

System Cost Update

nationalgrid



July 2018

World Cup and Royal Wedding

nationalgrid

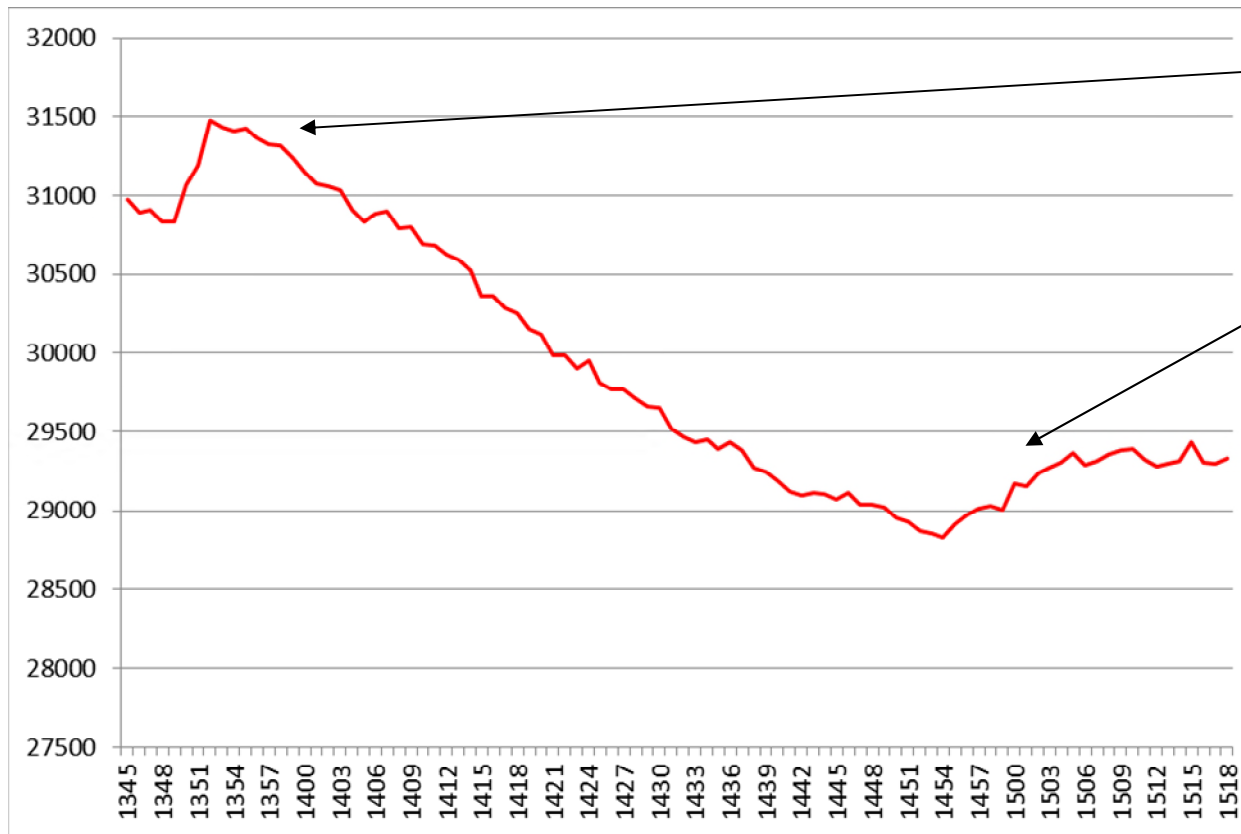


World Cup 2018

Minute Forecast

Panama v England – Sunday 24th June 2018

nationalgrid



- Half-time Pickup of 500 - 600 MW @ 13:45 + Injury Time.
- Full Time pickup of 450 - 550 MW @ 14:45 + Injury Time.
- Forecast based on previous world cup games.



