



DER Market Integration Consultative Forum

3 June 2021

*We acknowledge the Traditional Owners
of country throughout Australia and
recognise their continuing connection to
land, waters and culture.*

*We pay our respects to their Elders past,
present and emerging.*

AEMO Competition Law Meeting Protocol

AEMO is committed to complying with all applicable laws, including the Competition and Consumer Act 2010 (CCA). In any dealings with AEMO regarding proposed reforms or other initiatives, all participants agree to adhere to the CCA at all times and to comply with this Protocol. Participants must arrange for their representatives to be briefed on competition law risks and obligations.

Participants in AEMO discussions **must**:

1. Ensure that discussions are limited to the matters contemplated by the agenda for the discussion
2. Make independent and unilateral decisions about their commercial positions and approach in relation to the matters under discussion with AEMO
3. Immediately and clearly raise an objection with AEMO or the Chair of the meeting if a matter is discussed that the participant is concerned may give rise to competition law risks or a breach of this Protocol

Participants in AEMO meetings **must not** discuss or agree on the following topics:

1. Which customers they will supply or market to
2. The price or other terms at which Participants will supply
3. Bids or tenders, including the nature of a bid that a Participant intends to make or whether the Participant will participate in the bid
4. Which suppliers Participants will acquire from (or the price or other terms on which they acquire goods or services)
5. Refusing to supply a person or company access to any products, services or inputs they require

Under no circumstances must Participants share Competitively Sensitive Information. Competitively Sensitive Information means confidential information relating to a Participant which if disclosed to a competitor could affect its current or future commercial strategies, such as pricing information, customer terms and conditions, supply terms and conditions, sales, marketing or procurement strategies, product development, margins, costs, capacity or production planning.

Today's meeting

Time	Item	Speaker
11:00 – 11:05	Welcome and introductions	Matthew Armitage
11:05 – 11:15	Virtual Power Plant Demonstrations Update	Jacqui Mills
11:15 – 11:25	Customer & Aggregator User Stories – feedback summary	Matthew Armitage
11:25 – 11:40	Project EDGE: <ul style="list-style-type: none">• Local Services Overview• Lessons Learned Report	Matthew Armitage/ Nick Regan / John Theunissen
11:40 – 11:55	Q&A	<i>Via Slido.com – use code #MICF</i>
11:55 – 12:00	Future Meetings & Close	Matthew Armitage



VPP Demo & MASS Consultation update

VPP update

- The VPP Demonstrations have been **extended beyond 30 June 2021** and are now due to conclude immediately before the effective date of the amended MASS.
- **From 1 July 2021** until the end of the VPP Demonstrations:
 - Current VPP Demonstration participants will no longer be required to submit enrolment, operational and telemetry data and the **APIs will be decommissioned.**
 - **No further portfolio updates** will be accepted following the publication of the draft determination, and any applications submitted must be processed and completed by 30 June 2021.
 - No new participants will be enrolled.

MASS Consultation Overview



- The MASS Consultation has been extended by a further 4 weeks with the draft determination due to be published on 14 June 2021.
- AEMO are using this extended period to:
 - Conduct further analysis on the error introduced at sampling rates slower than 50ms (e.g. 1s) and to determine concrete outcomes to inform the draft determination.
 - Opportunity to further consider the behaviour of DER inverters to determine if, or to what extent, this may impact power system security, with inverters providing FCAS at scale.

User Stories

Feedback Summary

Aggregator User Stories - feedback & input

DER Wholesale Integration User Stories			Acceptance criteria		
As a...	I want...	So that I...	Solution must...	Reform process	Being addressed?
Aggregator	To be paid for providing valuable data and services (including comms) to AEMO, networks and retailers	Can invest in solutions and incentivise customers to participate in VPPS	Deliver reliable services that offer value		
	To be able to group different asset types into a single DUID	Can give more customers access to aggregation services	Have similar performance characteristics across asset types		
	To be accountable for delivering reliable services from controllable assets without being penalized for uncontrollable customer behaviours	Can stimulate innovation and reduce costs	Be reliable and appreciate the differences between aggregated DER performance and behaviours and traditional generators		
	Accurate long-term forecasts of the revenue available from service delivery	Can invest in solutions and provide customers with up-front incentives to stimulate DER uptake	Support long term contracts and reliable price forecasts		
	To work towards implementing industry standards over time	Can reduce costs and allow greater choice for customers	Develop standards over time considering real-world practical experience. Avoid mandating standards implementation until they are mature enough for companies to invest in.		
	Unify WDR, MASP and other VPP into a single market participant	Offer customers choice and decrease transaction costs	Facilitate market growth and customer choice		
	Standardisation of implemented solutions	Do not have to integrate different grid services projects with different DNSPs	Use standards such as IEEE 2030.5 and protocols such as OpenADR so that all implementation is similar.	DER Min Tech Standards	

