Flexibility Products Review and Alignment

Open Networks

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Introduction

About ENA

Energy Networks Association represents the companies which operate the electricity wires, gas pipes and energy system in the UK and Ireland.

We help our members meet the challenge of delivering electricity and gas to communities across the UK and Ireland safely, sustainably and reliably.

Our members include every major electricity and gas network operator in the UK and Ireland, independent operators, National Grid ESO which operates the electricity system in Great Britain and National Grid which operates the gas system in Great Britain. Our affiliate membership also includes companies with an interest in energy, including Heathrow Airport and Network Rail.

We help our members to:

- Create smart grids, ensuring our networks are prepared for more renewable generation than ever before, decentralised sources of energy, more electric vehicles and heat pumps. Learn more about our Open Networks programme.
- Create the world's first zero-carbon gas grid, by speeding up the switch from natural gas to hydrogen. Learn more about our Gas Goes Green programme.
- Innovate. We're supporting over £450m of innovation investment to support customers, connections and more.
- Be safe. We bring our industry together to improve safety and reduce workforce and public injury.
- Manage our networks. We support our members manage, create and maintain a vast array of electricity codes, standards and regulations which supports the day-to-day operation of our energy networks.

Together, the energy networks are keeping your energy flowing, supporting our economy through jobs and investment and preparing for a net zero future.

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
- 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 three workstreams under Open Networks to progress the delivery of the smart grid.

2023 Open Networks programme Workstreams

- Network Operation
- Market Development
- Planning and Network Development

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

BUUK infrastructure
Cadent Your Gas Network
electricity north west Bringing energy to your door
ESB NETWORKS
ESO
national gas
nationalgrid
Northern Gas Networks
Northern Ireland Electricity Networks
NORTHERN POWERGRID
Scottish & Southern Electricity Networks
SGN
SP Energy Networks
UK Power Networks Delivering your energy
WALES&WEST UTILITIES

ENA associates

- Chubu
- EEA
- Guernsey Electricity Ltd
- Heathrow Airport
- Jersey Electricity
- Manx Electricity Authority
- Network Rail
- TEPCO

Executive Summary

Throughout 2023, the ENA Open Networks Flexibility Products Technical Working Group have collaborated with industry to establish a more detailed definition of the parameters that make up a Flexibility Service within the Distributed Network Companies. This comprehensive standardisation exercise was undertaken to develop proposals for alignment with the aim of eliminating the differences on the use of Flexibility Services between the companies. These differences were highlighted by Flexibility Service Providers in the Open Networks 2022 Consultation as being a barrier to participation in the Flexibility Services markets and as such the resolution of this challenge was prioritised as a key outcome of Open Network for 2023.

This comprehensive piece of work has achieved its objective of bringing forth these proposals with a number of significant activities including:-

- Consultation with Flexibility Service Providers, the Regulator and Industry Stakeholders
- Consensus across all GB Distribution Network and System Operators utilising Flexibility Services
- Engagement with the Market Facilitation Platform providers to establish routes to integrate the proposals into the market procurement, dispatch and settlement systems

This report details the major activities involved. A key element of the proposed solution is the development of Common Product Parameters; a range of Flexibility Service elements that define its market structure, availability requirements and utilisation details. These proposals have gained widespread approval from FSPs, and industry stakeholders and the aligned Flexibility Products will be implemented throughout the GB Flexibility Services market in 2024.

And finally, in addition to alignment proposals, a governance framework has been proposed to prevent future deviation in approach between Network Companies. The ENA as part of the outcomes of the Open Networks programme will govern the Flexibility Services products moving forward. This governance will include a Change Review process to implement any future amendments or improvement including manage proposals for new Flexibility Products that could add liquidity to the market.

Aligned Flexibility Products

Table 1 New defined list of GB Flexibility Products under the 2023 Products alignment programme (supersedes previous releases).

Product name	Payment Structure
Peak Reduction	Utilisation payment only
Scheduled Utilisation	Utilisation payment only
Operational Utilisation	Utilisation payment only
Operational Utilisation + Scheduled Availability	Availability and utilisation payment
Operational Utilisation + Variable Availability	Availability and utilisation payment

The 2023 Flexibility products working group consists of representatives from the following networks:

Product Alignment need

Purpose of this initiative

As the GB Distributed Flexibility Services market has matured, the use cases for the standardised Distribution Flexibility Market Products have expanded. The four Products originally defined have been used to facilitate a range of new and interesting markets, increasing market fluidity extensively. However, due to local technical reasons and/or market reasons (such as Flexibility Service Providers (FSP) asset capabilities) as well as the high level parameters used to originally define the products, some localised deviation in the utilisation approach has been taken by the Network Companies to aid liquidity. Responses to our Stakeholder Consultation 2022 suggested that FSPs would prefer more clarification of the different approaches.

