nationalgridESO

ESO Forward Plan 2019-21

Monthly Reporting - January

21 February 2020

Foreword

Welcome to our monthly performance report for January 2020. Each month we report on a subset of metrics, which have data available at monthly granularity. Our third quarterly report was published[1] in January, and gave a fuller picture of our performance so far for the 2019-20 reporting year including an update on our progress against the deliverables set out in our current Forward Plan[2].

We now report our progress against our deliverables on the Forward Plan tracker[3] which is updated monthly on our website.

A summary of our monthly metrics covering January is shown in Table 1 below.

Contents

Metric	Performance	Status
Balancing cost management	£141.2m outturn against £90.7m benchmark	●
Energy forecasting accuracy	Demand forecast error target not met; wind forecast error target not met.	●
Month-ahead BSUoS forecast	22% forecasting error	●
System access management	2.40/1000 cancellations	●
Connections agreement management	100%	●
Right first time connection offers	91%	●

● **Exceeding expectations**
● **Meeting expectations**
● **Below expectations**

Table 1: Summary of monthly metrics

You can find out about our vision, plans, deliverables and full metric suite in the Forward Plan pages of our website[4].We welcome feedback on our performance reporting to box.soincentives.electricity@nationalgrideso.com .

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ESO Regulation Senior Manager

[1] https://www.nationalgrideso.com/document/161531/download
[2] https://www.nationalgrideso.com/document/140736/download
[3] https://www.nationalgrideso.com/document/162046/download
[4] https://www.nationalgrideso.com/about-us/business-plans/forward-plans-2021

Role 1 Managing system balance and operability

Operate the system safely and securely, whilst driving overall efficiency and transparency in balancing strategies across time horizons

Support market participants to make informed decisions by providing user friendly, comprehensive and accurate information

Metric 1 – Balancing cost management

January 2020 Performance

For monthly breakdown of costs, please refer to our balancing costs webpages[5].

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Benchmark cost (£m)	83.2	97.5	75.3	85.6	87.4	96.6	103.3	98.4	91	82.6	81.9	81.1	1063.9
Additional cost forecast due to WHVDC fault (£m)	11.3	11.3	1	0	0.5	1	0	1.5	0	8.1	2.6	0	37.3
Benchmark adjusted for WHVDC (£m)	94.5	108.7	76.3	85.6	87.9	97.6	103.3	99.9	91	90.7	84.5	81.1	1101
Outturn cost (£m)	80.1	60.7	85.5	67.2	105.0	107.3	129.7	84.4	127.3	141.2			988 [YTD]

Table 2: Monthly balancing cost benchmark and outturn.

Note that we are including an adjusted benchmark figure due to restrictions on Western HVDC link availability during April, May, June, August, September and November as these events were outside of our control.

To apply seasonality to the monthly benchmark figures, we have apportioned the calculated benchmark for the year (£1063.9m) across the 12 months in the same ratio as our year-ahead monthly BSUoS forecast[6]. Note that outturn cost excludes cost associated with Black Start.

[5] https://www.nationalgrideso.com/balancing-data
[6] https://www.nationalgrideso.com/document/141946/download

Supporting information

The total balancing cost outturned at £141.2m with an increase from the previous month of over £14m.

Energy costs (including energy imbalance) for January 2020 out-turned at around £49m showing a decrease from the previous month costs of nearly £5m. However, the total cost for system actions (constraints) in January 2020 was around £92m which is an increase from the previous month of nearly £19m.

The Western Link became unavailable from Friday 10 January due to a fault and returned to service in the first week of February). This made it challenging to operate the system on days with high wind levels, exacerbating the power flow restriction in place particularly on the Scotland-England boundary, and requiring a very large volume of BM actions to buy off wind generation in order to solve the constraints.

Monday 13th, Tuesday 14th and Wednesday 15th were days characterized by sustained high wind levels across the country, with wind generation in excess of 10GW, with a daily spend for constraints actions peaking at around £5.8m, £6m and £8m respectively. A similar scenario occurred over the last two days of the month with daily costs for system actions peaking at nearly £6m on both Thursday 30th and Friday 31st.

The RoCoF spend for January 2020 outturned at around £18m showing a decrease from the previous month of around £3m.

Voltage costs in January 2020 out-turned at around £1.5m to deliver around 200GWh of voltage support capabilities, showing a decrease in cost from December 2019 as well decrease in volumes of over 90GWh.

Metric 3 – Energy forecasting accuracy

January 2020 Demand Forecasting Performance

Figure 1: Demand Forecasting Performance, shows our performance for November as the green histogram against the blue target line.

