

Welcome to the Settlements Forum

7th November 2017

Housekeeping



slido



Agenda

Time	Agenda	Speaker
10:10	Welcome	Duncan Burt
10:25	Introduction to Settlements	Paul Lowbridge
10:40	BSUoS: <ul style="list-style-type: none"> • The Billing Process • Forecasting 	Nick Everitt Jon McDonald
11:40	Future SO/ Ancillary Services	Adam Sims
12:00	Lunch Break	

Time	Agenda
12:45	Breakout Session 1
13:45	Coffee Break
14:00	Breakout Session 2
15:00	Wrap Up & Questions
15:30	Close

Breakout Option	Speakers
Ancillary Services	Rachel Payne, Jo Barker Andy Rice
TNUoS	Paul Wakeley, Paul Hitchcock
Meet the Experts	

Welcome

Duncan Burt
Interim Director of System Operations

Introduction to Settlements

Paul Lowbridge
Settlements Manager

Our Core Functions

Ancillary Services Settlement

Settlement for all Ancillary Service procurement

~£450m per year

Deliver payments

Trades Settlement

Settlement of Electricity and Gas trading activity for System Operator

~£200m per year

BSUoS Billing

Revenue collection process for Electricity System Operator

~£1.2bn per year

Collect revenue

Regulation Change & IS/Business Projects

Ensure compliance for all new regulatory changes, modifications, new services and IS projects

Implement changes

Meet The Team

Rob Smith
Contracts & Settlements Manager

Paul Lowbridge
Settlements Manager

Rachel Payne
AS Team Leader

Jo Barker
Settlement Strategy Lead

Nick Everitt
BSUoS/Trades Team Leader

Tariq Hakeem
Projects Team Leader

Theresa Greaves

Saliha Gulbahar

Manpreet Patel

Sean Donner

Bea Ennim

Tori Adams

Mohammad Razaq

Farah Khan

Gabriel Griffin-Booth

Karen Sawbridge

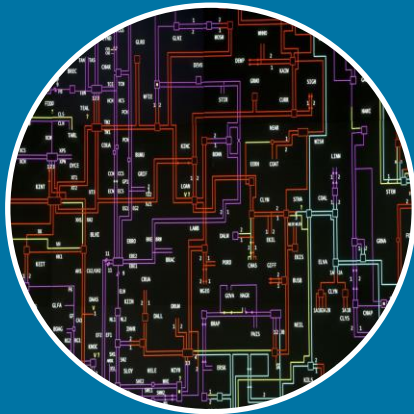
Julie Bubb

Kiran Goswami

Key (main focus area):

- Ancillary Services
- BSUoS
- Trades
- Projects

Improving Performance



Delivery of Daily Operation

*Payments
Billing
Projects*



Information & Communication

*Query Management
Information Provision
Customer Experience*



Preparing for Future

*System Updates
Process Improvement
Code Modifications*

BSUoS: The Billing Process

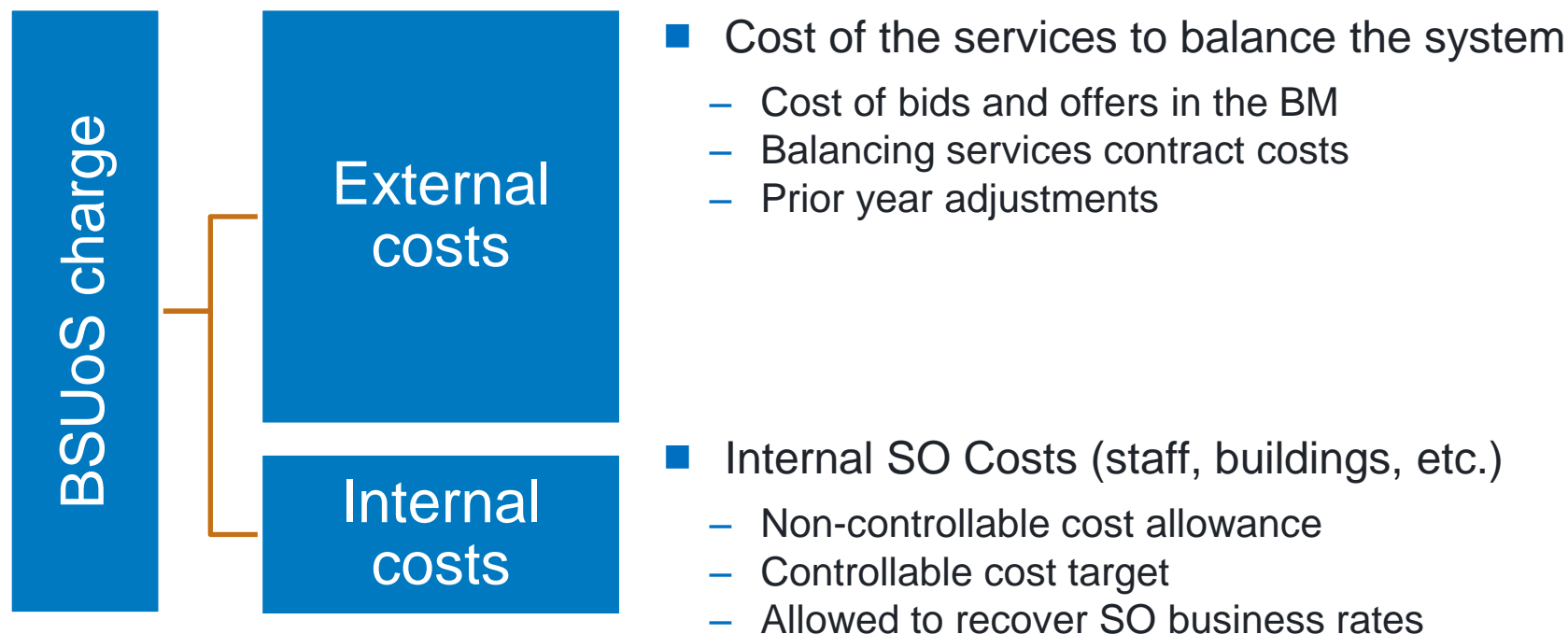
Nick Everitt
BSUoS/Trades Team Leader

BSUoS is one of the three types of Electricity Transmission Charges

1. Transmission Network Use of System Charge (TNUoS)
 - Recovers the cost of infrastructure assets
2. Connection Charges
 - Recovers the cost of connection assets
3. Balancing Services Use of System Charges (BSUoS)
 - Recovers the cost of operating the system
 - Paid by users of the transmission system (lead party of BMU is actually billed)
 - Obligation to pay is in the CUSC
 - Calculated and settled in accordance with the charging methodology statement

Composition of BSUoS charges

Your BSUoS charge recovers the costs incurred by National Grid, acting as the System Operator, in executing our obligation to balance the Electricity Transmission System on behalf of the industry

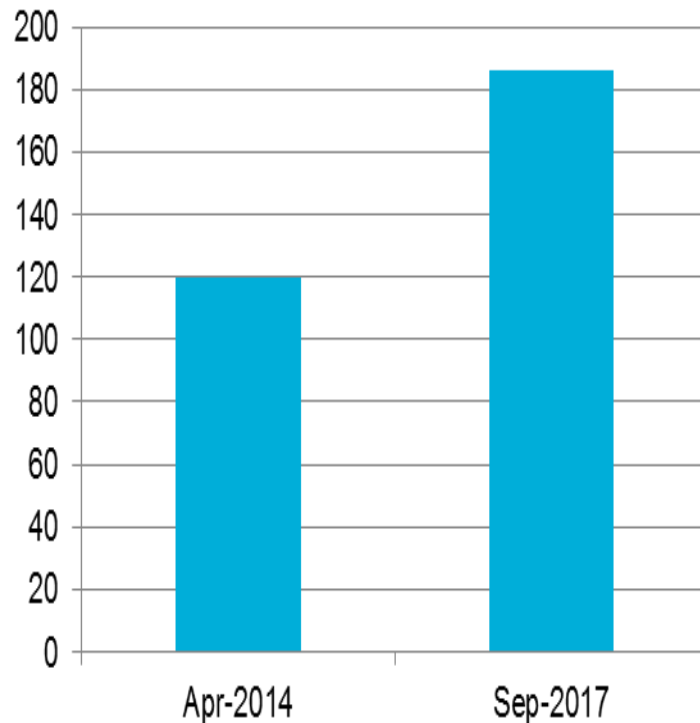


Both External and Internal Costs have an Incentive Scheme Adjustment applied to them to incentivise National Grid to balance the system economically and efficiently

