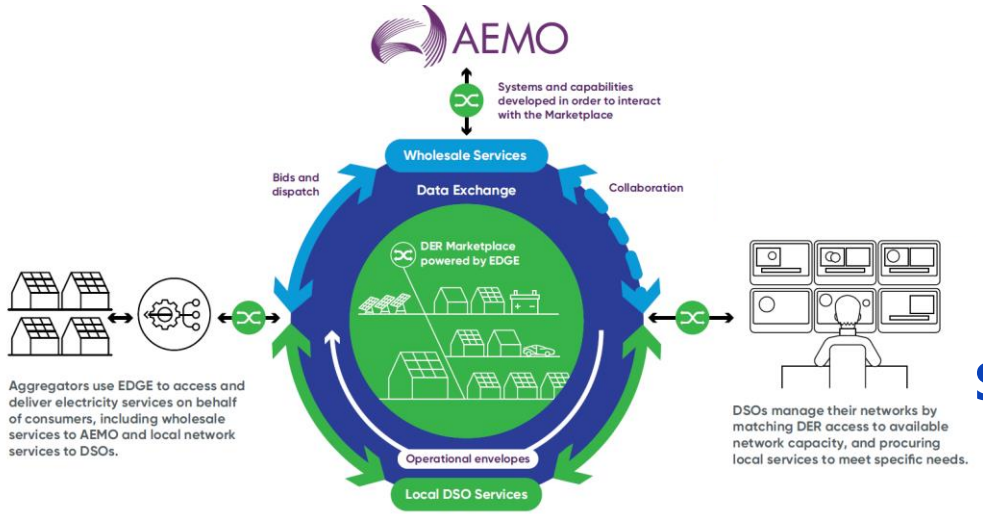
Networks Advisory Group

Outputs pack

Wednesday 19 May 2021 | 2.30 – 4.00pm

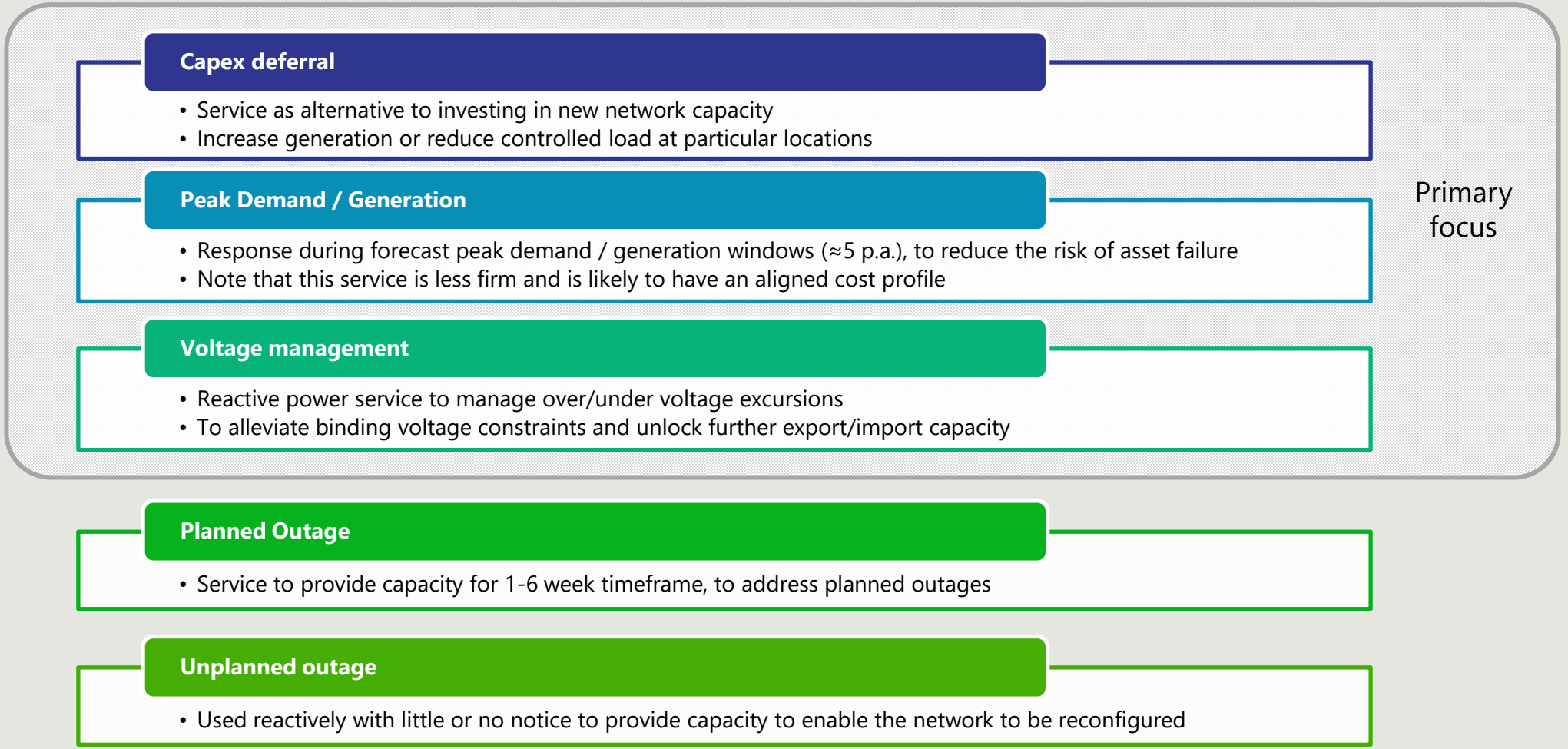
Part I: Local Services definition

Participants were invited to revisit the envisaged roles and processes



Aggregator		Distribution System Operator
View service and assess whether to enrol	**Define**	Define service characteristics and contractual terms
Submit enrolment information and performance test data	**Enrol**	Assess performance test data and pre-approve to participate
Submit offer - if accepted, exchange contracts per pre-agreed terms	**Engage**	Post service opportunity, assess offers from pre-approved participants, exchange contracts
Respond to dispatch signal to deliver service	**Deliver**	Schedule service delivery or trigger dispatch via EDGE
Submit service verification data	**Verify**	Download/view data on EDGE Assess data to verify performance
Set up standard queries for reporting	**Report**	Set up standard queries for reporting

Participants were also provided with the current thinking about local services for testing



Participants were asked about the existing services definition and potential valuation approaches

Define

Enrol

Engage

Deliver

Verify

Report

What tweaks are required to services definition?

Differentiate between services needed to solve issues for HV networks from LV circuits

Consider different arrangements for load / generation

Consider how to handle exceptions required for large system events

Clarify connection requirements for each service

Consider how service definitions will best enable sufficient availability of services for DNSPs

Worth differentiating services needed to solve for issues for HV networks from those for LV circuits. The higherup we go, the more 'liquidity' (aggregators will be more capable of providing services)

May need to consider different arrangement for load/gen

There may be benefit in building exceptions for larger system events

Provide clarity on connection requirements (particularly for voltage)

What happens when a service is not enough of not available at all? What is the back up? Or, on the other way around, how can a DNSP make sure there is sufficient volume of services from aggregators?

What techniques could be used to "value" the respective local network services procured from the market?

Capex: Cost of avoided investment
Voltage: Cost of conventional alternatives

Portfolio value of suppliers (including allowance for oversubscription) required to deliver the solution

Degree of firmness should inform "value"

For capex related services, shouldn't the price reflect what otherwise would be invested (ideally, much cheaper)? For voltage, similarly, shouldn't it reflect the cost of conventional alternatives?