DISCLAIMER: THIS IS A DRAFT WORKING DOCUMENT AND DOES NOT REPRESENT AEMO'S VIEWS. THE PURPOSE IS TO ARTICULATE AND UNDERSTAND DIFFERENT STAKEHOLDER PERSPECTIVES

Aggregator User Stories - feedback & input

DER Wholesale Integration User Stories			Acceptance criteria		
As a...	I want...	So that I...	Solution must...	Reform process	Being addressed?
Aggregator	To be able to optimise at both the household, local network and system levels	Can maximise the benefit for my customers	Be capable of optimising at multiple levels to maximise overall benefit		
	To be able to set priorities for different levels of interaction	Can ensure that my customers priorities are taken into account	Allow flexibility to set different priorities depending on customer choice		
	Have visibility of individual asset capacity and constraints, (eg limits on hybrid inverter throughput)	Can have confidence in the aggregated available capacity	Include consideration of customer level constraints that dynamically affect available capacity		
	To be able to group customers by network location/node	Can co-optimize localised network constraints/ opportunities for subsets of the aggregated fleet with system wide opportunities	Ensure that network locality can be flagged to allow for optimisation based on local network opportunities		
	To be able to easily add and remove customers to the fleet without the need for re-registration for provision of services	Can adjust registered fleet capacity in response to customer churn or new customer enrollment	Ensure that changes in fleet capacity can be easily reflected in registered capacity		

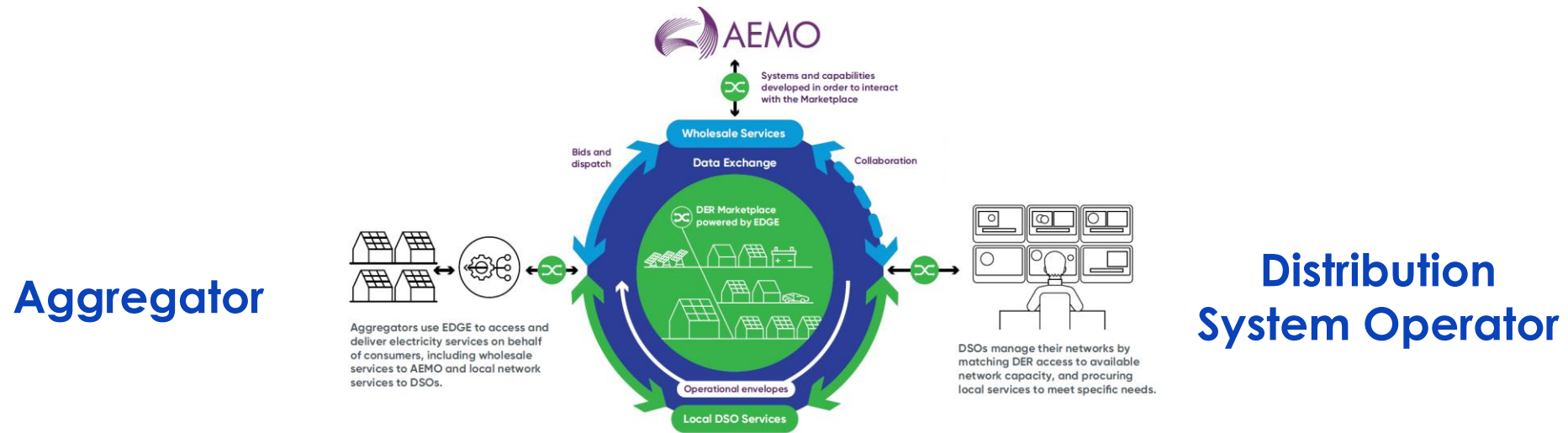
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Project EDGE:

- Local Network Services
- Lessons Learned

Recap of the proposed “Local Services Exchange (LSE)” process in EDGE and exploring a couple of local services in more detail

Local Services – Proposed process/roles



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

Local Services considered for testing

Capex deferral

- Service as alternative to investing in new network capacity
- Increase generation or reduce controlled load at particular locations

Peak Demand / Generation

- Response during forecast peak demand / generation windows (≈ 5 p.a.), to reduce the risk of asset failure
- Note that this service is less firm and is likely to have an aligned cost profile

Voltage management

- Reactive power service to manage over/under voltage excursions
- To alleviate binding voltage constraints and unlock further export/import capacity

Planned Outage

- Service to provide capacity for 1-6 week timeframe, to address planned outages

Unplanned outage

- Used reactively with little or no notice to provide capacity to enable the network to be reconfigured

Primary focus

Summary classification of local services

Demand increase / reduction

High Firmness

(typically linked to a **network planning** capex deferral use-case, EDPR Augex funded)

- **Trial example:** Feeder with high overloading probability/incidence – peak demand reduction service required
- **Future example:** Reverse power during solar PV generation peak causes sustained or regular network operation/asset issues – local generation reduction or load increase service required
- **Treatment:** Likely to require services over a prolonged period (>1 year), hence suited to a longer-term contract with *guaranteed availability and agreed pricing*

Medium Firmness

(typically linked to an **operational planning** use-case, weather related, EDPR Opex funded)

