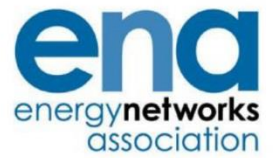


The Voice of the Networks



Energy Networks Association

Open Networks Project

March 2020

Final v1

**ON WS1A P3
Dispatch & Settlement
Processes**

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1 Introduction

The Open Networks Project is a major energy industry initiative, run by the Energy Networks Association that will transform the way our energy networks work, underpinning the delivery of the smart grid. This project brings together 9 of UK and Ireland's electricity grid operators, respected academics, NGOs, Government departments and the energy regulator Ofgem. The 2019 Project Initiation Document outlines what the Open Networks Project will deliver in 2019, how it will be delivered and when. Workstream 1A is focused on Flexibility Services in the developing Flexibility Market and has 3 key objectives:

1. Develop and deliver good practice and convergence of directly contracted DSO services to customers across DNOs to deliver a consistent experience for customers
2. Facilitate markets outside the direct procurement of service by DSOs to allow third parties to develop effective and liquid market platforms for customers to realise value for flexibility, and
3. Support the wider use of DSO services by removing barriers and encouraging the consideration of flexibility solutions.

The following extract summarises the aims for **Product 3** in **Workstream 1A, Dispatch & Settlement Processes**, for which this document is a key deliverable.

2019 PID Extract – WS1A P3 Dispatch & Settlement Processes;

Review current activation, dispatch & settlement processes and develop good practice for activation and dispatch and identify what DNO capabilities are required to support this. This good practise should include alignment of DSO and NG ESO services in terms of procurement, timescales, service windows and contract terms as much as possible.

2 Scope of the Product

2.1 Product deliverables

Two key deliverables were outlined within the Product Scope, Sub-deliverable a and Sub-deliverable b. The full scope for these is detailed below.

Sub-deliverable a

Undertake a review of current dispatch and settlement processes across DNOs, identify good practice and propose an approach to achieve commonality.

Inclusions

- Agree and describe related terminology.
- RFI to each DNO requesting details of:
 - Current activation process, (process through which flex provider is accepted onto each respective DNOs flexibility programme). Will include process and timescales for procurement, contract award, testing and provider readiness,
 - Dispatch process, to include both method of dispatch; method each DNO uses to actively deploy/signal flexibility services from activated flexibility providers, and dispatch optimisation; any level of optimisation methodology a DNO employs to inform dispatch decisions,
 - Settlement process, to include; settlement methodologies; how a providers earnings are calculated, settlement practices; timescales, systems, approval etc, and
 - Location of each DNOs published materials detailing processes for activation, dispatch & settlement.

- Review responses and identify good practice.
- Review responses and identify KPI measures, feed into ENA's wider Flexibility KPI reporting.
- Carry out gap analysis and identify areas for further development.
- Identify dependencies on other Open Networks products and seek alignment; timescales, procurement, service windows, contract (P2, P4...)
- Ensure differing processes for dispatch and settlement between product types are captured.
- Consider potential impacts to processes should future developments reduce the timescales of operation e.g. intra-day markets.

Exclusions

- Baseline methodologies; method used to determine the value of a provider's base load so an accurate measurement of flexibility performance can be taken from that value.

Dispatch & Settlement Processes

- Processes for future planned product types.
- Full specification for optimisation, high level good practice only.

Assumptions

- Each DNO will have either a live example or a proposed example of their dispatch methodology.

Constraints

- DNOs are at varying stages of dispatch process and methodology development.

Final Deliverable

Report identifying good practise, gap analysis and recommendations for DNO commonality. Will include principles for decision making criteria for selection of solutions pre-dispatch.

Sub-deliverable b

Develop an implementation plan to take forward agreed areas of commonality.

Inclusions

- Each DNO to carry out an impact assessment for adoption of good practice identified through sub deliverable a.
- Agree approach for areas identified through gap analysis in sub deliverable a.
- Each DNO to provide a timeline for implementation of good practice, considering impact assessment outcomes.

Exclusions

- None identified.

Assumptions

- Timeline will detail activities at a high level, identifying when each DNO expects to adopt certain aspects and functionalities.

Constraints

- Process to agree a timeline within each DNO will vary and could extend past product timeline.

Final Deliverable

Collated high-level timeline for DNO good practice implementation & publish on ENA website.