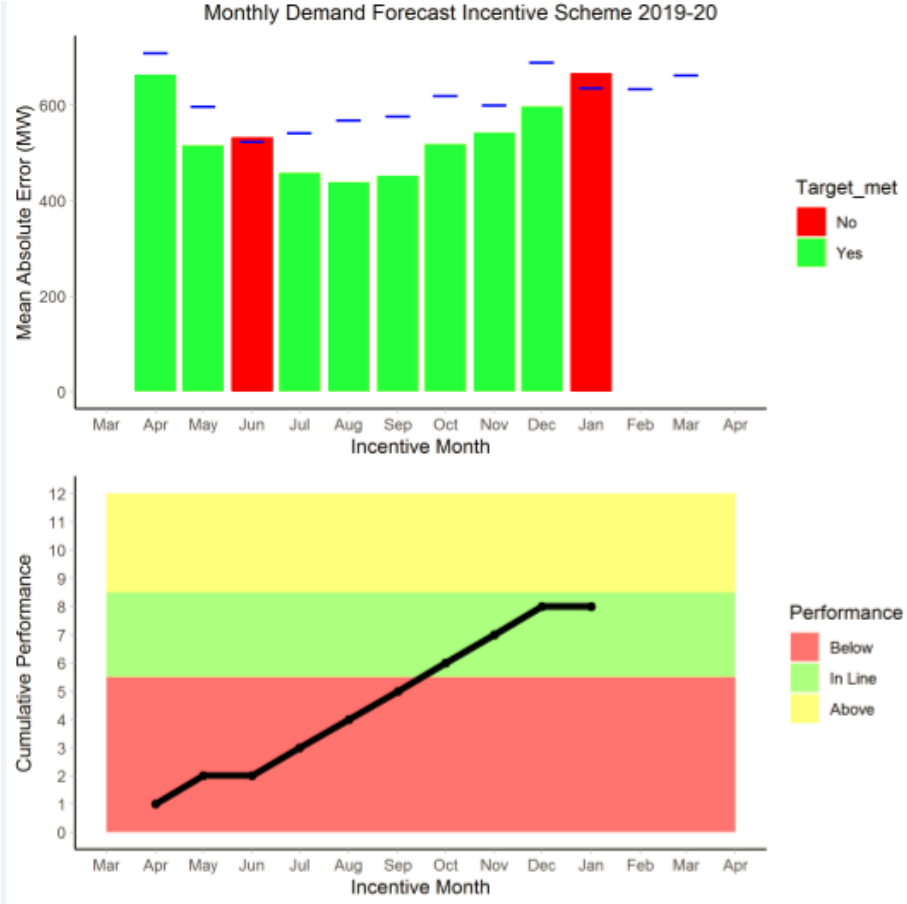


Figure 1: Demand Forecasting Performance

Supporting information

In January 2020, our day ahead demand forecast error was just higher than the target of 637MW. January MMAE (monthly mean absolute error) was 667MW. This was only the 2nd month in this financial year (2019-20) for which the target has not been met.

January 2020 was one of the mildest January's on record, but with a significant cold spell in the latter part of the month.

The first week of the month saw relatively large errors, corresponding to the end of the holiday period. As per December, the holiday period presents forecasting challenges due to the differing day-patterns on which the holidays fall, and the corresponding changes in consumer behaviour. We also saw some large over-forecasts during the cold spell from the 20th – 23rd. Much of this was due to difficulties in identifying underlying day to day trends in the data. However, this latter week also saw significant Triad avoidance activity, and highlights the challenge in modelling this phenomenon.

Performance benchmarks

At the end of the year, we will count how many months we have met our targets and apply the benchmarks:

- Below benchmark: 0-5 months;
- In line with benchmark: 6-8 months;
- Exceeds benchmark: 9-12 months.

January 2020 Wind Generation Performance

Figure 2: Wind Forecasting Performance, shows our performance this month as the green histogram, against the blue monthly target.