- **Trial example:** Forecast asset overload as a result of heat wave activity or picking up additional customer load due to a planned temporary network reconfiguration - peak demand reduction service required
- **Future example:** Minimum demand system issue forecast - local generation reduction or load increase service required
- **Treatment:** Likely to require services on a seasonal basis, hence suited to a shorter-term contract with *negotiated availability and pricing*

Low Firmness

(typically linked to a **spontaneous operational** use-case trigger, event related, EDPR Opex funded)

- **Trial example:** Unexpected occurrence of abnormal local network loading as a result of a community event, or a combination of weather and special calendar days - peak demand reduction service required
- **Future example:** AEMO declared system contingent scenario – services required would relate to the event
- **Treatment:** Akin to NEM spot market - *no guaranteed availability, pricing is set by the market or negotiated earlier*, hence suited to a shorter-term contract with negotiated pricing

← Opportunity to contract multiple services under one umbrella? →

Summary classification of local services

Voltage management

High Firmness

(typically linked to a **network planning** capex deferral use-case, EDPR Augex funded)

- **Trial example:** LV network with known regular or sustained Code voltage breaches – local voltage management service required
- **Future example:** Support of additional DER hosting capacity (e.g. for export / EV charging) where known voltage constraints exist – local voltage management service required
- **Treatment:** Likely to require services over a prolonged period (>1 year), hence suited to a longer-term contract with *guaranteed availability, agreed pricing and autonomous operation*

Medium Firmness

(typically linked to a **forecast market need** use-case, high price related, funding to be clarified)

- **Example:** LV network with known limited capacity for energy export/import – local voltage management service required to temporarily relieve network constraint for market economic benefit
- **Treatment:** Likely to require services on a seasonal basis or until constraints are remediated, hence suited to a shorter-term contract with *negotiated availability and pricing*

Low Firmness

(typically linked to a **spontaneous market need** use-case trigger, event related, funding to be clarified)

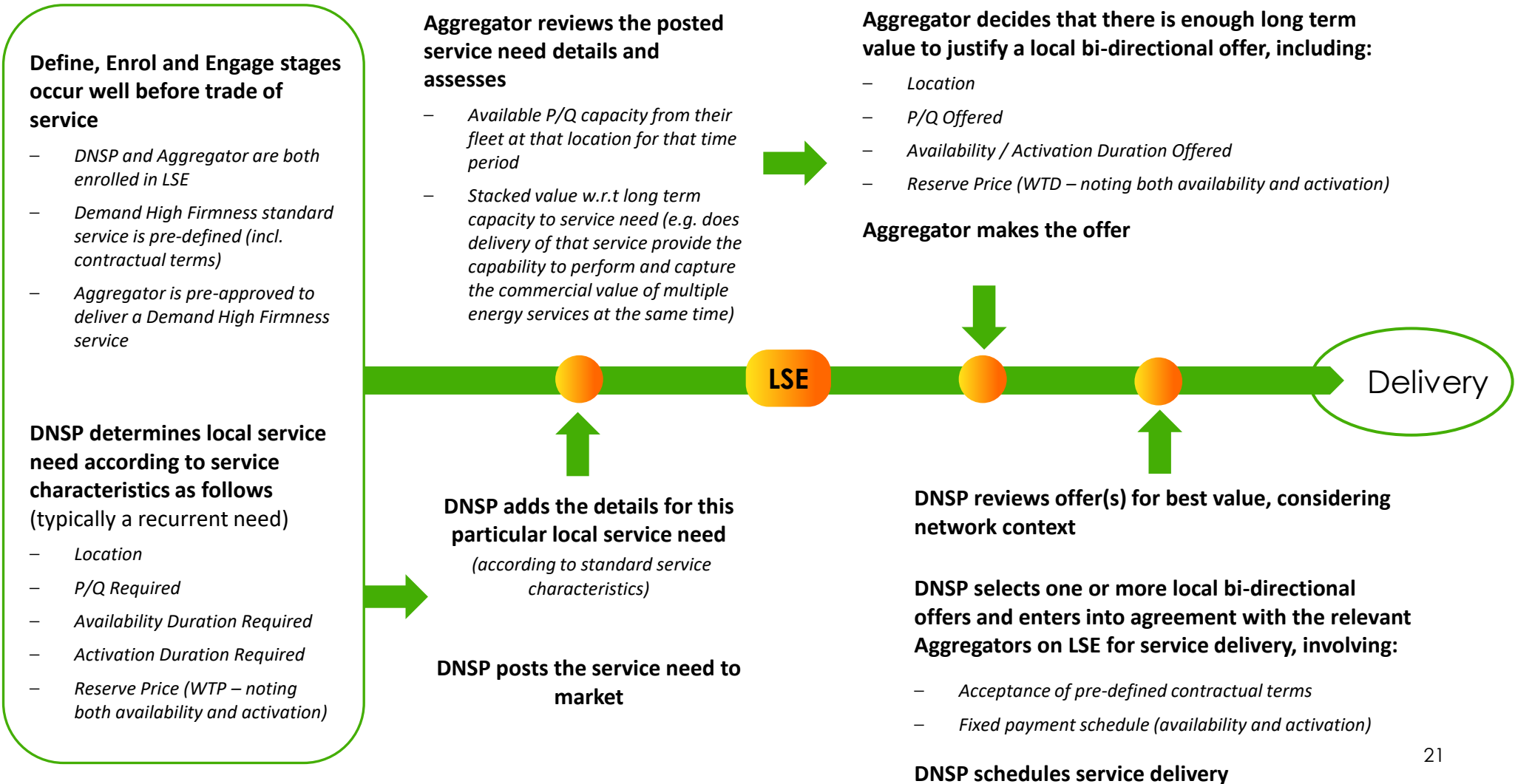
- **Example:** Opportunistic expanded local DER export / import portfolio requires additional local network capacity (market motivated, voltage limited local network) – local voltage management service required to temporarily enable increased DER activity for market economic benefit
- **Treatment:** Likely to require ad-hoc services, hence suited to a shorter-term contract with *uncertain availability, pricing is set by the market or negotiated earlier*