2.2 De-scoped activities

The product team considered that activities that fall under Activation were a duplication of the work already undertaken in ON WS1A P2 in 2019. It was also agreed that establishing

good practice for activation activities within P3 would undermine future work to be undertaken by the Procurement Processes product; P2, throughout 2020.

As a result, P3 went on to get agreement from the WS1A Working Group to de-scope Activation from its deliverables.

The P3 product team documented its initial findings on Activation; this has been passed to P2 product team to consider usefulness for 2020 scope.

3 Product timeline

The product team held its first meeting on 30 August 2019 and agreed the following timeline.

Agree detailed product scope	August 2019
Template issued to all DNOs to collate information on existing dispatch & settlement processes	September 2019
Product workshop to agree good practice and conduct gap analysis	October 2019
Produce first draft of product report for product team review	November 2019
Agree and finalise P3 2019 product report	December 2019
Product workshop to consider implementation of commonality	January 2020
Finalise DNO implementation timeline	January 2020*

*Indicative. Acknowledged that process to agree may take longer.

4 Product Outputs

4.1 Sub deliverable a

4.1.1 Agree and describe related terminology.

The product group collated terminology associated with Dispatch & Settlement Processes and agreed the following definitions.

Dispatch	Process through which the DNO informs a flexibility provider of the required level of service within operational timescales
Distributed Energy Resource (DER)	An asset or group of assets that are a resource for distribution and/or transmission flexibility.
Flexibility Provider	Owner or appointed operator of contracted DER.
Forecasts	Identification of constraint, will occur under variable time parameters.
Capacity Availability	Time when the DER is be available to provide flexibility services.
Unavailability	Notification of when DER cannot be available to provide flexibility services.
Energy Utilisation	Period of requested service delivery.
Declarations	Process through which asset are declared available - only where week ahead/electronic process exists.
Acceptance assessment criteria	Methodology employed by the DNO to ensure that Flexibility Providers are accepted for availability in the most equitable manner.
Acceptance	Process through which DER is accepted for availability. This is only relevant where advanced declarations exist.
DSO dispatch signals	Instruction to deliver service.
DSO stop signals	Instruction to cease delivery of service.
Dispatch criteria	Methodology employed by the DNO to ensure that Flexibility Providers are utilised in the most efficient manner.
Optimisation	Methodology employed by the DNO to deliver an output that ensures Flexibility Providers are utilised in the most efficient manner.
Settlement	Process through which the DNO verifies flex provider's service and calculates appropriate payment.
Performance verification	Process to verify flex provider has delivered service at the level declared/instructed/contracted.

Baseline	Established level of DER base load from which a delta is measured to calculate level of service delivered.
Checks & Approvals	Bi-lateral checks to confirm delivery of service & settlement
Payment calculations	Agreed level of payment - could include methodologies for under-delivery etc.
Penalties	Financial penalties associated with under deliver/ non delivery etc.

4.1.2 Information request to each DNO requesting details of current processes relating to Activation, Dispatch & Settlement.

A template was completed by each DNO to provide detail on current processes undertaken relation to Dispatch & Settlement.

DNOs were also required to provide location of any published materials detailing processes for activation, dispatch & settlement. These have been collated where available and passed to the ENA to publish on the Open Networks webpage.

4.1.3 Review responses and identify good practice.

Following the information request all responses were collated and DNO representatives took part in a workshop to review responses and identify any existing good practice.

In general the structure of DNO processes are already largely aligned across both dispatch and settlement. All DNOs undertook the same key process steps, with only practical differences becoming apparent.

DNOs agreed to produce Good Practice flow charts for both the dispatch and settlement process.

In addition to the flow charts some further areas of good practice in both dispatch and settlement have been identified.