Therefore, as part of the 2023 ENA Open Network Programme[1], the Flexibility Products Technical Working Group (FPTWG) which is part of the 2023 Market Development Workstream, were tasked to investigate these differences and bring forward proposals to align DSO flexibility product definitions to enable and ensure that at least 80% of tendered flexibility should be tendered through common products by the summer of 2024.

Original four Flexibility Products

Table 2 details the four products released initially as the standardised Distribution Flexibility Market Products[2]. These were established to meet the anticipated needs of the networks and the capabilities of FSPs to provide these services, with the ambition that these products would capture the majority of use cases of distribution network flexibility needs that could be met by Flexibility Services.

Table 2 Historical nomenclature and high level descriptors of the GB Flexibility Products[2]

Product	Description
Sustain	The Network Operator procures, ahead of time, a pre-agreed change in input or output over a defined time period to prevent a network going beyond its firm capacity
Secure	The Network Operator procures, ahead of time, the ability to access a pre-agreed change in Service Provider input or output based on network conditions close to real-time.
Dynamic	The Network Operator procures, ahead of time, the ability of a Service Provider to deliver an agreed change in output following a network abnormality.
Restore	Following a loss of supply, the Network Operator instructs a provider to either remain off supply, or to reconnect with lower demand, or to reconnect and supply generation to support increased and faster load restoration under depleted network conditions.

[1] https://www.energynetworks.org/industry-hub/resource-library-old/open-networks-2023-launch-document-(jan-2023).pdf
[2] https://www.energynetworks.org/publications/on20-ws1a-p3-flexibility-products-active-power-service-definition-and-implementation-plan

Investigation Approach

A comprehensive review was carried out by the FPTWG team. This review kicked off with a detailed discussion and subsequent agreement as to what was within and out with the scope of the group. It progressed further to examine:-

- The details of the Flexibility Products that had been procured by their organisations since their original release
- An internal review of the detail as to how each company was utilising the product to achieve its technical network requirement
- Areas of alignment
- Specification of Product Parameters
- Confirmation on the elements that cannot be aligned due to limitations relating to Flexibility Zones or Distributed Energy Resource (DER) parameters

Scope

Areas for alignment

The team agreed that to meet the needs of our stakeholders we would align the products in accordance with these three main strands of alignment area for the Flexibility Products:-

- Payment Structure – how the service provision shall be recompensed
- Availability – the agreed product parameters that are available for use for the service provision
- Utilisation – the agreed product parameters that will be used to deliver the service provision

It was agreed that for each of these elements the area of alignment would be characterised under (what became known as) the Common Product Parameters (CPP). These will be detailed later within this report.

Outside the scope of this TWG

There were a range of variables and parameters which are critical to the procurement of Flexibility Services that are not specific to how the Flexibility Product is defined but are crucial to how its need is assessed, how it is procured from the market and how it is measured, dispatched, and settled. These specialisms are out of scope for this TWG but covered by other ENA Open Network (ON) groups or specific to the individual Network Companies.

Table 3 Product Item Out of Scope of this technical working group (TWG)

Product Item Out of Scope of this TWG	Scope Covered by
Price paid / Valuing Flexibility Service	Network Situation Specific – ENA Common Evaluation Methodology (CEM tool)
Network needs assessment	Individual Network Companies
Pre-Contract Processes	ENA ON Procurement Processes TWG
Market Platform	Individual Network Companies
Dispatch process and technology (API/Platform etc)	Dispatch and Systems Interoperability TWG
Settlement Process	Settlement TWG
Baselining Methodology	ENA Open Networks hosted

Elements that cannot be aligned upon

There were an additional range of variables which are critical to the procurement of Flexibility Services that are not specific to how the Flexibility Product is defined but were specific to either the asset type providing the Flexibility Service or to the particular flexibility zone where the Service was needed. It was agreed that these would not be part of the alignment process.

Alignment proposal stages

Planning

A seven-stage alignment proposal was mapped out including Market engagement consultation.