Market service related

Opportunity to contract multiple services under one umbrella?

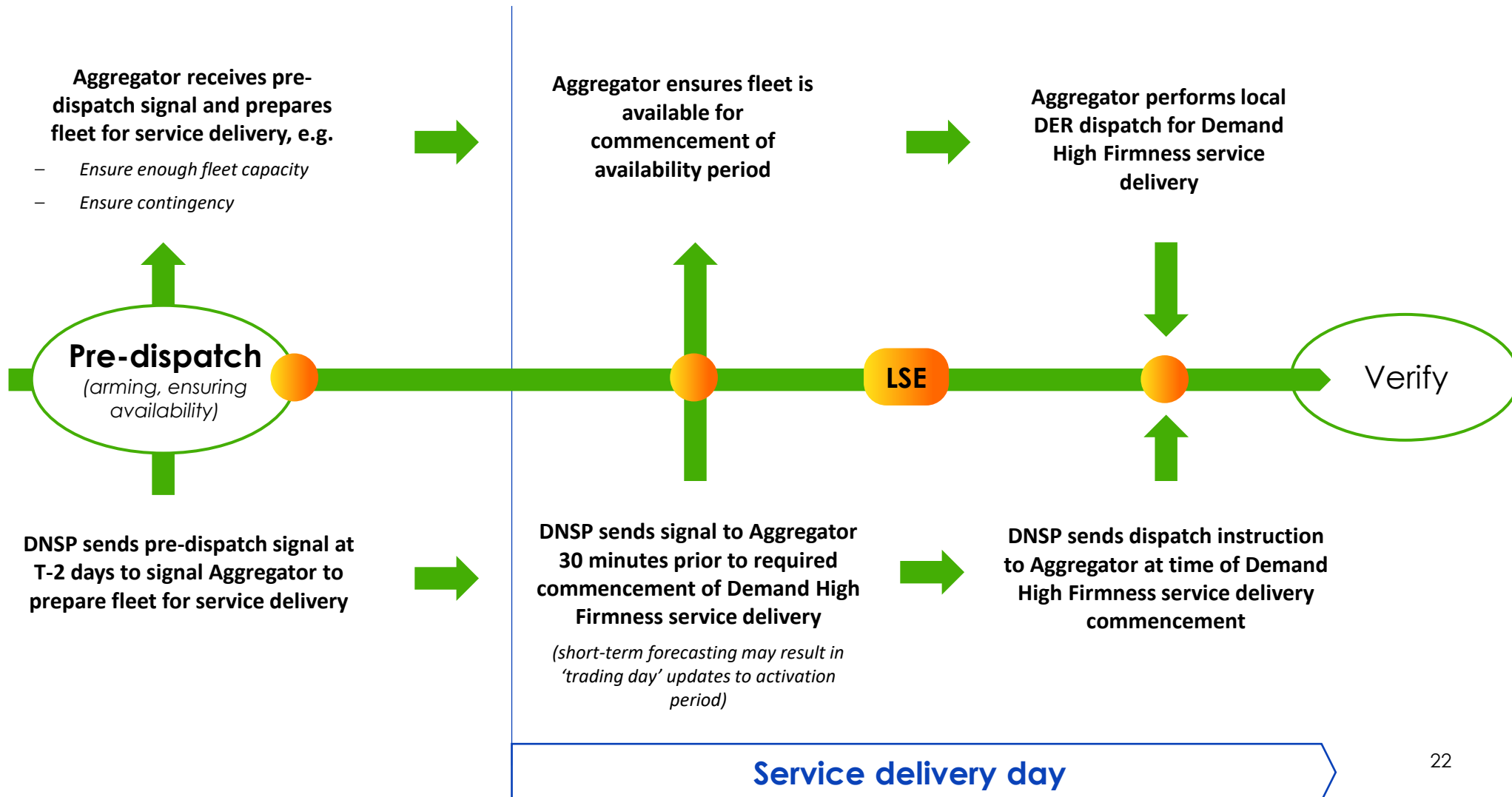
A closer look at a couple of services