4.1.4 Ongoing development of good practice

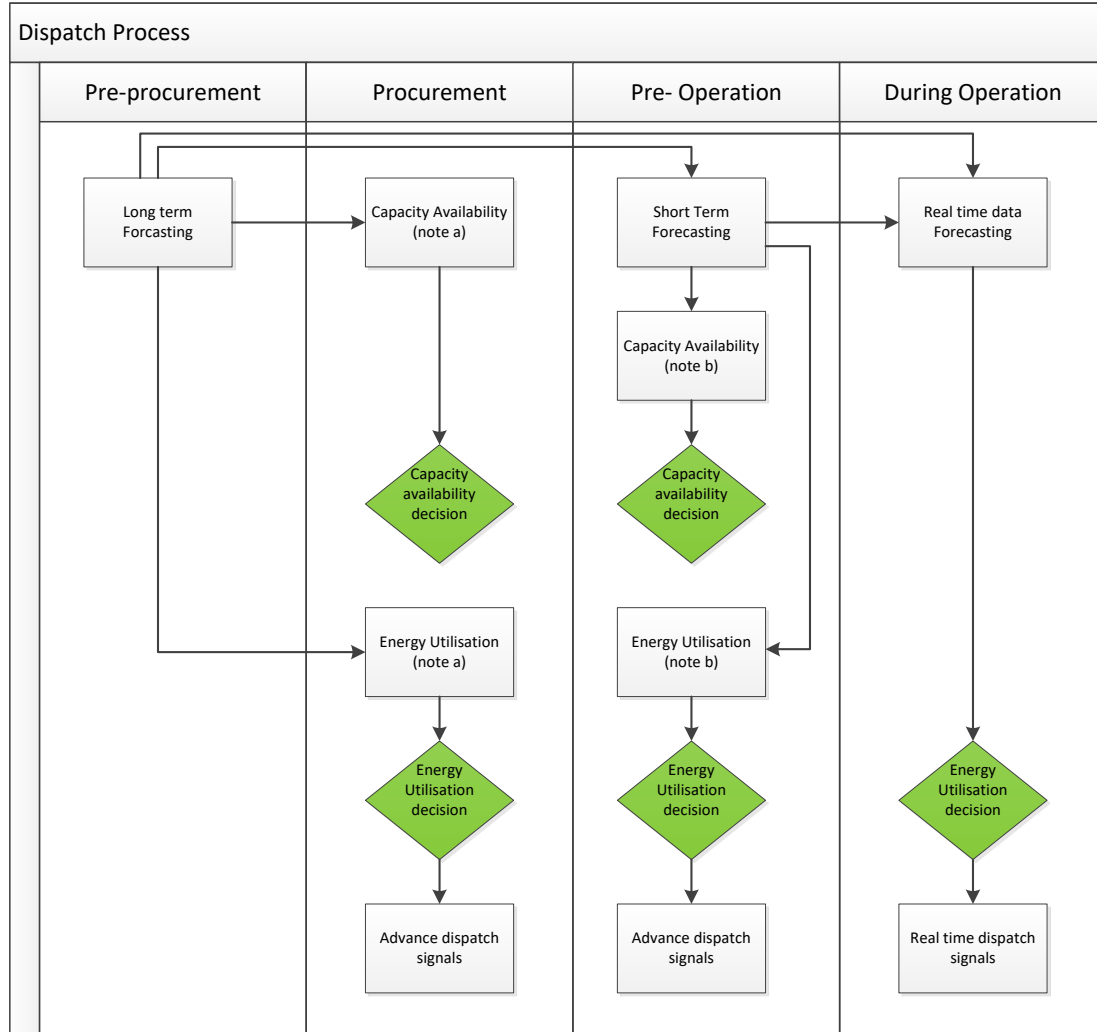
DNOs experience operating dispatch processes is relatively low, with only two DNOs dispatching flexibility services to date, it is recognised that any good practice established at this stage could be superseded as DNOs develop their dispatch capabilities over the course of 2020 as more experience is gained.

The Open Networks 2020 programme includes scope for DNOs to revisit dispatch and settlement good practice at the end of 2020. At this point DNOs will review their practices and consider any applicable changes.

Key steps in the dispatch process – good practice

The flow chart below outlines the key steps undertaken by DNOs in relation to dispatch.

It should be noted that the timing of decisions, either at Procurement or Pre-operation stage, will be dependent on product type¹ and how each DNO chooses to operate that product type.



Note a. applicable only to active power product types that schedule capacity availability and/or energy utilisation at the procurement stage.

Note b. applicable only to active products types that schedule capacity availability and/or energy utilisation near to or in real time.

¹ [Open Networks DSO Service Requirements Definitions](#)