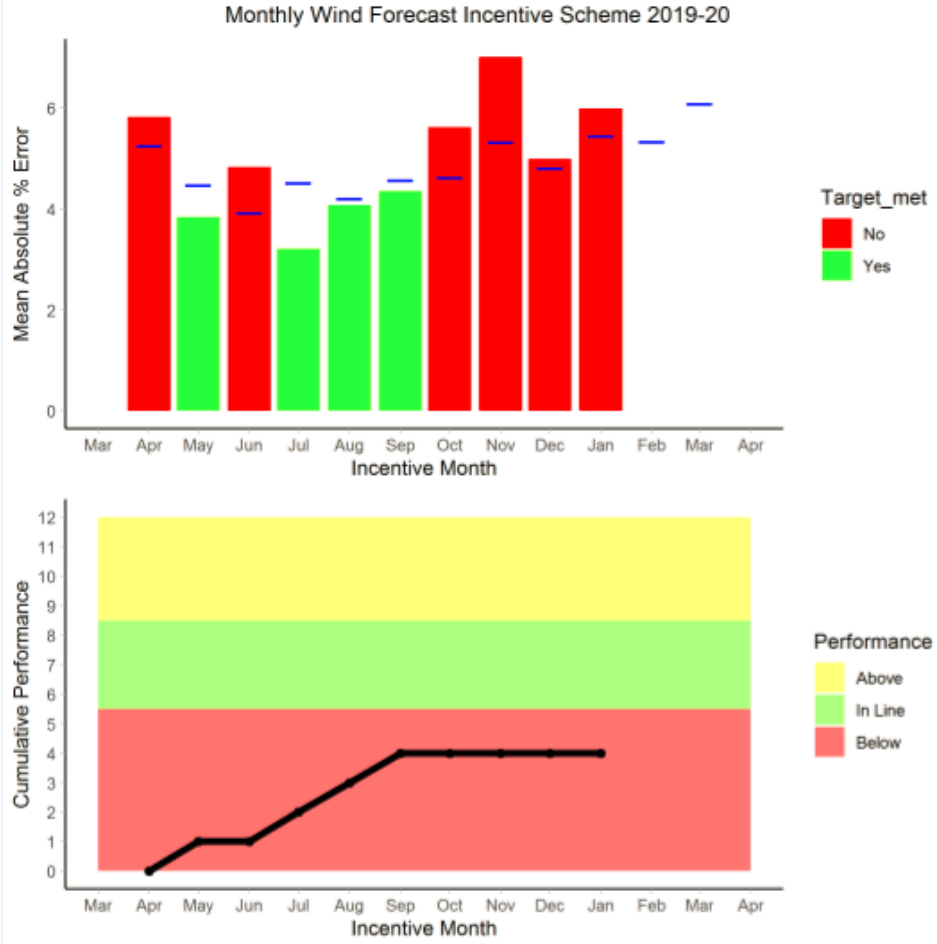


Figure 2: Wind Forecasting Performance

Supporting information

In January 2020, our day ahead wind forecast error was higher than the target of 5.45%. January's MMAPE (mean monthly absolute percentage error) was 5.99%.

There were several occasions of significant wind power forecast error throughout January. These occurred when unusually strong weather fronts and low-pressure atmospheric systems moved across the UK. The errors were caused by the inaccurate forecast of the timing and direction of these weather formations.

Further efforts to improve the wind power forecasts are ongoing. This includes identifying extra locations to receive weather data, which are located near to the larger wind farms to improve wind power forecast accuracy. We are also continuing our efforts to identifying issues with metering data and resolve these issues.

Performance benchmarks

At the end of the year, we will count how many months we have met our targets and apply the benchmarks:

Below benchmark: 0-5 months;

In line with benchmark: 6-8 months;

Exceeds benchmark: 9-12 months.

Role 2
Facilitating Competitive Markets

Ensure the rules and processes for procuring balancing services maximise competition where possible and are simple, fair and transparent

Promote competition in wholesale and capacity markets

Metric 9 – Month ahead forecast vs outturn monthly BSUoS

January 2020 Performance

Month	Actual	Month-ahead Forecast	APE	APE>20%	APE<10%
April-19	2.87	3.02	0.05	0	1
May-19	2.48	3.12	0.26	1	0
June-19	3.39	3.07	0.09	0	1
July-19	2.75	3.23	0.18	0	0
Aug-19	3.97	3.34	0.16	0	0
Sept-19	3.94	3.71	0.06	0	1
Oct-19	3.86	4.02	0.04	0	1
Nov-19	2.49	3.52	0.42	1	0
Dec-19	3.56	3.18	0.11	0	0
Jan-20	3.84	2.98	0.22	1	0