Demand increase / reduction - High Firmness Service



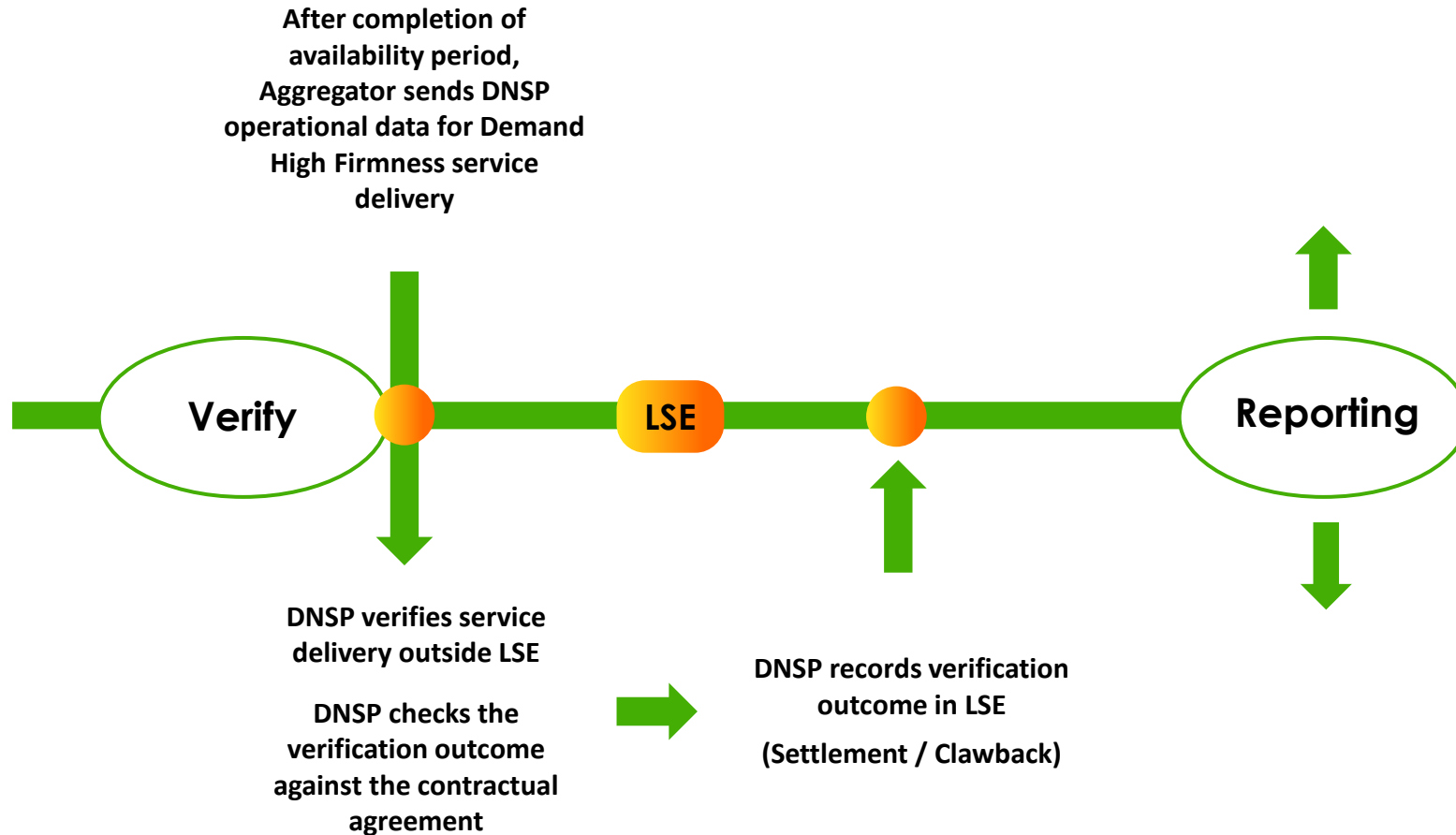
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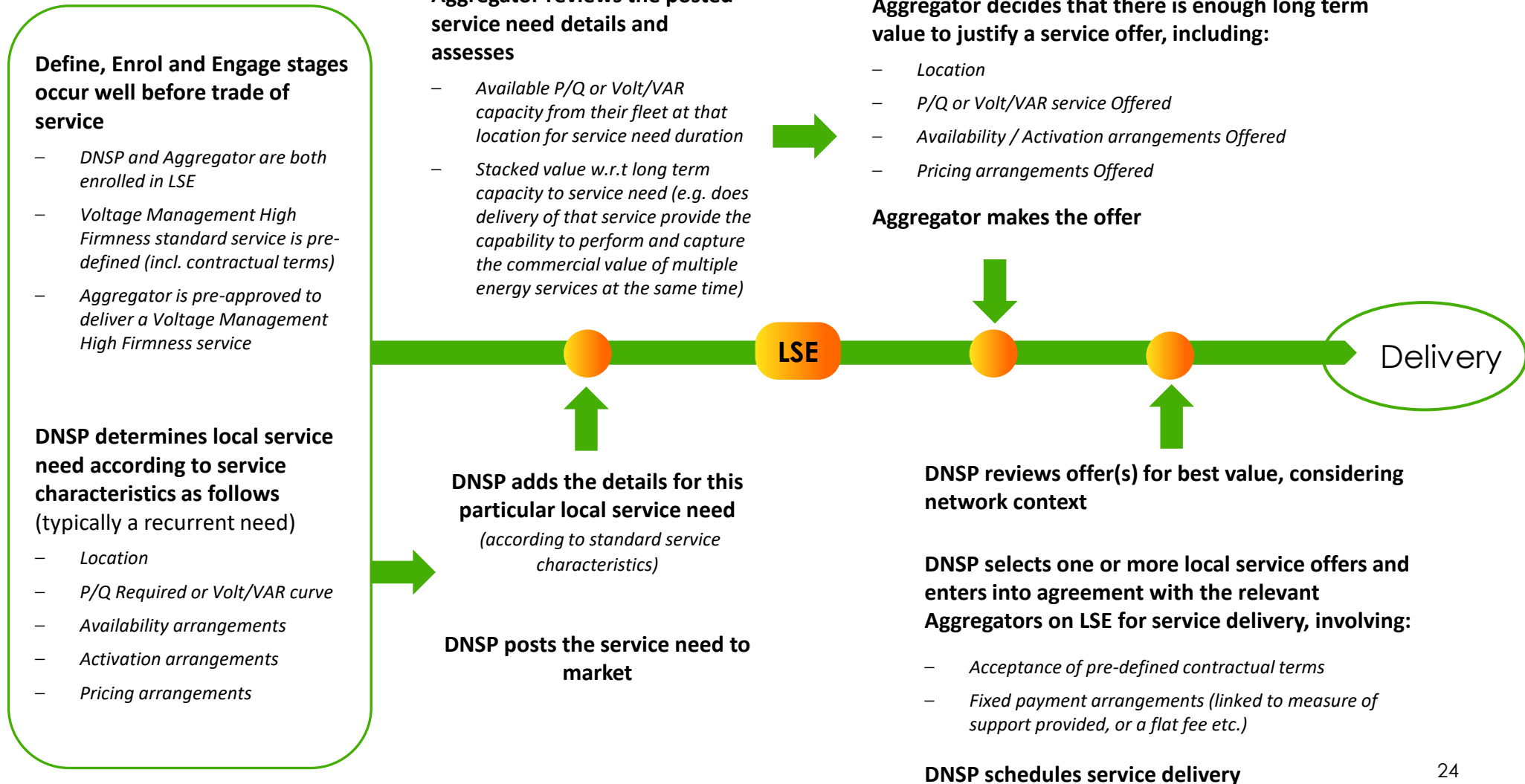
