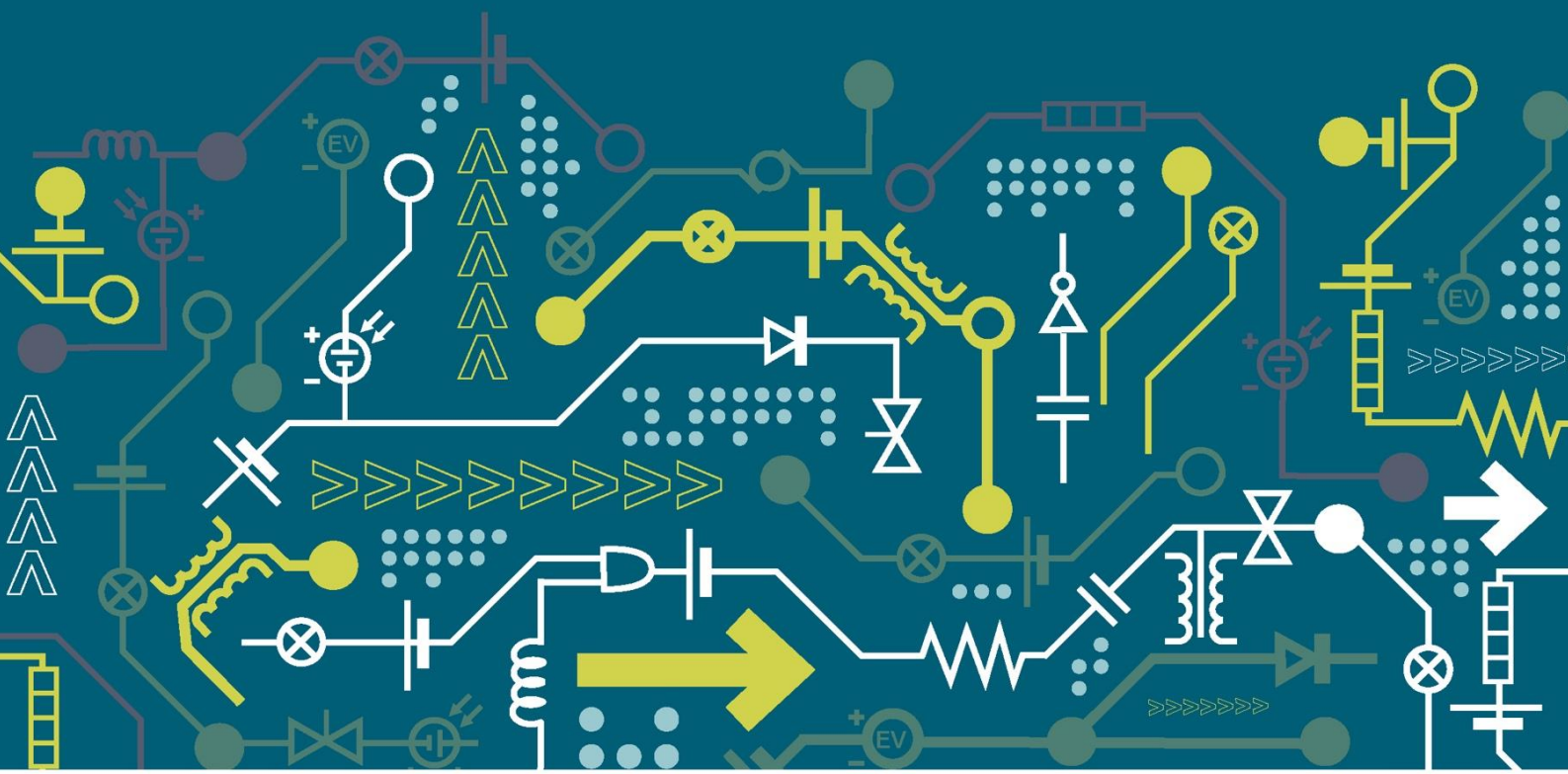
WPD INNOVATION

Market Design

IntraFlex Project

Summarising the key market feature of the trial



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Contents

1 Executive Summary

This document summarises the initial market design for the IntraFlex project and is intended to help facilitate engagement with relevant stakeholders to stimulate discussion and refinement of the design to ensure maximum value for UK electricity customers before any trials begin.

The recently registered Network Innovation Allowance (NIA) project is looking to address the disconnect between Distribution Network Operator (DNO) flexibility service procurement and the imbalance it potentially creates within the electricity market.

Due to the limited volumes procured to date, the impact of these calls are currently de-Minimis. However, as DNO's commit further to the procurement flexibility services, this impact is expected to increase. As such the project aims to understand how links could be created between DNO service procurement and the energy market to minimise any risk as well as understand how this would impact on both market participation and prices.

The solutions to be trialled are detailed in the document below and consist of the operation of a new closer to real time markets for DNO services facilitated by the NODES market platform. This new market will have two imbalance mitigation services. The first will cover the time between current service procurement (week ahead) and the day ahead energy auction and will simply provide enhanced information on DNO actions to Balance Responsible Parties (BRP). The second, in the intraday timeframe, where imbalance caused by the DNO is automatically rebalanced through a link to the intraday market.

This document summarises the services as well as other key commercial features such as the expected payment mechanics and the proposed baselining methodology.

We welcome any feedback on the market design. Please contact mwatson@westernpower.co.uk .

2 Project Background

2.1 DNO procurement of flexibility

Following a number of innovation trials all UK DNO's have now committed to the consideration of Flexibility services for relevant network reinforcement of significant value[1].

Within WPD, this procurement is conducted under our Flexible Power[2] brand. This comprises a set of tools and processes to allow for the procurement and operation of flexibility services to manage DNO constraints. These services are procured ahead of time through a dynamic purchasing systems, with actual calls accepted on a weekly basis from availability supplied by participants. This is highlighted in the figure below.

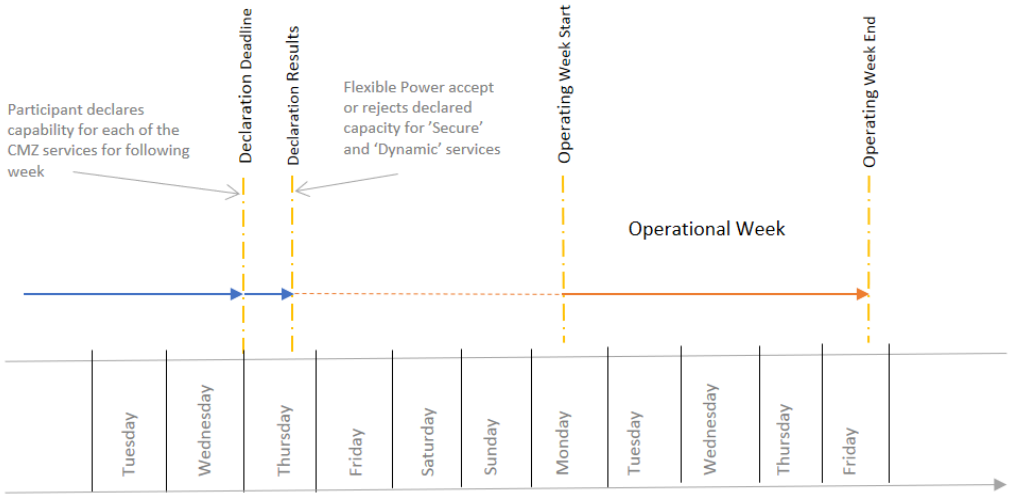

Figure 1: Flexible Power operational timeline

WPD currently procures three services for active power reduction. These are detailed in the table below and align with the products defines as part of the cross industry Open Networks project[3] (see table 2).

[1] http://www.energynetworks.org/assets/files/ENA%20Flex%20Committment.pdf
[2] www.flexiblepower.co.uk
[3] http://www.energynetworks.org/assets/files/ON-WS1-P2%20DSO%20Service%20Requirements%20-%20Definitions%20-%20PUBLISHED.pdf
http://www.energynetworks.org/assets/files/ON-WS1-P2%20Product%20Definition_Final_7Sept2018%20-%20PUBLISHED.pdf

Table 1: Flexible Power services

	Secure	Dynamic	Restore
Advance Payment	Arming	Availability	None
Utilisation	Medium	High	Premium
Participant declaration	Week Ahead	Week Ahead	Week Ahead
FP Accept / Reject	Week Ahead	Week Ahead	Automatic Accept
Dispatch Notice	Pre-Scheduled	15 minutes	Immediate
Seasonal Requirement	All	Summer	All
Site Type	Half Hourly Metered	Half Hourly Metered	Half Hourly Metered

Table 2: Open Networks Products

Service Characteristics	Scheduled Constraint Management	Pre-fault Constraint Management	Post-fault Constraint Management	Restoration Support
When to act	Pre-fault	Pre-fault	Post-fault	Post-fault
Triggering action	Time	DSO forecast; or Asset Loading	Network Fault	Network Fault
Certainty of utilisation	Very certain	Uncertain	Uncertain	Very uncertain
Efficiency of utilisation	Low	Medium	High	Low
Risk to network assets	Low	Medium	High	Low
Frequency of use	High	Medium	Low	Low

The Flexible Power Services were designed to sit alongside wider market mechanisms to ease participation in the services.