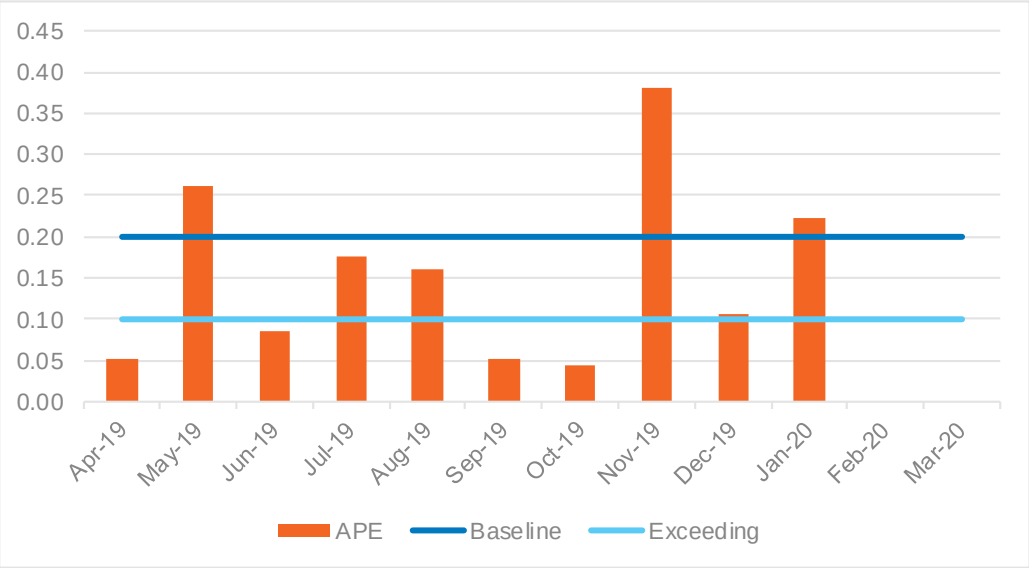
Table 3: Month ahead forecast vs. outturn BSUoS (£/MWh) November 2019 Performance

Performance benchmarks

Exceeds benchmark: Exceeding is meeting baseline performance and five or more forecasts less than 10% APE.

In line with benchmark: Of the 12 forecasts over a financial year, baseline performance is less than five forecasts above 20% APE.

Below benchmark: five or more forecasts above 20% APE.



Supporting information

BSUoS was higher than forecast for January, with high winds driving constraint costs. The Western Link HVDC unexpectedly tripped on 10 January and didn't return until the 8 February. The loss of this cable coupled with the high winds meant expensive actions had to be taken to manage the thermal constraints between Scotland and England, thus driving balancing costs up.

Figure 3: Monthly BSUoS forecasting performance

Notable events this month

Power Responsive Flexibility Forum

The forum was held in central London on 15t January. The day covered policy updates from BEIS and Ofgem, current developments in flexibility markets from the ESO and ENA, and future opportunities from Centrica, ESO and DNOs.

We had around 160 people attend the day and had 45 responses to our feedback survey after the eventIn summary, the event was a success, with an average score across the day of 7.3/10 on “How useful did you find the sessions?”.

Roles 3 & 4
Facilitating whole system outcomes and supporting competition in networks

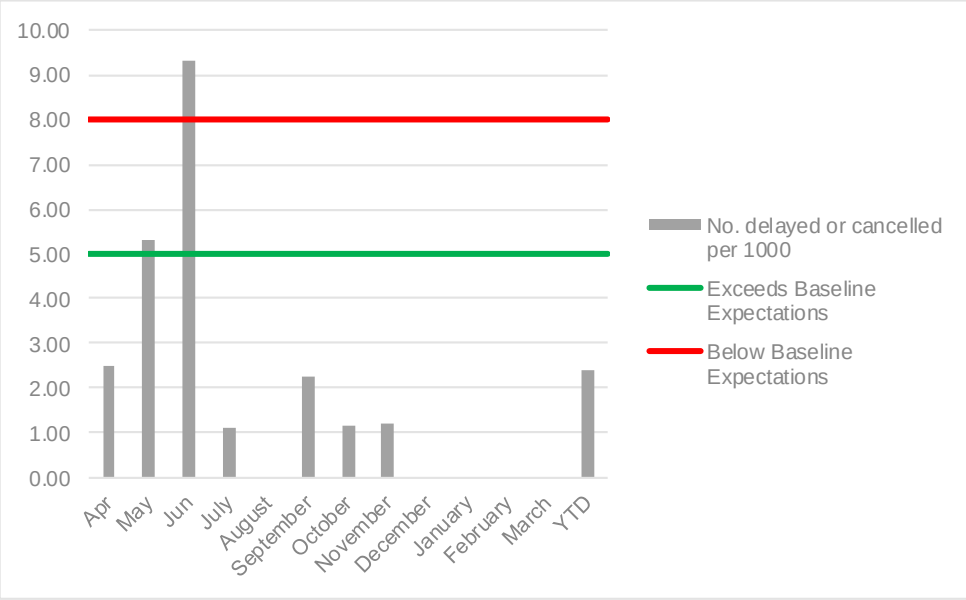
Coordinate across system boundaries to deliver efficient network planning and development