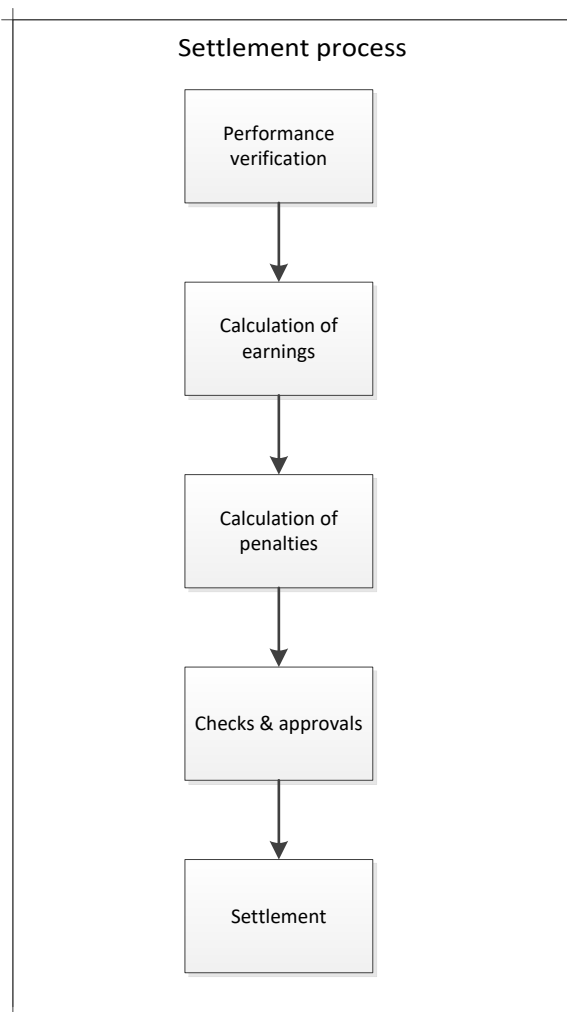
Dispatch – further good practice.

In addition to the flow chart, the following areas of good practise were also identified.

Dispatch	Findings	Good practice
DSO dispatch signals	<p>The current or proposed methods of dispatch signalling varied across DNOs;</p> <ul style="list-style-type: none"> • Manual signals such as email, text, phone call • Integration into in-house systems (such as ANM) to all automation of signalling. • Development of bespoke system to carry out automated signalling. <p>Manual signals were recognised to be resource intensive, which will be difficult to sustain as use of flexibility increases. However if a DNO has low levels of flexibility requirement, early system investment could be cost in-efficient in the short term.</p>	<p>Long term, automated dispatch systems offer the greatest level of efficiency, accuracy and reliability.</p> <p>Where increased flexibility activity makes manual signalling in-efficient due to resource intensity, the DNO should adopt an automated system.</p>
Availability/Dispatch assessment criteria	<p>Some DNOs have published decision criteria it uses to optimise its dispatch decisions.</p> <p>The DNOs who haven't published this criteria have not yet sought procurement for active products that seek to optimise dispatch from a pool of available providers (e.g. Dynamic and Restore products).</p> <p>However, it was agreed that in the future all DNOs will be looking procure these types of products and the need to optimise dispatch will be relevant.</p>	<p>Where multiple flexibility providers could provide a service in excess of the requirement, a DNO should adopt consistent and fair criteria to assess which flexibility providers will be secured for capacity availability and/or utilisation.</p> <p>The product team has developed Guiding Principles for the application of decision criteria, which is included within Appendix A of this document</p>

Key steps in settlement Process – good practice

The flow chart below outlines the key steps undertaken by DNOs in relation to settlement.



Settlement – further good practice

In addition to the flow chart, the following areas of good practise were also identified.

Settlement	Findings	Good Practice
Settlement process	<p>There is significant variation in implementation, ranging from the provider calculating and submitting the invoice to DNO system calculated self-billing invoices which automate the end to end process. It is noted that the ESO does automated self-billing.</p> <p>The differing methods are reflective of DNOs differing volumes of flexibility requirements. While requirements are small it may be more cost efficient to</p>	<p>As volumes of flexibility requirements increase DNOs not already using a system to automated settlement should consider the cost effectiveness of doing so.</p>

	continue with a provider-led invoicing process.	
Performance verification	<p>Similarly to the Settlement process, the current methods adopted by DNOs to verify performance delivered by Flexibility Providers vary to reflect their current requirement volumes.</p> <p>For some the verification is automated through a system and flexibility providers are able to submit their metering readings via an API in real time. Others request metering data post event in support of an invoice.</p>	As volumes of flexibility requirements increase DNOs not already using a system to automated verification should consider the cost effectiveness of doing so.
Metering	<p>All DNOs require metering data from flexibility providers in order to verify and settle the service.</p> <p>All DNOs finalise verification and settlement post event.</p> <p>One DNO also requires real-time verification for products that require informed dispatch decisions such as Dynamic & Restore.</p>	As DNOs develop into real time operation of active products, the ability to receive and verify metering data in real time is advantageous.