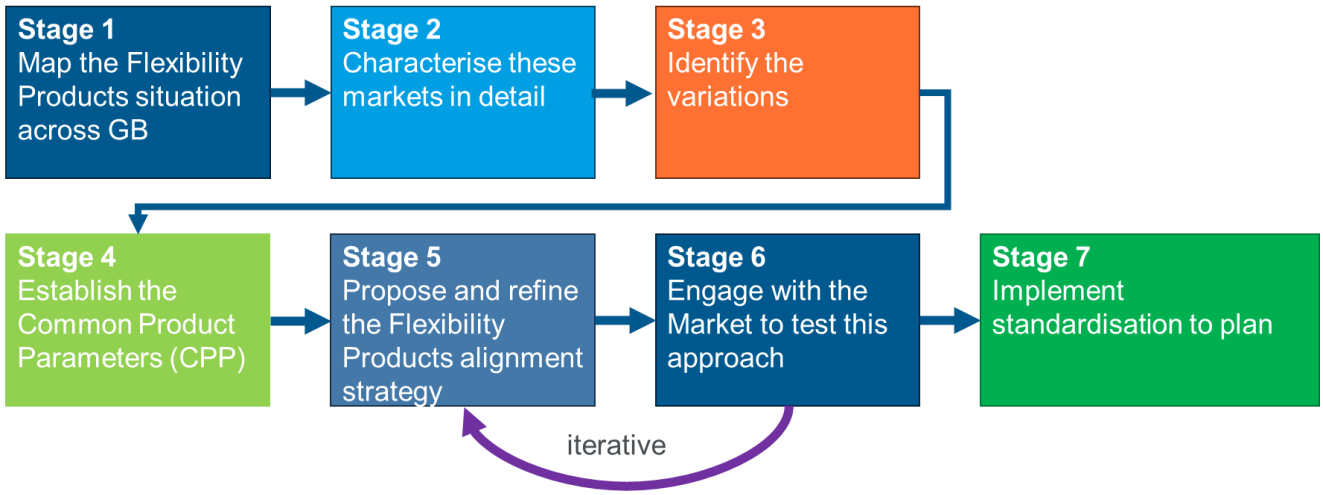

Figure 1 Steps for the Flexibility Products alignment proposals

Progress

The steps in the plan were actioned through in Q1 and Q2 of 2023. In July 2023, a proposal was put together and presented to the relevant bodies for initial consideration. This included a specific Focus Group on the topic with relevant stakeholders in July 2023, and a progress update in early August 2023. Feedback was taken and the proposal refined as a consequence. A draft final proposal was presented in August 2023 and challenged by the ENA Open Networks Challenge Group. Further refinement and changes to the approach were undertaken and the final proposal issued again through the governance channels in November 2023. This was authorised on 5th December 2023.

Next steps

The implementation plan was presented in September 2023, and amended to take into account feedback from the governance channels, with initial deployment of the standardised Flexibility Products planned throughout 2024 by the Network Companies.

Dependencies on delivery schedule

There are a range of dependencies impacting how and when Network Companies can deploy these products, including but not limited to; system changes to needs-assessment, procurement, service selection, scheduling, dispatch, and settlements processes.

In addition, the contractual changes to service terms and payment calculations will need to be integrated.

Finally, communication and education of the changes to the market will be carried out by the Network Companies, ENA, and other key stakeholders, such as the flexibility platform providers.

Characterisation

For each strand of the product definitions to be aligned i.e. Structure, Availability and Utilisation, a list of parameters that described the products was established by the team. These parameters provide economic and technical characteristics for the Market Provider to describe their flexibility service need to the market. These were then mapped together to provide the characterisation to facilitate the alignment of the Flexibility Products.

Characterisation approach

Why Common Product Parameters?

The alignment proposal is to retain the product structures essentially as they were originally designed but to be very explicit on the design up front by providing a small finite list of characteristics and options know as Common Product Parameters (CPP) to provide clarity for the flexibility service procurement from the outset.

EXAMPLE

Common Product Parameter Name:	Availability Payment Unit
Aligned Definition:	The Units used for Availability Payments
Aligned Options available:	£/MW/h
	£/MWh
	£/h

Sub Parameters

To capture the maximum range of technologies that can provide flexibility services while providing clarity of elements, such as speed of response; the new product definitions will allow a sub parameter option and have only one parameter that differs between them. As these share all other aspects of CPP, these will not be classed as separate products. These aligned sub parameter options are presented within Table 4 and are mapped to the aligned Flexibility Products in Figure 2.

