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# Revenue Stacking for Flexibility

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Current state of play & future recommendations

13/12/2023



## Agenda

- 1. Introduction
- 2. Summary Report findings
- 3. Next steps
- 4. Questions

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## National Grid and DSO

- National Grid Electricity Distribution is the largest DNO by area in the UK
- DSO functions sit in their own directorate
- We have been building DSO capabilities since early ED1
- We have been publishing producing DFES since 2020, DNOA documents since 2021 and procuring flexibility service since 2018
- Building on this success, we have launched our DSO Charter to focus our actions in ED2



DistributionSystemOperator

## **Our Flexibility Services**

Focussed on Constraint Management	Procured across various time frames	First DNO to introduce an Overarching Contract					
>£4m market opportunity	Over 450MW (6500 assets) registered on our Market Gateway	Procurement in 38 HV and 1300 LV zones so far this year					

We have short term trades clearing weekly. Our next long term trades open on January 15<sup>th</sup>. For more information visit <u>www.flexiblepower.co.uk</u> or contact <u>NGED.flexiblepower@nationalgrid.co.uk</u>

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## Importance of revenue stacking

- The need for DSO flexibility services has historically outstripped supply
- We want to build liquid local markets to allow us to defer more reinforcement, drive competition in delivery and drive value for our customers
- Given the inherent challenges associated with DSO services (Geographically constrained, time bound needs), it is essential we lower the opportunity cost of service provision.
- DSO pricing is fixed against the cost of reinforcement so unit values are higher when volume are lower
- Revenue stacking sits alongside wider work to simplify access to our services



#### DistributionSystemOperator

## Previous work in this space

- Has been a focus from our earliest developments. Our weekly process was built around the flexible STOR contracts
- Commissioned previous work by Cornwall into the topic. This fed into the Open Networks project
- Investigation of impacts on Supply Market in IntraFlex project
- Baselines reviewed to simplify and aid stacking



# Cornwall Insight review of flexibility revenue stacking



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## Background

Cornwall Insight prepared a report **exploring the extent to which flexible service providers (FSPs) can stack revenue streams** (commissioned by National Grid Electricity Distribution).

Particularly focusing on the way in which services being procured by Distribution Network Operators (DNOs) integrate with other, more established revenue streams.



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## Progress against the previous report

Many of the recommendations from our previous report remain relevant today, although the context may have changed slightly within the broader remit of a changing system and modified balancing services to meet changing system need. They **can be summarised** as:

Flexible asset providers remain able to move between revenue streams in different time periods much more readily than they are able to stack multiple revenue streams in the same time period. There remain opportunities for greater coordination across services being procured by the ESO and DNOs and the timescales for procurement and dispatch. Participants have highlighted that the ESO and DNOs could work together to standardise contracts further. DNO services tend to have primacy over a range of ESO services where there is a conflict. Though progress has been made on coordination and a hierarchy of services through primacy workstreams. Generally, newer services and procurement rounds are learning lessons from previous generations and generally improving in terms of access and ability to jump. However, this is not universal.

Fundamentally, at present:

- The ease of access to information on stacking is low
- Interactions can be unclear and open to interpretation
- There may be misunderstanding in how services can be stacked



## Methodology

There are nuances to how and when assets can earn revenues from each of these services co-optimally. Therefore, **we** have assessed the "stacking" of revenues under three different definitions:

Jumping	Revenue from the same asset and MW, but during adjacent or different time periods					
Splitting	Multiple services from the same asset in the same time period, but not from the same MW					
Co-delivery	Multiple service revenues from the same MW in the same time period in the same direction					

We note that in most instances there is no single definition on the explicit interaction between services and how these would be concurrently provided by FSPs. In order to distinguish between **the different levels of clarity in stacking, we have broadly classified between services as follows:** 

Explicitly stackable	Rules or guidance explicitly state the alignment and ability to co-optimise services
Implicitly stackable	Based on our understanding of market rules, there is nothing explicitly preventing this
Implicitly unstackable/ technical issues arise	As above, operational challenges mean FSPs unlikely to be able to or want to co-deliver
Explicitly unstackable	Rules or guidance explicitly state revenues cannot be co-optimised across services

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# Jumping between services remains the most viable form of revenue stacking