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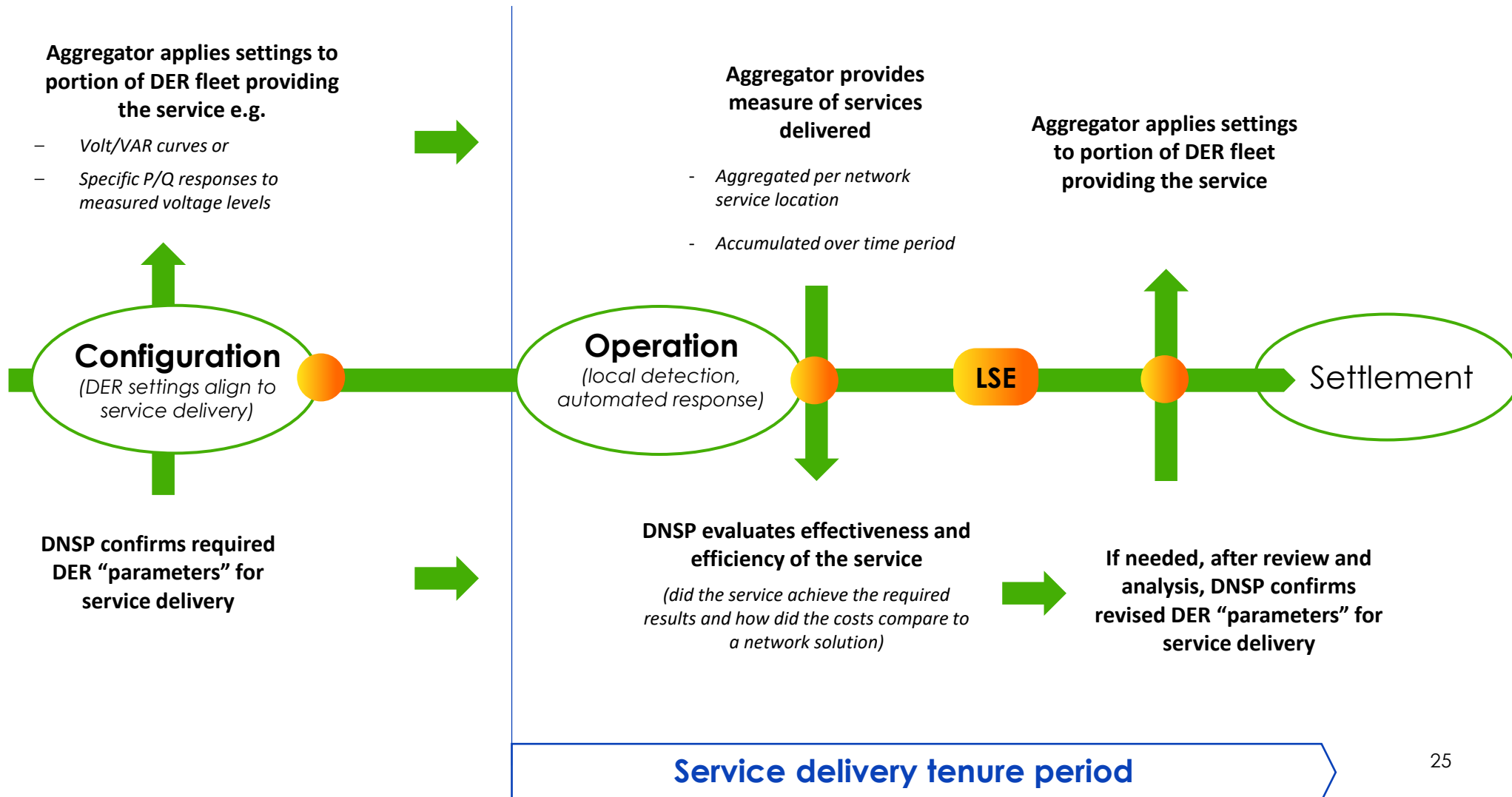
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Voltage Management - High Firmness Service



