

Recommended steps to move to real time procurement

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Introduction

About ENA

Energy Networks Association (ENA) represents the owners and operators of licenses for the transmission and/or distribution of energy in the UK and Ireland. Our members control and maintain the critical national infrastructure that delivers these vital services into customers' homes and businesses.

ENA's overriding goals are to promote UK and Ireland energy networks ensuring our networks are the safest, most reliable, most efficient and sustainable in the world. We influence decision-makers on issues that are important to our members. These include:

- Regulation and the wider representation in UK, Ireland and the rest of Europe
- Cost-efficient engineering services and related businesses for the benefit of members
- Safety, health and environment across the gas and electricity industries
- The development and deployment of smart technology
- Innovation strategy, reporting and collaboration in GB

As the voice of the energy networks sector, ENA acts as a strategic focus and channel of communication for the industry. We promote interests and good standing of the industry and provide a forum of discussion among company members.

About Open Networks

Britain's energy landscape is changing, and new smart technologies are changing the way we interact with the energy system. Our Open Networks programme is transforming the way our energy networks operate. New smart technologies are challenging the traditional way we generate, consume and manage electricity, and the energy networks are making sure that these changes benefit everyone.

ENA's Open Networks programme is key to enabling the delivery of Net Zero by:

- opening local flexibility markets to demand response, renewable energy and new low-carbon technology and removing barriers to participation
- providing opportunities for these flexible resources to connect to our networks faster
- opening data to allow these flexible resources to identify the best locations to invest
- delivering efficiencies between the network companies to plan and operate secure efficient networks

We're helping transition to a smart, flexible system that connects large-scale energy generation right down to the solar panels and electric vehicles installed in homes, businesses and communities right across the country. This is often referred to as the smart grid.

The Open Networks programme has brought together the nine electricity grid operators in the UK and Ireland to work together to standardise customer experiences and align processes to make connecting to the networks as easy as possible and bring record amounts of renewable distributed energy resources, like wind and solar panels, to the local electricity grid.

The pace of change Open Networks is delivering is unprecedented in the industry, and to make sure the transformation of the networks becomes a reality, we have created six workstreams under Open Networks to progress the delivery of the smart grid.

2022 Open Networks programme Workstreams

- WS1A: Flexibility Services

- WS1B: Whole Electricity System Planning and T/D Data Exchange
- WS2: Customer Information Provision and Connections
- WS3: DSO Transition
- WS4: Whole Energy Systems
- WS5: Communications and Stakeholder Engagement

Our members and associates

Membership of Energy Networks Association is open to all owners and operators of energy networks in the UK.

- ▶ Companies which operate smaller networks or are licence holders in the islands around the UK and Ireland can be associates of ENA too. This gives them access to the expertise and knowledge available through ENA.
- ▶ Companies and organisations with an interest in the UK transmission and distribution market are now able to directly benefit from the work of ENA through associate status.

ENA members



ENA associates

- [Chubu](#)
- [EEA](#)
- [Guernsey Electricity Ltd](#)
- [Heathrow Airport](#)
- [Jersey Electricity](#)
- [Manx Electricity Authority](#)
- [Network Rail](#)
- [TEPCO](#)

1 About WS1A Product 2

1.1 Background

Previously, this product has delivered alignment across DNOs on activities relating to procurement of flexibility services including definition of common flexibility services, alignment across DNOs on procurement activities including how and when tenders are assessed by DNOs and coordinated DNO - ESO (Electricity System Operator) procurement windows.

In 2021, the product focused on investigating the potential for further alignment of procurement timescales between the DNOs and the ESO (including consideration of the Capacity Market). Detailed reviews were undertaken to identify and assess the range of options, and the product concluded that it may not be of value to create concurrent DNO and ESO procurement timelines at this juncture. The product has consulted on both the options analysis and this conclusion. Stakeholders have broadly agreed with this conclusion and would like to see alignment across other process areas (pre-qualification, technical specifications etc.) and to see further consideration of real time flexibility procurement.

1.2 Activity for 2022

As identified in our response to the 2021 [Flexibility Consultation](#), this product will focus on improving aspects of the procurement process such as pre-qualification and will progress thinking on the move to real time markets, mapping out steps that are required in the short, medium, and longer term to achieve this.

As part of the work on real time procurement, the product will build on the 2021 WS1A P4 Evolution Report to further develop the technical, legal, and regulatory service requirements identified in the report as required for a common procurement framework across DSO and ESO.

As part of work on pre-qualification, this product will develop a standard pre-qualification criteria and approach including the convergence of timescales such that they are accommodative even of smaller flexibility service providers. To this product will build on the preliminary work undertaken as part of 2019 WS1A P2 Procurement Processes which delivered a gap analysis to establish a view on the criteria that can be standardised. This product will also review current approaches to pre-qualification employed across DNOs and the ESO to understand the pros and cons of the various approaches, with a view to align where possible.