Outcomes

Outcome 1 - Common product parameters

Table 4 Common Product Parameters – structure, availability and Utilisation

Purpose	Parameter Name	Description	Options
Structure	Payment Structure	How the service is structured (i.e. what is the DNO/DSO asking of the FSP)	Utilisation Only Availability and Utilisation
	When Prices are set [procurement timescales]	Time before use that prices are determined	At Trade Operational
Availability	Availability Request Mechanism	How availability is requested from providers	Request initiated by DNO Request Initiated by FSP
	Availability Acceptance timing	When availability is accepted by the DNOs	At trade After trade
	Availability Refinement timing	Can the DNO refine the availability required? If so, when. This determines what availability payments are due.	Yes No
	Availability Changes Allowed?	Can FSPs change their availability declaration post acceptance?	Yes No
	Minimum Aggregate Unit Size	The minimum volume requirement for provision of availability	e.g. 50kW, 1MW, N/A
	Partial Availability Acceptance Possible?	Whether the DNO can accepted a portion of the offered volume	Yes No
	Time Variable Availability Volumes Allowed	Can the FSP provide different volumes for availability for the different periods within the availability window?	Yes No
	Availability Payment Unit	The Units used for Availability Payments	£/MW/h £/MWh £/h

Purpose	Parameter Name	Description	Options
	Availability Period	The unit of time considered for Availability Instructions	Electricity Forward Agreement (EFA) blocks Settlement Periods Minutes
Utilisation	Utilisation Payment Unit	The Units used for Utilisation Payments	£/MWh £/MW/season
	Utilisation Period	The unit of time considered for Utilisation Instructions	Electricity Forward Agreement (EFA) blocks Settlement Periods Minutes
	Delivery Expectation	How the FSP is expected to respond to a utilisation instruction	Continuous (a sustained delivery over the entire utilisation window) Peak Delivery (targeting the maximum response that can be delivered within the window) Maximum generation cap
	Maximum Response Time	Time from Utilisation Instruction to full output	At trade 15mins 2 mins
	Payments during response time?	Are FSPs paid during the response time	Yes No
	Minimum Utilisation Time	The minimum time a unit can be instructed for	60 minutes (Hour) 30 minutes (Half Hour)
	Minimum Utilisation Volume	The minimum volume that can be instructed	Measured in kW
	Utilisation Instruction Timings	Timeframes in which utilisation Instructions are communicated.	At trade Operational Real Time
	Partial Utilisation Instruction possible	Whether the DNO can instruct a portion of the available volume	Yes No
	Time Variable Utilisation Volumes Allowed	Can the DNO vary the utilisation instruction for the different periods within the availability window?	Yes No

Outcome 2 – Flexibility Products

Table 5 New defined list of GB Flexibility Products under the 2023 Products alignment programme (supersedes previous releases).

Product name	Payment Structure
Peak Reduction	Utilisation payment only
Scheduled Utilisation	Utilisation payment only
Operational Utilisation	Utilisation payment only
Operational Utilisation + Scheduled Availability	Availability and utilisation payment
Operational Utilisation + Variable Availability	Availability and utilisation payment

Figure 2 in Appendix F is a summary of the key differences between the standardised Flexibility Products by mapping these to the Common Product Parameters. Further details of the agreed standard definitions of the Common Product Parameters for each of the products are presented within Appendix B-F.

Examples of how the aligned Flexibility Products can be used

To aid further understanding of the purpose of the products, some use case examples are presented, to show how the products can be used to provide Flexibility Services. Please note, this is not a definitive list of all use cases.

Peak Reduction

This product seeks a reduction in peak power utilised over time. This response can manage peaks in demand and could be provided by long-term energy efficiency activities.

This product could be used where energy efficiency measures are planned that would reduce a sites overall electricity consumption across the year but specifically during high peak periods.

Scheduled Utilisation

In this product, the time that flexibility is delivered has been pre-agreed in advance with the provider. This product will primarily benefit FSPs that cannot respond in real-time or near to real-time. This service can be used by the Network Companies to manage seasonal peak demands and defer network reinforcement, for example.

Operational Utilisation

This product allows for the use case where the amount of flexibility delivered is agreed nearer to real time. This can be utilised to facilitate a change in demand profile from FSPs based on network conditions close to real-time. The assets will be dispatched for the required level of service that is required based upon actual network measurement data thus managing the cost.

