This session will be recorded and shared after this event. If you have any objections please feel free to drop off the call and listen back in your own time. Thank you

Regional Development Programme

Megawatt Dispatch (MWD)

Webinar for DER (UK Power Networks South Coast)

12 January 2024

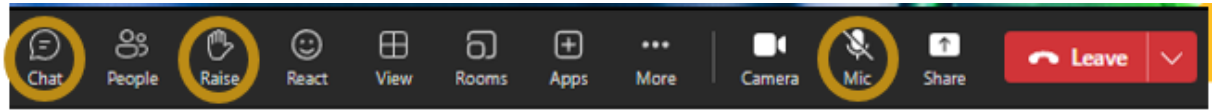
UK Power Networks Delivering your electricity

ESO

Introduction & Overview

Tim Manandhar
Distribution System Operator (DSO) MW Dispatch Project Lead

Keith Parker
Regional Development Programmes – MWD Product Manager



Agenda

Item	Presenter	Time
Welcome and Introductions	Keith Parker - ESO Tim Manandhar – UKPN	11.00am
Reminder of MWD Service	ESO	11.05am
Process Overview Recap	ESO	11.10am
Service Terms Key Call Outs	ESO	11.15am
Dispatch and Cease Process	UKPN	11.30am
Some Settlements Examples	ESO	11.40am
Next Steps- Service Terms Consultation & Supporting Documents	ESO	11.50am
Q & A – we welcome any final questions	All	11.55pm- onwards

Reminder of the Service

Keith Parker
Regional Development Programmes – MWD Product Manager

What is MWD – A Reminder ?

- A ‘turn to zero’ service to allow ESO Control Room to manage pre-fault Thermal Export Constraints
- Covering 5 GSPs across South Coast (UKPN SPN area)
- Minimum of 1MW generators able to take part in the service

- DER will be commercially contracted with ESO alongside their DNO Connection Agreement – the service provides a way to fulfil the ‘Control & Visibility’ obligation via a Connect and Manage requirement

There are 2 ways of fulfilling these Control & Visibility (V&C) requirements:

- Participation in the ESO Balancing Mechanism / Wider Access
- Participation in the new MWD transmission thermal constraint management service.

MWD is a more minimalist and potentially cheaper to implement service than the Balancing Mechanism – DERs will only be able to participate in one the markets, not both.

- A continuous service with assumed availability (unless DER is made unavailable via the DNO / DSO)
- ESO instruction issued to DER to ramp to zero via DNO infrastructure
- Utilisation payments only – there are no availability payments for the service. Regular (submission closes at 16:00 daily for the following day) DER price resubmission to ESO is possible.

Process Overview Recap

Keith Parker
Regional Development Programmes – MWD Product Manager

E2E Process Overview

Registration

- One off collation and validation of DER and asset information via Single Market Platform (SMP) (ESO Registration platform) – including any issue / query resolution
- Agreeing to Service Terms for MWD service participation
- Provision of pricing information (can be updated by provider as needed – daily 4pm cut off for following day)

Planning

- UKPN indicates 'DER unavailability' for the service every week covering 3 weeks ahead and then a day ahead – risks of conflict or 'Primacy' concerns shared with ESO
- ESO uses DER unavailability data in planning process
- Planning and Scheduling / Bounceback tools will help ESO National Access Planning (NAP) and Electricity National Control Centre (ENCC) in forecasting / decision making

Instruction

- UKPN provides the ESO with DER real time MW output and ongoing availability
- MW dispatched in short lead / real time using ESO ASDP system via DNO using the DNO infrastructure to DERs

Settlement

- Business As Usual (BAU) Settlement process uses Instruction, Metering and Pricing data held by ESO
- Service Paid monthly
- Utilisation payment only

