nationalgridESO

ESO Forward Plan 2019-21

Monthly Reporting - February

20 March 2020

Foreword

Welcome to our monthly performance report for February 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 February is shown in Table 1 below.

Contents

Metric	Performance	Status
Balancing cost management	£145.0m outturn against £84.5m benchmark	●
Energy forecasting accuracy	Demand forecast error worse than the target; wind forecast error better than the target.	●
Month-ahead BSUoS forecast	19.7% forecasting error	●
System access management	2.61/1000 cancellations	●
Connections agreement management	100%	●
Right first time connection offers	92%	●

● **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 .

Louise Schmitz

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

February 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	144.7	145.0		1136.9 [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, November, January and February as these events were outside of our control.

[5] https://www.nationalgrideso.com/balancing-data

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.

Supporting information

The total balancing cost outturned at £145m, significantly above the benchmark cost of £84.5m. This was a result of high winds and was further impacted by the unavailability of the Western Link HVDC.

The total cost for system actions (constraints) in February 2020 was around £100m, which is an increase from the previous month of nearly £6m. The high levels of Scottish Wind, including storms Ciara and Dennis on consecutive weekends meant that large volumes of actions were required to manage the power flow restrictions in place in Scotland and on the England-Scotland boundary due to sustained high wind levels at times of low demand. Later in the month, a combination of planned outages and network faults caused further restrictions on the network and resulted in costs being incurred to manage this. The high levels of wind along with low demand and mild temperatures led to low levels of inertia and consequently high RoCoF costs.

[6] https://www.nationalgrideso.com/document/141946/download

Metric 3 – Energy forecasting accuracy

February 2020 Demand Forecasting Performance

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

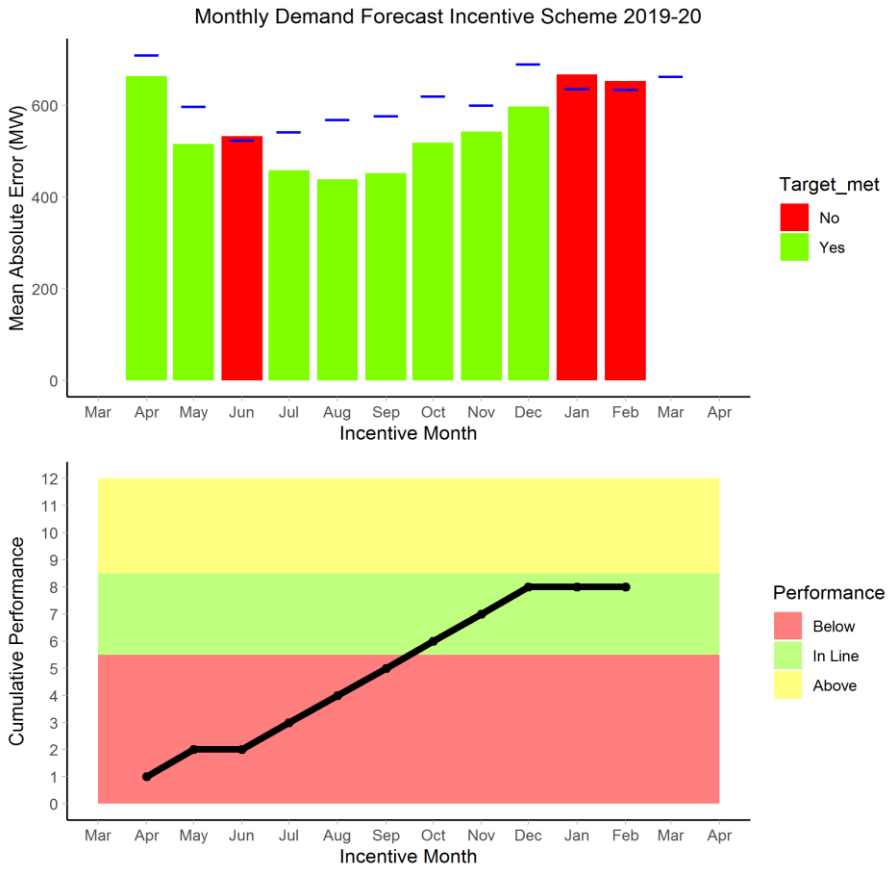

Figure 1: Demand Forecasting Performance

Supporting information

In February 2020, our day ahead demand forecast performance was just worse than the target of 635MW. February's MMAE (monthly mean absolute error) was 653.7MW. This was only the 3rd month in this financial year (2019-20) for which the target hasn't been met.

February 2020 saw 3 storms hit the UK, over the 2nd, 3rd and 4th weekend periods. As well as the storms themselves, resulting flooding and impact in the days following saw underlying demand vary in a more unpredictable manner than is typically observed. Of the 3 storms, the first, storm Ciara, was the most impactful on demand errors.