2.2 Existing NODES Market design.

NODES is an independent marketplace for a sustainable energy future where grid owners, producers and consumers of energy can trade decentralised flexibility and energy. NODES is owned equally by Nord Pool, Europe's leading power market, and the energy company Agder Energi. More information is available on: www.nodes.energy

NODES launched its innovative market design at European Utility Week in 2018. The market design is a result of the work of an international work group consisting of experts from UK, The Netherlands, Germany and Norway. Experts where sourced form DNV GL, Pöyry, E-Bridge, Cognizant, Nord Pool and Agder Energi as was led by Edvard Lauen from Agder Energi.

The market design has been developed bottom-up and allows flexibility (Real Power) to be traded in various constraint zones (Grid Locations) at any voltage level of the grid. Grid locations will be defined by the DNO and may or may not be part of a larger grid location at a higher voltage level thus enabling the DNO to model any constraint in the regional or local grid.

The NODES market design allows for technical aggregation of flexibility up to the transmission grid making this flexibility available to the Electricity System Operator (ESO). This functionality will be trialled within the NorFlex project involving the Norwegian TSO Statnett and Distribution System Operators (DSO) Agder Energi, Glitre Energi and Mørenett. Market design for NorFlex and a practical approach to the functionality

is being established in the project with the Norwegian regulator as observer in the market design workshops.

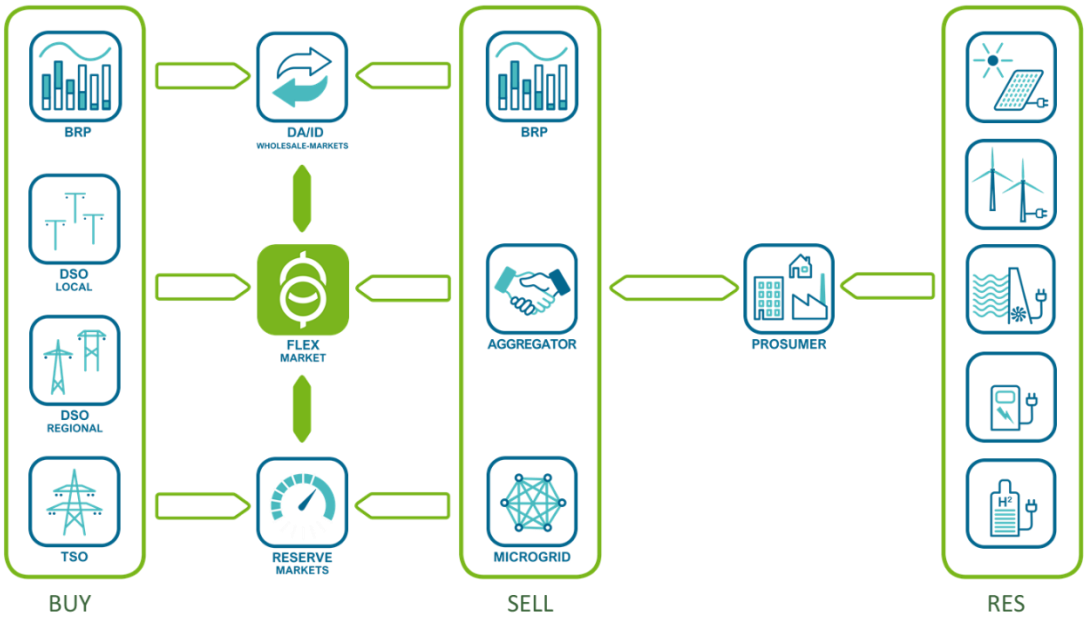

Figure 2: NODES Market Design

It should be noted that within the area of flexibility services and energy markets, variable terminology is used across Europe. Within this document we use the following terminology (interchangeably):

- DSO/DNO: The entity responsible for the operation of the Distribution Network;
- BRP/Energy Supplier: The entity responsible for the management of energy Imbalance;
- ESO/TSO: The entity with residual balancing responsibility;
- Aggregator /Flexibility Service Provider (FSP): This is the seller of flexibility services. This could be for a single prosumer or many.

2.3 Limitations of the current arrangements for the procurement of DNO flexibility

The current processes for the procurement of DNO flexibility provide a means for the delivery of value to distribution customers. However, as they scale up, they may cause issues in the wider electricity market as volumes increase resulting in material impacts on supplier imbalance

The figure below depicts, in a simplified manner the current process for the procurement of DNO flexibility services.

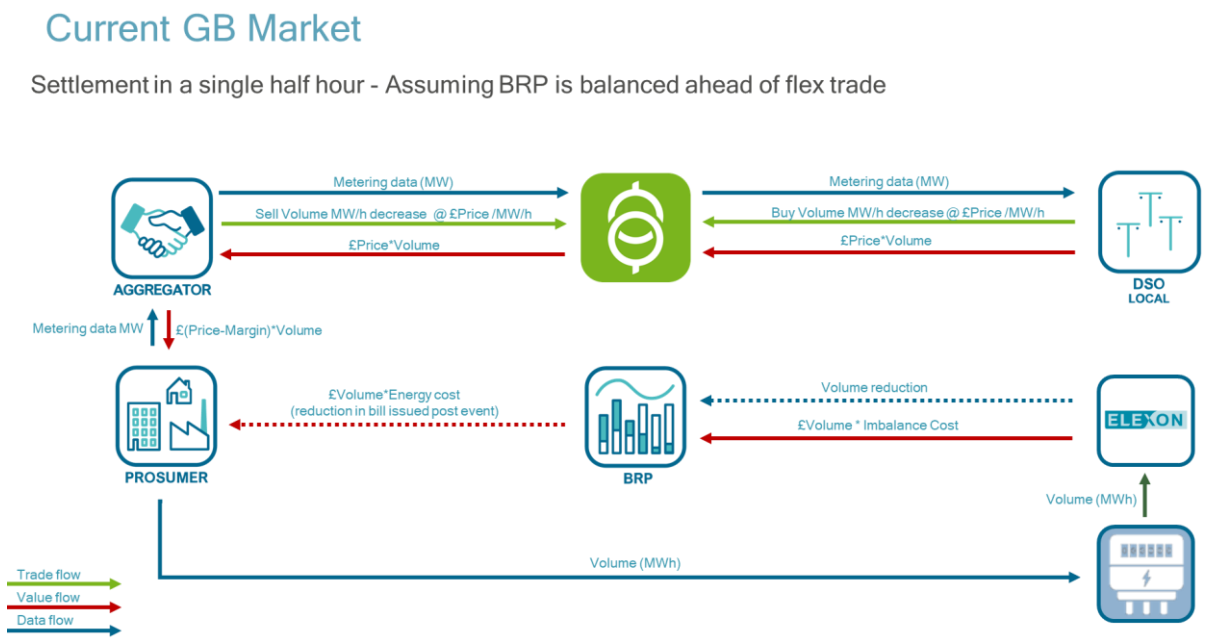

Figure 3: Current GB market

As there isn't always a formal contract between the Aggregator or the DNO and the FSP's BRP, the purchase of flexibility can result in an energy imbalance. This results in the BRP being charged with an Imbalance cost. In addition the BRP loses value from the loss of the energy sale if the requirement is to reduce demand or increase embedded generation The reverse would be true if the DSO was seeking to increase demand to absorb excess localised generation that could leave the BRP short on their market position.

The figure below adds some examples of the potential value flows for a demand reduction scenario. It should be noted that the numbers are purely illustrative and should not be taken as expected values. For example, imbalance costs ranged from -£65.98 to £48.03 for a long system in October 2019.