2 About this document

2.1 Purpose

This document is intended to meet the first P2 deliverable for 2022 as detailed in the ON 2022 PID extract below;

Recommended steps to move to real time procurement	Following a review of current network processes and development plans, this deliverable will clearly set out a best view of steps required in the short, medium and longer term to move towards real time flexibility procurement. This will be included in the ENA stakeholder consultation in Jul. This will feed into WS1A P0 that will be setting out a broader roadmap across key aspects of flexibility.
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2.2 Timescales used

In order to quantify the short, medium and long term timescales the product team agreed that common planning timescales used for short and medium term were appropriate and reflect the considerations and activities DNOs expect to be undertaking as the approach ED2, these are;

- Short <12 months

- Medium 1-3 years

For the long term timescale, while 3-5 years is commonly used, the product team agreed that 1-5 years would be more appropriate as this recognises that DNO are likely to action some medium and long term steps in parallel and at differing rates. [Section 5.1](#) provides more detail on the considerations that will inform the rate of DNO implementation.

2.3 Future Deliverables

It should be noted that the product will be continuing this work later in 2022 to develop an implementation plan for delivery in November 2022 as detailed in the ON 2022 PID extract below;

Real time procurement	<p>Detailed implementation plan to progress short-medium term actions for real time flexibility</p> <p>Develop a clear and detailed action plan that sets out how the steps identified above will be delivered by network companies and by when. Where barriers have been identified, appropriate actions should be identified and included in this plan to address them.</p> <p>Whilst work will commence in Aug to stagger some of the product activities, this plan will take on board any stakeholder feedback that comes through the consultation.</p> <p>Following the publication of this, implementation will commence as per the plan.</p>
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2.4 Quantifying the steps

As part of the continued work on DNO implementation later this year, the product team will carry out analysis to quantify the short, medium and long term steps in terms of;

- The level of barrier they present to progress (BR)
- Complexity (CX)
- Cost (CT)
- Time (TM)

Ahead of this work, the product team have identified the steps detailed within this paper that they currently perceive to be significant. This steps have been indicated within this paper using the abbreviations above.

3 Short term steps <12months – Knowledge Gathering

For DNOs to evolve their flexibility market offerings towards real-time/closer to real-time procurement and operation, in the short term they will need to focus on removing any apparent barriers. This will involve gathering knowledge and learning from the wider industry, and developing knowledge through the Open Networks Project enabling them to assess and mitigate the risks associated with closer to real-time procurement of flexibility.

3.1 Considerations

Regulatory licence conditions and procurement law require DNOs to comply with measures that conflict with the procurement of real-time/closer-to real-time flexibility.

While DNOs may have varying views on the degree of risk associated with these short term considerations, it is agreed that they are critical to supporting DNO evolution towards real-time procurement and may present a barrier to progress;

Network Planning (BR)	<p>Engineering Recommendation P2/7 accepts the use of flexibility as a contribution to the firm capacity of a site, however the timescales in which these studies are undertaken are currently not conducive to the shorter-term procurement of flexibility. Other regulatory submissions such as the annual Load Index is also driven by these planning assumptions, and so review is required to reassess the potential contribution of flexibility to a sites' capacity, and the thresholds to which networks can operate their assets without breaching these standards.</p> <p>Each DNO will also have wider planning considerations when considering procuring flexibility in real-time/closer to real-time. For example, feasibility may need to be subject to liquidity assessments, and product thresholds may need to be put in place to minimise the risk of non-delivery.</p>
Procurement Law Compliance	<p>DNOs must comply with UCR regulations, and most have applied this obligation to their flexibility procurement. UCR requires the publication of tendering opportunities well ahead of a tender opening. It also requires a 10 day stand still after a tender is closed before the contract can be finalised. Procuring in real-time/closer to real-time will mean DNOs cannot comply unless they adapt their procurement processes.</p> <p>Work currently underway in 2022 through the P4 Standard Agreement Product will support the development of this as DNOs are looking to align with the ESO who already adopt a framework approach.</p>
Flexibility Evaluation	<p>WS1A P1 has developed a Common Evaluation methodology (CEM) tool, which has been consulted on with external stakeholders, and has been adopted for use by all distribution networks to assess the value of flexibility bids against either the traditional network solution or an ANM solution.</p> <p>The tool was developed as a spreadsheet model, informed by the feedback for a transparent approach accessible to flexibility providers.</p> <p>Assessments using this tool can be time consuming as they consider a wide range of factors and are driven by annual DFES forecasts, and so in its current form may not be compatible with a shorter-term procurement timescale.</p>

3.2 Dependency on Open Networks Outputs

Some outputs of activities currently underway within Open Networks have a short-term dependency with the enablement of real-time/closer to real-time flexibility procurement.