4.1.4 Review responses and identify KPI measures, feed into ENA's wider Flex KPI reporting.

Additional KPIs have been identified to capture DNO activity relating to dispatch and settlement, potential KPI parameters had been identified by the product team and further detailed in section 4.2.3.

4.1.5 Carry out gap analysis and identify areas for further development.

The product team identified three areas that should be considered for further development;

- 1 'Payment Calculations' & 'Penalties' methodologies.
 - Compare payment mechanics currently employed by DNOs in respect of delivered flex services.
 - Compare penalty methodology currently employed by DNOs in respect of under-delivered flex services.
 - Identify good practice and identify commonality opportunities.
- 2 Standardisation of data formats
 - Determine and employ strategy to achieve standardisation of published flexibility requirement data.

- Determine and employ strategy to achieve standardisation of published flexibility post requirement report data.
- 3 Standardisation of communication exchanges and protocols
- Compare communication methods currently employed by DNOs and the ESO for the exchange of requirement data, dispatch signals and reporting.
 - Consult with stakeholders to understand provider barriers and benefits to each method.
 - Determine and employ strategy to achieve standardisation of communication exchanges and protocols.

It has been proposed that work to establish commonality in these areas is undertaken in the ON WS1A 2020/21 programme.

4.1.6 Identify dependencies on other Open Networks products and seek alignment.

Outcomes of this product will feed into the Open Networks 2020 programme. Particularly products seeking to further align the procurement, contracting and operations of active power products across DNOs.

4.1.7 Ensure differing processes for dispatch and settlement between product types are captured.

Differences for dispatch decision making have been identified for differing product types. More detail on this is provided within Appendix A.

4.1.8 Consider potential impacts to dispatch & settlement processes should future developments reduce the timescales of operation e.g. intra-day markets.

The product team considered a move to closer to real time operations such as intra-day or spot markets would have minimal impact to current dispatch and settlement processes assuming that automation for real time dispatch decision making were also invested in at this time.

Wider aspect of the flexibility process are more likely to be impacted, particularly procurement timescales and current pricing/bidding processes.

The product team also acknowledged that the timescales for such a development in the flexibility market to become apparent are not yet known. DNOs are considering these markets and their impacts through their innovation programmes.

4.2 Sub-deliverable b.

Develop an implementation plan to take forward agreed areas of commonality.

4.2.1 Each DNO to carry out an impact assessment for adoption of good practice identified through sub deliverable a.

This was undertaken by each DNO representative within the product team and collated.

All DNOs had detailed a commitment to develop and operate flexibility over the course of 2020 in order to gain further experience to be shared and collate at the end of the year.

It was therefore agreed that it would be more appropriate to publish a joint timeline to demonstrate the common approach each DNO is undertaking.

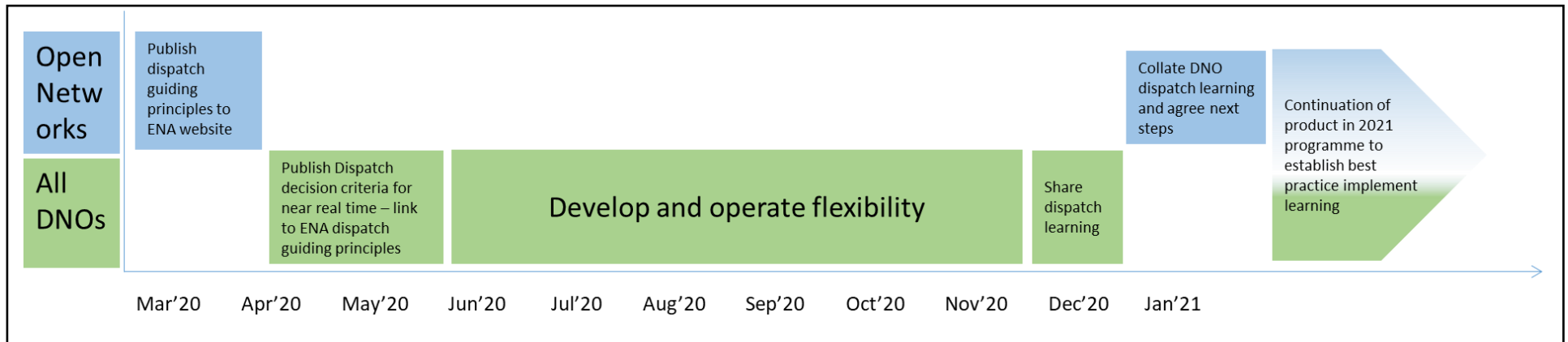
4.2.2 Agree approach for areas identified through gap analysis in sub deliverable a.