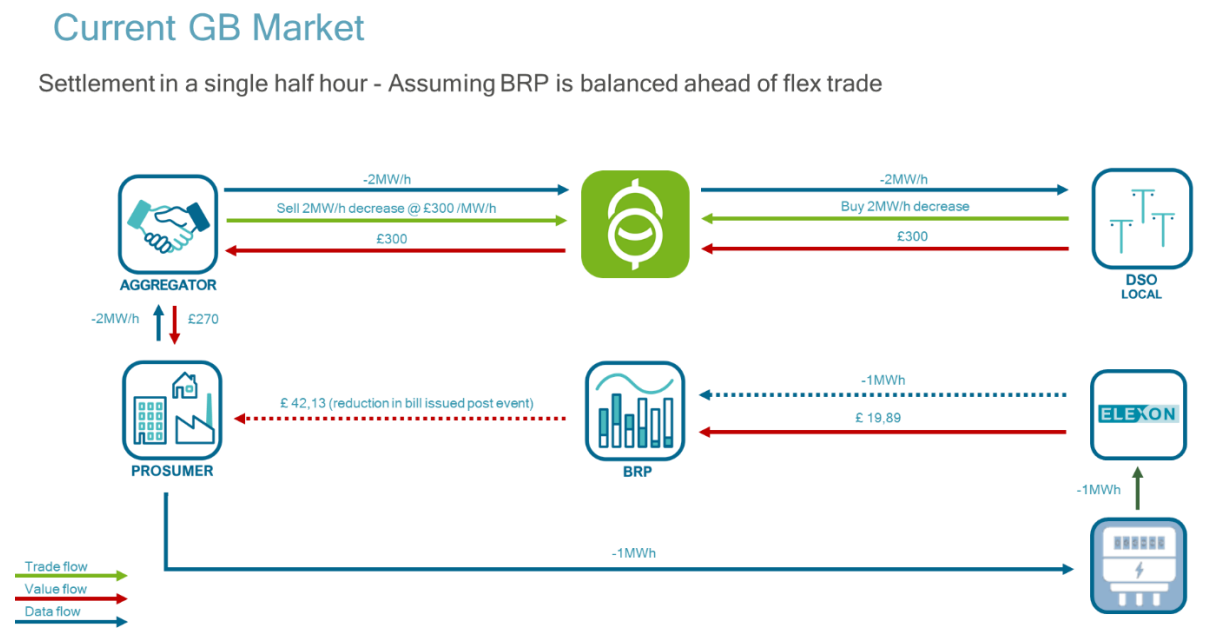

Figure 4: Example of Current GB market

As part of their letter on the design of arrangements to accommodate independent aggregators[4], Ofgem re-iterated the benefits of independent aggregation, whilst acknowledging the requirement for careful design of market arrangements. One of these was that delivery risk and balancing cost should be aligned with the party that creates them.

Section 7 details a number of industry actions focussed on improving access to services for independent aggregators.

2.4 Scope of IntraFlex

The IntraFlex Project has a very specific scope, to better understand the impact of DNO service procurement on BRPs and develop tools to mitigate the associated risks.

This will be done through the operation of the NODES marketplace in closer to real time. Operating closer to real time should allow new participants to access the markets whilst key features such as a day ahead information services as well as an auto-rebalancing function to the intra-day market (described in the following sections) will look to lower supplier exposure to imbalance costs and decrease the costs of providing flexibility in the long run.

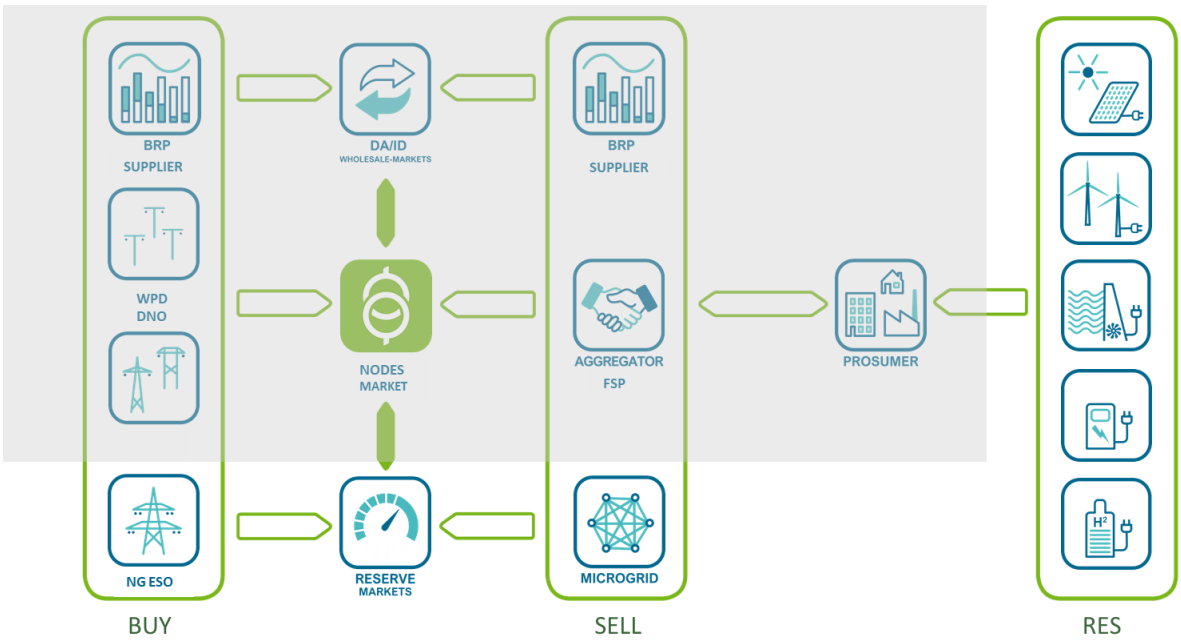

Figure 5: Scope of IntraFlex

We have explicitly avoided any markets that cover the post gate closure timeframe due to the complexity associated.

The project starts with stakeholder engagement aimed at validating the market design and ensuring its value to the UK electricity system. The project will then progress to two operational trials in which we will require participation by FSPs and their associated BRPs

The project is funded under the Network Innovation Allowance and will be delivered by WPD, NODES and SGC.

[4] https://www.ofgem.gov.uk/publications-and-updates/independent-aggregators-and-access-energy-market-ofgem-s-view

3 New Market Options

3.1.1 Timeline

As detailed in section 2.1, current procurement acceptance of flexibility services by WPD is relatively rigid and done at the week ahead stage with dispatch notice ranging from week ahead down to real time. Within the project we propose the development of new markets as shown in the timeline below:

- The NODES market is a continuous market that can be accessed at any timeframe.
- WPD will use the NODES market after the current Flexible Power week ahead acceptance timeline;
- NODES will provide an information service to BRPs. Originally this run up until intraday timeframe on any activation already committed by the DSO. Following stakeholder feedback, we will consider extending the information service throughout the day of delivery up until gate closure on NODES.
- NODES will provide automatic rebalancing service in the intraday timeframe for trades that are being activated in the daily timeframe.
- Discussions with Elexon have highlighted the opportunity to operate the intraday service up to the Delivery Period. However, following discussions with the ESO, we initially agreed to close all procurement ahead of Gate Closure (1 hour ahead of the Delivery Period). This was to reduce the risk of conflicting with ESO services. We also received feedback from stakeholders that the NODES within day results need to be available at least 30 minutes ahead of Gate Closure to allow results to be integrated into bid strategies for the balancing mechanism. We have therefore resolved to introduce a Gate Closure on NODES 90 minutes ahead of real-time.
- We will also endeavour to avoid making trades over the same time period as the day ahead and intraday auctions. Again this will allow participants to accommodate results from on market into the other.