P4 – Standard Agreement	<p>As highlighted in the table above, DNOs will need to consider a framework approach to procurement to allow them to fully adopt real-time/closer to real-time procurement.</p> <p>The focus of the P4 work in 2022 is the re-structuring of the Standard Agreement to allow the ESO to adopt it. As the ESO need a contract structure that will allow them to continue procuring under a framework, this benefit DNOs when they are also looking to adopt frameworks.</p>
P1 - CEM	<p>Work is continuing throughout 2022 to include further assessment of the option value provided by flexibility, and will incorporate elements of carbon reporting, which is being undertaken by WS1A P7.</p> <p>In addition this product should consider the tools applicability for shorter-term procurement timescales and recommend any developments that can support DNOs evolution toward real time/closer to real time procurement.</p>

P0 – Common Framework for Flexibility	The Smart Systems and Flexibility plan (July 2021) documented the need for a review to planning approaches under Engineering Recommendation P2, and WS1A P0 will monitor any changes undertaken by the ENA’s wider working groups.
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3.3 Knowledge gathering

Many DNOs currently have flexibility trials underway and the learning from these will inform the development of their flexibility programmes.

Notable NIC funded flexibility trials that have a focus on trialling closer to real-time procurement and developing systems to facilitate it which will complete in the short term include;

Trial	DNO	Description	Timeframe
TRANSITION	SSEN	Developing and demonstrating tools and systems for the transition to a flexible energy system.	Dec 2022
FUSION	SPEN	Developing an accessible open source market place for flexibility service offerings.	Jan 2023

In addition, there is wider knowledge sharing from DNO & ESO BAU experience with closer to real-time procurement and feedback from providers participating in these markets to consider.

There is a great deal of learning that can be sourced from the experience of the ESO and their stakeholders during the consultation on the Short-Term Operating Reserve (STOR) Day Ahead market and more recently the Dynamic Containment consultation in Nov 2021.

Additionally, the ESO is about to embark on a consultation for Dynamic Moderation and Regulation products and this could be a good opportunity to converse and tap into this through the development of the P2 deliverables during 2022.

This knowledge sharing already takes place through Open Networks and DNOs are required to gather stakeholder input regularly through the established SLC31e process.

4 Medium term steps 1-3 years - Planning

In the medium term, DNOs will need to consider in more detail the practical elements involved with a move to real-time/closer to real-time procurement. And, in addition the subsequent operation of real-time/closer to real-time products.

4.1 Considerations

Medium term considerations will fall across three core elements; Products, Processes and Systems.

The P2 product team has identified some of the key considerations under these three core elements that are known at this time;

Products	Determine which products will be used for real-time/closer to real-time procurement and consider how parameters of these products may need to change.
	Decide the volume of requirements be allocated between real-time and longer term procurement opportunities.

		Consider the approach to non-delivery penalties for real-time/closer to real-time procurement.
		Consider the stackability of real-time/closer to real-time products with wider markets.
Processes		Adopt a contractual structure suitable for real-time/closer to real-time procurement.
		Determine the timelines for real-time/closer to real-time procurement processes.
		Identify the required resources and determine the timelines for operational decision making.
Systems (CX)	Internal systems	Identify developments needed to existing systems to accommodate real-time procurement and operations.
		Identify new systems required to accommodate real-time procurement and operations.
		Identify interfaces required between these systems to facilitate real-time procurement and operations.
	Digitalisation & Automation	Identify planning, procurement and operational processes that will benefit from digitalisation and automation as a result of the reduced timescales associated with real-time/closer to real-time procurement. These could include the CEM, Pre-qualification and tendering processes, and service selection criteria.
	Data management	Identify data capture requirements for reporting and market transparency.
	Marketplace interactions	Identify interfaces needed for FSPs to interact with real-time procurement opportunities.
Identify interfaces needed for market platforms to participate in DNO flexibility opportunities.		
Stakeholder consultation		Consult on any proposed changes to products, processes and systems with stakeholders through established SLC31e process

4.2 Dependency on Open Networks Outputs

It is clear that there will be significant benefits to the market through standardised approaches across network operators in respect of the medium term considerations detailed above. This standardisation is a core deliverable of the Open Networks Programme and the medium-term considerations have a dependency on activities currently underway within Open Networks;