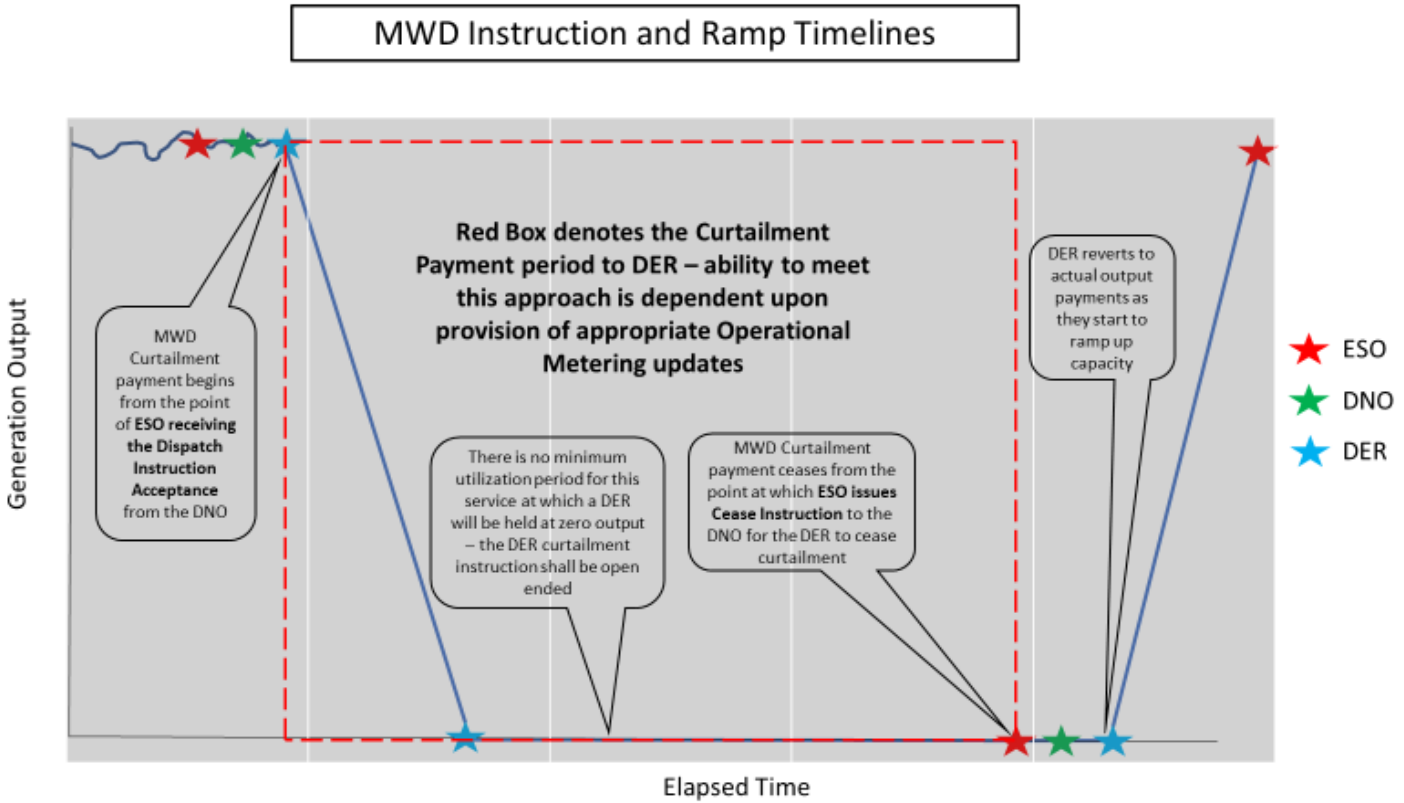
Service Terms (Key Call Outs)

Keith Parker
Regional Development Programmes – MWD Product Manager

Service Terms Key Call Outs

- Connect and Manage and Control and Visibility clauses in Appendix G / Connections offers / agreements
- Connected DERs with conditions should sign up for MWD or join the BM
- Key elements for communications and data sharing requirements in place
- Notice of unavailability through UKPNs Network Vision 8 weeks in advance
- Curtailment to zero required on issue of dispatch instruction (deadband agreed as 0.05MW)
- DER ramp down times - linked to UKPNs EDS
- No min or max dispatch instruction duration – open ended until ESO issues a cease instruction
- DERs will be paid for utilisation of the service based on MW reduction, instruction duration and submitted price (can be updated as required by DER – 4pm closure time)
- ESO sends a monthly statement of payment to DER
- Dispute process in place for disputes that can't be resolved locally