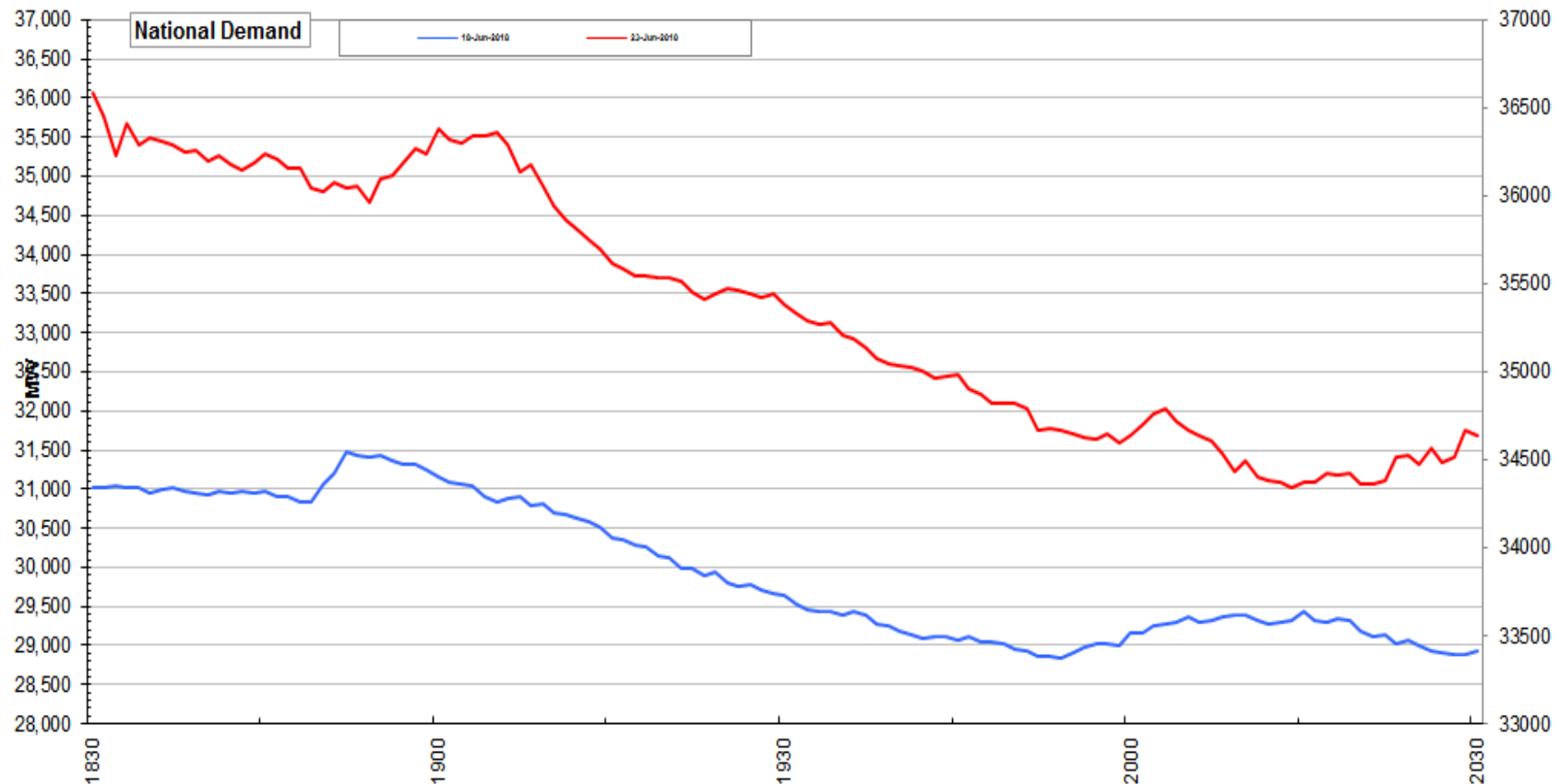
FIFA WORLD CUP
RUSSIA 2018

World Cup 2018

Historical Data

Panama v England – Sunday 24th June 2018

nationalgrid



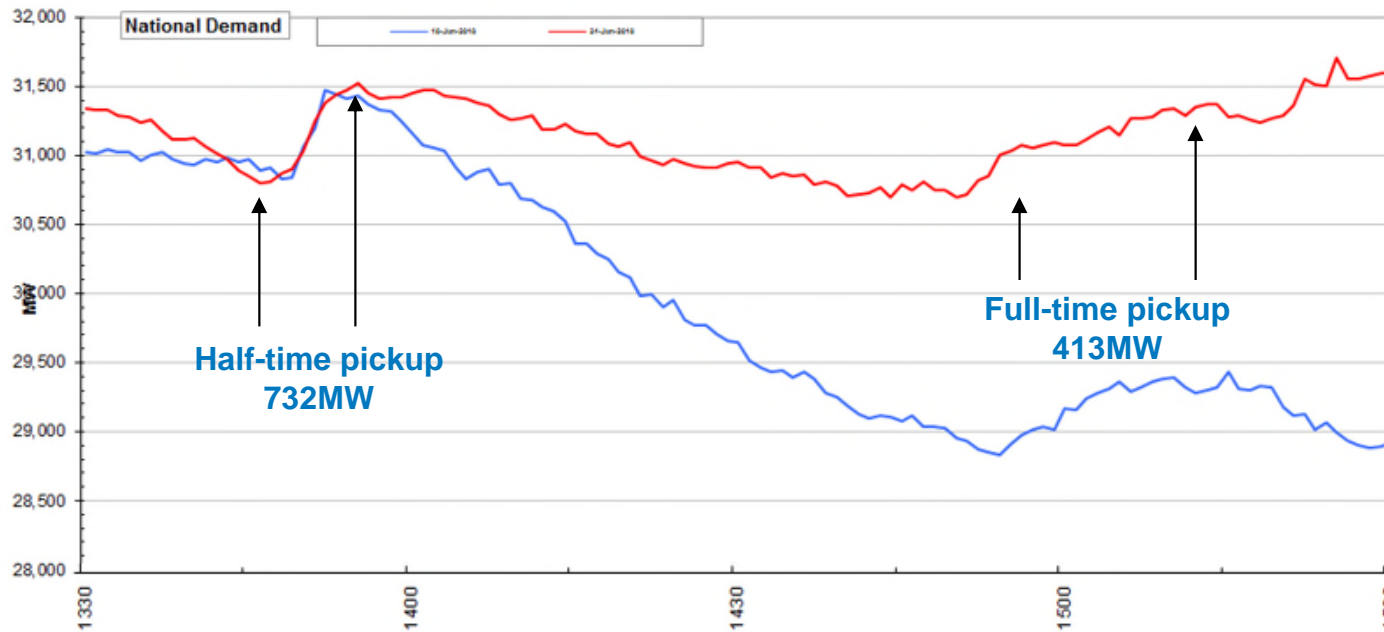
- **Red line:** England v Slovenia, 3rd match, Group Stage, 23/06/2010, 19:00 GMT
- **Blue line:** England v Tunisia, 1st match, Group Stage, 18/06/2018, 19:00 GMT

World Cup 2018

Demand Outturn

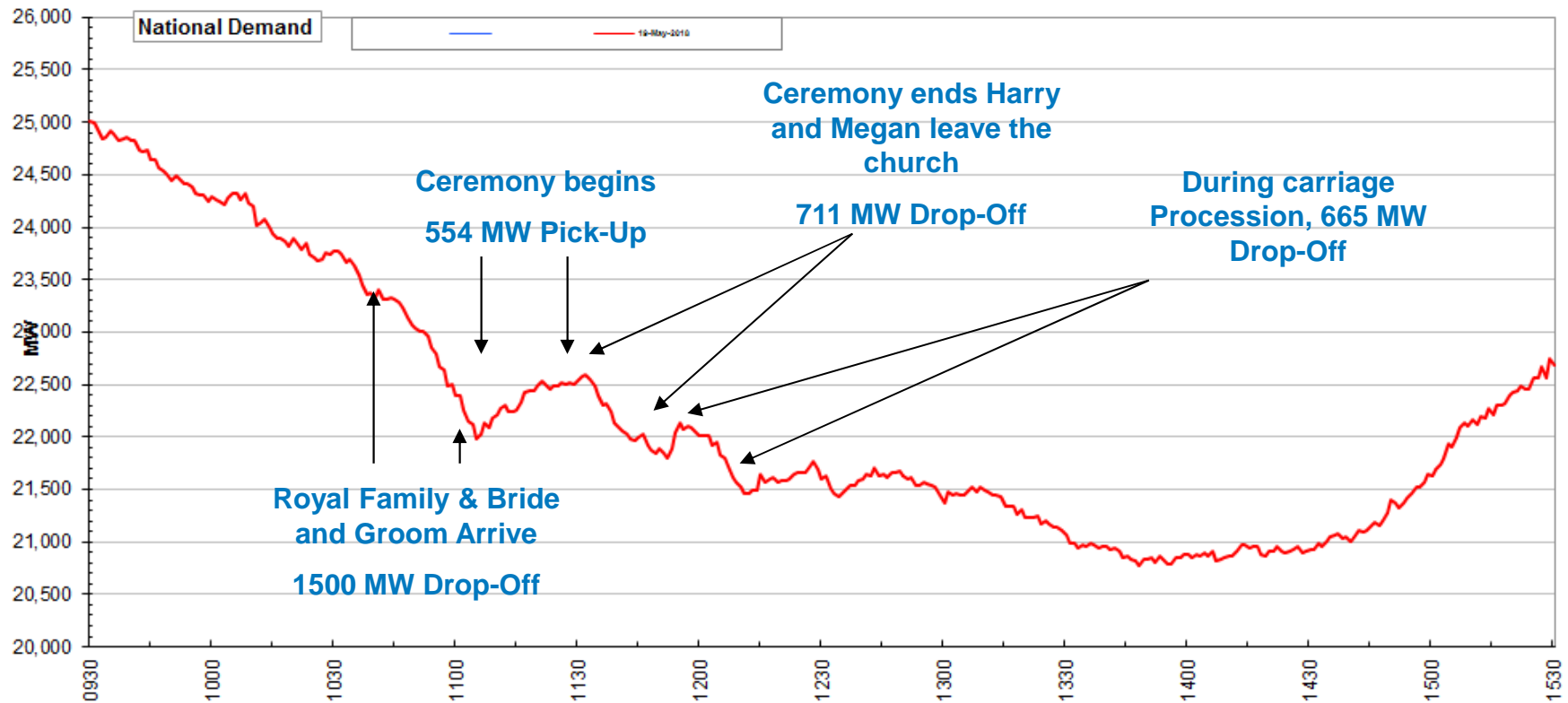
Panama v England – Sunday 24th June 2018