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.

February 2020 Wind Generation Performance

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

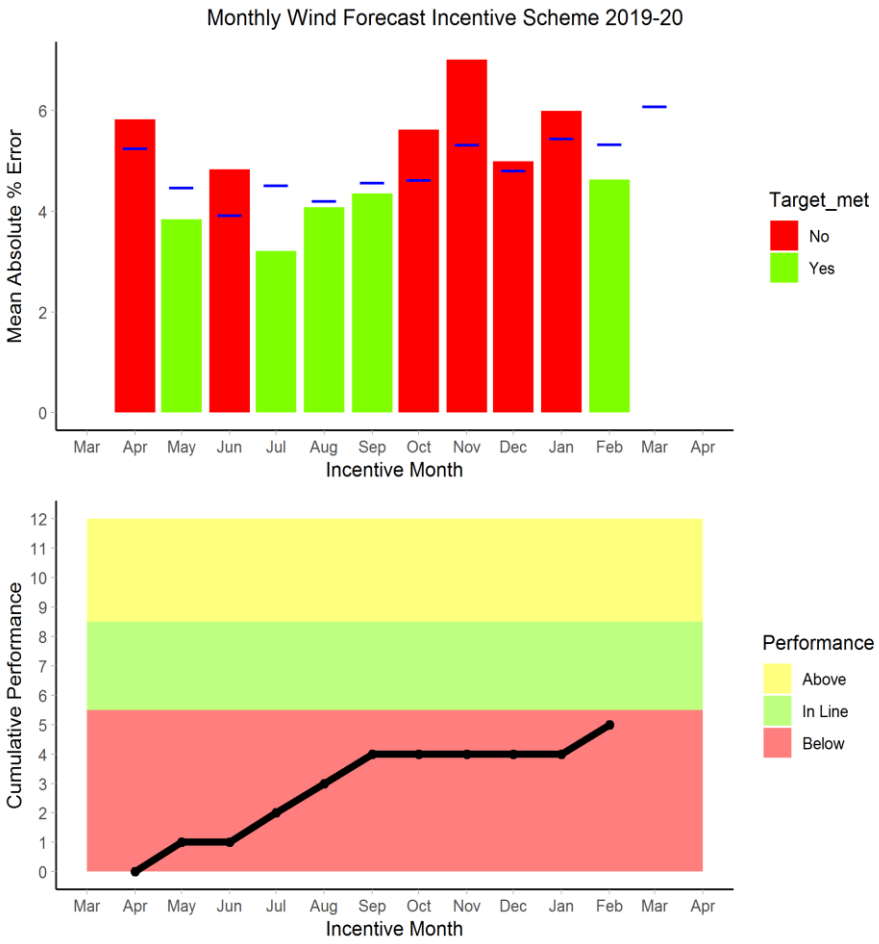

Figure 2: Wind Forecasting Performance

Supporting information

In February 2020, our day ahead wind forecasts were better than the target of 5.33%. February's MMAPE (mean monthly absolute percentage error) was 4.63%.

There were three major storms that passed over the UK in February these were: Ciara (Sunday 9th February), Dennis and Jorge (Saturday 29th February)

Firstly, we received ample warning and accurate forecasts from our weather provider with regard to Storm Ciara. Monitoring this closely as it approached, arrived and departed was a key part of our strategy. Many of the newer wind farms have not experienced wind speeds greater than 20m/s and so Storm Ciara gave us an opportunity to learn more precisely the effect that higher wind speeds would have.

Secondly, during wind speeds between 16m/s and 23m/s the power curve for wind turbines flattens off. This means that an error in forecast wind speed between 16 m/s to 23 m/s results in a reduced wind power forecast error. Hence in this elevated wind speed range it is less difficult to achieve accurate wind power forecasting. During more normal wind speeds a small error in the wind speed forecast is amplified by the behaviour of the wind turbine and can result in a larger wind power forecast error.

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

February 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	3.99	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	2.55	3.52	0.38	1	0
Dec-19	3.57	3.18	0.11	0	0
Jan-20	3.86	2.98	0.23	1	0

Feb-20	4.27	3.43	0.20[7]	0	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.