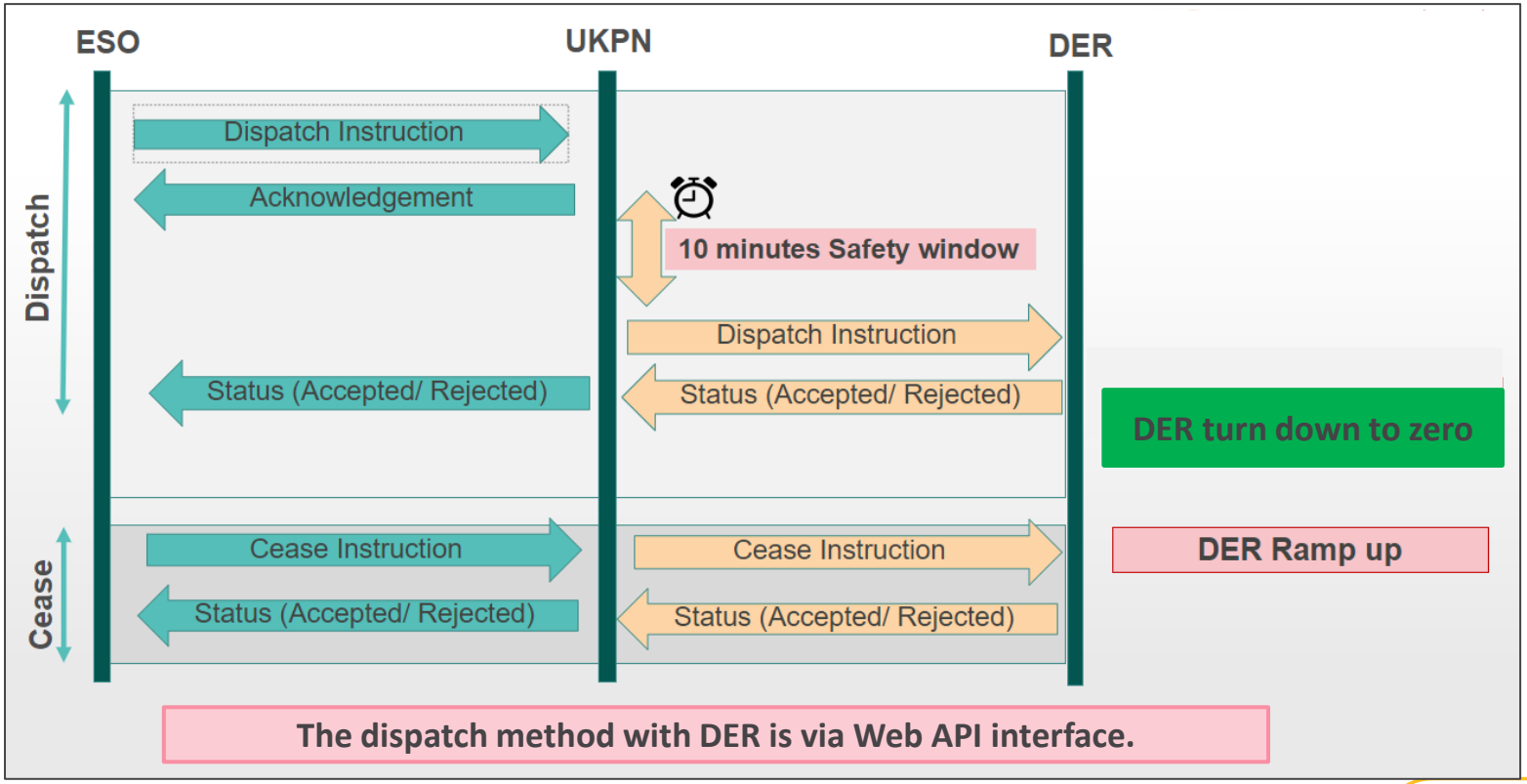
MWD Curtailment Payments & Minimum Utilisations