BSUoS Growth

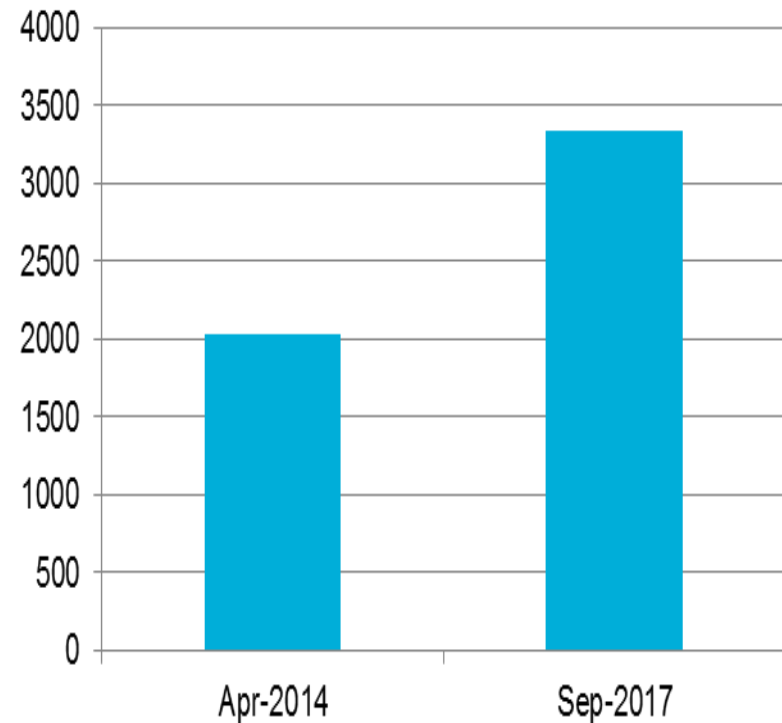
BSUoS Parties Growth

Number of Invoices Issued Per Day



BMU Growth

Number of BMU's in CAB



Calculation and billing

- BSUoS charges depend on the balancing actions that we take each day
- Charges apportioned on a half hourly £/MWh basis – *one price per period, paid by all*
 - Generators and suppliers are obliged to pay BSUoS under the CUSC (interconnectors have been exempt since 28th August 2012)
 - Charges based on actual metered volumes
- Billed Daily
- Two stages of settlement, excluding the Interim Initial run which is not billed
 - More details on next slide...

Billing timetable

BSUoS Charges for each settlement day are calculated multiple times, reconciling the charge as more accurate costing and metering data is available

Run Type	Definition	Process/Bill Timescales
II	Interim Initial	Settlement day + 5 working days No Invoice Sent
SF	Settlement Final	Daily, Settlement Day +16 working days
RF	Reconciliation Final	Daily, Settlement day + 14 months

BSUoS Charge Overview

■ $BSUoS \text{ Charge } \text{£/MWh (per SP)} = Q_{Mij} * TLM_{ij} * TU * BSUoS \text{ Price}$

Q_{Mij} = Metered volume *

TLM_{ij} = Transmission Loss Multiplier*

TU=Trading Unit Delivery Mode which is 1 for an exporting trading unit and -1 for an importing trading unit*

BSUoS Price = Price derived from National Grid System Operator Costs

* Data provided/derived from data in by the SAA-I014 file

Table below shows charge scenarios (note: Positive value is a payment due to National Grid, a Negative value is payment due to the BSC party)

Scenario	Q_{Mij}	TLM_{ij}	TU	BSUoS Price	Charge £
Generator in exporting trading Unit	10	0.9	+1	10	£90
Generator in importing trading Unit	10	0.9	-1	10	-£90
Supplier in exporting trading Unit	-10	0.9	-1	10	£90
Supplier in importing trading Unit	-10	0.9	+1	10	-£90

BSUoS Price Derivation Overview

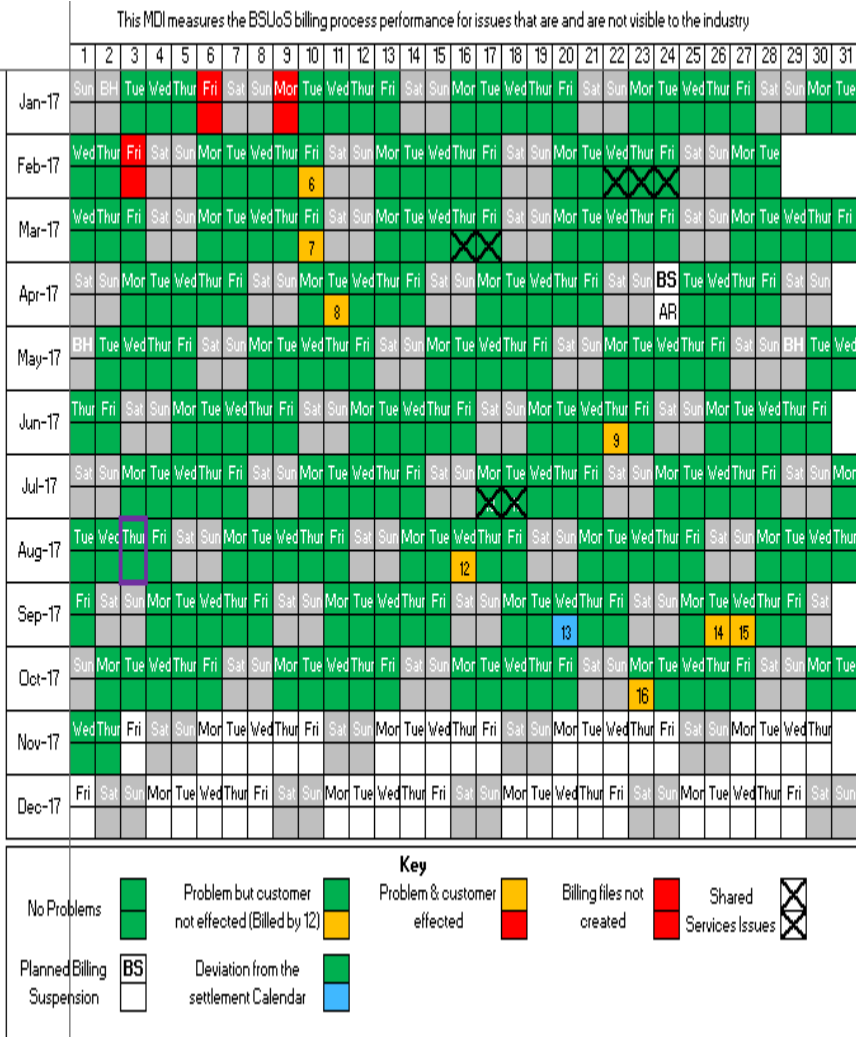
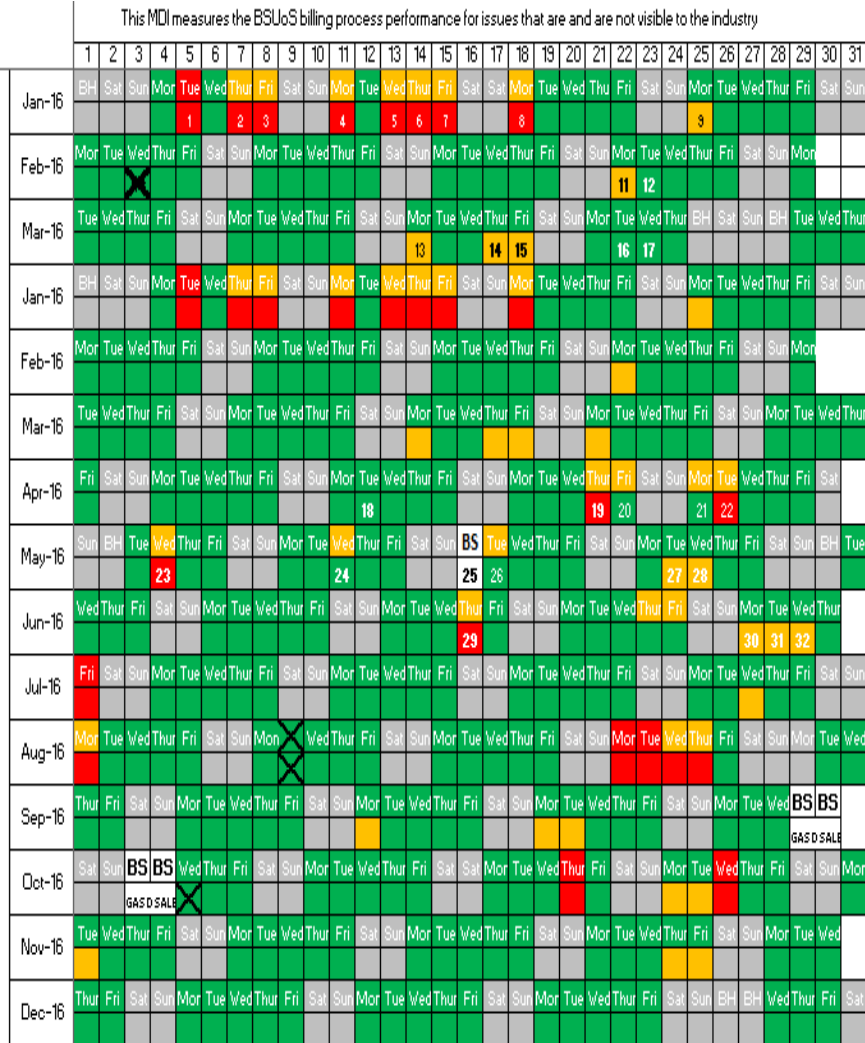
Example for 1st April SP 1 where Target cost = £1.195B