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Demand outturn for England v Panama match

Breakdown: The Royal Wedding 2018



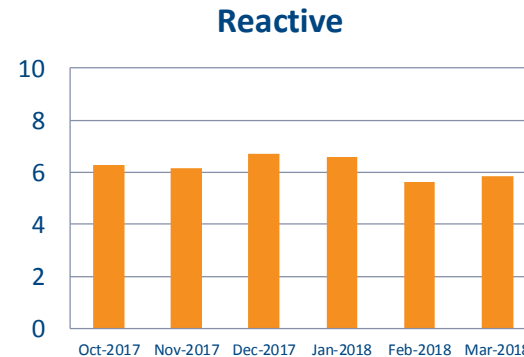
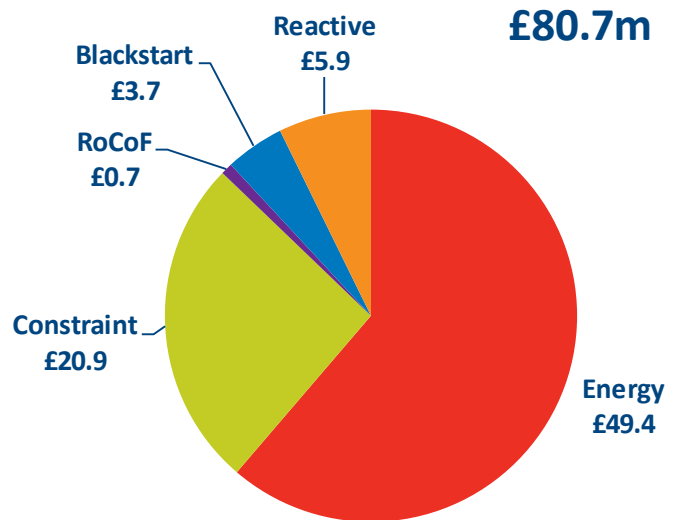
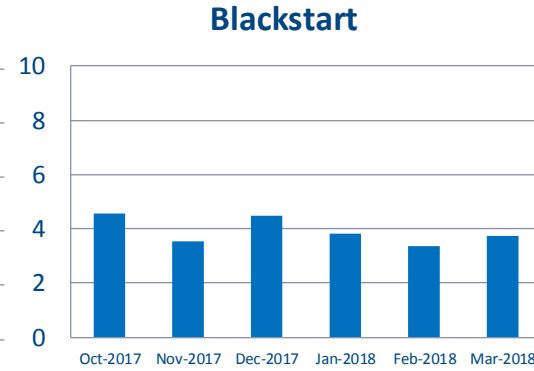
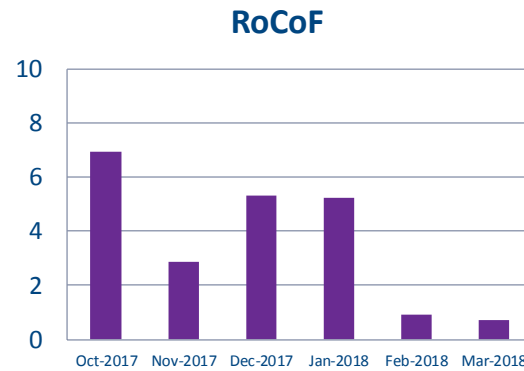
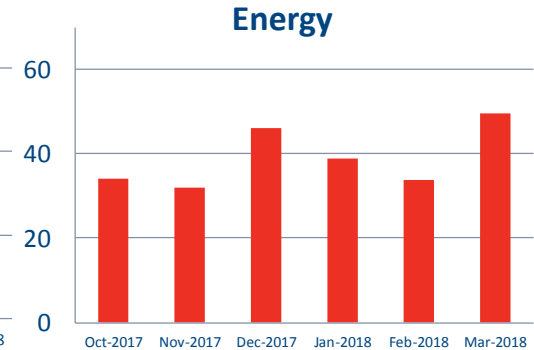
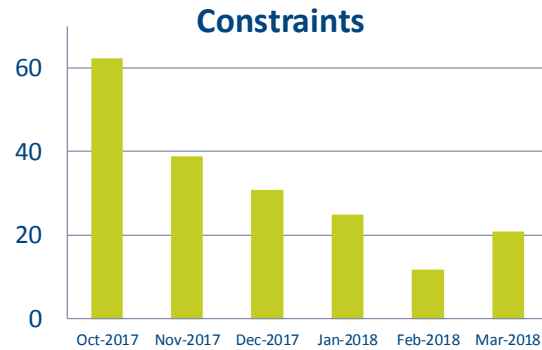
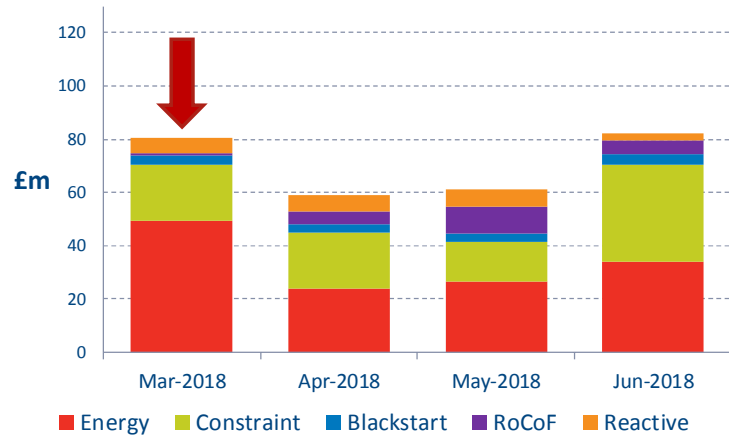
Demand outturn for The Royal Wedding 2018

Balancing Service Use of System (BSUoS)