Dispatch and Cease Process

UKPN
Sima Davarzani – UKPN Product Lead

MWD Dispatch Process



Settlement Overview

Keith Parker
Regional Development Programmes – MWD Product Manager

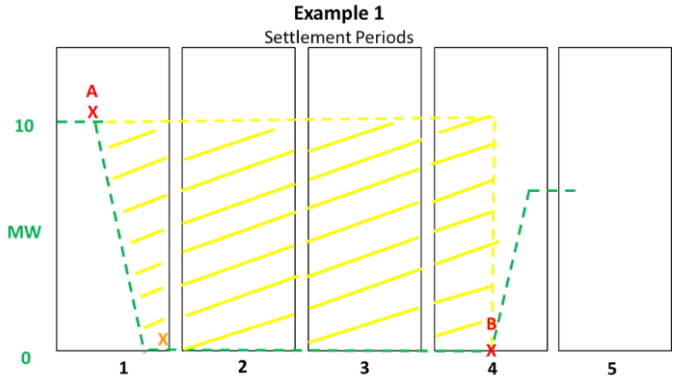
MWD Curtailment Payments Examples- 1

A X Dispatch Instruction Acceptance
X Response Time (according to Table 1)
B X Cease Instruction
Volume of Energy Paid
Volume of Energy Withheld
Export Profile

In Example 1 the DER is exporting 10MW in Settlement Period (SP) 1 when the Dispatch Instruction Acceptance (DER confirmation status = Accepted) is notified to NGESO by the DNO. The DER achieved the required response time specified in Table 1 in SP1.

DER maintains zero MW throughout SP2 and SP3. NGESO then issue a Cease Instruction in SP4 and DER commences ramp up to previous/new export level.

Therefore, the DER is paid for all reduced MW volume (from the baseline of 10MW) for SP1 from the point of Dispatch Instruction Acceptance. The DER is also paid for all reduced MW volume during SP2 and SP3 as the export level was zero, and reduced MW volume is also paid in SP4 up to the point the Provider is issued with a Cease Instruction from the DNO.

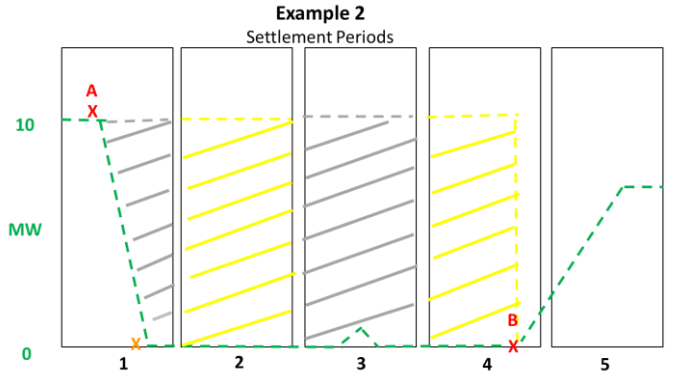


MWD Curtailment Payments Examples - 2

A X Dispatch Instruction Acceptance
X Response Time (according to Table 1)
B X Cease Instruction
Volume of Energy Paid
Volume of Energy Withheld
Export Profile

In Example 2 the DER is exporting 10MW in Settlement Period (SP) 1 when the Dispatch Instruction Acceptance (DER confirmation status = Accepted) is notified to NGESO by the DNO. The DER reaches zero MW in SP1, **but fails to achieve the required response time specified in Table 1**. DER maintains zero MW throughout SP2 but **export increases above deadband tolerance of 0.05 MW for a brief period in SP3**. The DER maintains zero MW through SP4 until NGESO issues and the DER receives a Cease Instruction. DER then commences ramp up to previous/new export level.

Therefore, the DER is **not** paid for any reduced MW volume **for SP1** due to the **Response Time failure**. The DER is paid for all reduced MW volume during SP2 but is **not paid** for any volume in **SP3** as the **export level increased**. Reduced MW volume is paid in SP4 up to the point of the Cease Instruction was issued to the DER.