Incentivised Costs Daily Total = £3m,
Profit/Loss Sharing Factor = +/-10%, Maximum Profit/Loss = £10m
SP 1 Applicable Volume = 10,000 MWh, Daily Volume = 100,000 MWh

BSUoS Price SP1 = Total Cost for SP 1/ SP 1 Applicable volume = £137,397.36/ 10,000 = 13.74 £/MWh

SO Cost	Costs assigned	SP Allocation
Settlement Period Cost (Allocated to SP) £10k	<ol style="list-style-type: none"> Costs of Bids and Offers Electricity Trading Costs Week ahead STOR Availability Costs 	£10k
Daily Costs (Volume Weighted allocation To SP) £1m	<ol style="list-style-type: none"> Ancillary Services Costs (*) Internal Costs Prior Year Costs Other Incentives e.g. Wind Forecasting 	£1m * [10,000/100,000]= £100k
Incentive Profit/Loss daily total (Computed and Volume Weighted allocation to SP)	<ol style="list-style-type: none"> Incentivised costs forecast to end of year and compared to a Target cost. If Forecast Cost less then Profit computed else Loss. Profit/Loss assigned to a given day is a proportion of Profit/loss forecast the year less any Profit/Loss already recovered 	<ol style="list-style-type: none"> Forecast Profit = (£3m * 365/1) – £1.195b = £100m Profit/Loss = [£100m * 10% * 1/365-0] = £27,397.26

Billing Performance



BSUoS data can be found on our new website

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Electricity > Charging and methodology

Balancing services use of system (BSUoS) charges

The BSUoS charge recovers the cost of day-to-day operation of the transmission system. Generators and suppliers are liable for these charges, which are calculated daily as a flat tariff for all users. BSUoS charges depend on the balancing actions that we take each day, but we provide a monthly forecast of BSUoS. You can also consult historical BSUoS charges.

The methodology that calculates BSUoS is set out in Section 14 of the CUSC. The monthly forecast of BSUoS is provided as part of the current Monthly Balancing Services Summary report.

For more general information about the BSUoS charging process please consult our introduction presentation:

[Download the Introduction to BSUoS \(PowerPoint\) document](#)

BSUoS links

- Current BSUoS data (2)
- News (5)
- Useful information and documents (5)
- Historical BSUoS data - BF (16)
- Historical BSUoS data - RF (15)

Current BSUoS data

Published	Name
31 Oct 2017	Current SF BSUoS Data
31 Oct 2017	Current RF BSUoS Data

Enquiries

For queries regarding BSUoS contact us. Lines open from Monday - Friday, 09:00-18:00

01926 654 618
BSUoS.Queries@nationalgrid.com

Current Forecast of BSUoS

Click here for information about current monthly forecasts of BSUoS.

[View more](#)

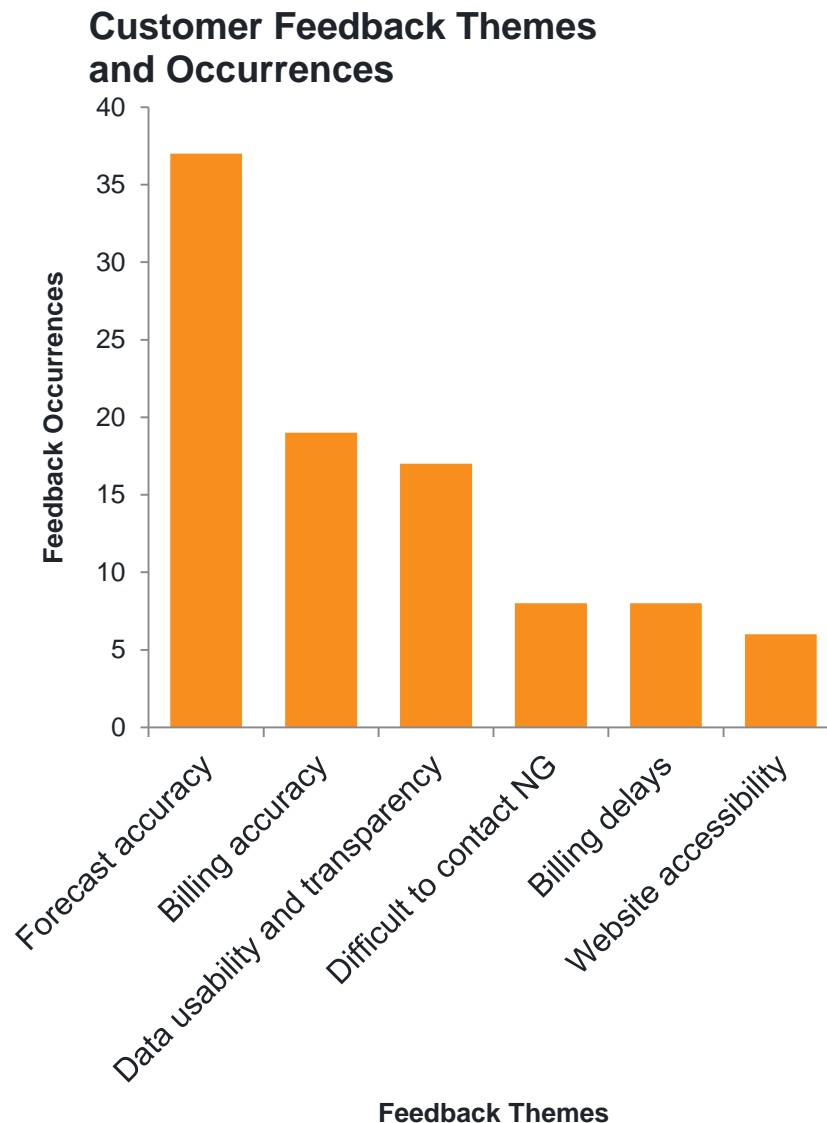
- BSUoS prices
- Monthly balancing services summary (MBSS) reports
- Other useful information and documents
- News
- Daily BSUoS Forecast (being trialled)