#### Ability to jump between different services

Revenue stream/ Service	Wholesale	Balancing Mechanism	NIV Chasing	Capacity Market	Short Term Operating Reserve	Firm Frequency Response	Enhanced Reactive Power Service	DSO services	Local Constraint Market	MW Dispatch Service	Demand Flexibility Service	Slow Reserve	Quick Reserve	Balancing Reserve	Electricity Restoration Services	Dynamic Containme nt	Dynamic Moderation				
Balancing Mechanism						lur	ning betwe	oon service		the most	viable										
NIV Chasing						forn	n of revenu	e stacking	55 1011/01115	the most	VIADIC					Кеу					
Capacity Market	N/A	N/A	N/A						I		1				Ev	olioithy upor	taakabla				
Short Term Operating Reserve				N/A				Consi	deration of	delivery w	vindows is i	mportant; i	more			Explicitly unstackable					
Firm Frequency Response				N/A				granul	lar windows	s support	stacking, b	ut there ma indows	ay be good		Im	Implicitly unstackable					
Enhanced Reactive Power Service				N/A									1		Implicitly stackable						
DSO services				N/A						Se	ervices are	in competi	n competition with each Explicitly sta								
Local Constraint Market				N/A						ot	her – FSPs	are more	likely to for	cus on							
MW Dispatch Service				N/A						ar	nd those wi	vith greatest accessibility									
Demand Flexibility Service				N/A								Ŭ									
Slow Reserve				N/A										Situati	ions prever	nting jumpi	ng can				
Quick Reserve				N/A										includ	e strict exc	lusivity cla	uses,				
Balancing Reserve				N/A										BIMU I	requiremen	ts, & ANM					
Electricity Restoration Services				N/A								schemes									
Dynamic Containment				N/A																	
Dynamic Moderation				N/A																	
Dynamic Regulation				N/A																	

Source: Cornwall Insight

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# Service splitting has become more available, but challenges and complexities remain

#### Ability to split different services

Revenue stream/ Service	Wholesale	Balancing Mechanism	NIV Chasing	Capacity Market	Short Term Operating Reserve	Firm Frequency Response	Enhanced Reactive Power Service	DSO services	Local Constraint Market	MW Dispatch Service	Demand Flexibility Service	Slow Reserve	Quick Reserve	Balancing Reserve	Electricity Restoratio n Services	Dynamic Containme nt	Dynamic Moderation		
Balancing Mechanism					Ser	vice splittir	na has hec		readily via	ble notab									
NIV Chasing					for	nameplate	ESO servi	ices, whole	esale, and	the BM	i y				Key				
Capacity Market	N/A	N/A	N/A													,			
Short Term Operating Reserve				N/A					However,	this can re	ely on inter	pretation o	f		Explicitly unstact				
Firm Frequency Response				N/A					service ter	rms, guida one servic	nce if avai	lable, ensu inhibit abi	iring lity		Implicitly unstack				
Enhanced Reactive Power Service				N/A					to provide	the other,	and provid	ding two			Implicitly stackable				
DSO services				N/A					services d	oes not re	sult in pen	alty			Explicitly stackable				
Local Constraint Market				N/A															
MW Dispatch Service	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				Splitting	of DSO s	services rer	nains			
Demand Flexibility Service				N/A						N/A			challenging, particularly with ESO services. Requirements to be a BMU and submit PNs can also be prohibitive						
Slow Reserve				N/A						N/A									
Quick Reserve				N/A						N/A									
Balancing Reserve				N/A						N/A									
Electricity Restoration Services	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Dynamic Containment				N/A						N/A					N/A				
Dynamic Moderation				N/A						N/A					N/A				
Dynamic Regulation				N/A						N/A					N/A				

Source: Cornwall Insight

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# Co-delivery remains unviable for most services, but this may be with good reason

Ability to co-deliver different services

Revenue stream/ Service	Wholesale	Balancing Mechanism	NIV Chasing	Capacity Market	Short Term Operating Reserve	Firm Frequency Response	Enhanced Reactive Power Service	DSO services	Local Constraint Market	MW Dispatch Service	Demand Flexibility Service	Slow Reserve	Quick Reserve	Balancing Reserve	Electricity Restoratior Services	Dynamic Containment	Dynamic Moderation		
Balancing Mechanism				(			noine			inctonooo	whore ee	dolivoring	mayba			Kev			
NIV Chasing					unviable f	for most se	ervices –	ber	neficial for t	the system	, incentivis	ing multipl	e service			itoy			
Capacity Market					with the e	exception o	of the CM -	- inte	eraction. He	owever, thi	s is a broa	der questio	on for indus	stry	Explicitly unstackable				
Short Term Operating Reserve					this may be with good reason										Technical challenge inhibit				
Firm Frequency Response						of the service - e.g. how to define reverse actions or									L	Utilisation availab			
Enhanced Reactive Power Service						payments for availability but not utilisation, and if this									opposite direction				
DSO services						should be further considered in service designs									R	estoration a	availability		
Local Constraint Market																ble			
MW Dispatch Service																			
Demand Flexibility Service																			
Slow Reserve																			
Quick Reserve																			
Balancing Reserve																			
Electricity Restoration Services																			
Dynamic Containment																			
Dynamic Moderation																			
Dynamic Regulation																			