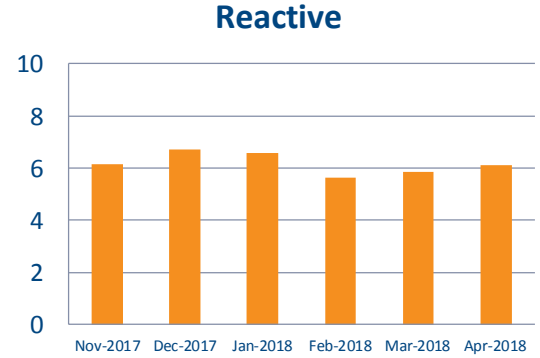
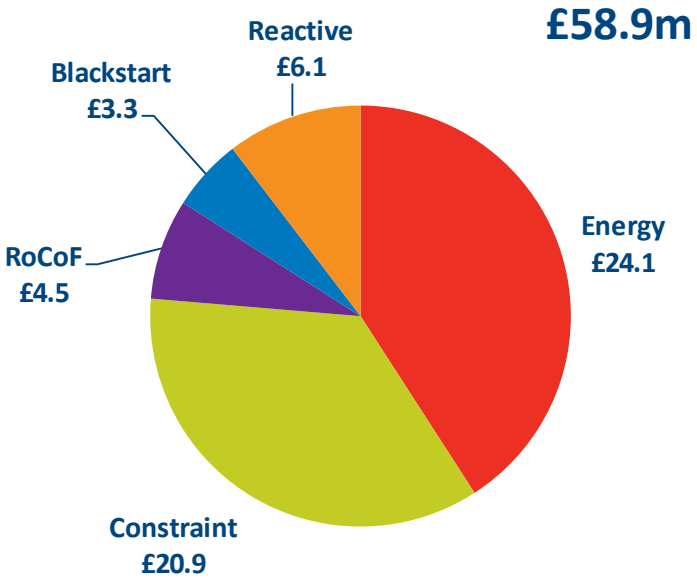
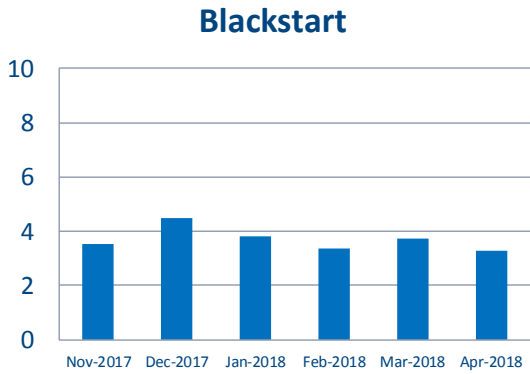
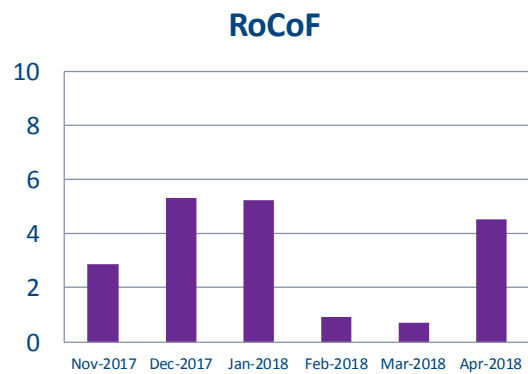
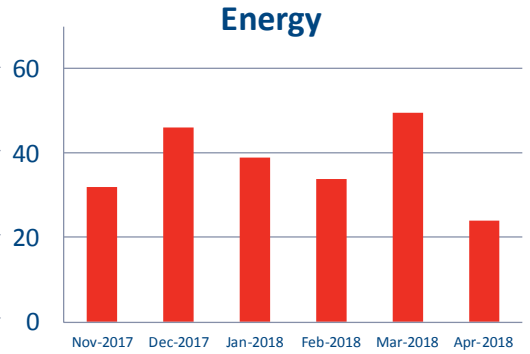
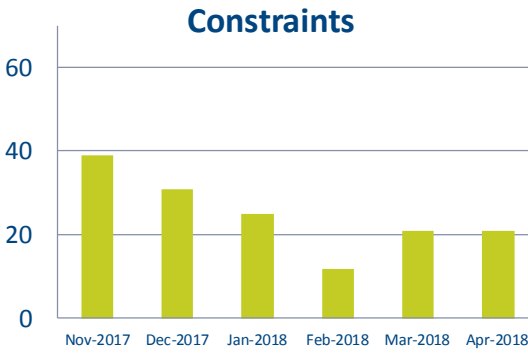
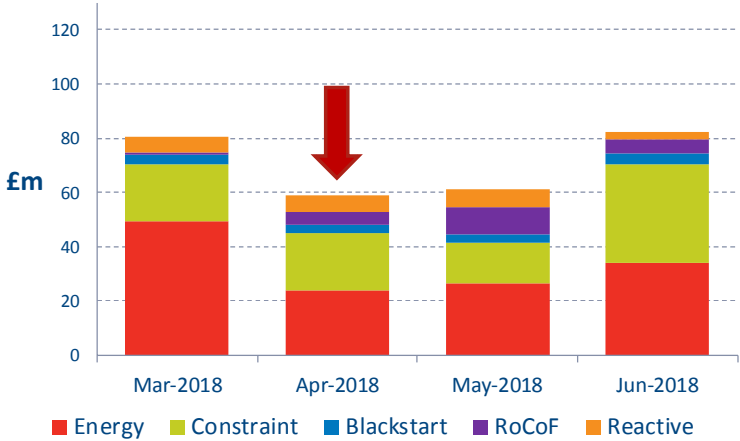
March 2018 : £1.96/MWh