Find via **Electricity** menu → **Charging and methodology**
 → **Balancing services use of system (BSUoS) charges**

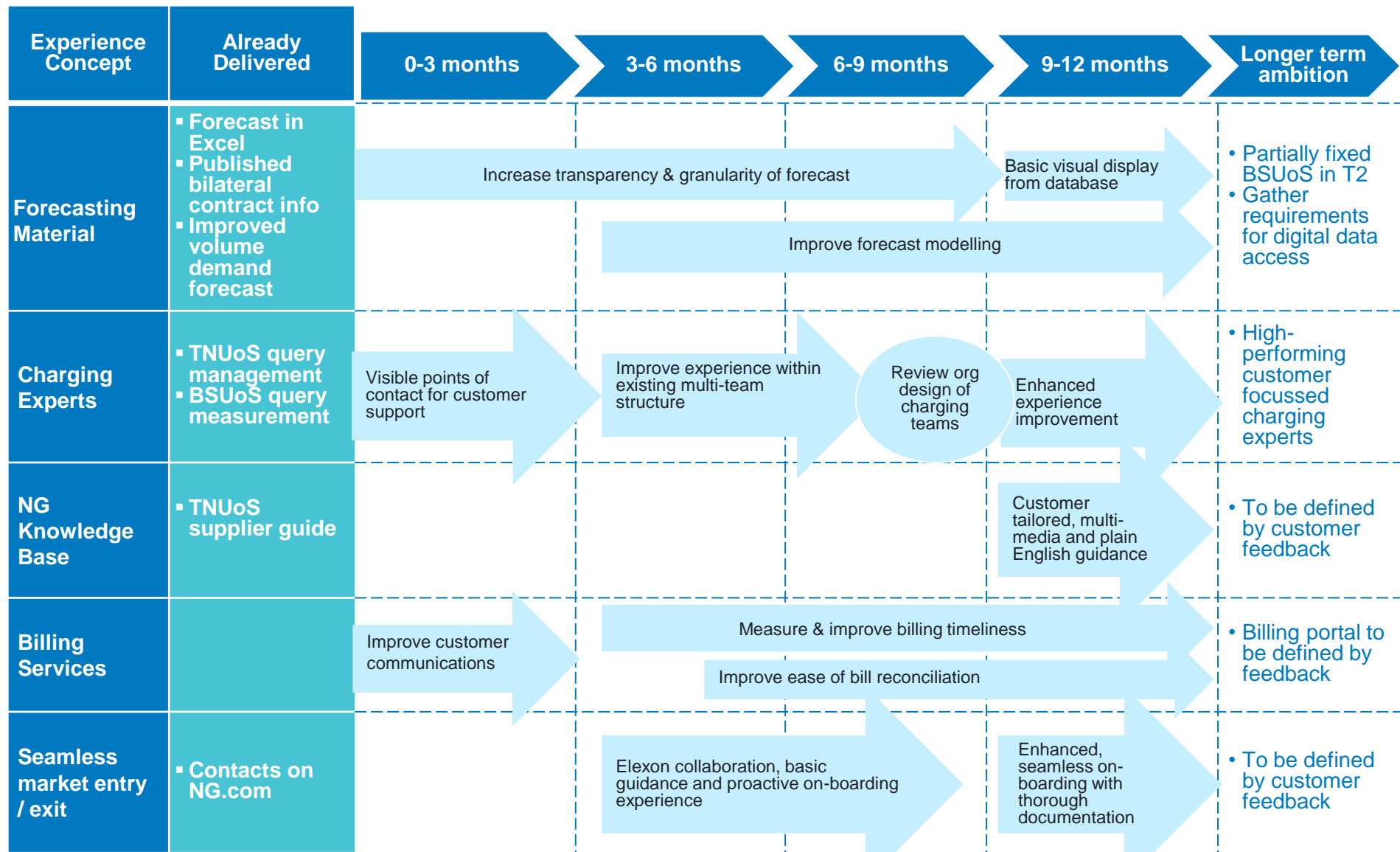
<https://www.nationalgrid.com/bsuos>

Feedback from our customers has identified some clear themes and priorities for the charging journey

- **Poor BSUoS forecasting accuracy and transparency**
 - “BSUoS forecasts are just wrong”
 - “Volatility is the biggest pain point”,
 - “Assumptions are needed to be able to support forecasts”
- **Difficult to get contact NG & get access to information (BSUoS & TNUoS)**
 - “BSUoS side it’s been dreadful and given up on BSUoS engagement. Same company but get very different response from NG teams”
 - “Not much dialogue between the businesses e.g., NG and the Supply business”
 - “need more help for small suppliers (new and existing) to handle all the information”
 - You need to be on the "right distribution lists" to be invited to webinars
- **Billing services need to improve**
 - “reconciling BSUoS actuals and understanding movement can sometimes be challenging”
 - “BSUoS need to accurately compare outturn against forecast”
 - “Quite often have delays in getting the BSUoS invoices”



We have a plan to customer feedback

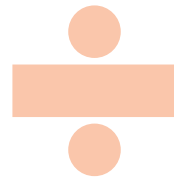


BSUoS: Forecasting

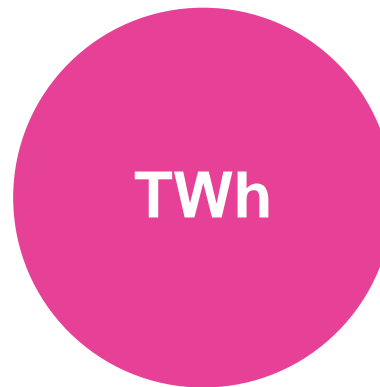
Jon McDonald
Senior Commercial Performance Analyst

How do we forecast BSUoS each month?

