being steps on the way to a building blocks model)?
3. Are there additional transitional steps you think would be beneficial?
4. Are there specific transitional issues we need to bear in mind for end users, traders or other participants?

NEXT STEPS

NEXT STEPS

- ‘Open Mic’ session scheduled for 24 July will enable further in-depth, two-way dialogue about today’s content
- Technical working group presentation focussing on scheduling and dispatch on 11 August
- ESB paper in August will contain update on this MDI and interlinkage with other MDIs
- Technical working group presentations on other two-sided market topics will be held later in the year

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