Total Cost: £95.5m, Volume: 48.7TWh



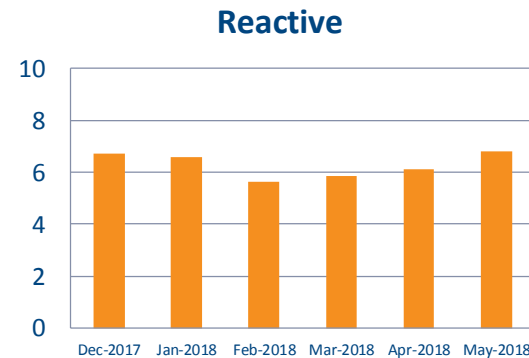
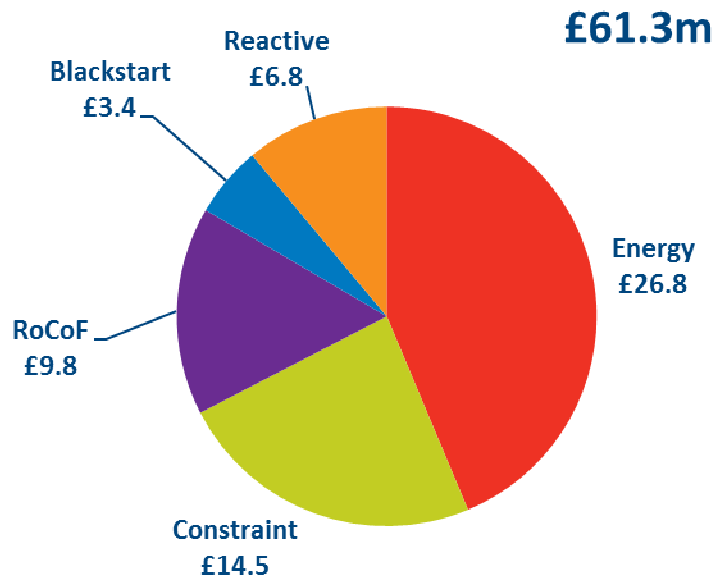
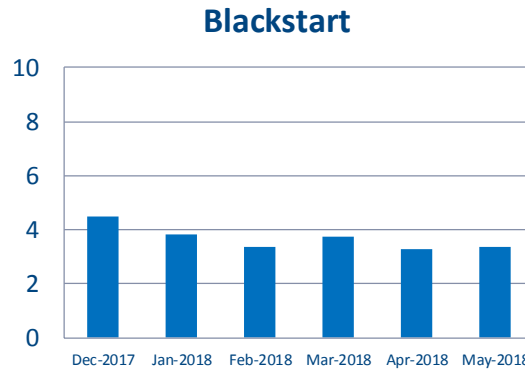
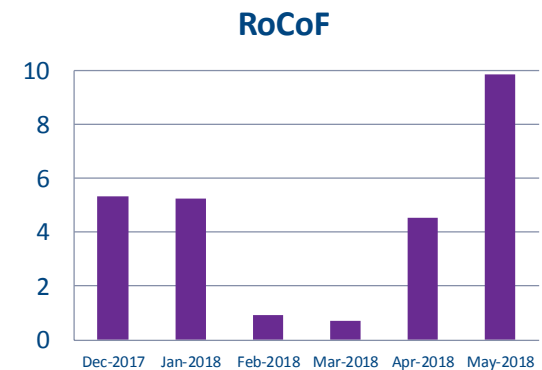
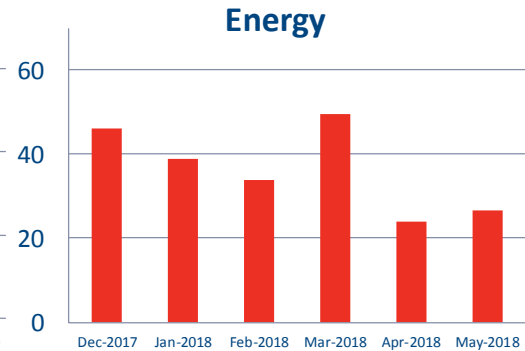
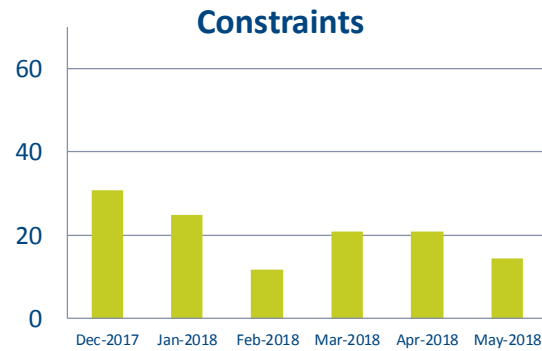
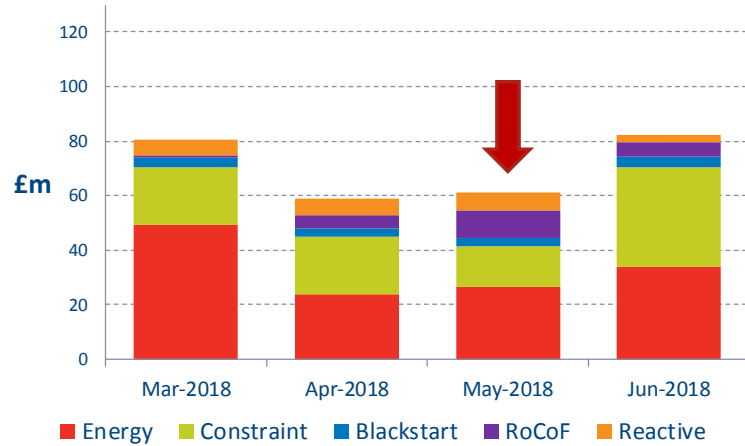
April 2018 : £1.89/MWh

Total Cost: £76.4m, Volume: 40.4TWh



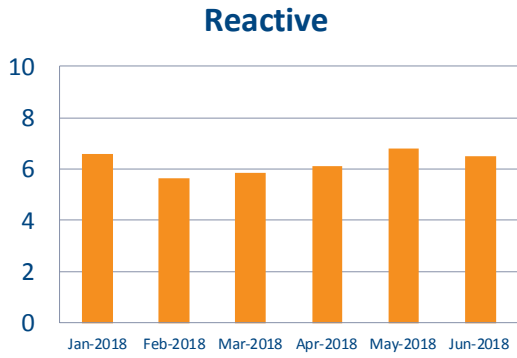
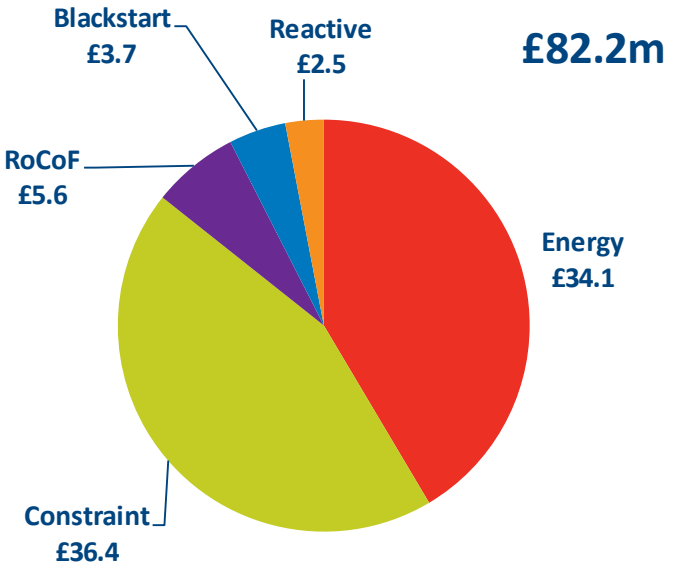
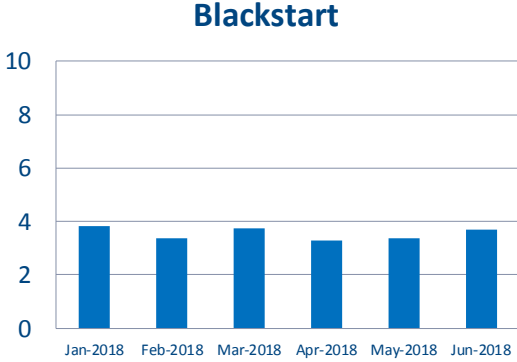
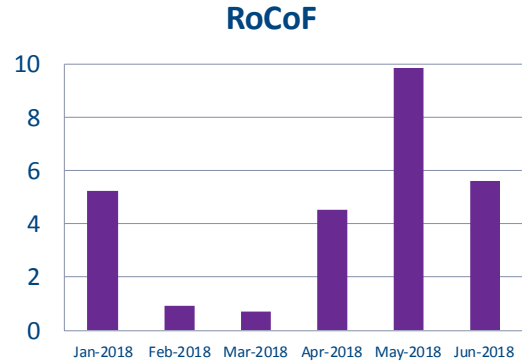
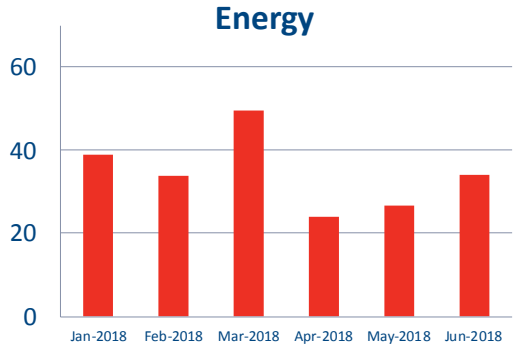
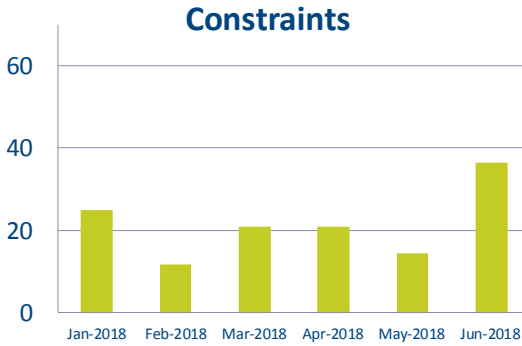
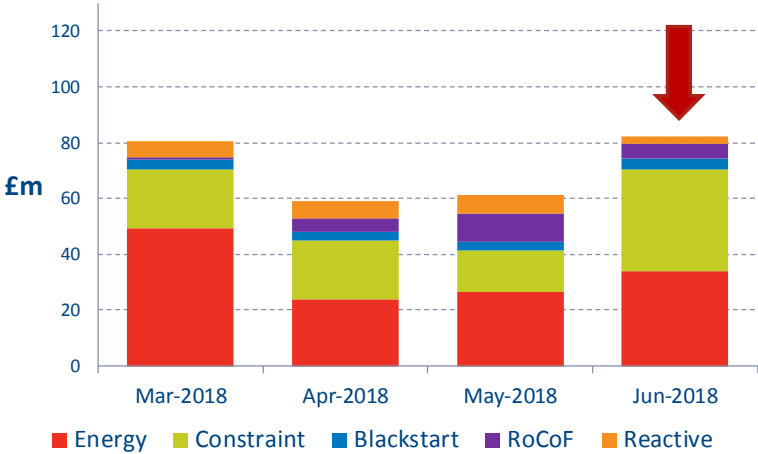
May 2018 : £1.93/MWh