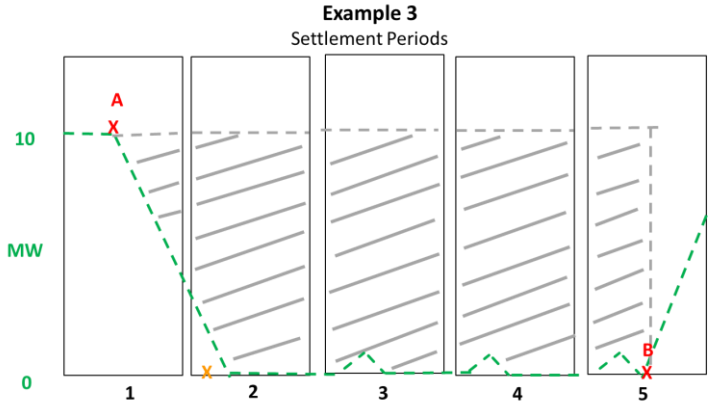


MWD Curtailment Payments Examples- 3

A X Dispatch Instruction Acceptance
X Response Time (according to Table 1)
B X Cease Instruction
Volume of Energy Paid
Volume of Energy Withheld
Export Profile

In Example 3 the DER is exporting 10MW in Settlement Period (SP) 1 when the Dispatch Instruction Acceptance (DER confirmation status = Accepted) is notified to NGESO by the DNO.
The DER does not reach 0.05 MW or below in SP1 **failing to achieve the required response time specified in Table 1**. DER does reach 0.05 MW or below in SP2 **but not for the entire SP**. DER **export increases for a brief period in SP3, SP4**. DER export also **increases** for a brief period in SP5 prior to the NGESO Cease Instruction when the DER commences ramp up to previous/new export level.

Therefore, due to failures in each SP, the DER is **not paid for any reduced volumes across the entire Dispatch Instruction.**

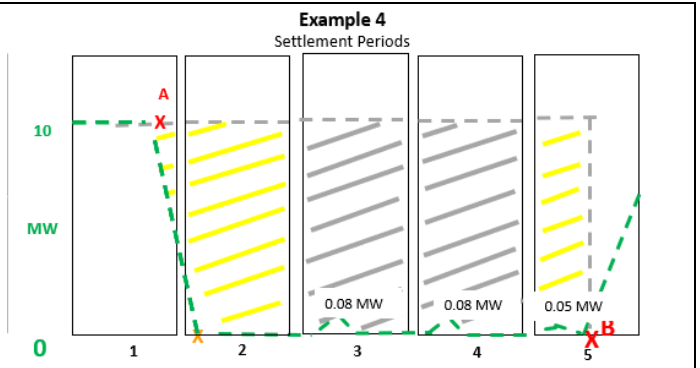


MWD Curtailment Payments Examples- 4

A X Dispatch Instruction Acceptance
X Response Time (according to Table 1)
B X Cease Instruction
Volume of Energy Paid
Volume of Energy Withheld
Export Profile

In Example 4 the DER is exporting 10MW in Settlement Period (SP) 1 when the Dispatch Instruction Acceptance (DER confirmation status = Accepted) is notified to NGESO by the DNO. The DER does reach 0.05 MW or below in SP2 **within the required response time specified in Table 1**. DER does maintain 0.05 MW or below in SP2. DER **export increases for a brief period in SP3 and SP4 above 0.05 MW**. DER export does maintain 0.05 MW or below in SP5. NGESO issues Cease Instruction during SP5 when the DER commences ramp up to previous/new export level.

Therefore, the DER is paid for all reduced MW volume during SP1 & SP2 but is **not paid** for any volume **in SP3 & SP4** as the **export level increased above** 0.05 MW **deadband** tolerance. Reduced MW volume is paid in SP5 up to the point of the Cease Instruction was issued to the DER.