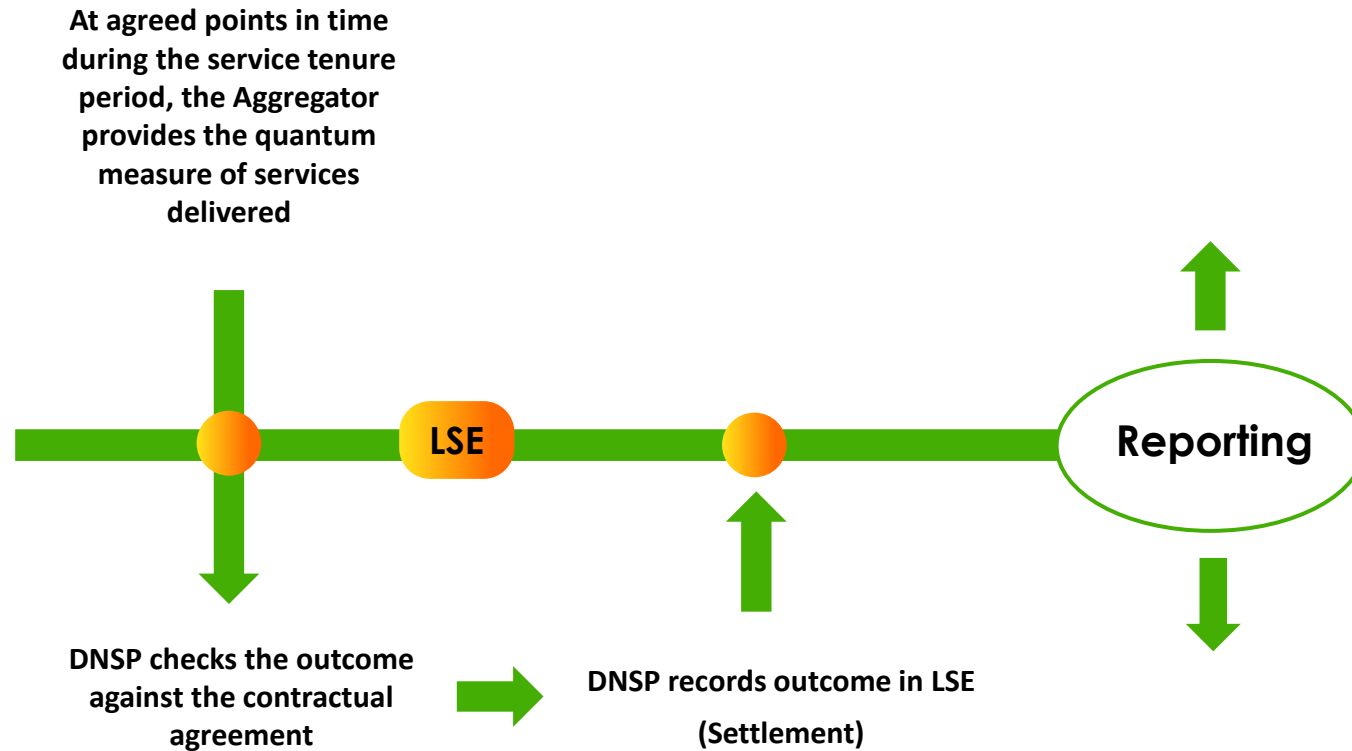
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Voltage Management - High Firmness Service