**Total
BSUoS
Costs**



**BSUoS
Volume**



Recent trends

+

Updated requirements

+

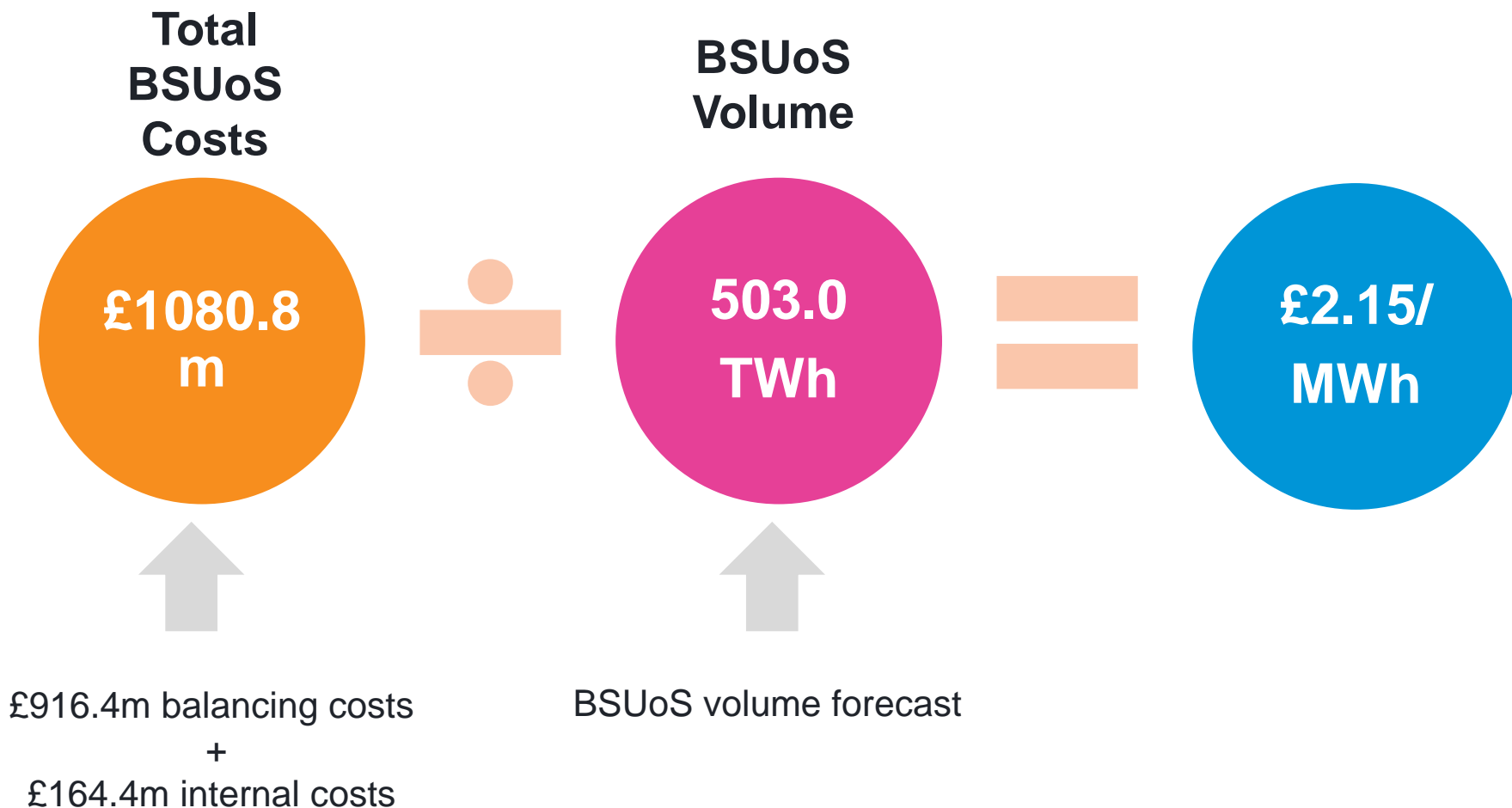
Known outage plan / faults

+

Internal costs (RIIO approved)

Demand forecast

BSUoS 17/18 Forecast – as at October 2017

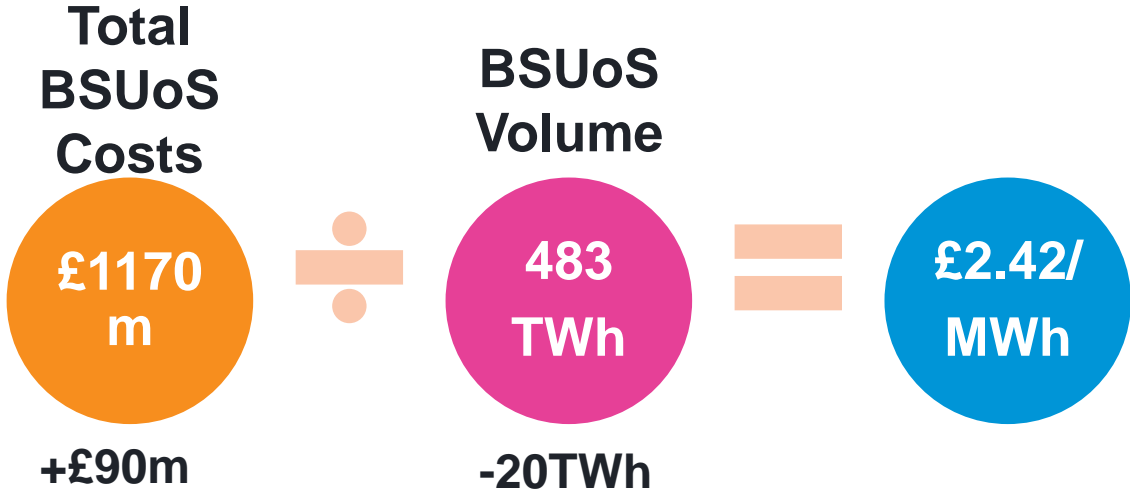


BSUoS scenarios

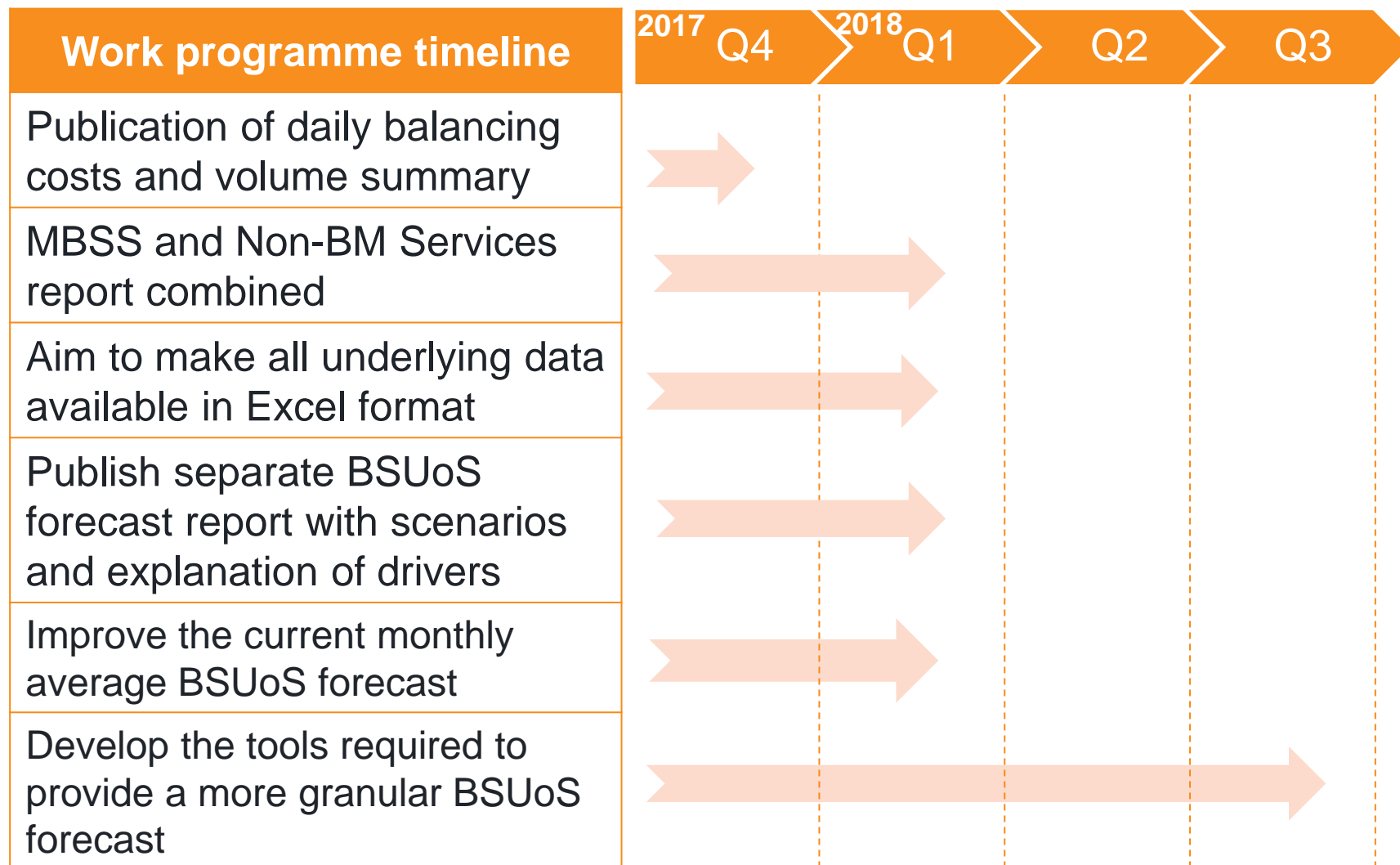
Margin costs higher than forecast
+£40m BSUoS costs