Portfolio of different suppliers combined to deliver solution – what risks? Need to oversubscribe?

Firmness: that it cannot be overridden or opted out of

Participants provided a wide range of suggested topics to gather evidence about for the trial

Define
Enrol
Engage
Deliver
Verify
Report

What evidence would be useful to gather during the trial about the delivery of network services? (e.g. relating to the Aggregator supply risk; consideration of the need for alternate back-up supply etc.)

Competition considerations

- What if an aggregator becomes an unregulated monopoly of service?
- What if the customer wants to switch aggregators?
- Does the customer have a choice in what services they participate in? Or is this up to the aggregator to determine?

Participation incentives

- When does the network constraint need to be addressed as it disproportionately impacts the value an aggregator can get form energy market
- Longevity of business models for aggregators, networks and AEMO to support the backend systems (CAPEX and OPEX costs)
- What additional benefit do you get for medium firmness if you have to give 4 hours' notice – it is not really an 'event'?
- The threshold, or decision measures where a medium firmness becomes a high firmness and vice versa

Performance response

- Comparison against a network owned solution like a StatCom for voltage or network/ community battery for voltage thermal and even backup supply
- The impact to other parts of the DNSP procedures e.g. control room, PQ groups, lines etc
- Is it easier/cheaper to recruit a single C&I vs multiple residential? Do you get a better response?
- Installed capacity required to provide a given firm capacity for a service
- The speed to procure the service, especially the long term if aggregator needs to recruit customers
- Time to response and interaction with market bids
- Quantifying the availability (or extent) of certain services when really needed
- Is there different performance from different devices? E.g. DM from battery vs aircon vs hotwater

Complexity in the measurement and verification of delivery of certain local services may be difficult to avoid

Define

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Report

We foresee challenges in measuring/validating the delivery of certain types of local network services (e.g. baselining) **How might verification be simplified, and what guidance could be offered for testing verification within the trial?**

Multiple measurement points as net metering makes verification difficult

UE's summer save program could help inform baselining techniques. But it does assume 100% smart meter penetration

The trials will need to have 'control weeks/days' (no service provision) to create a baseline. The corresponding smart meter data can be used for comparisons