Next Steps

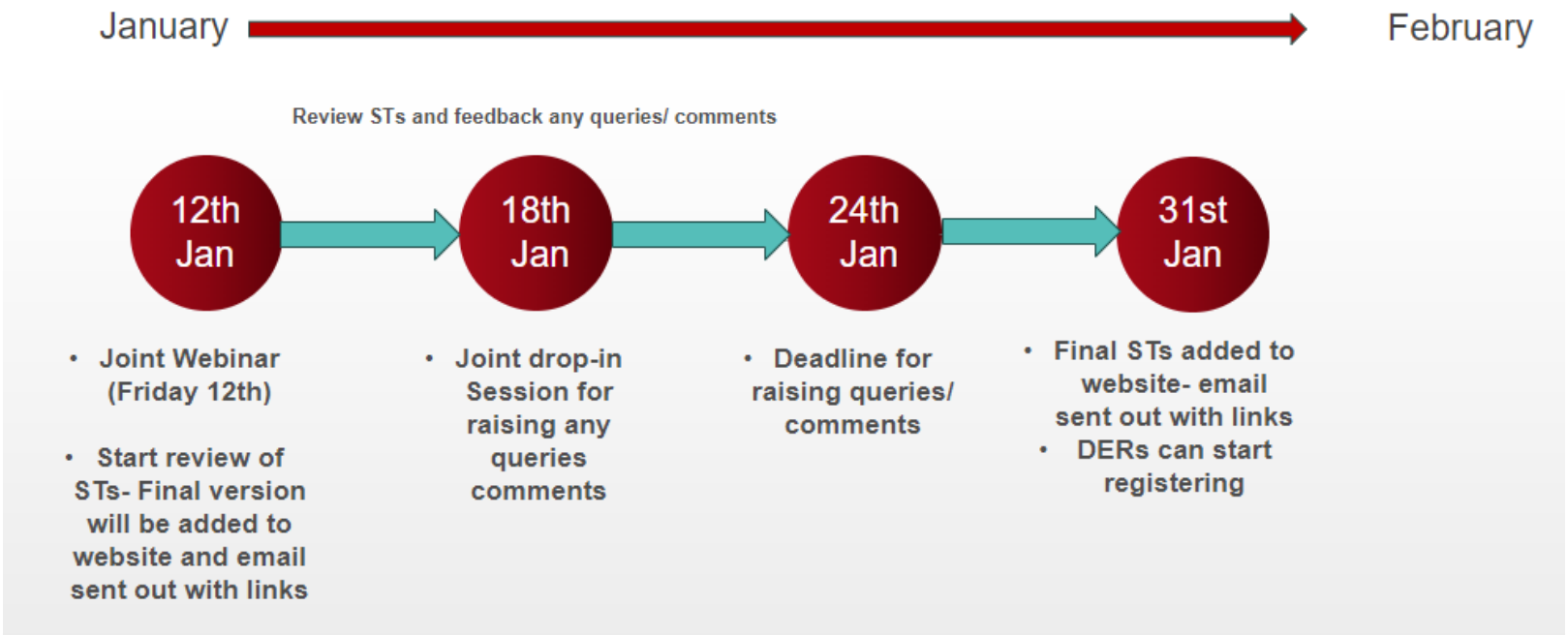
Terms Review and Supporting Documents

Keith Parker
Regional Development Programmes – MWD Product Manager

Next Steps & Key Documents

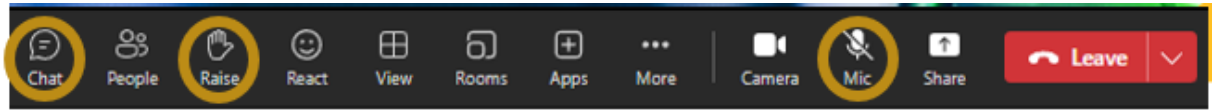
- IT solutions planned for delivery and ESO / UKPN business processes in place end March
- Service Terms and associated documents being published today for DER review - look out for an email with links
- We will hold drop in session to cover off / talk through any specific or generic queries you may have
- Service Terms Review period closes 24th January – shortly after which we will confirm they are live (assuming no wholesale changes)
- Registration for the service will start shortly after - look out for an email to detail when registration is open
- We also plan to run a first live dispatch as a trial to build confidence – UKPN are liaising with a provider for us to work with

Engagement Plan



Q & A

Please raise your hand on Teams or put your question in the chat function



Continuing the conversation

- **Next steps:**
  - **IT Integration Testing ongoing with ESO and UKPN**
  - **Aiming for a technical go live in March 2024**
  - **Continuing regular communication.**

If you would like to meet with the DNO, to discuss:

- The project then please contact
- Rachael.Raine@ukpowernetworks.co.uk

If you would like to meet with the ESO, to discuss the transmission constraint management service please get in touch at

- box.WholeElectricitySystem@nationalgrideso.com

Access the ESO's current and past RDP documents at:

https://www.nationalgrideso.com/research-publications/regional-development-programmes

Access the UKPNs website:

Regional Development Programmes - UKPN DSO (ukpowernetworks.co.uk)

For further information on ESO publications please visit: nationalgrideso.com

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Appendices

Why do we need a MWD Service ?