A DNO may utilise this product in order to restore network supplies following an unplanned outage/fault where the regulatory funding does not allow for availability payments e.g. customer interruptions (CI).

Operational Utilisation + Scheduled Availability

This product procures, ahead of time, the ability of an FSP to deliver an agreed change following a network abnormality. The availability will be defined at the point of procurement and cannot be modified once the contract has been agreed. The assets will be dispatched for the required level of service that is required based

upon actual network measurement data, meaning that the DNO/ESO is only paying utilisation payments based upon the actual needs of the network.

An example use case for this product is when a DNO is planning for sufficiency of flexible services contracts based upon short-medium range forecasting of network constraints.

Operational Utilisation + Variable Availability

This product allows for DNOs and the ESO to procure a level of contracted capacity, but then refine the requirements in terms of availability closer to the event. The assets will be dispatched for the required level of service that is required based upon actual network measurement data, meaning that the DNO/ESO is only paying utilisation payments based upon the actual needs of the network.

An example use case for this product is when a DNO is planning for sufficiency of flexible services contracts based upon long range forecasting of network constraints.

Implementation

Plan

There is an intention for all GB DNOs/DSOs to move swiftly to the aligned Flexibility Products. It is anticipated that all will be starting some procurement of the new products potentially in parallel to existing products as soon as possible after final market release. The expectation is that by Q2 (Apr-Jun) 2024 all will have migrated to procuring only the standardised Flexibility Products for at least 80% of tendered flexibility.

Each DNO will provide more detailed implementation details as part of their Market Notification processes.

Details of the products that will be procured by each network company will be published in the established manner via the invitation to tender (ITT) process including the sub-parameter detail. The use of the products will be driven by the network need, evolution of the flexibility market and the market platforms as well as technological development of new solutions deployed by FSPs and/or Network Companies.

Early indications of the plans for use of the aligned Flexibility Products are listed within Appendix G in Figure 3.

Interim states

There are a few of the common product parameters where the DNOs will not be aligned from the very start. This is due to some differences in platform tools and dispatch systems utilised. These parameters are:-

- Minimum Aggregate Unit Size
- Partial Availability Acceptance Possible
- Time Variable Availability Volumes Allowed
- Minimum Utilisation Volume
- Partial Utilisation Instruction Possible
- Time Variable Utilisation Volumes Allowed

The short to medium term plan is to align on these and we are actively developing the systems with the platform providers to facilitate this. The end state that is being aligned to is listed in the appendices. The progress of the delivery of these final alignment components will be reported via our regulator's channels (see Reporting section).

Reporting

It is proposed that the reporting of the delivery of the commitment to meet this outcome is covered via the Network Companies **Electricity Distribution Licence Condition 31E: Procurement and use of Distribution Flexibility Services reporting requirements[3].** In this requirement details of the form the Flexibility Products procured and used are collated, validated, and reported to the regulator. This proposal, developed by the FPTWG is being co-ordinated by ENA in their Open Networks discussions with Ofgem.

Future Governance

A framework has been proposed for future governance of the aligned product definitions to prevent future deviation in interpretation. This will provide a clear route for the introduction of innovations on the agreed products or indeed the introduction of new products that would further enhance the market liquidity for Flexibility Services. This ensures an enduring route for development of the market in a way that is deployed consistently across all the Network Companies. Please note that the following approach has been designed such that it can be swiftly adopted by the new market facilitator when fully operational.

[3] SLC31E Procurement and use of Distribution Flexibility Services reporting requirements guidance (ofgem.gov.uk)

The future governance of the products will sit under the ENA Open Networks programme. A technical standard clearly outlining the parameters of the defined products, as detailed within this report, will be published on the ENA's Document Catalogue System; which is an online catalogue of engineering documents available from the ENA. Hosting the documents within this repository will allow for unrestricted access to Open networks technical standards, tools, and contracts. Detailed, reports and supporting documents will continue to be hosted within the Open Networks website.

Any change requests to the Open Networks documents hosted on the ENA's Document Catalogue System will have to be submitted directly to Open Networks for consideration, at which point Open Networks will reconvene a working group with representatives from all network companies for a full review of the proposal. If the proposed changes are deemed appropriate by the Open Networks governance process, an amendment will be made to the technical standard, and a new technical standard for the flexibility products will be uploaded.