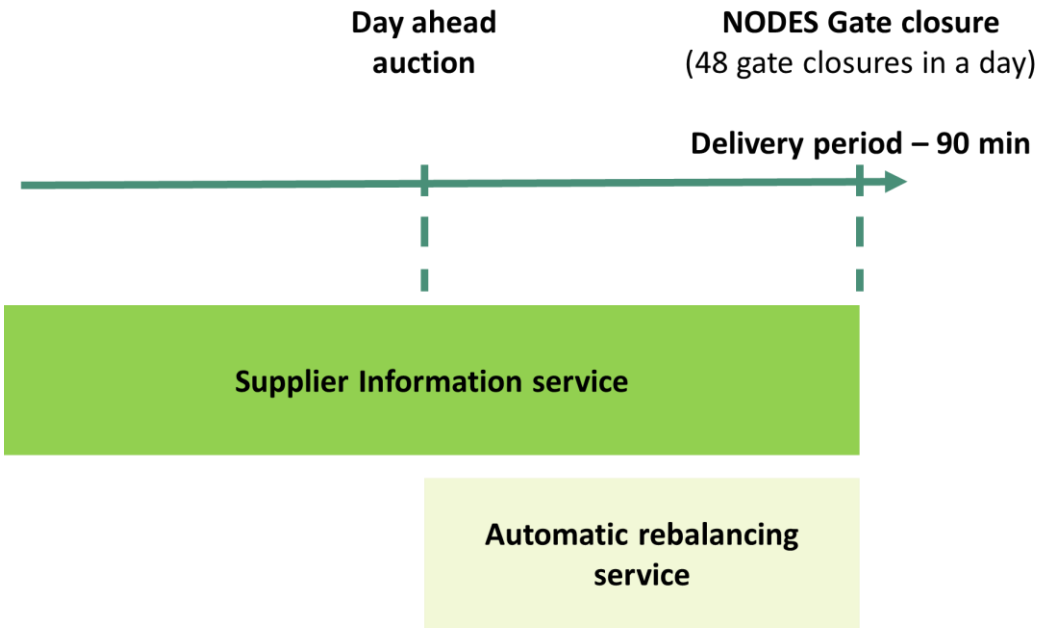

Figure 6: Market Timelines

We anticipate that beyond the trial, these markets would operate in parallel with existing procurement timelines and other markets being developed. DNO procurement strategies would look to procure across the timeframes to balance the benefits of improved forecasts and alternative participants closer to real time against the risks of price uncertainty. This will depend on the levels of liquidity of each market.

It should be noted that we are only considering Pre-Fault Constraint Management services (equivalent to the Secure service). This is simply due to the nature of the services and their required dispatch timelines.

Scheduled Constraint Management requirements should be understood within these market timeframes, whilst any Post-Fault services are typically deployed with 15 min notice, which is post gate closure.

More details of each service can be found in the sections below.

3.2 Information service for BRPs up to intraday timeframe

NODES will provide suppliers with information on the calls made to date by the DSO. Our initial intention was to make this information available until the day ahead energy market gate closure, but we see value in extending the service up until NODES Gate Closure. This will allow suppliers to correct their position and avoid the associated imbalance costs. This relatively simple process requires minimal intervention from NODES and allows BRPs full control over their portfolio. This process is highlighted in the diagram below.

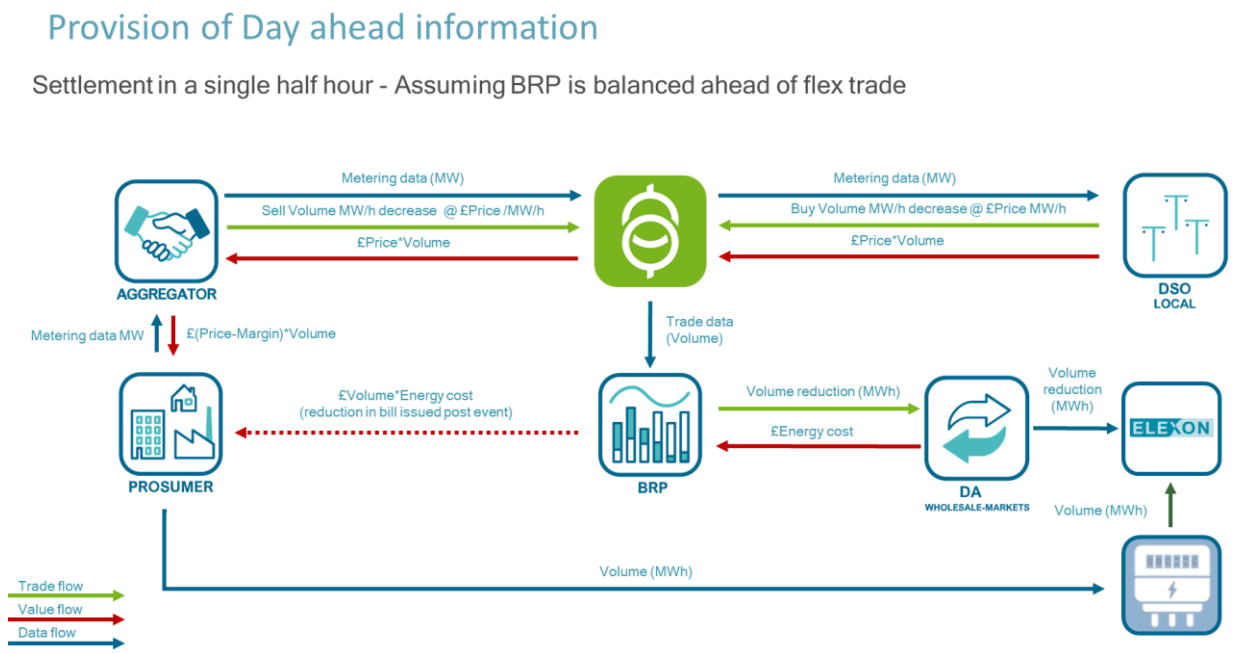

Figure 7: Information Service

Example values are provided below. As per earlier sections, these are illustrative to ease understanding rather than stating expected values.

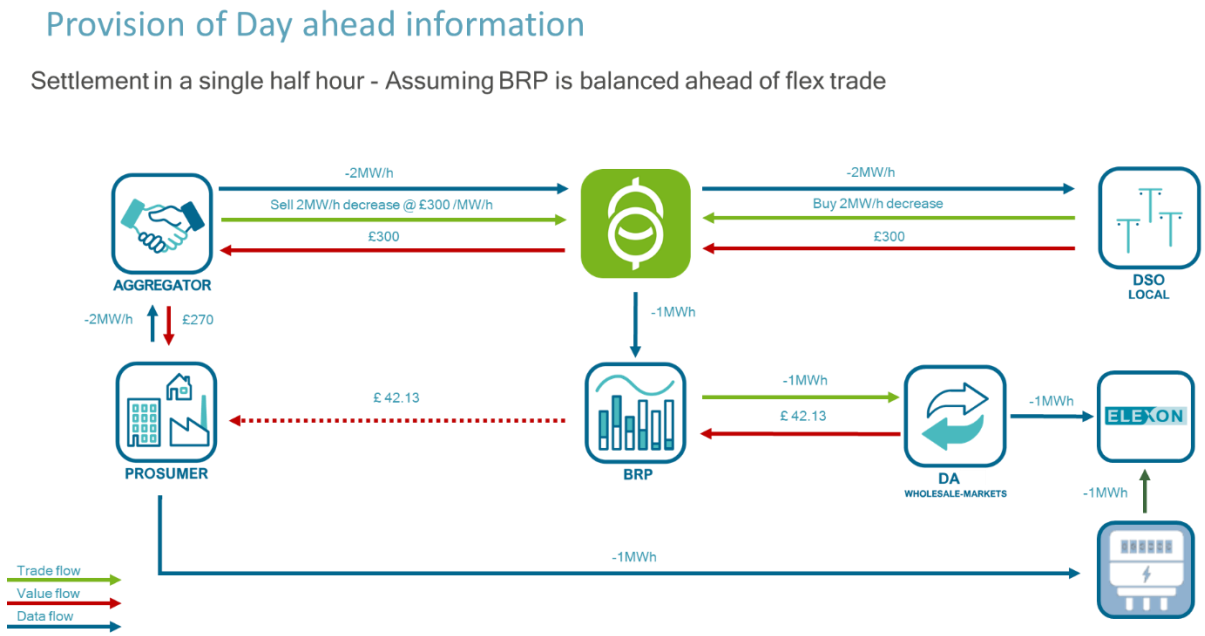

Figure 8: Example of the Information service

Our intention is that this information will be available in the NODES web portal and suppliers will also be able to pull it via an API. This allows the BRPs to time the information to align with their processes. It also simplifies the interfacing of systems.

Another key element to consider is the flow of potentially commercially sensitive information between the aggregator and the BRP to allow for this service to operate. Considerations of the required level of anonymization and aggregation will be made to ensure that all parties involved are comfortable with the information being shared, whilst still allowing value to be created. In the initial instance an opt-out of the service for Aggregators will be provided.

3.3 Intraday rebalancing service

The BRP can elect to have NODES automatically rebalance its position in the intraday timeframe. This is detailed below and aims to offset any action taken by the DSO with an automatic counteraction in the intraday energy market. In normal operation this should release value back to the BRP. This is explained shown in the figures below.