Gaps identified and detailed in 4.1.5 were discussed with the WS1A group towards the end of 2019, these have fed into the activities being undertaken by this Work Stream in 2020 and further in 2021.

4.2.3 Each DNO to provide a time line for implementation of good practice, considering impact assessment outcomes

As previously noted in this report, to date each DNO has had varying levels of experience operating flexibility services and future levels of experience will be dependent upon any upcoming procurement response. Until DNOs have had the opportunity to further develop and operate their flexibility offerings, it was agreed by the product team that a joint implementation timeline would be produced. Most notably, the joint timeline will allow a period of development and operation, which will allow DNOs the opportunity to further develop and operate their flexibility offerings. At the end of this period, DNOs reps will re-group to share learning and experience from this period. This shared learning will inform what activity the Open Networks project might want to undertake in Dispatch & Settlement in 2021.

Joint DNO Dispatch & Settlement timeline;



Dispatch & Settlement Processes

During the 'Develop and operate flexibility' phase DNOs will be required to capture their experience and any learning gained in a consistent manner. This will be collated by the ENA through its existing KPI process.

The product team has identified some parameters that could be included in this, however the ENA will work with the wider WS1A group to agree what these parameters should be and a consistent methodology for determining them. In addition, DNOs will need to agree which aspects of this data will be published.

Suggested parameters for Develop & Operate phase

The product team identified two key areas where data should be collated across all product types; Learning & Activity.

Suggested Learning parameters – these are not likely to be data fields, instead DNOs are to describe their experience and share any learning captured through operation;

- Dispatch decisions; where a pool of providers were available, what dispatch criteria did the DNO employ?
- Dispatch decisions; where a DNO did employ dispatch criteria, how effective was this, did the criteria change with experience?
- Dispatch signals; what methods of dispatch signalling did the DNO employ, what were the pros and cons associated with these methods.
- Settlement; what settlement processes did the DNO employ, what were the pros and cons associated with these methods.

Suggested Activity parameters – these are likely to be data fields, an agreed methodology to determine how these are calculated consistently and to what level activity data is aggregated will be required. This data is more likely to be published by the ENA, consideration should be given as to how these fields align with any more detailed requirement data that the ENA is also considering publishing.

- Volume of availability required, procured, dispatched & delivered.
- Volume of Utilisation required, procured, dispatched & delivered.
- Costs associated with Availability & Utilisation.
- CO2 associated with Utilisation.*

*If captured. Not all DNOs collect this information through their procurement processes.

The ENA have now begun to action this new KPI requirement, ON WS1A will support the identification and agreement of appropriate parameters and methodologies.

Dates for the product team to re-group and consider the learning and activity outputs has been agreed with the ENA and added to the 2020 programme.

Appendix A

Dispatch Decision Criteria – Guiding Principles

Introduction

It is recognised that in order to provide confidence in Distribution Flexibility, DNOs must provide market participants with clear and transparent guidance on any criteria used to inform its dispatch decisions.

However, to date DNOs have had very little experience dispatching flexibility, with only two DNOs having dispatched flexibility services and further DNOs expected to begin dispatch activities over 2020.

In order to align the criteria relating to dispatch activities ahead of sufficient experience being undertaken, ON WSA1A P3 has produced Guiding Principles each DNO will adopt and test in 2020.

It is then expected that experience operating flexibility over 2020 will inform a further piece of work for the 2021 Open Networks programme which will seek to agree common principles. The P3 product team recognises the ESO Balancing Mechanism Principles² documents as good industry practice, Open Networks 2021 programme could seek to produce a similarly detailed document for the DSO.

Relevance of Dispatch Decision Criteria – Guiding Principles

These decisions are of particular relevance where multiple providers could provide a service in excess of a DNO's requirement. In these instances the DNOs should adopt consistent and fair criteria to assess which providers will be accepted for dispatch.

The DNOs recognise the importance of flexibility as an investable proposition, as well as the wider commitment to ensure the costs of flexibility remain competitive and economic for all our customers.

Where competitive market for local flexibility have been developed, resulting in over supply, DNOs will need to select the priority order on which flexibility assets are accepted and dispatched first. By sharing this methodology in advance, flexibility providers may be able to align the dimensions of the flexibility submitted to the procuring party to those most highly valued.