High wind and high embedded outturn, lower BSUoS volume, higher footroom / margin costs



Forecast improvements and transparency



Future Role of SO & Ancillary Services

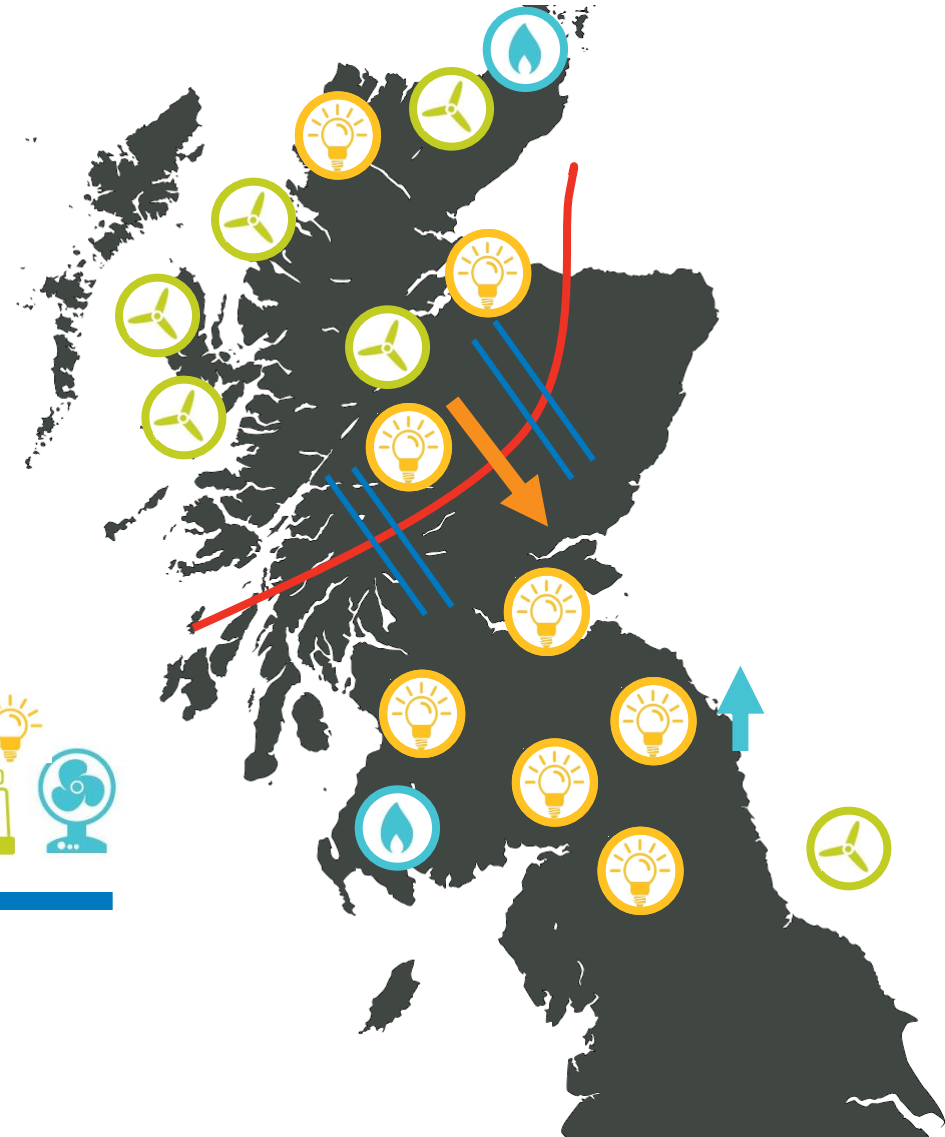
Adam Sims

System Operator Flexibility Manager

Overview of Balancing Services

Balancing services are contracted to help the SO:

- Manage electricity flows across the networks
- Balance generation and demand
- Ensure the quality and security of supply to consumers



System Needs & Product Strategy



- Published in June 2017
- Provided an overview of SO system needs
- Consulted on potential future changes to balancing services products

Product Simplification: consultation insights

Key Themes from consultation responses

128

10+ industries
consulted

98%

1

Greater transparency of the System Operators day to day activities

2

A reduction in barriers to entry

3

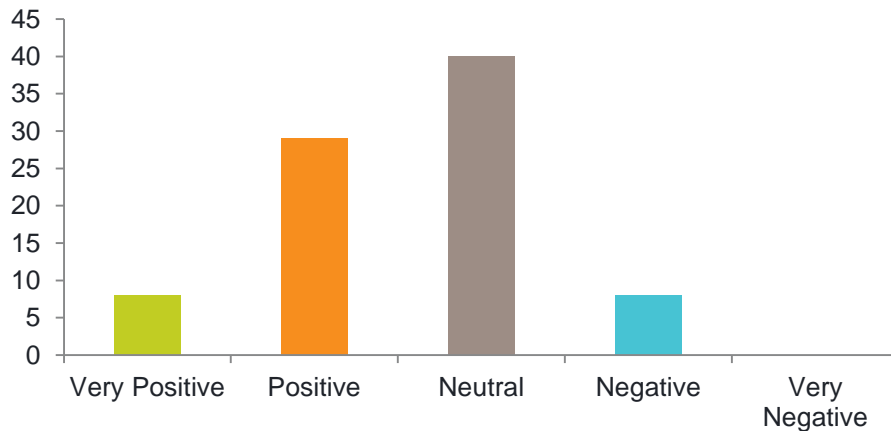
The System Operator to provide more details on its simplification of products

Product Simplification: consultation insights

Insights – Service Stacking: Impact of Single Market and Standardisation

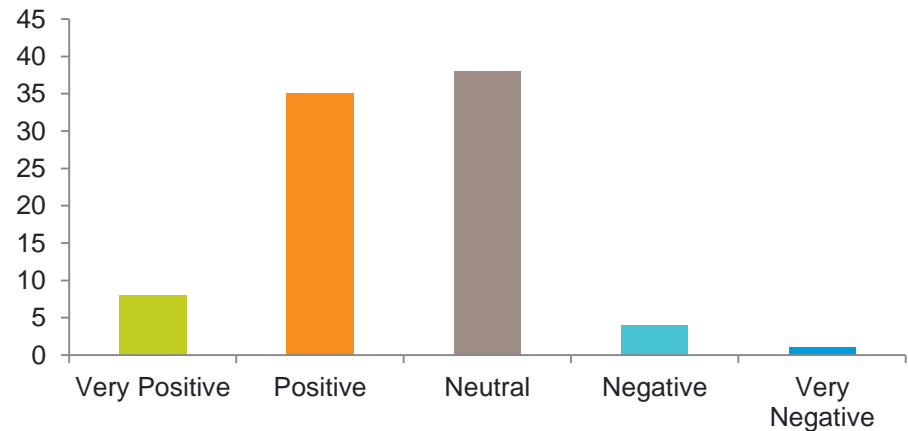
Consultation demonstrates the broad view that standardised products, rather than single markets, would better enable stacking of services.