May need to limit services to measurable outputs – reductions in network use during peak times could be rewarded through reduced network charges instead

Part II: Dynamic network pricing options

Participants were presented with a draft conceptual approach for thinking about the dynamic network pricing context (1/2)

Operational Scenarios	Current Mechanisms used to address	Optional Mechanisms being explored
	Reduce Unplanned Networks Cost	
Load at wrong time	1. Structured non-network service procurement	1. Market for non-network service procurement
	2. Policy Limits on Connection	2. Network Operating Envelopes
Too much generation at wrong time	**Reduce Long-Run Networks Cost**	
	1. Annual network tariffs	**1. Dynamic network Pricing**
Incentivise more generation or load at right time	**Reduce Wholesale or Energy Cost**	
	1. Wholesale market (including feed-in tariffs)	1. Ensure feed-in tariff maintains close alignment to market value
	2. Ancillary market	2. Integration of Wholesale Market with DER

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Participants were presented with a draft conceptual approach for thinking about the dynamic network pricing context (2/2)

Trial Objectives (Why)

Adjust behaviour based on network cost re-allocation for which Purpose?

- *Reduce Long-Run Network cost*
- *Inefficient DER uptake*

Scope of resource targeted?

(a) export change

(b) load change

(c) use of storage

Will this trial:

(1) Test potential for behaviour change?

- *Test threshold for $change*
- *Test volume of change for each $change (firmness and size of response)*

(2) Test 'best' method of dynamic pricing?

Who / How / When?

Principles (What)

- **Who pays, or who should bear the risk?**
- **Customer protections** – who, and when should those people be not affected; any last resort?
- **Who should have 'power' to respond/affect?**
  - *Who is involved*
  - *Who adjusts tariff (eg. not modified by retailer, just done by aggregator)*

Design Options (How)

Frequency of tariff = align with envelope?

Calculate against resource or connection point?

Which resource?

- ***Battery***
- *Solar PV system?*
- *Smart appliances*

How complex is the pricing?

- *by hour bands?*
- *By hour*
- *By 5 min*

Signaling?

- *Week ahead*
- *Day ahead*
- *Real-time*

Trial measurement approach?

- ***Simulated vs real data***
- *Baseline without change*
- *Apply change, with tariff on top*
- *Use cases to be considered*
  - *Sunny/wet/cloudy days*

Participants provided feedback about the context and operating scenarios

Does the Dynamic Network Pricing conceptual approach paint an accurate picture and appropriately link operational scenarios with mechanisms?

It would be useful to map out what level of co-operation would be needed by retailers and AER to run a trial

Short run locational marginal pricing could also be used to manage locational constraints in addition to tariffs that are focussed at LRMC

Are there any other operational scenarios we should consider?

A few models should be tested – at connection point and beyond single device to provide a more connected customer experience

"Wrong time" might be wrong to us, but the most useful to the customer / market

"Load at peak load time"

What other principles should be introduced for the benefit of the customer?

Principles (What)

Who pays, or who should bear the risk?

Customer protections – *who, and when should those people be not affected; any last resort?*

Who should have 'power' to respond/affect?

- *Who is involved*
- *Who adjusts tariff (eg. not modified by retailer, just done by aggregator)*

If you think of aggregators as 'using' the network to participate in markets then it makes sense to charge them for the use of the network if they add costs to the network (which the are likely not to)

Isn't this something that the aggregator needs to figure out so customers engage with them?

Ensure any value that is derived from use of customer assets is passed onto customer and not just added to a margin

Dynamic pricing is not aimed at customers but rather their agents that participate in markets etc.

Participants observed that dynamic pricing was a valuable piece of the puzzle but not the entire picture

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Who / How / When?

Should the dynamic pricing objectives prioritise testing potential for behaviour change or the (hypothesised) ideal methods?

Some (but not all services) may be well signalled by tariffs

Any testing should prioritise better understanding aggregator response rather than the ability to drive customer behaviour change

Quantifying and testing responsiveness for different services should precede any dynamic pricing testing

It may be similar to the ancillary markets vs energy markets dilemma – might be worth thinking which aggregator activities are ancillary-like (probably voltage?) and which ones are energy-like and should be signalled by tariffs (probably load/generation shifting?). Short duration peak reductions could be ancillary, but you'd want longer term changes to be driven by cost reflective LRMC pricing. As a minimum you'd want your LRMC signals to be humming in the background to provide an incentive for innovation in long run changes.

Less about behaviour change and more about how the aggregator responds and products it provides. Don't make it more complex for the customer. Behind the meter optimisation will change to leverage value. E.g. battery charge and discharge rates

Before testing prices or dynamic pricing, it is important to quantify/test the degree of responsiveness for different types of services. Can the aggregators deliver? It is not that easy when we talk about voltages.

Agreed the test is on the aggregator rather than individual customers as customers do not have sufficient knowledge to respond