Total Cost: £78.0m, Volume: 40.4TWh



June 2018 : £2.81/MWh

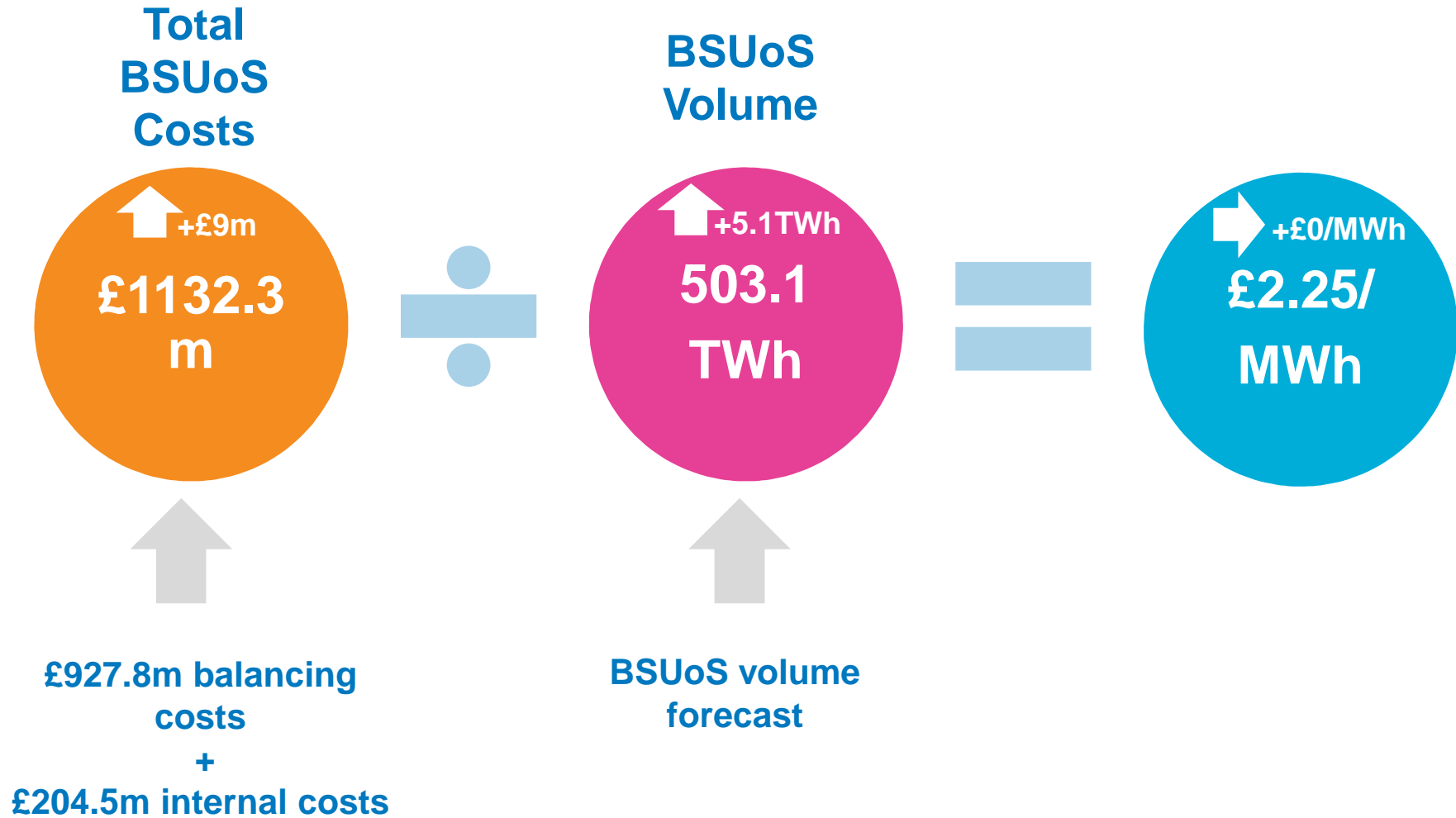
Total Cost : £99.0m, Volume: 35.2TWh



Balancing Service Use of System (BSUoS) Forecasting



BSUoS 18/19 forecast – as at July 2018



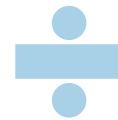
BSUoS sensitivity analysis 18/19

HVDC in service end of October instead of end of August

Total
BSUoS
Costs

£1149
m

+£17m



BSUoS
Volume

503
TWh



£2.28/
MWh

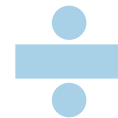
+£0.03/MWh

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

Total
BSUoS
Costs

£1222
m

+£90m



BSUoS
Volume

493
TWh



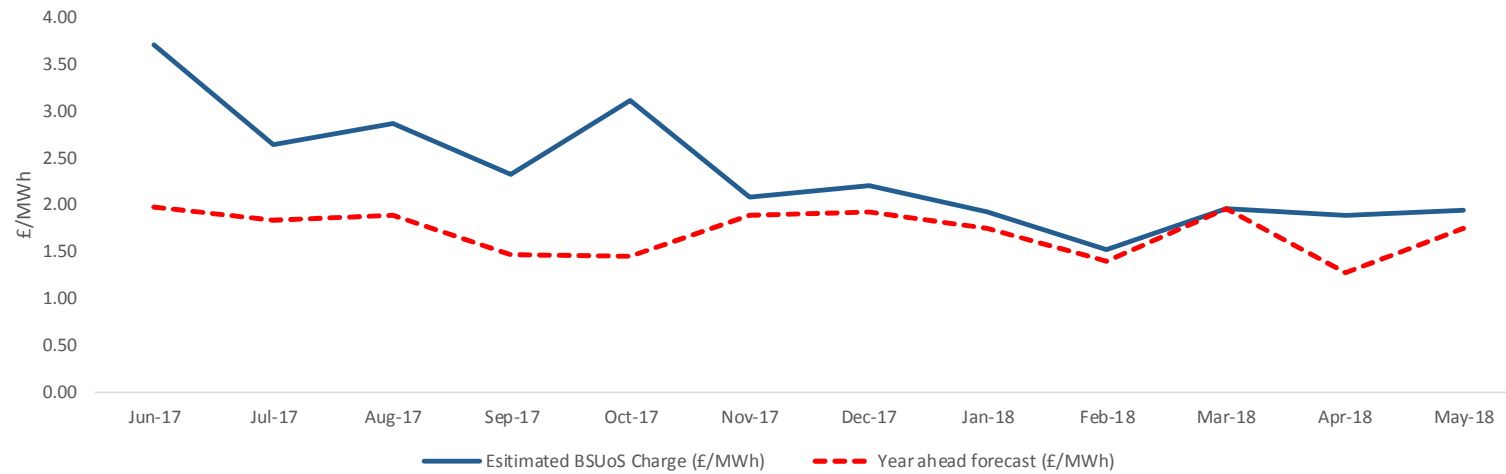
£2.48/
MWh

+£0.23/MWh

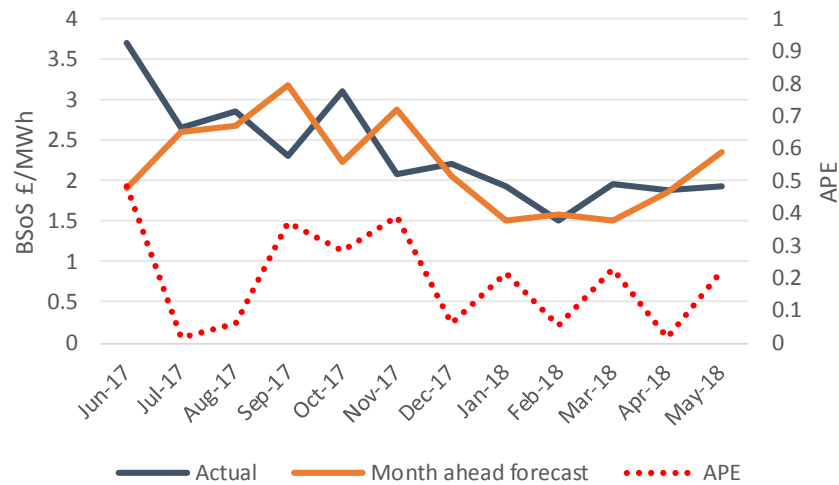
-10TWh

Forecast Accuracy – BSUoS Report