Single market



57% believe standardising products will have a positive effect on competition

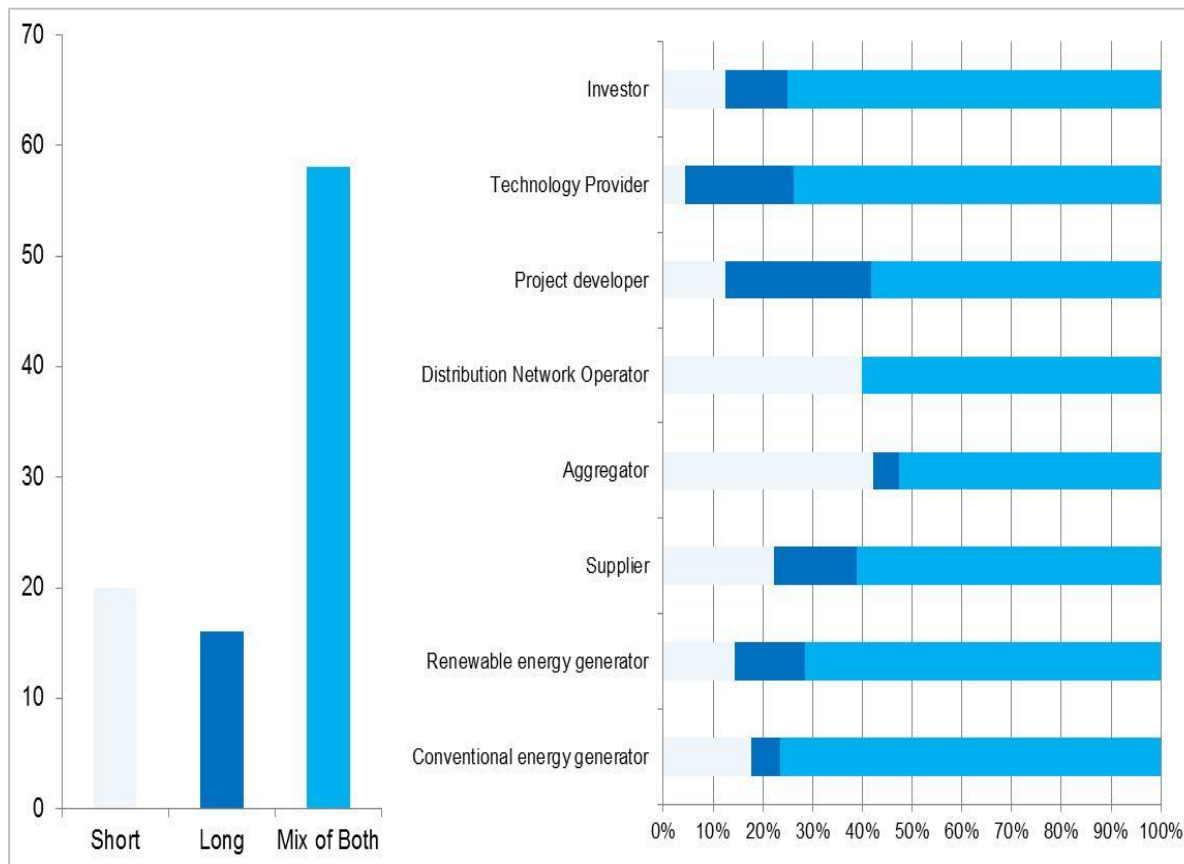
Standardisation



79% believe standardising products will have a positive effect on transparency

System Needs and Product Strategy

Insights – Short Term Markets v Long Term Contracts: A Balance Preferred

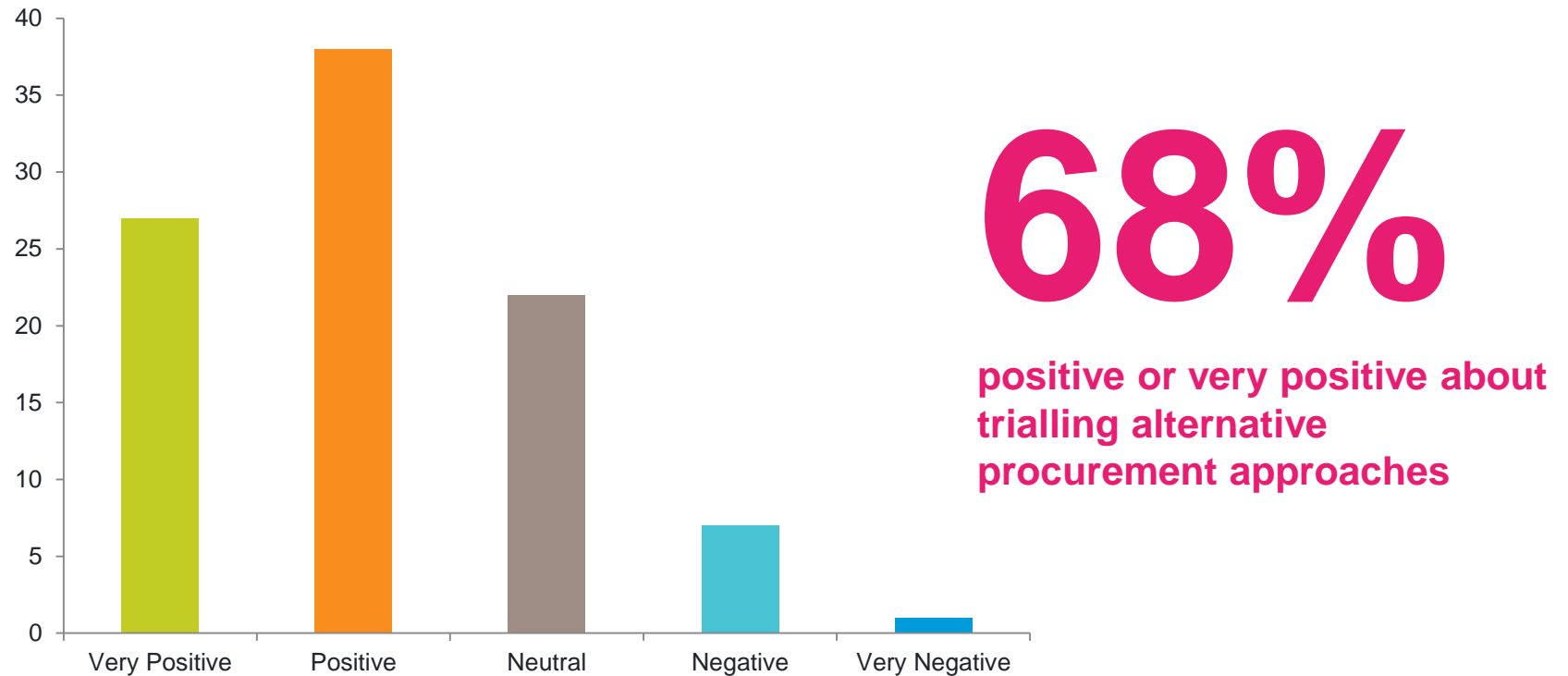


62%

**favour a mix of short
and long term contracts**

System Needs and Product Strategy

Insights – Procurement Trials: Positive response



Product Simplification: proposed principles

1

Our procurement decisions will be transparent and our methodology and needs will be clear to the market ahead of time

2

The design of our products, the way we procure, and the contractual arrangements will increase competition in provision of services to SO