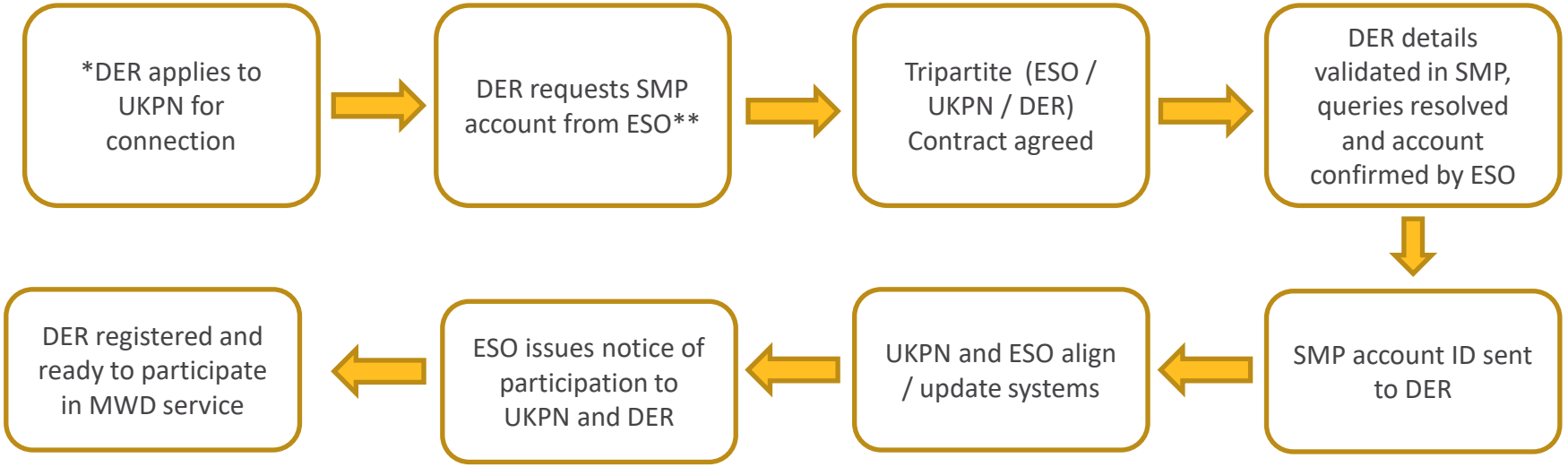
- Network organisations are finding ways to ‘unlock’ more capacity through non-network solutions. ESO Regional Development Programmes are a vehicle for this.
- Since 2019, connection offers in the relevant South Coast Grid Supply Points (GSPs) (Bolney, Ninfield, Sellindge, Canterbury North, Richborough) have contained requirements to provide Visibility & Commercial Control (often termed Deep Connect and Manage)

- There are 2 ways of fulfilling these Control & Visibility (V&C) requirements:
  - Participation in the ESO Balancing Mechanism / Wider Access
  - Participation in the new transmission thermal constraint management service: MW Dispatch.

- The choice of routes is up to the Distributed Energy Resources (DER)
- The former will give more granular levels of control, but requires more complex, and potentially more costly, integrations
- The latter has been designed to be as simple as possible, however, trades off some of the granular control.

The rest of this webinar will focus on the MW Dispatch Service Product / Service

MWD Registration Process Overview



*For initial service Registrations we anticipate this will be open to DERs with C&V terms, however, moving forward we anticipate potential to open the service to those DERs without C&V terms already