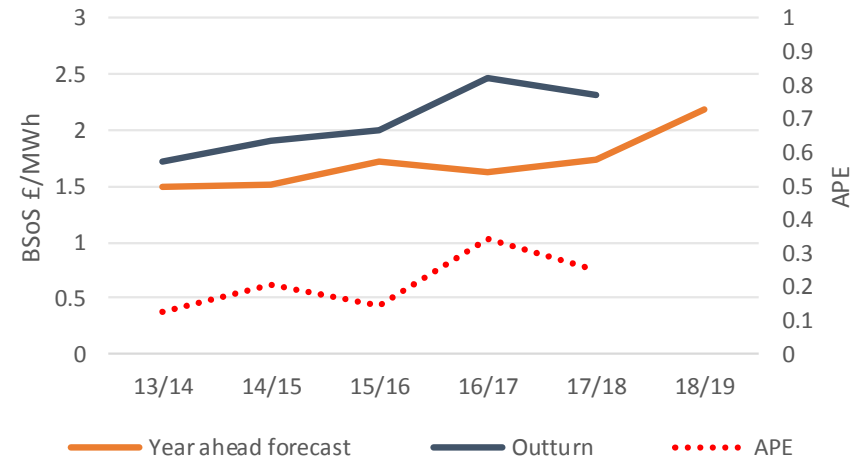
Historical outturn vs year ahead forecast




Month ahead forecast vs actual and APE



Yearly History and APE



Forecast improvements and transparency

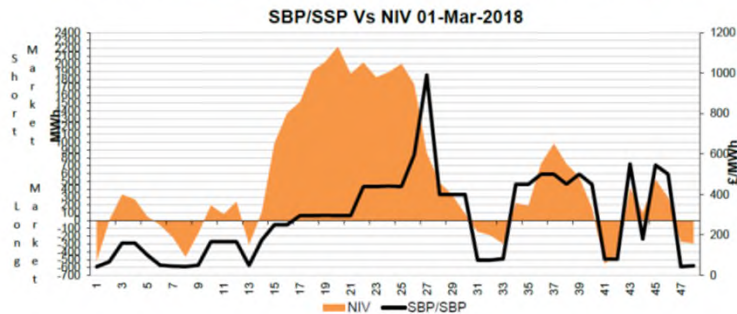
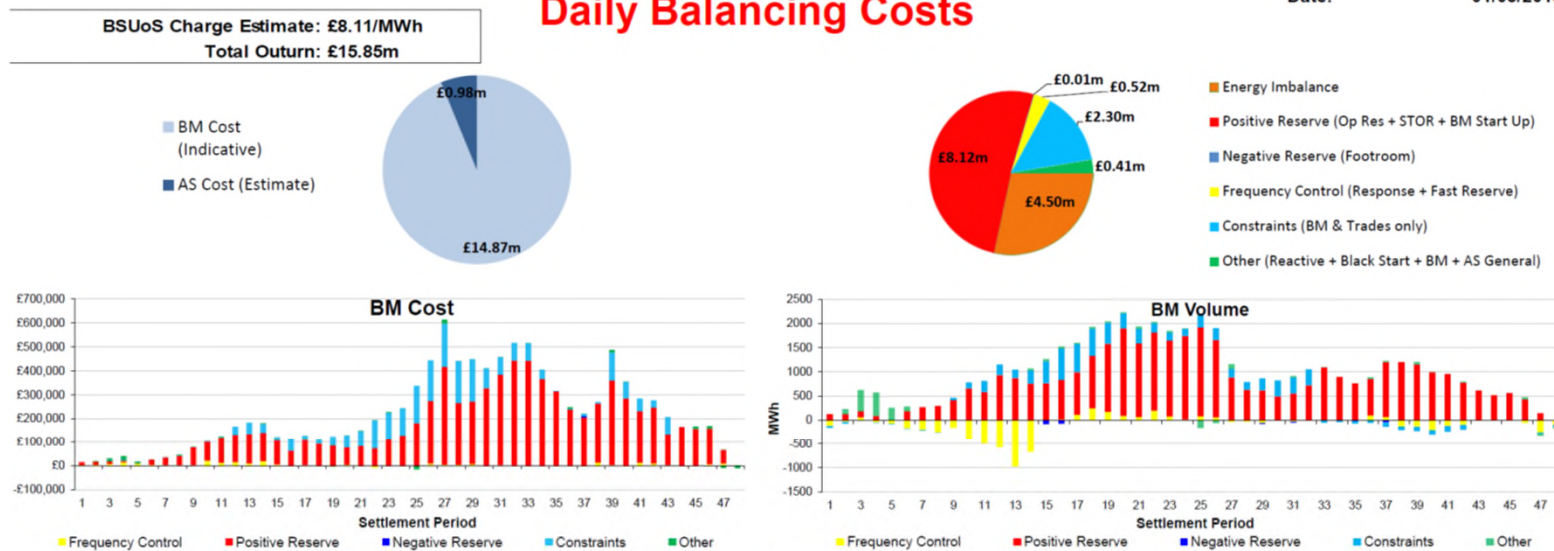
Work programme timeline	2018 Q1 Q2 Q3 Q4			
Publication of daily balancing costs and volume summary	Complete			
Improve the current monthly average BSUoS forecast	Complete			
Aim to make all underlying data available in Excel format	Complete			
Separate BSUoS forecast report with error bands and explanation of drivers	Complete			
Review the MBSS and combine with the Non-BM Services report.	Complete			
Develop the tools required to provide a more granular BSUoS forecast				