3

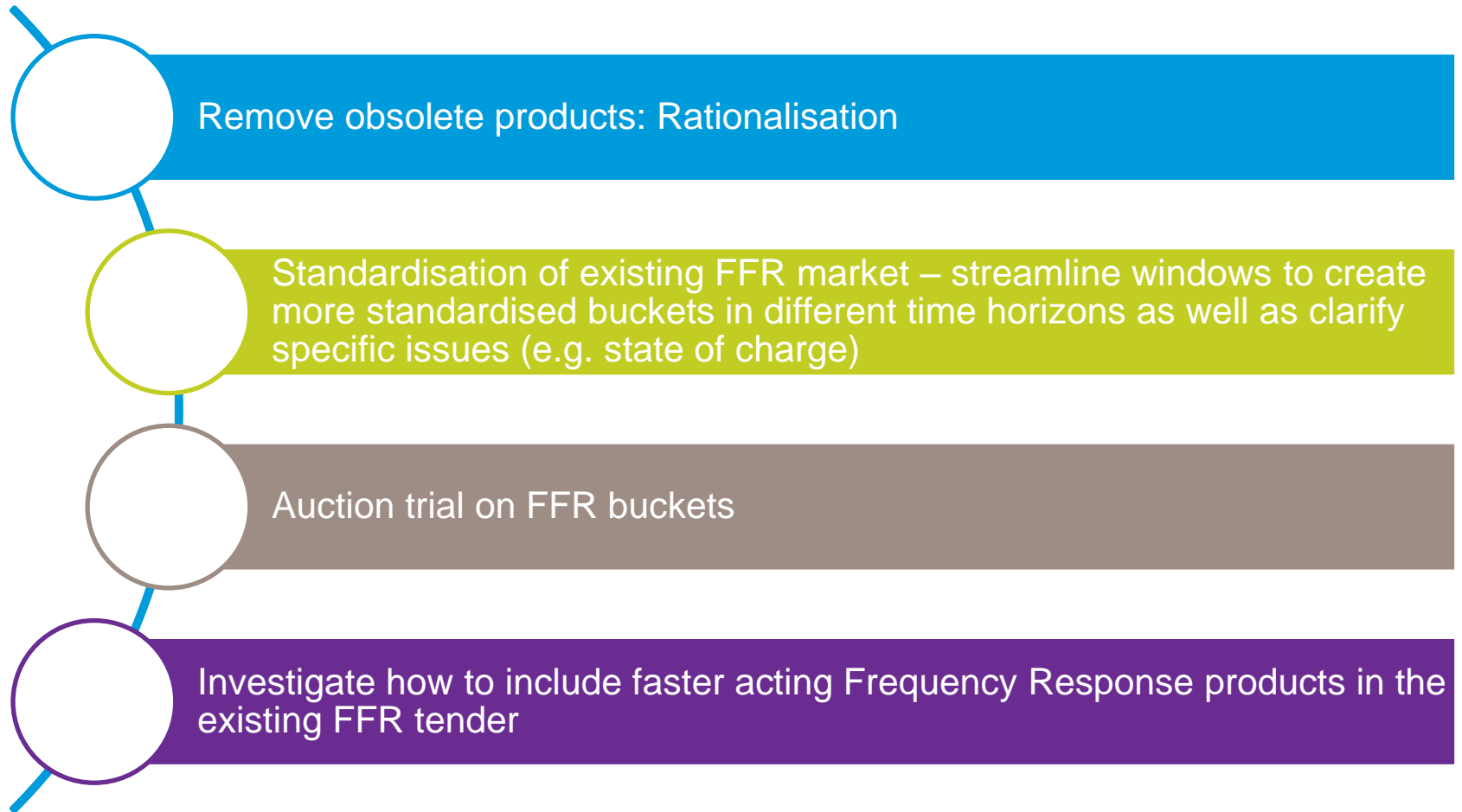
Our products will be designed to meet both operational requirements and the technical ability of provider assets while meeting system security

4

The procurement of balancing services shall comply with European guidelines, insofar as this represents the most economic approach for GB consumers

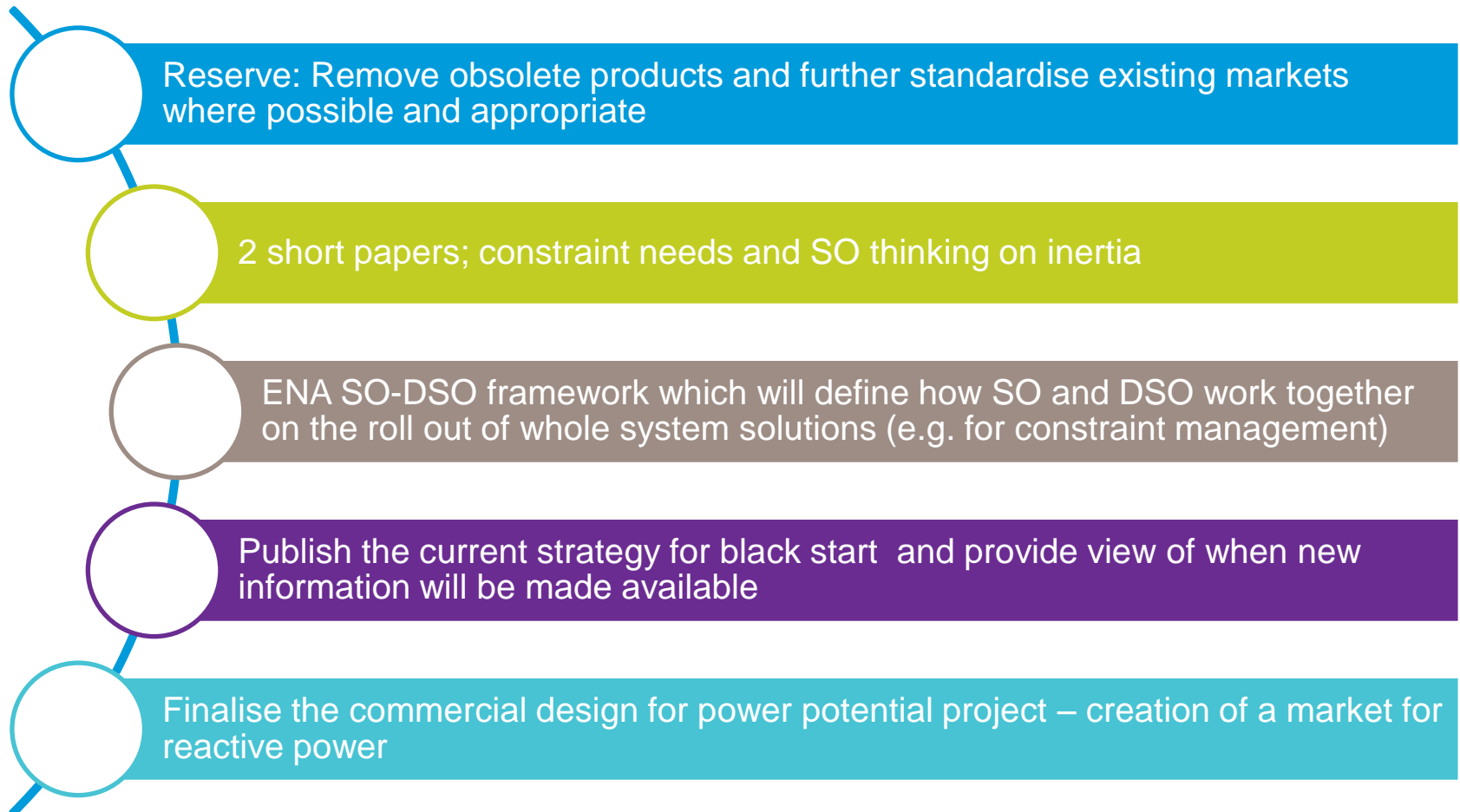
Product Simplification: Actions we are taking in the next 12 months

Frequency Response



Product Simplification: Actions we are taking in the next 12 months

Reserve, constraint management, reactive power and black start



Useful Information and Links

National Grid Website Links

- National Grid BSUoS: <https://www.nationalgrid.com/bsuos>
- National Grid Balancing Services: <https://www.nationalgrid.com/uk/electricity/balancing-services>
- National Grid Electricity Trading: <https://www.nationalgrid.com/uk/electricity/balancing-services/trading>
- National Grid Settlements: <https://www.nationalgrid.com/uk/electricity/balancing-services/settlements>

Contact the Settlement Team

- Team Telephone: **01926 654613**
- BSUoS Queries: BSUoS.Queries@nationalgrid.com
- Ancillary Service Queries: settlement.queries@nationalgrid.com
- Trades Queries: commodities@nationalgrid.com

External Links

- BM Reports: <https://bmreports.com/>
- Elexon Glossary : <https://www.elexon.co.uk/glossary/>
- Charging Futures Forum: <http://www.chargingfutures.com>
- Ofgem: <https://www.ofgem.gov.uk/>

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