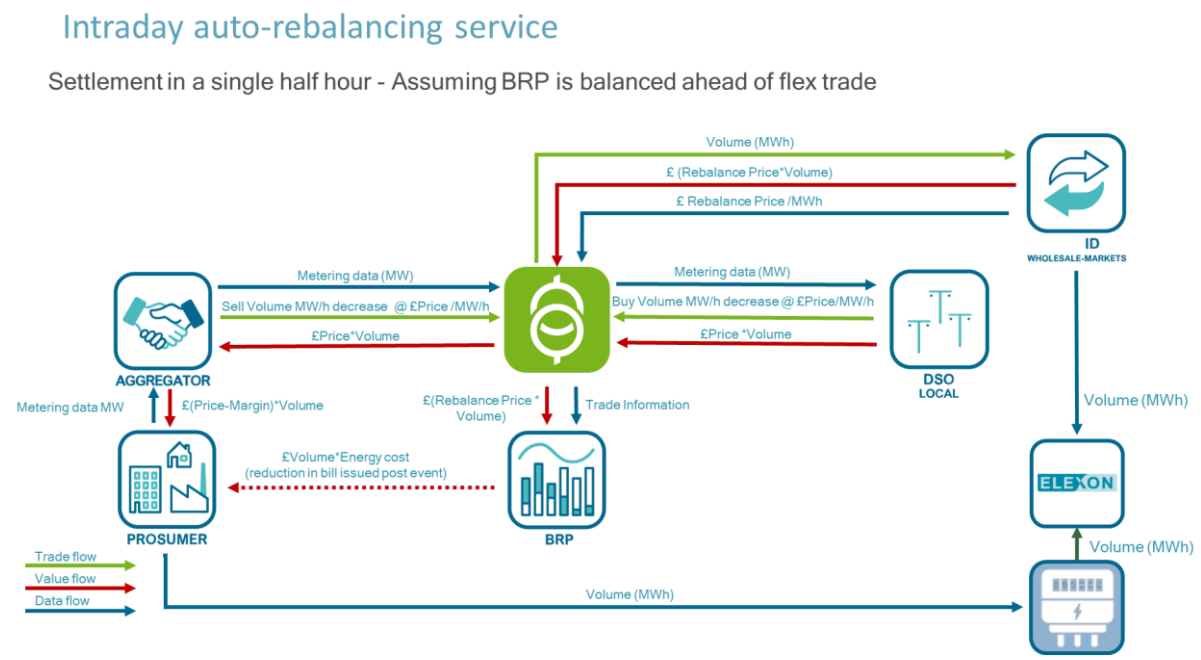

Figure 9: Auto Rebalancing Service

Example values are provided below. As per earlier sections, these are illustrative to ease understanding rather than stating expected values.

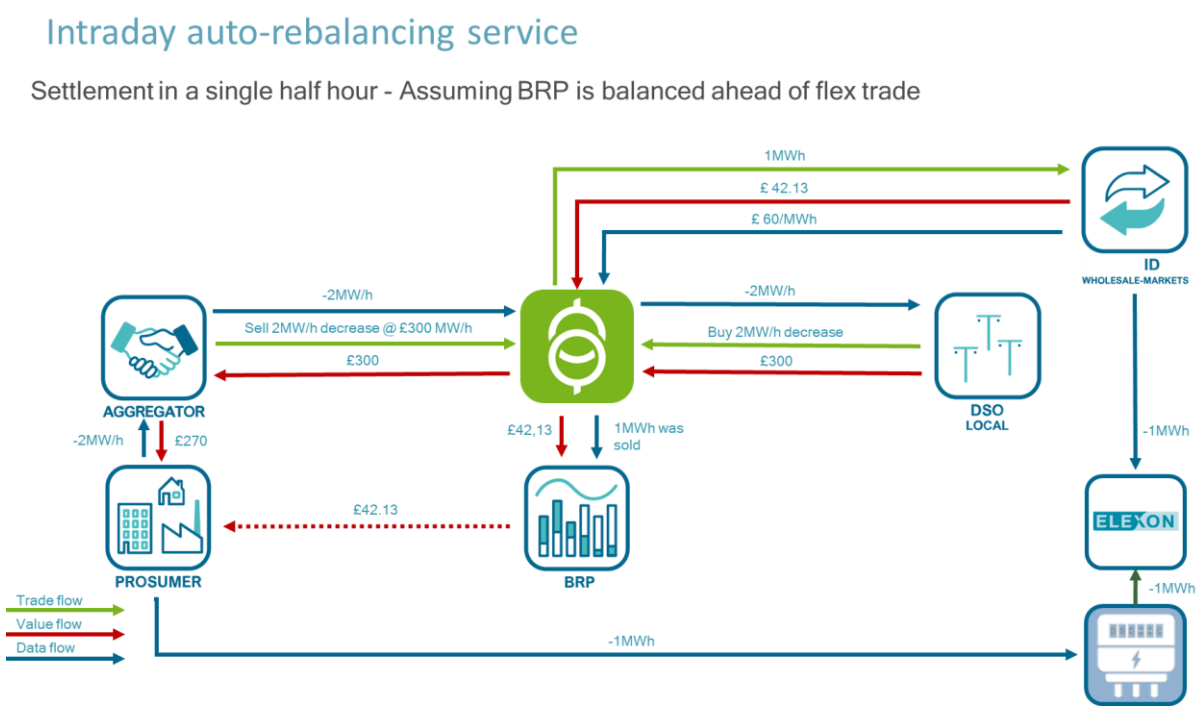

Figure 10: Example of the Auto Rebalancing Service

However, in the case of negative pricing in the intraday market the cost of this action will be presented to the DSO at the time of purchase. In this scenario the DSO would pay the sell price which would be passed onto the aggregator and the rebalance price which would be passed into the intraday market.

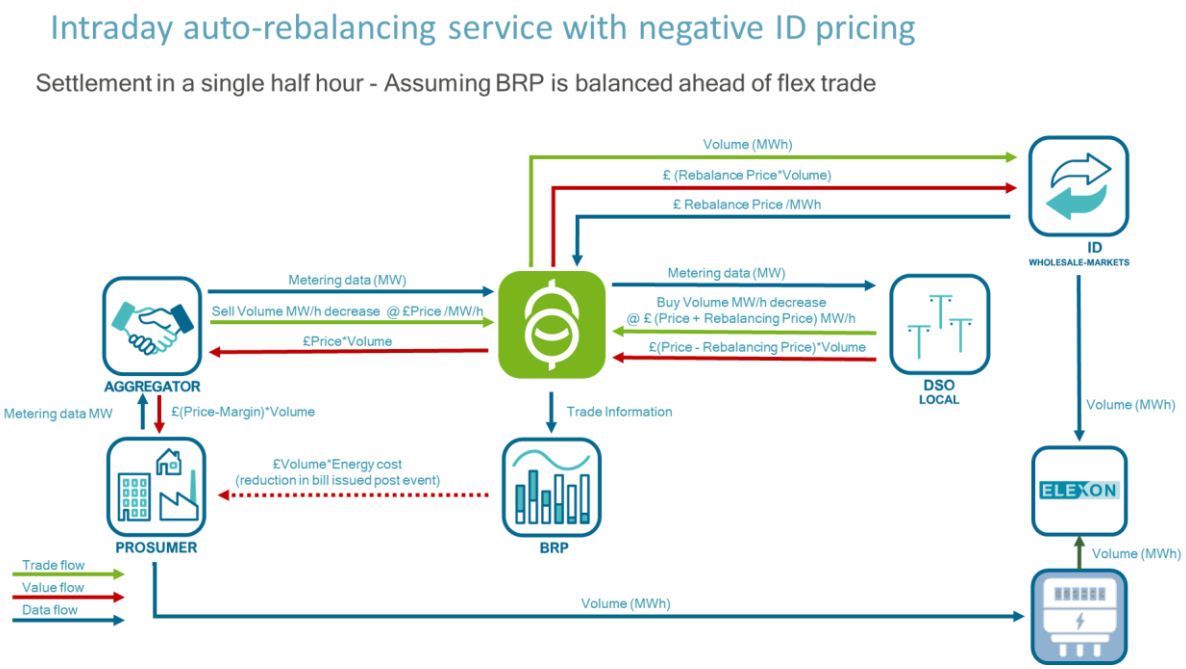

Figure 11: Auto Rebalancing Service with Negative Pricing

The service will include an override/blocking feature to allow the BRP to block the NODES market from taking a counteraction if this would help their energy position (i.e. they are short).

In addition, due to the non-geographic nature of the intraday market, there is a risk that the counteraction is in the same geographic area as the constraint the DNO is trying to avoid. This is dependent on the scale of DNO constraint zones and will be investigated further as part of the trial.

4 Commercial Details

To date the services procured by DNOs have been done so in advance. As the markets within the trials are closer to real time, it will be necessary to develop appropriate commercial terms to reflect this. For example, it is expected that participants will not be paid availability or arming payments. As such new payment mechanics and baselining techniques are necessary for the trial.