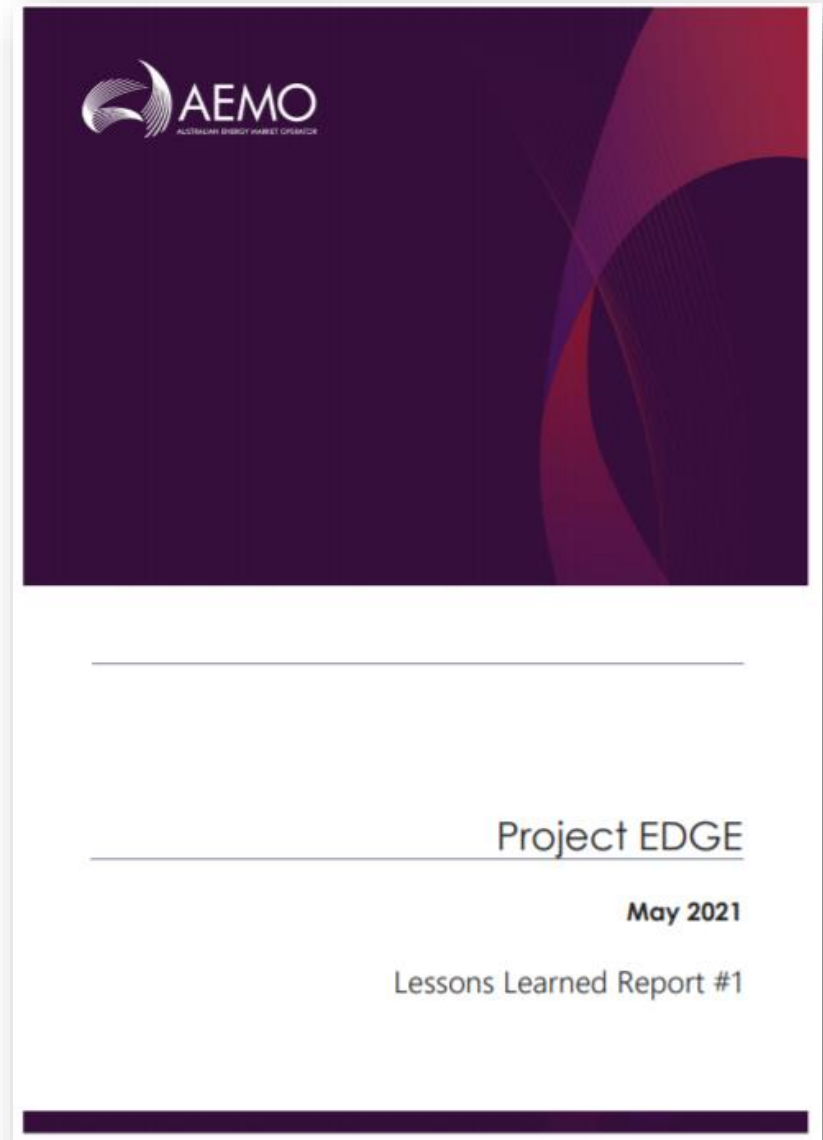
A closer look at a couple of services

Voltage Management - High Firmness Service



Project EDGE: Lessons Learned Report

- The first Project EDGE “Lessons Learned” Report has been published on AEMO’s Project EDGE website.
- Key learnings to date include:
 - Challenges and opportunities arising due to remote working conditions and how these will continue to influence ongoing approaches to working collaboratively.
 - Benefits of early engagement and inputs from stakeholder working groups.
 - How Project EDGE will work with complementary projects to maximise outcomes and learnings.
 - Considerations regarding the technology development and procurement.
 - An overview of the knowledge sharing plan and how this will maximise outcomes for the project.
- Future Lessons Learned and Knowledge Sharing reports will be combined with further insights into the knowledge gained as the project progresses.
- 2nd Public Webinar planned for Aug/Sep 2021





Q&A

Join via slido.com using code #MICF



Future Meetings & Close

Next meeting: 1 July

Future Meetings

- **Thursday, 1 July 2021**
- **Thursday, 8 August 2021**
- **Thursday, 2 September 2021**
- **Thursday, 7 October 2021**
- **Thursday, 4 November 2021**

Note:

- Agenda & meeting documents will be provided 5 days prior to meetings.
- Meeting actions will be distributed within 5 days post meetings (as required).
- Non-confidential information will be published on AEMO's website in the month following each meeting.



Questions & contact

EDGE@aemo.com.au