P2 – Procurement processes	Standardised commercial and technical qualification processes will support the digitalisation of these processes either through a common system or a common structure.
P3 – Dispatch Interoperability & Settlement	<p>Operating flexibility in real-time/closer to real-time will impact operational dispatch processes and systems.</p> <p>Standardised market place interfaces will be required to remove the burden on FSPs and market platforms looking to interface across multiple SOs.</p> <p>In addition real-time/closer to real-time procurement is likely to require less lenient penalties for non-delivery impacting current approaches to settlement.</p>

P6 - Flexibility Products	The parameters of products suitable for real-time/closer to real time procurement will differ to those currently procured by DNOs.
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4.3 Knowledge Gathering

When developing systems and processes, DNOs should look to examples already in place or in development by the ESO, most notably the ESOs Single Market Platform. UK Market consistency in the use of platforms and common interfaces into these will be key enabler to increased participation providing the liquidity needed for successful real-time/closer to real-time procurement.

DNOs are also required to consult any proposed changes to their flexibility offerings; changes to products, processes and systems, with their stakeholders. This consultation is part of the C31E process and allows stakeholders the opportunity to directly feed into and help shape DNOs plans for evolving their flexibility programmes.

5 Long term steps 1-5 years - Implementation

In the longer term, DNOs must consider how these changes will be implemented and how they ensure transparency to the market once changes are made. DNOs may evolve toward real-time procurement at differing rates, but all consider it to be capability they will develop throughout the ED2 period.

5.1 Considerations

Considerations for DNO implementation are;

Rate of evolution	<p>It is recognised that many DNOs may choose to incrementally implement real-time/closer to real-time procurement, particularly those that choose to adopt early. For example, DNOs may decide to defer day ahead and in-day procurement and initially role out monthly or weekly procurement.</p> <p>Market liquidity will be a key factor in when and how DNOs chose to implement real-time/closer to real-time procurement. Without a liquid market, real-time/closer to real-time procurement would present risks to network security.</p> <p>In addition, the size and complexity of system development needed by each DNO will factor into their decision on when and at what level to evolve to real-time/closer to real-time procurement of flexibility.</p>
Market transparency	DNOs will need to consider how and when they communicate their flexibility requirements and their procurement and operational decisions to the market. Both to encourage participation and to ensure transparency. What tools are used to communicate these, and how these reflect consistency with other DNOs will be key.

5.2 Dependency on Open Networks Outputs

Some outputs of activities currently underway within Open Networks have a long-term dependency with the enablement of real-time/closer to real-time flexibility procurement.

Market Data	There is likely to be benefits in a future Open Networks product that looks at common approaches to the publication of flexibility market data.
P0 – Common Framework for Flexibility	Knowledge sharing and DNO progress should be overseen by P0 under the common framework.

5.3 Knowledge Gathering

As DNOs are likely to progress at different speeds, it is essential that knowledge sharing continues throughout this evolution. This will support the adoption of common products, processes and systems across DNOs.

6 Consolidated view

The image below summarises the short, medium and long term steps identified in this paper;

Short term Medium Term Long term

STEPS TO REALTIME/CLOSER TO REALTIME PROCUREMENT						
Removing Barriers/knowledge gathering		Planning			Implementation	
Gather Learning; DNO experience ESO experience Outcomes of innovation trials Feedback from Stakeholders Regulatory input	Consult with Procurement and Legal reps to agree procurement/contractual structure for realtime/closer to realtime flex procurement. Alignment with P4 - Common Contract	(Products) Define Product parameters for realtime/closer to realtime procurement. Alignment with P6 - Flexibility Products	(Processes) Determine procurement structure and associated timelines. Alignment with P2 - Procurement Processes	C31E engagement with Stakeholders; Products, Processes and Systems	Market Transparency Produce documentation to support changes; policy, contracts, FSP guides etc.	Gather Learning; DNO experience ESO experience Outcomes of innovation trials Feedback from Stakeholders Regulatory input
	Consult with Planning teams to understand network risks; Flexibility Assessment approach, ER-P2/7 Oversight from P0 - Common Framework for Flexibility	(Systems) Identify Systems and interfaces required for realtime/closer to realtime procurement. Alignment with P3 - Dispatch and Settlement	Scope and specify systems and interfaces to facilitate real time/closer to real time procurement	Gather Learning; DNO experience ESO experience Outcomes of innovation trials Feedback from Stakeholders Regulatory input	Build Systems and Interfaces Produce tools to support the communication of requirements and decision making	Test/trial

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Energy Networks Association

4 More London Riverside

London SE1 2AU

t. +44 (0)20 7706 5100

w. energynetworks.org

 [@EnergyNetworks](https://twitter.com/EnergyNetworks)

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Registered office: 4 More London Riverside, London, SE1 2AU

The voice of the networks



Energy Networks Association

4 More London Riverside

London SE1 2AU

t. +44 (0)20 7706 5100

w. energynetworks.org

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