4.1 Link between DNO requirements and energy produced/avoided

It is important that the commercial terms reflect the requirement of a DNO for the delivery of a capacity reduction over time rather than an energy purchase, although the two are inextricably linked. For example, a DSO may wish to procure a reduction in demand by 2MW for an hour to keep a network asset from being overloaded during a peak period. This is represented by the orange line in the figure below and demonstrates the desired delivery from a generator over the full period. This results in the production of 2MWh as a 'by-product' of the action. If we were to only measure delivery using conventional half hourly metering resolution, then the participant could alternatively deliver 4MW for 15 min in each of the half hour periods as shown by the broken red line and could arguably have delivered the correct volume of energy. However, in this example the asset would remain overloaded between 01:00 to 01:15 and again from 01:45 to 02:00.

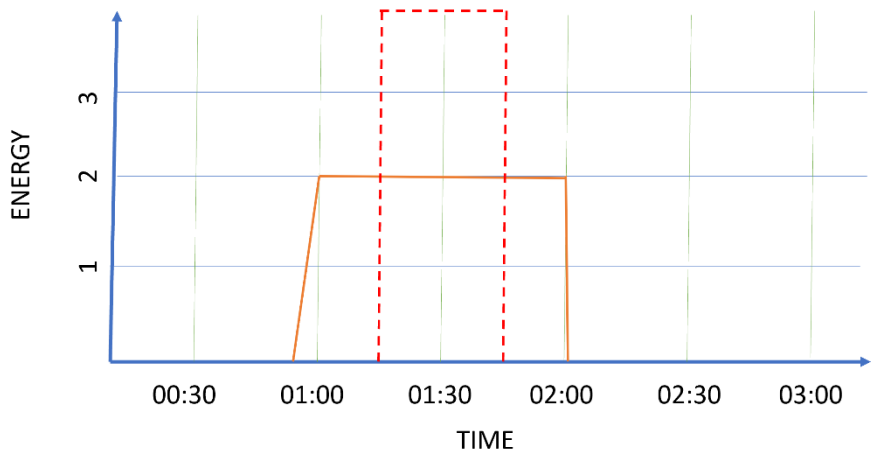

Figure 12: DNO requirement vs energy procurement

4.2 Market mechanics

The NODES marketplace is centred on the concept of parametrisation. Compared to existing marketplaces for exchange of wholesale electricity products with physical delivery, NODES allow market participants to register assets with a wide array of characteristics. This is a fundamentally different approach compared to current 'energy-only' markets where orders are characterised by price, quantity and bidding zone (spatial information, mostly based on politically determined borders). In NODES, more detailed locational information is required and technical properties can be included in the asset registration process. Applying filtering functionality, grid operators will be able to review the NODES order book for flexibility offers that meet the technical minimum requirements for solving their grid problem.

Upon successful asset approval by the DSO, flexibility providers will be able to enter orders in the flexibility market. FSPs will group their assets into asset portfolios that reflect DSO locational requirements and submit buy or sell orders based on these portfolios. The DSO will create the grid locations in the NODES

platform which enable them to create spatial boundaries for flex offers that are valuable for grid constraint relief.

Buy and sell orders are entered with a number of properties:

- Order-type: Buy or Sell
- Regulation: Up or Down
- Fill type: Limit, Fill-and-Kill, Fill-or-Kill[5]
- Activation price: £
- Reservation price: Price in £ (not applicable in for this trial)
- Capacity: in MW
- Time: Parameters regarding start time, end time, expiry
- Location: Grid location for order
- Asset portfolio: Choose relevant portfolio for entering order
- Minimum duration
- Maximum duration

In IntraFlex, flex orders will be entered with a minimum duration matching the imbalance settlement period in GB, i.e. 30 minutes. A trade in NODES within a specific grid location for a given time period, obliges the flex provider to a constant active power deviation from the baseline for the asset portfolio.

NODES apply pay-as-bid matching logic in which market participants enter a price for each unit they want to buy or sell. The market clears at the point where supply matches aggregate demand and winning bidders are paid their bid price for each unit. Compared to existing pay-as-bid markets (e.g. GB intraday) where price is the primary matching criterion, NODES applies pre-filtering based on buyers' preferences prior to matching on price.

NODES will provide a settlement service and will handle invoicing and payments for matched trades. Under normal circumstances the standard NODES rulebook will determine how to cope with cases where flexibility providers do not deliver according to expectations from the buyer. For IntraFlex, cases of non-delivery are covered by the baseline methodology and payment mechanics covered below.

4.3 Payment Mechanics Principal

A vital component of any flexibility services offering is an understanding of how the procurer expects a participant to behave in response to a request to deliver capacity. This can be different depending what technologies they are using, whether it is dedicated to that purpose or has other standard duties at that time. I.e. a demand reduction site is likely to have load profile that they will interrupt non-critical demand from in order to meet their delivery delta. Whereas a stand by generator or energy storage device may be idle until called upon to deliver.

The payment mechanics must recognise the typical behaviour of that asset outside flexibility events, which to a large extent is achieved through the baseline methodology (see section below). It is critical that the payments strike a reasonable balance between incentives and punitive measures to achieve reliability. As a result, it is unlikely that a simple payment based on volume of energy displaced in terms of kWh is sufficient as outlined in Section 4.1. The payment mechanics will need to support the granularity of data that will enable the DSO to determine the shape of the delivery rather than just the overall volume delivered.

A proportional penalty approach has already been adopted within the Flexible Power programme and after consideration of the available options it has been determined that these are also best suited to IntraFlex.

[5] A Limit order is an order to buy or sell at a specific price or better. A Fill-or-Kill order is an order that is cancelled if no matching order is found that fills the order in full at the specified price or better. A Fill-and-Kill order is an order where any volume that is not filled at the specified price or better is cancelled, but which can be filled partially.

There are different versions of the principle in use for each of the three existing Flexible Power services, which award delivery that is close to or above what was committed under contract, but for each percentage point below the threshold an increased proportion of the payment is lost. This reduction ratio ranges between double and triple reduction of payment per minute across the services.
A key differentiator for the IntraFlex trial payment mechanics and those of the pre-fault services in Flexible Power results from the absence of an availability or arming element to the overall payment calculation. Despite this we have attempted to align the payment mechanics with those already in use and therefore the general principals have been adopted.

- 1 minute granularity for measurement of delivery
- Grace factor enabling 100% payment for delivery at 95% or above
- Reduction of 3% in payment for each percentage under 95%
- No payment for delivery below 63%
- No payment for over delivery

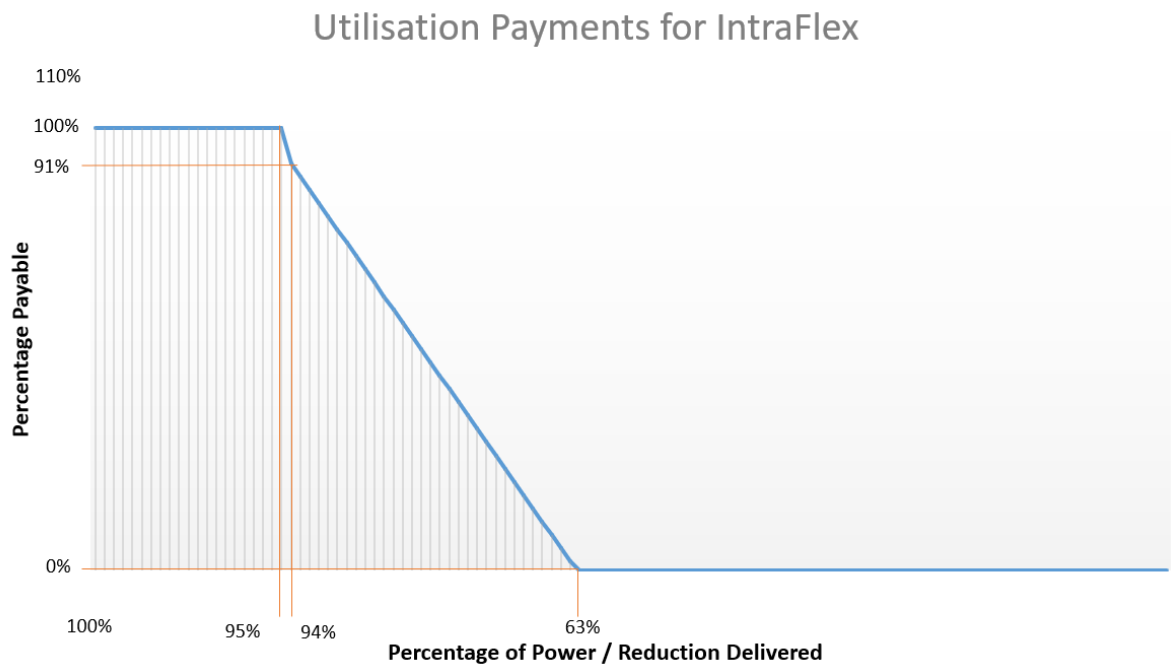

Figure 13 - IntraFlex Payment Mechanics

The most significant departure from the Flexible Power payment mechanics relates to the periods of measurement and the baseline. The baseline methodology is outlined in the next section and required significant modification from Flexible Power which uses data over the past month to establish a single baseline that is applied for the entire month, regardless of time or day. With IntraFlex and its need to relate closely to actual behaviour, it is necessary that the mechanics and baseline are capable of reflecting this closer attachment to 'actuals'. For these reasons we have developed the services to operate in 48 half hour periods per day, with FSPs able to alter their bids for each half hour, reflecting their underlying marginal costs at different times as well as their ability to deliver against a profiled baseline.