Furthermore, the energy networks SLC31E reports will be monitored to assess proliferation of these newly defined flexibility products. If there is a clear evidence for change, the networks can initiate a review, which will trigger the reconvening of the working group to review the evidence and formalise the change if found appropriate via the Open Networks governance. This process will ensure that any changes to the standard are agreed for deployment across all GB networks, thus maintaining the commitment to tender at least 80% of flexibility only through these common products. Please note that the criterion for retiring existing products is still being developed, once this has been complete it will be incorporated into the review timelines and published on our flexibility providers webpage within the ENA website.

Anticipated Benefits of this approach

- Transparency to the Market - common structures are maintained
- Clarity on the form the product will take in each tender round
- Flexibility Service Providers have confidence on product alignment across GB
- Framework is in place for adoption across the NIE and ESB networks in Ireland if required
- More versatility available to DNOs to utilise Flexibility Services in more network use cases assisting with market liquidity[4]
- The Common Product Parameters have a clear definition allowing evolution to defined terms when considering future governance
- Governance structure future proofs the roll out of new products to further develop the Flexibility Products marketplace and ensure innovative new products are rolled out across GB in a consistent manner.

[4] A liquid market - many available buyers and sellers and comparatively low transaction costs

Conclusion

The ENA Open Networks Flexibility Products Technical Working Group has consulted widely with our stakeholders to understand the challenges for Flexibility Service Providers with regards Flexibility Products descriptions.

With reference to these challenges a wide-ranging review was carried out on historical utilisation of the products in the Flexibility Services market. This uncovered the specific market components that were driving differences in how the products were being utilised by the Network Companies to facilitate delivery of the Flexibility Services.

A comprehensive standardisation exercise was undertaken to develop proposals for aligned definitions of key parameters with the aim of eliminating the differences. These proposals were presented for consultation with the industry via a range of forums including those specifically targeting Flexibility Service Providers. This consultation provided further opportunity to refine and clarify the definitions. The final proposals gained approval from the ENA Open Networks governance panels and are presented here.

In addition to alignment exercise, a governance framework has been proposed to prevent future deviation in approach between Network Companies, it is proposed that the ENA Open Networks govern these products and provide a Change Review process to implement any future amendments or manage proposals for new Flexibility Products. The ENA will work with the Network Companies to implement any future changes across the industry.

APPENDICES

APPENDIX A SCHEDULED UTILISATION PRODUCT DEFINITIONS

Purpose	Common Product Parameter	Scheduled Utilisation	
		Scheduled Utilisation - Settlement Periods	Scheduled Utilisation - Specific Periods
Structure	Payment Structure	Utilisation Only	Utilisation Only
	When prices are set (procurement timescales)	At trade	At trade
Availability	N/A	-	-
Utilisation	Utilisation Payment Unit	£/MWh	£/MWh
	Utilisation Period	**Settlement Periods**	**Blocks**
	Delivery Expectation	Continuous	Continuous
	Maximum Response Time	N/A	N/A
	Payments during response time?	No	No
	Minimum Utilisation Time	30 mins	30 mins
	Minimum Utilisation Volume	End state: N/A Interim: differs per DNO	End state: N/A Interim: differs per DNO
	Utilisation Instruction Timings	At trade	At trade
	Partial Utilisation Instruction possible	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO
	Time Variable Utilisation Volumes Allowed	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO

APPENDIX B PEAK REDUCTION PRODUCT DEFINITIONS

Purpose	Common Product Parameter	Peak Reduction
Structure	Payment Structure	Utilisation Only
	When prices are set (procurement timescales)	At trade
Availability	Availability Request Mechanism	N/A
Utilisation	Utilisation Payment Unit	£/MWh
	Utilisation Period	Settlement Periods
	Delivery Expectation	Peak Delivery
	Maximum Response Time	N/A
	Payments during response time?	No
	Minimum Utilisation Time	30 mins
	Minimum Utilisation Volume	End state: N/A Interim: differs per DNO
	Utilisation Instruction Timings	At trade
	Partial Utilisation Instruction possible	End State: Yes Interim: differs per DNO
	Time Variable Utilisation Volumes Allowed	End State: Yes Interim: differs per DNO