New Reporting

Daily Balancing Cost Report (available now)

<https://www.nationalgrid.com/uk/electricity/market-operations-and-data/system-balancing-reports>

Date: 01/03/2018



Commentary

Special actions were taken to cover risk of potential gas plant interactions following GNCC issuing a Gas Deficit Warning for Gas Day commencing 6am. This uncertainty compounded widespread technical issues with generating plants' performance throughout the day, which were mainly due to the low ambient temperatures being experienced across GB. A significant volume of generation expected to synchronise for the morning pick-up failed to do so or was delayed. In the late afternoon, an interconnector was declared to half its capability for the rest of the day following a technical fault. To address the short market, additional generation was required. Furthermore, the darkness peak was the highest recorded for this winter period, with a half hour average 18:00 to 18:30hrs of 50.1GW. Some BM actions were taken to solve power flow restrictions between Scotland and England and to manage voltages levels. Overnight Trades on the interconnectors were taken for Rocof.

New Reporting

MBSS Report (available now)

<https://www.nationalgrid.com/uk/electricity/market-operations-and-data>



2. Overview of Balancing Cost

This section provides information about the total cost of balancing services, including generation and demand response, and the total cost of balancing services, including generation and demand response.

Figure 1: Total balancing cost by category, in pounds sterling (£m)

Category	Cost (£m)
1.000 - Other	1.000
1.001 - Demand	1.001
1.002 - Demand	1.002
1.003 - Demand	1.003
1.004 - Demand	1.004
1.005 - Demand	1.005
1.006 - Demand	1.006
1.007 - Demand	1.007
1.008 - Demand	1.008
1.009 - Demand	1.009
1.010 - Demand	1.010
1.011 - Demand	1.011
1.012 - Demand	1.012
1.013 - Demand	1.013
1.014 - Demand	1.014
1.015 - Demand	1.015
1.016 - Demand	1.016
1.017 - Demand	1.017
1.018 - Demand	1.018
1.019 - Demand	1.019
1.020 - Demand	1.020
1.021 - Demand	1.021
1.022 - Demand	1.022
1.023 - Demand	1.023
1.024 - Demand	1.024
1.025 - Demand	1.025
1.026 - Demand	1.026
1.027 - Demand	1.027
1.028 - Demand	1.028
1.029 - Demand	1.029
1.030 - Demand	1.030
1.031 - Demand	1.031
1.032 - Demand	1.032
1.033 - Demand	1.033
1.034 - Demand	1.034
1.035 - Demand	1.035
1.036 - Demand	1.036
1.037 - Demand	1.037
1.038 - Demand	1.038
1.039 - Demand	1.039
1.040 - Demand	1.040
1.041 - Demand	1.041
1.042 - Demand	1.042
1.043 - Demand	1.043
1.044 - Demand	1.044
1.045 - Demand	1.045
1.046 - Demand	1.046
1.047 - Demand	1.047
1.048 - Demand	1.048
1.049 - Demand	1.049
1.050 - Demand	1.050
1.051 - Demand	1.051
1.052 - Demand	1.052
1.053 - Demand	1.053
1.054 - Demand	1.054
1.055 - Demand	1.055
1.056 - Demand	1.056
1.057 - Demand	1.057
1.058 - Demand	1.058
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1.067 - Demand	1.067
1.068 - Demand	1.068
1.069 - Demand	1.069
1.070 - Demand	1.070
1.071 - Demand	1.071
1.072 - Demand	1.072
1.073 - Demand	1.073
1.074 - Demand	1.074
1.075 - Demand	1.075
1.076 - Demand	1.076
1.077 - Demand	1.077
1.078 - Demand	1.078
1.079 - Demand	1.079
1.080 - Demand	1.080
1.081 - Demand	1.081
1.082 - Demand	1.082
1.083 - Demand	1.083
1.084 - Demand	1.084
1.085 - Demand	1.085
1.086 - Demand	1.086
1.087 - Demand	1.087
1.088 - Demand	1.088
1.089 - Demand	1.089
1.090 - Demand	1.090
1.091 - Demand	1.091
1.092 - Demand	1.092
1.093 - Demand	1.093
1.094 - Demand	1.094
1.095 - Demand	1.095
1.096 - Demand	1.096
1.097 - Demand	1.097
1.098 - Demand	1.098
1.099 - Demand	1.099
1.100 - Demand	1.100

Figure 2: Balancing Mechanism

2.3 Trading

This section includes information about forward trading, including non-locational and BMU-specific trading and pre-gate BMU transactions.

We use three categories of trading:

- forward trading – negotiated bilateral contracts, which can be tailored to suit the parties' needs
- power exchange – electronic trade-matching systems, where participants enter the prices at which they're prepared to buy or sell electricity
- energy balancing contracts – agreements for services that help us balance the system; we use these mainly when a power plant stops working or produce less energy than expected.

You'll find more detail on our website at www.nationalgrid.com/uk. Look under Electricity, Balancing services, and then [Trading](#).

2.3.1 Forward trading

We sometimes buy or sell electricity (in advance of the balancing mechanism process), called "forward trading". It helps us balance the system and manage system issues ahead of real-time.

The total cost of forward trading in April was £3.96 million.

The absolute volume of forward trade for April: 142,684 MWh

Figure 3: Forward trading cost, in pounds sterling (£m)

Month	Cost (£m)
Apr 18	3.96
May 18	3.58
Jun 18	3.58
Jul 18	3.58
Aug 18	3.58
Sep 18	3.58
Oct 18	3.58
Nov 18	3.58
Dec 18	3.58
Jan 19	3.58
Feb 19	3.58
Mar 19	3.58

BSUoS developments

Default tariff cap legislation – methodology for calculating cap

Ofgem consultation closed on the 25th June. Statutory consultation will likely be in August 2018

CMP250 – proposal to fix BSUoS

With Ofgem for decision

CMP281 – changes to charging of storage, removes import BSUoS charges from storage only.

At workgroup stage

CMP292 – proposed cut off date for changes to the charging methodologies

Awaiting first workgroup

CMP296 - Aligning the CUSC to the BSC post-P344 (Project TERRE) to exempt virtual lead parties from BSUoS

Going to Ofgem in July

CMP299 - new SO incentive scheme, 7 incentive principles

Going to Ofgem in July