The capacity that is bid and accepted will spread evenly across the 30 min period and assessed on a minute by minute basis. If the FSP under delivers in any given minute this will be reflected within the payment mechanics with a reduced earning, and critically the opportunity value is lost as over delivery in any prior or subsequent minute will not offset the reduction. At the end of each HH period the value of each minute's earnings are accrued to calculate the total payment for that bid period.

One of the added challenges of IntraFlex over the Flexible Power service is that the introduction of the profiled baseline may require FSPs to rather than just maintain a steady delivery volume for an entire event period, it may be necessary to modulate the volume delivery form one HH period to the next. We would therefore require the FSP to consider how they will manage the transition between HH periods if there is a change in expected delivery volume. In order to maintain 95% and above it may be necessary to ramp at the end of a HH period to achieve a rising delivery volume in the next period or reduce delivery at the

beginning of the following period if the delivery volume falls. The FSP will therefore need to be cognisant of their technical capability to alter output and bid what is viable in relation to their baseline. The current trials scope recognises that over delivery by a FSP could also have a material impact on BRP imbalance but at this stage no penalties have been included for excess volume. The trial will capture the data from events and analyse this and report on the results. Similarly, there will also be learning activities associated with the assessment of the baseline methodology in relation to actuals and any FSPs who exercise their rights to override in favour of alternative methodologies.

4.4 Baselines

A new baseline methodology has developed in conjunction with the payment mechanics.

The baseline methodology differs quite significantly from that currently used by Flexible Power with the most noticeable feature being that of a daily profile shape.

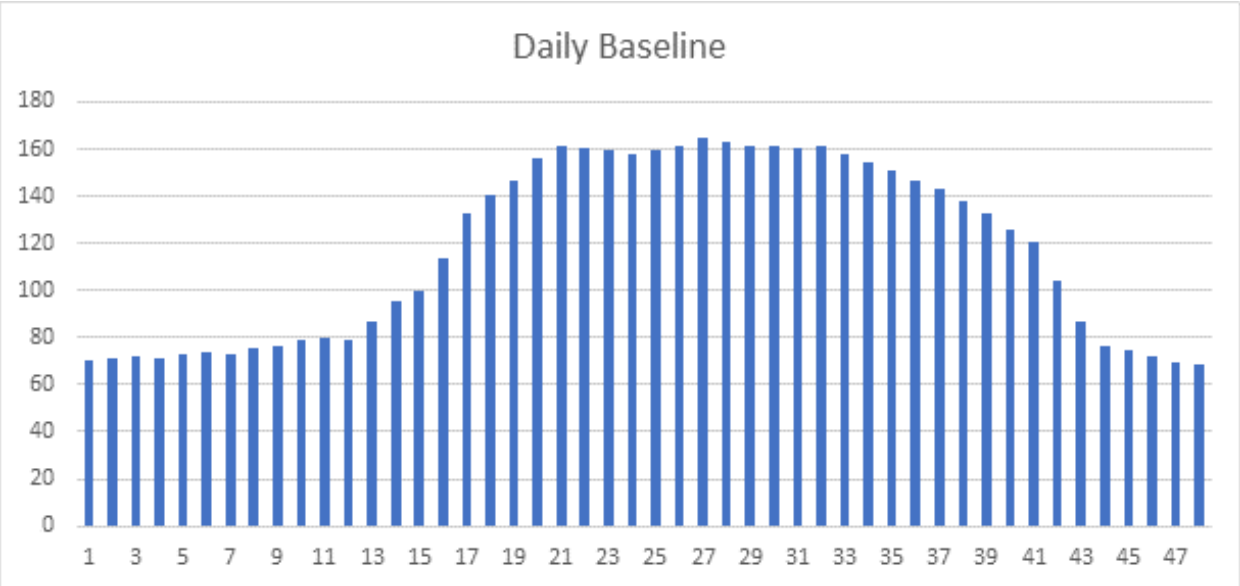

Figure 14 - Example of profiled baseline created with IntraFlex methodology

The method used within Flexible Power only captures data from a 4 hour period during week days and over several weeks in order to determine a single baseline that is applied at all times of day and for a minimum period of a month before being revised. Due to the 'closer to real time' it is feasible for the IntraFlex service to seek a more accurate baseline which is of vital importance when we develop links to energy markets and consider the impact of imbalance.

The profiled baseline approach means that there is an associated value for each of the 48 half hour periods throughout the day. In order to calculate these we have determined that the value for each period will be calculated from the average of the prior 5 completed week day's measurement for that same period. This will be calculated on a daily rolling basis so that by midnight we should have all the data necessary to publish the most up to date profile. We have assumed that this will be sufficient for the majority of FSPs and will develop the system to automatically calculate the appropriate value for each half hour and pre-populate this in the NODES platform. Recognising that there may still be exceptions for some FSPs we have also enabled the facility where it is possible to overwrite the automatic calculation if they believe they have an alternative method to more accurately predict what their baseline will be at the time associated with the bid offer.

Again we will monitor the performance of the baseline over the trial to help inform improvements.

5 Systems Overview

To enable the market to function, a number of systems and interfaces are required. These are intended to balance the requirement for simplicity whilst providing the required level of functionality. These are highlighted in **Error! Reference source not found.** below.

The primary systems are those owned and operated by NODES. These focus on the commercial relationship with the participant. This will be supplemented within the trial by a few technical systems provided by WPD.

For the trial the metering systems (the project metering and baseline calculations) functions will be provided through integration with existing WPD metering capability. This is to facilitate the timely deployment of the trial as well as the de-risking of the project rather than the mandated long-term solution. It is expected that beyond the trial, as the market for flexibility services matures, this function may be taken on by an independent operator (NODES or another party). The provision of metering services is a key discussion within Ofgem's Future Insights paper on Flexibility Platforms in electricity markets.

NODES will provide the commercial systems with participants able to interact via a Graphical User Interface (GUI) or Application Programming Interface (API). This will build on their existing market platform and will be supplemented with project specific development.

Throughout the process we are looking to balance the development of low cost trial enablers and longer term solution build to try and de-risk the project whilst also delivering a solution that could be easily rolled out.

More details on the systems requirements can be found in the Technical Overview document.