**Once Meter Point Administration Number (MPAN) is issued

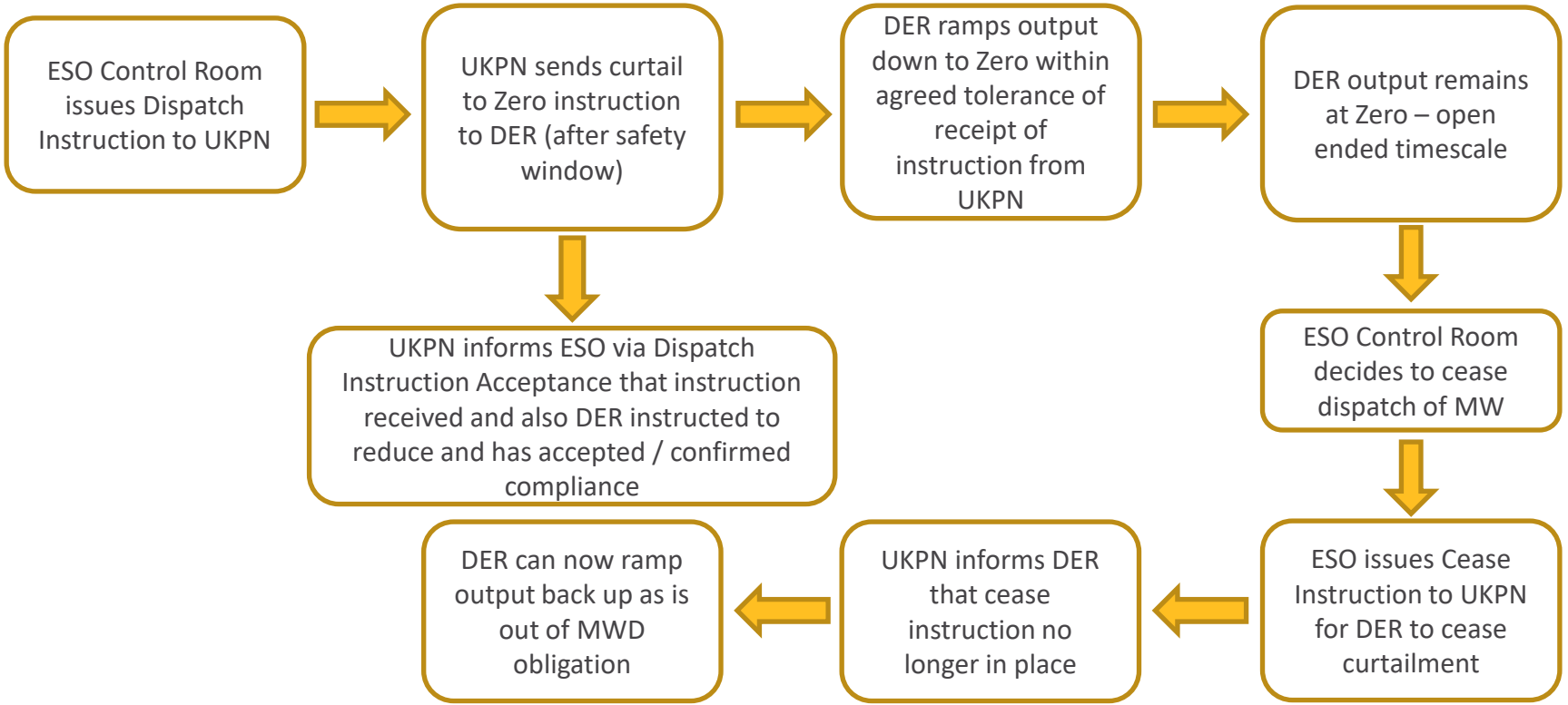
MWD Planning / Unavailability Process Overview

- Service is considered available by default.
- UKPN can declare a provider unavailable at different timescales for a number of reasons shown in the table below (3 week ahead and day ahead reports provided to ESO from UKPN)
- UKPN can also show ‘intra day’ unavailability via a real time data flag if necessary
- Incoming unavailability data feeds ESO ASDP system (for Dispatch purposes) and Planning and Scheduling / Bounceback tools

Reason	Mechanism
Generator Constrained due to outage	Ahead of time Unavailability Report
Expected conflict with DNO flexibility Services	Ahead of time Unavailability Report
Loss of communication to site	Real time data transfer
Abnormal DNO network running conditions	Real time data transfer

- Also allows us to prove / demonstrate some of the rules developed under the Open Networks Primacy Products and balance the whole system

MWD Instruction Process Overview



*NB - Curtailment payment is made to DER to recognise / compensate the request and compliance to curtail