APPENDIX C OPERATIONAL UTILISATION PRODUCT DEFINITIONS

Purpose	Common Product Parameter	Operational Utilisation		
		Operational Utilisation - 2 min response time	Operational Utilisation - 15 min response time	Operational Utilisation - week ahead response
Structure	Payment Structure	Utilisation Only	Utilisation Only	Utilisation Only
	When prices are set (procurement timescales)	At trade	At trade	At trade
Availability	N/A	-	-	-
Utilisation	Utilisation Payment Unit	£/MWh	£/MWh	£/MWh
	Utilisation Period	Minutes	Minutes	Minutes
	Delivery Expectation	Continuous	Continuous	Continuous
	Maximum Response Time	**2 mins**	**15 mins**	**N/A**
	Payments during response time?	No	No	No
	Minimum Utilisation Time	30 mins	30 mins	30 mins
	Minimum Utilisation Volume	End state: N/A Interim: differs per DNO	End state: N/A Interim: differs per DNO	End state: N/A Interim: differs per DNO
	Utilisation Instruction Timings	**Real Time**	**Real Time**	**Operational- Week Ahead**
	Partial Utilisation Instruction possible	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO
	Time Variable Utilisation Volumes Allowed	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO

APPENDIX D OPERATIONAL UTILISATION + SCHEDULED AVAILABILITY PRODUCT DEFINITIONS

Purpose	Parameter Name	Operational Utilisation + Scheduled Availability	
Name		Operational Utilisation + Scheduled Availability - 2 minute response time	Operational Utilisation + Scheduled Availability - Day ahead response
Structure	Payment Structure	Availability and Utilisation	Availability and Utilisation
	When prices are set (procurement timescales)	At trade	At trade
Availability	Availability Request Mechanism	Request initiated by DNO	Request initiated by DNO
	Availability Acceptance timing	At trade	At trade
	Availability Refinement timing	Not allowed	Not allowed
	Availability Changes Allowed?	No	No
	Minimum Aggregate Unit Size	End state: N/A Interim: differs per DNO	End state: N/A Interim: differs per DNO
	Partial Availability Acceptance Possible?	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO
	Time Variable Availability Volumes Allowed	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO
	Availability Payment Unit	£/MW/H	£/MW/H
	Availability Period	Settlement Periods	Settlement Periods
Utilisation	Utilisation Payment Unit	£/MWh	£/MWh
	Utilisation Period	Minutes	Minutes
	Delivery Expectation	Continuous	Continuous
	Maximum Response Time	**2 mins**	**N/A**
	Payments during response time?	No	No
	Minimum Utilisation Time	30 mins	30 mins
	Minimum Utilisation Volume	End state: N/A Interim: differs per DNO	End state: N/A Interim: differs per DNO
	Utilisation Instruction Timings	**Real Time**	**Operational - Day Ahead**
	Partial Utilisation Instruction possible	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO
	Time Variable Utilisation Volumes Allowed	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO

APPENDIX E OPERATIONAL UTILISATION + VARIABLE AVAILABILITY PRODUCT DEFINITIONS

Purpose Name	Parameter Name	Operational Utilisation + Variable Availability			
		2 minute response time	15 minute response time	Day ahead response	week ahead response
Structure	Payment Structure	Availability and Utilisation	Availability and Utilisation	Availability and Utilisation	Availability and Utilisation
	When prices are set (procurement timescales)	At trade	At trade	At trade	At trade
Availability	Availability Request Mechanism	Request initiated by DNO	Request initiated by DNO	Request initiated by DNO	Request initiated by DNO
	Availability Acceptance timing	At trade	At trade	At trade	At trade
	Availability Refinement timing	Week Ahead	Week Ahead	Week Ahead	Month Ahead
	Availability Changes Allowed?	No	No	No	No
	Minimum Aggregate Unit Size	End state: N/A Interim: differs per DNO	End state: N/A Interim: differs per DNO	End state: N/A Interim: differs per DNO	End state: N/A Interim: differs per DNO
	Partial Availability Acceptance Possible?	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO
	Time Variable Availability Volumes Allowed	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO
	Availability Payment Unit	£/MW/H	£/MW/H	£/MW/H	£/MW/H
	Availability Period	Settlement Periods	Settlement Periods	Settlement Periods	Settlement Periods
Utilisation	Utilisation Payment Unit	£/MWh	£/MWh	£/MWh	£/MWh
	Utilisation Period	Minutes	Minutes	Minutes	Minutes
	Delivery Expectation	Continuous	Continuous	Continuous	Continuous
	Maximum Response Time	**2 mins**	**15 mins**	**N/A**	**N/A**
	Payments during response time?	No	No	No	No
	Minimum Utilisation Time	30 mins	30 mins	30 mins	30 mins
	Minimum Utilisation Volume	End state: N/A Interim: differs per DNO	End state: N/A Interim: differs per DNO	End state: N/A Interim: differs per DNO	End state: N/A Interim: differs per DNO