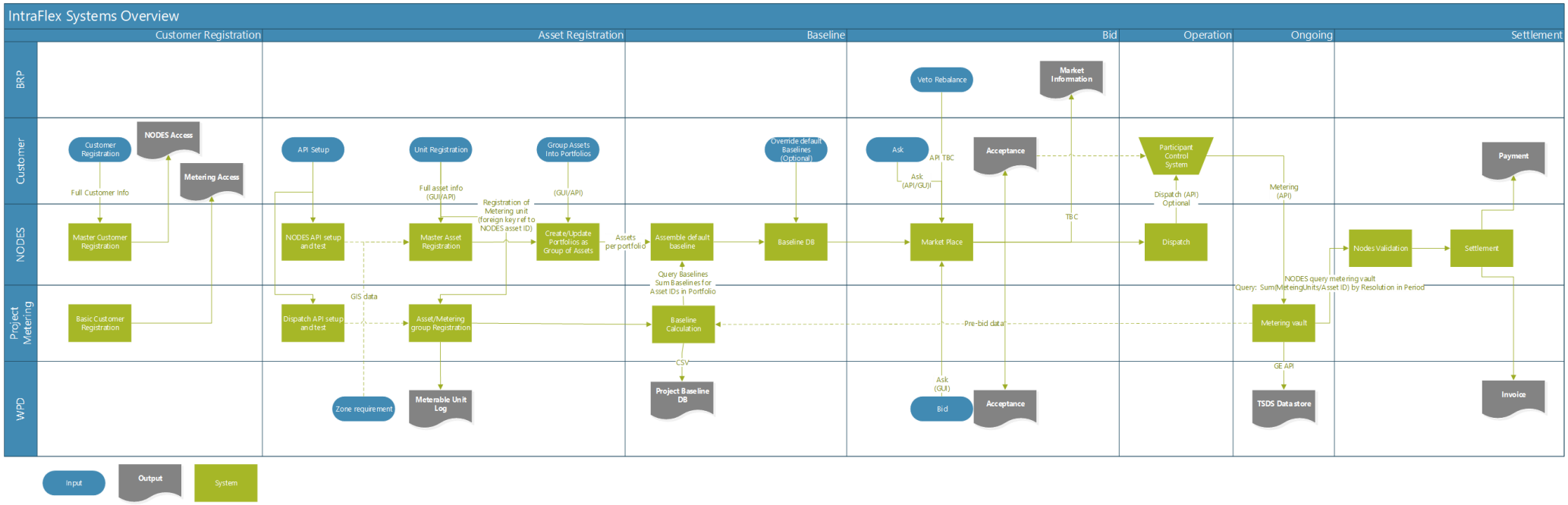

Figure 15: Systems Overview

6 Participant Journey

Leading up to and during the trial we envisage participant interactions to broken into a number of key stages:

- Information provision to FSPs and other stakeholders
- Participants' expression of interest in pilot participation
- Participant registration on the NODES platform
- Test system access and technical integration with NODES and dispatch, for participants who wish to act via the API
- Production system access
- Operational Trial

During the trial participant interaction can be broken down into the following stages:

- Trading on NODES
- Validation of delivered services by NODES
- Settlement by NODES

During the trial queries, requests and incidents will be handled by NODES. To this end, NODES will provide participants with a dedicated email address.

Going forward, it is expected that participants will contract with and interact with market operator (NODES) directly. Direct interaction with WPD and other parties should be minimal.

SGC will provide additional support to NODES for the duration of the trial to account for the additional complexity of innovation projects.

7 Other Work in This Space

We recognise that this project is operating in a complex and ever-changing market environment. As such we are keen to ensure we consider these changes and work to ensure the work in the project remains relevant and provides the most value to electricity customers.

Ofgem Insights Paper on Flexibility Platforms[6]: This paper looks into the options for flexibility platforms going forward. We feel this project aligns well with the recommendations put forward with the use of an independent market operator for the delivery of the Coordination and Flexibility Procurement functions. As detailed in section 6, we will look to repurpose WPD's existing dispatch capabilities for the delivery of this trial to simplify the trial and remove cost and risk. However, this could be provided by an alternative source beyond the trial.

Fusion (USEF) and other TEF work: USEF published their white paper on Flexibility Platforms [7] in November 2018. In this white paper USEF discuss the different position market platforms take in relation to the USEF Flexibility Value Chain.

The white papers paragraph 2.2.3 Option 3 describes market platforms as a gateway to ancillary services and this description is the one that is closest to the Market Design NODES is offering.

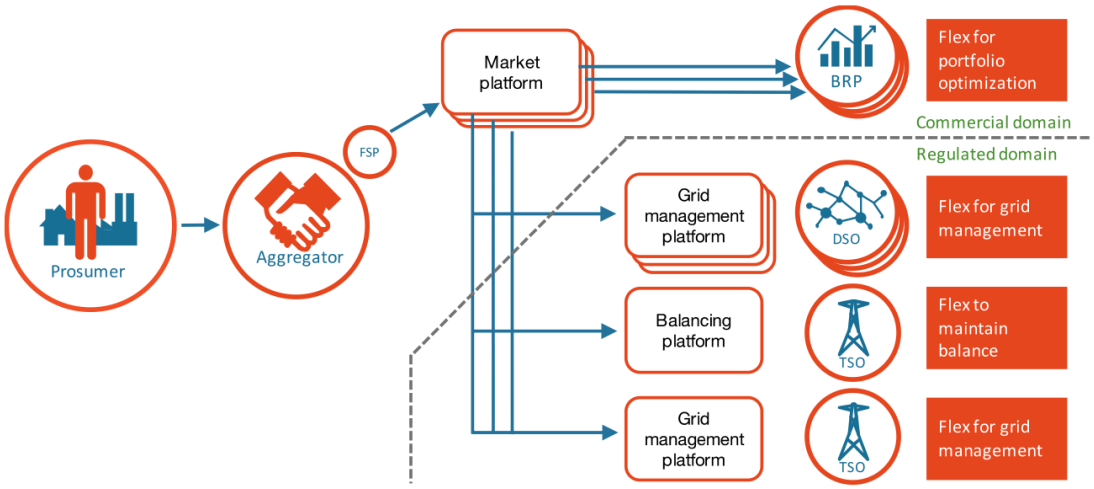

Figure 16: Option 3 of market platform from USEF Flexibility Platform Paper

This project focusses on the application of a specific market and the additional services it could provide rather than the full USEF framework as in FUSION. We will however ensure that there is engagement between the two projects to ensure learning is shared.

FleX competition[8]: BEIS has awarded funding for a number of flexibility platforms as part of their FleX competition. We believe that the focus on imbalance distinguishes this project from those projects awarded. However, we will keep a close watching brief to ensure that any relevant learning is utilised.

Elexon: There are a number of market changes that are currently taking place with regards to the BSC. Elexon have been identified as a key stakeholder within this project to ensure that the project is aligns with the direction of the market. To date we have identified the following relevant changes.

[6] https://www.ofgem.gov.uk/publications-and-updates/ofgem-s-future-insights-paper-6-flexibility-platforms-electricity-markets
[7] https://www.usef.energy/app/uploads/2018/11/USEF-White-Paper-Flexibility-Platforms-version-1.0_Nov2018.pdf
[8] https://www.gov.uk/government/publications/flexibility-exchange-demonstration-projects-flex-competition

- The considerable work around accommodating project Terre and the wider access to the BM through changes such as P344. These create new market opportunities for independent aggregators and cements their role within the wider system
- P354 “Use of ABSVD for non-BM Balancing Services at the metered MPAN level”: this has been agreed, and seeks to account for the volumes of non BM services called by the ESO through settlement. This effectively looks to remove any imbalance penalty from the participation of smaller services ESO flexibility services.
- The revision of acceptable metering and baselining methodologies through P375 & P376. Whilst not directly relevant it is important to ensure that requirements set within the project do not unnecessarily differ from emerging market standards.

Discussions with Elexon highlighted the technical possibility of adding DSO services within the ABSVD process. As discussed in section 8, the project will investigate this option in more detail.

ESO service changes: The ESO are currently investigating the procurement of closer to real time markets through their weekly auction trial for FFR services. We will engage with the ESO to gather any learning on the operation of closer to real time procurement.

8 Other Project Work

Alongside the market design and the trial, there are two notable other pieces of work to be carried out in the project. These are:

- Initial discussions with Elexon highlighted the technical possibility of treating DSO services within the ABSVD process as an alternative solution to the impact of DSO services on the wider electricity market. There are a number of pros-and cons of this solution, which need to be investigated further to understand which might provide the best end solution to the wider customer. As such, a new work package has been added to investigate the feasibility and the economic value of such a solution and its comparison with the more market led solution proposed in this document.

- The development of improved validation and sense checking. This work look develop internal processes for the comparison of metering data provided by flexibility providers and settlement data. This will be used to cross check performance and allow for more lenient metering standards (for example of assets rather than site boundaries).

- A review of procurement processes. Procurement of services by DNOs is covered by the Utility Contracts Regulations 2016. This legislation has strict requirements on in terms of the processes used for DNOs above certain thresholds. As such the project will review the expected market design against these regulations to ensure the long term value of the marketplace.

9 Contact

If, would like further information, or would be interested in participating in the trial please contact Matt Watson (mwatson@westernpower.co.uk).

Glossary

Abbreviation	Term
ABSVD	Applicable Balancing Services Volume Data
API	Application Programming Interface
BM	Balancing Mechanism
BRP	Balance Responsible Party
DNO	Distribution Network Operator
DSO	Distribution System Operator
ESO	Electricity System Operator
FFR	Firm Frequency Response
FSP	Flexibility Service Provider
GUI	Graphical User Interface
NIA	Network Innovation Allowance
SGC	Smart Grid Consultancy
TEF	Transition – EFFS – Fusion
TSO	Transmission System Operator
USEF	Universal Smart Energy Framework
WPD	Western Power Distribution

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