Applicability of Dispatch Decision Criteria – Guiding Principles

Applicability and timing of dispatch decisions depends on product type. All DNOs will carry out initial forecasting to establish a level of requirement, but some products need further forecasting as requirements move closer to real time. It is at this later forecasting stage that decisions around the scheduling of dispatch are applicable.

Dispatch decisions fall into two categories: capacity availability and energy utilisation;

- **Capacity Availability** - the point at which the flexible capability has been scheduled, at which point it is firm and for which an availability fee may be paid. This can occur

² [ESO Balancing Mechanism Principles](#)

at the procurement stage or some time in advance to real time where certainty of availability is required.

- **Energy utilisation** - where the energy delivery has been scheduled (when done in advance) or dispatched (when done near to real time), and a utilisation fee will be paid for the energy delivered. This schedule may be firm at the procurement stage for the Sustain product, or more commonly for flexibility services, close to or in real time.

Currently some DNO operates each active product with some differences. How a DNO chooses to operate each product will inform when relevant dispatch decisions are made and which dispatch decisions are applicable to the Dispatch Decision Criteria – Guiding Principles.

The following table maps the Dispatch Decision Criteria – Guiding Principles applicability by product;

Figure a. When dispatch decisions are made

Product ³	DNO Output	Capacity availability	Energy utilisation	Applicable payments
Sustain (Scheduled)	Forecast	At Procurement	At Procurement or near real time (depending on DNOs operation of product)	Availability and utilisation
	Schedule	At Procurement	At Procurement or near real time (depending on DNOs operation of product)	
Secure (pre-fault)	Forecast	At Procurement or near real time (depending on DNOs operation of product)	Near real time	Availability and utilisation
	Schedule	At Procurement or near real time (depending on DNOs operation of product)	Near or in real time	
Dynamic (post-fault)	Forecast	At Procurement or near real time (depending on DNOs operation of product)	Planned: near real time	Availability and utilisation (one DNO offers utilisation only)
			Unplanned: in real time	
Schedule	At Procurement or near real time (depending on DNOs operation of product)	In real time		
Restore (Restoration)	Forecast	N/A	In real time	
	Schedule	N/A	In real time	

³ [Open Networks DSO Service Requirements Definitions](#)

Key	
	Dispatch decision criteria not applicable.
	Dispatch decision criteria only applicable if DNOs do not set availability & utilisation at procurement stage and instead carry out further forecast and scheduling near real time to inform dispatch.
	Dispatch decision criteria are applicable.

Dispatch decision criteria – Guiding Principles

DNOs will consider the following factors ahead of making any decisions on both availability and utilisation of flexibility services.

No principles will be considered ahead of another, all must be considered to ensure network security is delivered for the most cost effective outcome.

Fig b. DNO Guiding Principles of Dispatch

Principle	Description	In Practice
Security	The needs of the system will be met using flexibility in such a way that security of supply is maintained.	DSO/DNO requirements: Conform with applicable standards with an appropriate management of risk.
Cost	Flexibility will be operated to meet system need at the minimum level of cost.	Lowest prices per MWh and minimum levels of over procurement. Flexibility will be procured in cost order and will not unduly discriminate against any provider.
Operability	DSOs will seek to dispatch services that offer compatible levels of operability.	Provider characteristics: availability, reliability, run times, response times etc... Accepted offers need to match/partially match requirements.

Dispatch decision criteria – Steps to a competitive market

Application of the 'DNO Guiding Principles of Dispatch' relies on a sufficient level of flexibility engagement that delivers a local competitive flexibility market i.e. a liquid market exists. Once liquidity is established in the Distribution Flexibility market, it will ultimately act to minimise the costs of flexibility services, maximise competition, and lower barriers to entry for all providers.

DNOs recognise they have a role to play in achieving a liquid market. The following steps will provide assurance to the emerging market.

Figure c. DNO Liquidity Steps

Step	Description	In Practice

<p>Competition</p>	<p>DSOs will provide transparency of their dispatch decisions and activities.</p>	<p>Transparency of our actions at dispatch will allow market participants to offer operable and cost efficient services.</p>
<p>Fairness</p>	<p>DSOs will operate a fair dispatch methodology and provide equal opportunities to participate.</p>	<p>A clear, transparent and fair approach offers assurance to existing and potential market participants.</p>

Appendix B

Assessment of non-firm DER at the point of dispatch

Open Networks defines Non-firm DER as follows;

Any DER with a connection agreement in place that restricts its access to the network. The level of firmness is the extent to which a user's access to the network may be restricted (physical firmness) and their eligibility for compensation if it is restricted (financial firmness).