Source: Cornwall Insight

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## Numerous challenges were identified in our research

Broader <b>uncertainty on co-</b> <b>deliverability</b> and whether this is intentional. Priority/ concern on this varies between procuring parties.	Visibility of the ability to stack services is opaque and unclear. In instances it depends on interpretation of legal text or operational conflicts/ misalignment between services.	Service window timeframes vary between services. Assets jumping between services may lose revenue waiting for new period to begin.	Long procurement timelines mean the value for flexibility may be unknown at the point of contract award.
Service terms and requirements are varied, T&Cs can put significant liability on FSPs, stymying participation.	Service requirements can hinder FSP's ability to split, jump or stack services. This is typically most relevant of starting positions of BM- registered assets and some ESO-related services.	Baselines from which service delivery and performance are assessed differ between ESO and DSO services. They also vary between DSO.	<b>RBS excludes many services</b> including DSO services.
Eligibility of assets with non- firm connections is not clearly outlined in a number of services.	Data used to demonstrate delivery is sourced from several points – meters, settlements (adjusted or not). This causes conflicts that can result in over or under- compensation.	No obligation to continue to consider these impacts or needs for future services or procurement platforms.	The design of flexibility services for very small-scale flexibility limit stacking options, due to the speed of deployment and system need.

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# There are a range of recommendations to support stacking, but prioritisation & feedback is important

#### **High priority**



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#### **Medium priority**



- Decide and/ or make clear whether value should be achievable for delivery of multiples services with the same MW
- Establish cross- service guidance. Establish a regular opportunity for Q&A (FAQ or annual forum)
- Information regularly reviewed, updated and put in one readily accessible location online
- Align service window timeframes where possible. Shortening them supports jumping (e.g. a BESS requiring time to charge)
- Provide clear guidance on non-firm connection eligibility for every service
  - Enhanced information sharing on curtailment likelihood, supporting procuring entities in allowing service provision when curtailment likelihood is low
  - Where possible move as close to real time procurement as possible. An alternative solution may be to align penalties for non-delivery to current market conditions, although this may be contractually difficult
- Co-develop a contractual framework with common elements/areas and schedules for ESO/DSO specific requirements
- While there are potentially good reasons for different starting requirements, they prevent service splitting. e.g. actions in DSO services for BM participants may contravene Grid Code
- Review service requirements, where they may be prohibitive (e.g. baselining and performance monitoring processes, or exclusivity clauses) to understand if they are necessary for service provision
- Align baseline approaches across DNOs. Base exceptions on requirements for the DNO and clear communication on the differences with FSPs



## About Cornwall Insight

Established in 2005, Cornwall Insight is one of the most respected voices in the energy industry. We provide research, analysis, consulting and training to businesses and stakeholders in the Great British, Irish and Australian energy markets.

### Our insight

Our independent experts work across the energy market and provide high quality and actionable insights on which to base your business decisions. We look to facilitate positive market and policy change, whilst also advising customers on how to navigate and comply with energy market dynamics, rules and regulations.

### Our expertise

Our experts in-depth working knowledge of energy market design, including policy and regulatory changes, means we are perfectly placed to advise on changes to the future market design and help businesses achieve their net zero goals.





## Next steps

#### Full details are available for your review:

- Full report and appendices available online.
- Webinar recording will be uploaded
- A follow up email will be sent out to all registrants with details and links.

#### We want your feedback:

- We will add a survey link in the follow on email.
- Alternatively respond to <u>NGED.FlexiblePower@nationalgrid.co.uk</u>
- We want to know if we have missed any key recommendations, their relative priorities and the specific actions that we should be taking to deliver improvement.

#### We are looking to prioritise actions to take forwards

- In the new year we will host a follow up webinar on actions to take following this work and the feedback
- We will coordinate with the recent ESO survey on the topic to align actions and will feed into the ON project.





# Any Questions?