Coordinate effectively to ensure efficient whole system operation and optimal use of resources

Facilitate timely, efficient and competitive network investments

Metric 11 – System access management

January 2020 Performance



	Number of outages	Number of outages delayed/cancelled
Apr	807	2
May	756	4
Jun	753	7
July	891	1
Aug	678	0
Sep	879	2
Oct	874	1
Nov	822	1
Dec	525	0
Jan	513	0
YTD	7498	18

Figure 4: Number of outages delayed by > 1 hour, or cancelled, per 1000 outages

Supporting information

For January, we had an average of 2.40 outage cancellations per 1000 outages, which is classed as 'Exceeding Expectations' .

In order to give some context to our performance, we have included a table to illustrate the exact number of delayed/cancelled outages each month.

We are consistently exceeding the benchmark, as our communication with our customers has improved and the outage plan is being optimised. Outages are effectively planned and therefore we are continuing to deliver greater access to the transmission system for our stakeholders and directly connected customers.

Performance benchmarks

Exceeds benchmark: Less than or equal to 5 per 1,000 outages

In line with benchmark: Between 5 and 8 per 1,000 outages

Below benchmark: More than 8 per 1,000 outages

Metric 13 – Connections agreement management

January 2020 Performance

Number of agreements that need updating	Number of agreements that need updating identified 9 months ago	Number of agreements updated within 9 months	Percentage of agreements updated within 9 months	Status
3	0	3	100%	●

Table 4: Connections agreement management performance

Performance benchmarks

2018-19 performance: = 86%.

Exceeds benchmark: >90% of agreements to be updated within nine months of notification.

In line with benchmark: 80-90% of agreements to be updated within nine months of notification.

Below benchmark: < 80% of agreements to be updated within nine months of notification.

Supporting information

The requirement to update connection agreements arises from a situation where new generation connects, and the ESO needs to amend its arrangements with existing generators connected in that region to ensure that it does not incur unnecessary balancing costs for consumers as a result of restricting generation.

We consider that nine months is a reasonable timeframe for updates of this type to be agreed with customers. So far, we have identified three agreements of this type, signed by the customer in April, July and November respectively. All agreements are within the nine-month timeframe.

We are working to identify where any further changes to connection agreements of this type are required.

Metric 14 – Right first time connection offers

January 2020 Performance

Connections Offers	Results
Year to date number of connections offers	151
Year to date ESO related reoffers	14
Year to date percentage of Right First Time connections offers determined from ESO related reoffers	91%

Table 5: Connections re-offers data

Figure 5: Connections offers monthly performance

Supporting information

In January, we processed 18 offers. There was one ESO related re-offer this month, which was due to an error on the Charging Appendices

There has been an improvement in our performance compared to last month. Our year to date performance is now 91%

Performance benchmarks

2018-19 performance: = 94%.

Exceeds benchmark: >95% of offers right first time.

In line with benchmark: 95% of offers right first time.

Below benchmark: < 95% of offers right first time.

Notable events this month

Network Options Assessment (NOA)

On 31 January we published our NOA for 2019-20. This details the options that transmission owners have provided to meet capability requirements on the GB electricity transmission network. It also shows the options the ESO recommends to the transmission owners to further develop for this investment year and conveys options that meet Ofgem's criteria for onshore competition and Interconnection analysis.

Additional information can be found here: https://www.nationalgrideso.com/publications/network-options-assessment-noa

Network Development Roadmap Update

On 31 January, we published this roadmap alongside the NOA. The update informs stakeholders of progress of our work to enhance our NOA processes by considering a wider range of solutions, from different provider types, to identify the most efficient solutions (as set out in our 2018 Network Development Roadmap). The document sets out progress so far, including how we've responded to stakeholder feedback and other challenges, and our proposed RIIO-2 developments. It also addresses a key piece of stakeholder feedback, which was for greater clarity over when we will communicate network needs and future tenders, by setting out annual cycles.

Additional information can be found here: https://www.nationalgrideso.com/publications/network-options-assessment-noa/network-development-roadmap

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