Background

Open Networks 2019 product, P2 DSO Procurement Processes, recommended that consideration needs to be given to those flexibility products (Secure, Dynamic and Restore) which may need to consider the use of non-firm connected DER at the point of dispatch.

It was also recommended that output should align with P2 work which considered the use of non-firm DER at the point of procurement.

P2 has published its outputs on the assessment of non-firm connections at the point of procurement⁴. These two documents should be read conjunction.

Introduction

It was perceived that there could be a risk to security of supply should DNOs seek to dispatch flexibility services from non-firm DER that could also receive a conflicting curtailment instruction due to a committed constraint under their connection agreement

It should be noted that the assessment of non-firm DER is applicable only to 'non-scheduled' (Sustain) products; Secure, Dynamic & Restore, where a DNO has a pool of providers to select services from. Sustain services from non-firm DER will be assessed at the procurement stage.

The likelihood of a connection agreement associated curtailment action being instructed at the same time as a Secure, Dynamic or Restore action is very low, however some circumstances could occur;

- Coincident nested constraints
- Transmission Service Conflicts/service stacking, Transmission constraints i.e. SWAN/SWOTS (South West Operational Tripping Scheme)

DNOs will need to gain further experience dispatching under non-firm scenarios, any further impact to planning timescales and settlements will become apparent as more experience is gained.

The product team has considered what process steps should be undertaken in order to assess the currently known risks associated with dispatching non-firm DER for flexibility services and produced a decision flow diagram.

⁴ <https://www.energynetworks.org/assets/files/ON-WS1A-P2%20DSO%20Services%20Procurement%20Processes%20Dec%202019%20Update-PUBLISHED.pdf>

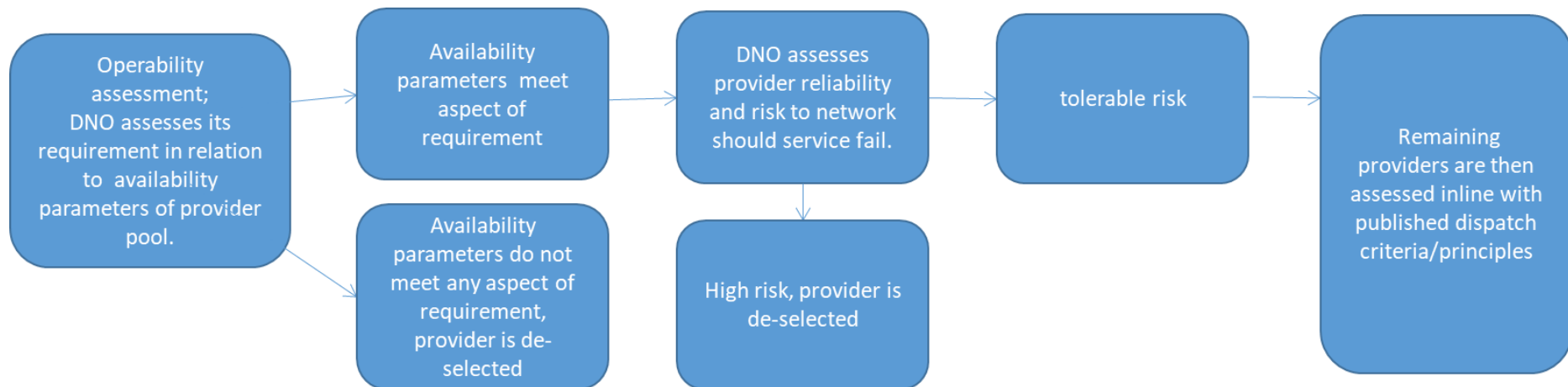
Decision flow diagram

The diagram below demonstrates a common approach each DNO would undertake when assessing the use of non-firm connected assets at the point of dispatch.

This assessment approach treats both firm & non-firm in the same manner;

- Availability parameters include; unavailability due to timed connection agreement etc. as well as provider unavailability for maintenance/faults etc. or any intermittency in export.
- Reliability assessment looks at the non-firm assets probability factor⁵, as well as aspects that would apply to all providers such as reliability and historic performance.
- Each DNO would establish its own tolerable risk limits.

Figure a. Decision flow diagram



⁵ As referenced in P2 report, Page 4. <https://www.energynetworks.org/assets/files/ON-WS1A-P2%20DSO%20Services%20Procurement%20Processes%20Dec%202019%20Update-PUBLISHED.pdf>