Purpose Name	Parameter Name	Operational Utilisation + Variable Availability			
		2 minute response time	15 minute response time	Day ahead response	week ahead response
	Utilisation Instruction Timings	**Real Time**	**Real Time**	**Operational - Day Ahead**	**Operational- Week Ahead**
	Partial Utilisation Instruction possible	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO
	Time Variable Utilisation Volumes Allowed	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO	End State: Yes Interim: differs per DNO

APPENDIX F FLEXIBILITY PRODUCTS MAPPED TO SUB-PARAMETER

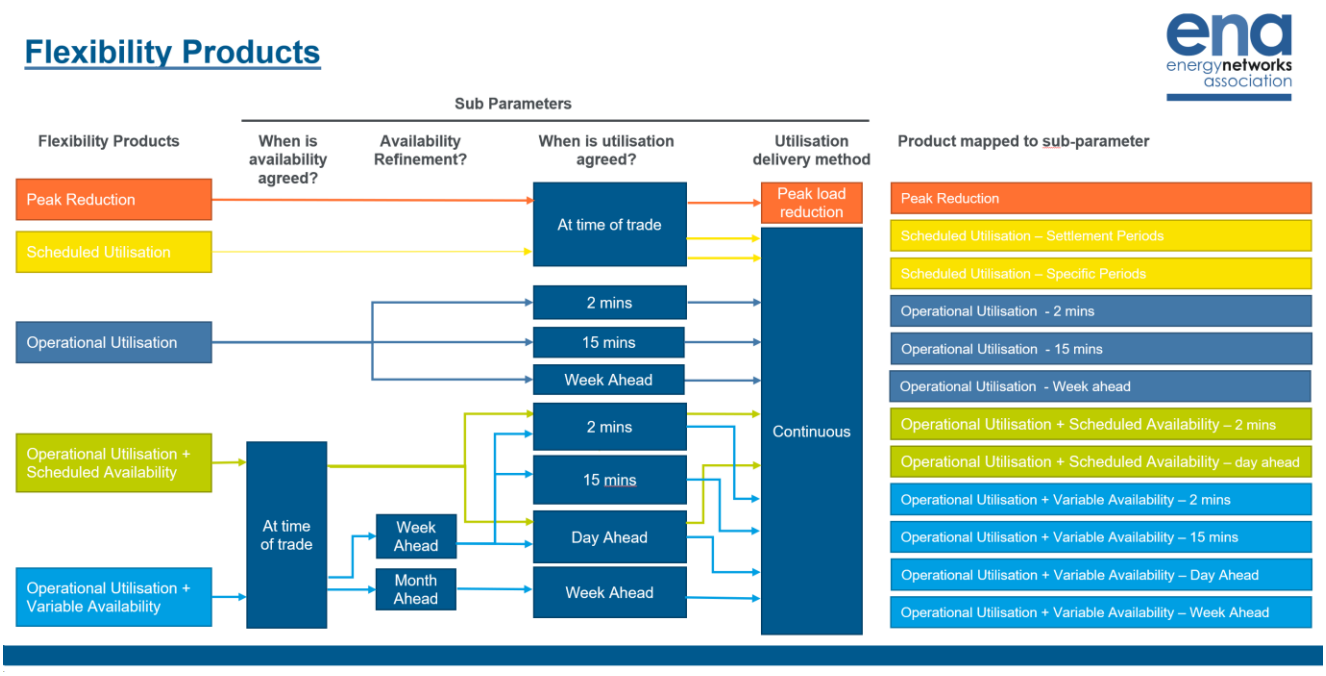

Figure 2 Flexibility Products mapped to product outcomes using the standardised sub parameters

APPENDIX G EARLY INDICATION OF NETWORK COMPANIES UTILISATION PLANS FOR THE ALIGNED FLEXIBILITY PRODUCTS

Product name	Sub-parameter	Network Company					
		NPg	SSEN	SPEN	NGED	UKPN	ENW
Peak Reduction	n/a						
Scheduled Utilisation	Settlement periods						
	Specific periods						
Operational Utilisation	2 mins						
	15 mins						
	Week ahead						
Operational Utilisation + Scheduled Availability	2 mins						
	Day ahead						
Operational Utilisation + Variable Availability	2 mins						
	15 mins						
	Day ahead						
	Week ahead						

Figure 3 Early indications of network companies plans for use of the aligned Flexibility Products

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