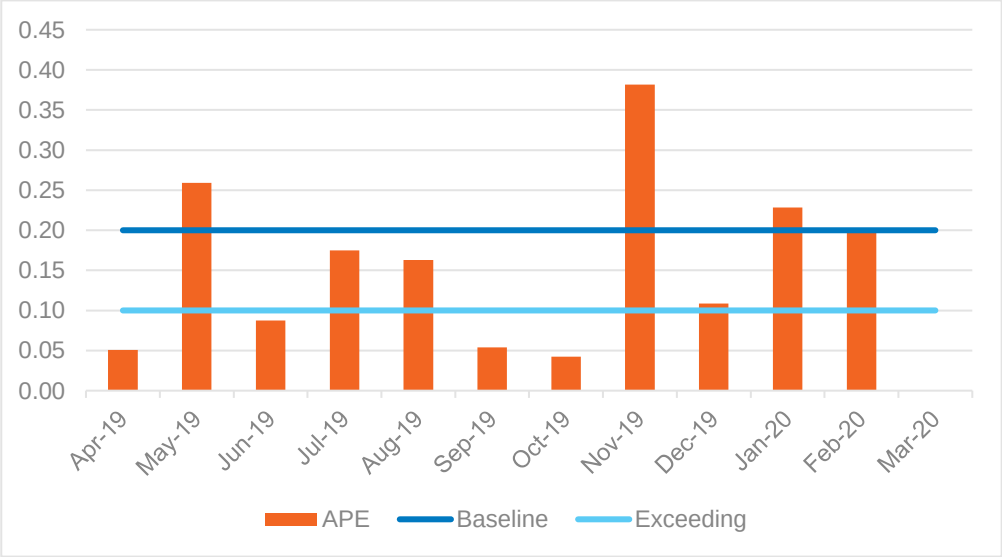

Figure 3: Monthly BSUoS forecasting performance

Supporting information

Balancing costs and therefore BSUoS levels were high in February driven by high levels of wind generation and extreme weather conditions. The Western Link HVDC was unavailable for the early part of the month, however this was foreseen at the time of producing the monthly BSUoS forecast. There were several planned outages in February, but the expected constraints were intensified by network faults leading to very high constraint costs.

[7] The accurate number is 0.197.

Notable events this month

Dynamic Containment Webinar

On 20 February, we hosted a webinar for Dynamic Containment to introduce the product and engage with the market. Dynamic Containment is designed to operate post-fault, i.e. for deployment after a significant frequency deviation in order to meet our most immediate need for faster-acting frequency response.

There were 163 providers in attendance at the webinar. We presented an information pack explaining our operability requirements and our proposal for the product. We took lessons learnt from the audio issues during the Q&A section and will improve our customer experience in the next event. We received the following comments in the feedback survey:

“Attended the webinar and found it fairly useful.”

“I appreciate you had audio issues, but the main presentation came across fine and was interesting – thanks.”

“We very much appreciate NGESO’s participation and engagement with industry.”

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

February 2020 Performance

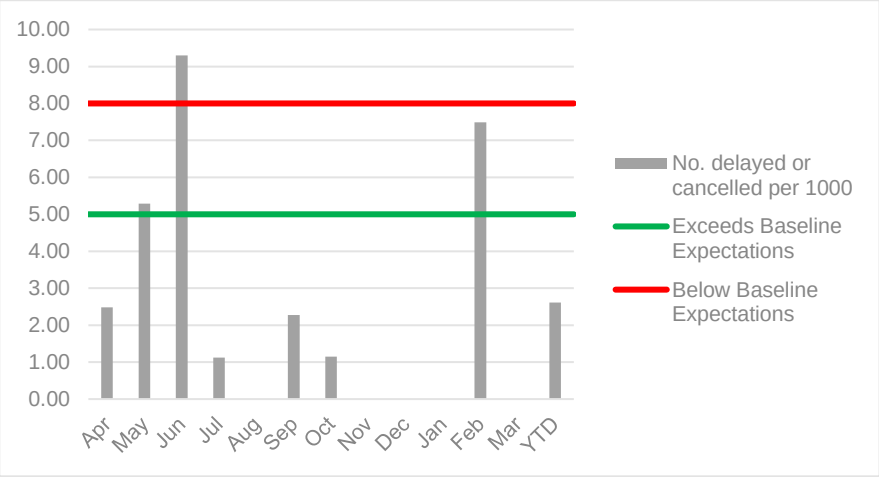

Figure 4: Number of outages delayed by > 1 hour, or cancelled, per 1000 outages

	Number of outages	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	0[8]
Dec	525	0
Jan	513	0
Feb	534	4
YTD	8032	21

[8] Note: this number was corrected on 03 March 2020.

Supporting information

In February, we had an average of 2.61 outage cancellations per 1000 outages, which is classed as ‘Exceeding Expectations’. There were two outages which were not released due to concerns over the constraint which was going to be created at the time of the outage. They have now been successfully released. The other two outages were delayed due to a substation reconfiguration that required modifying when the outage was requested by the TO. They were released with a minor delay.

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

Metric 13 – Connections agreement management

February 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

February 2020 Performance

Connections Offers	Results
Year to date number of connections offers	185
Year to date ESO related reoffers	14
Year to date percentage of Right First Time connections offers determined from ESO related reoffers	92%

Table 5: Connections re-offers data

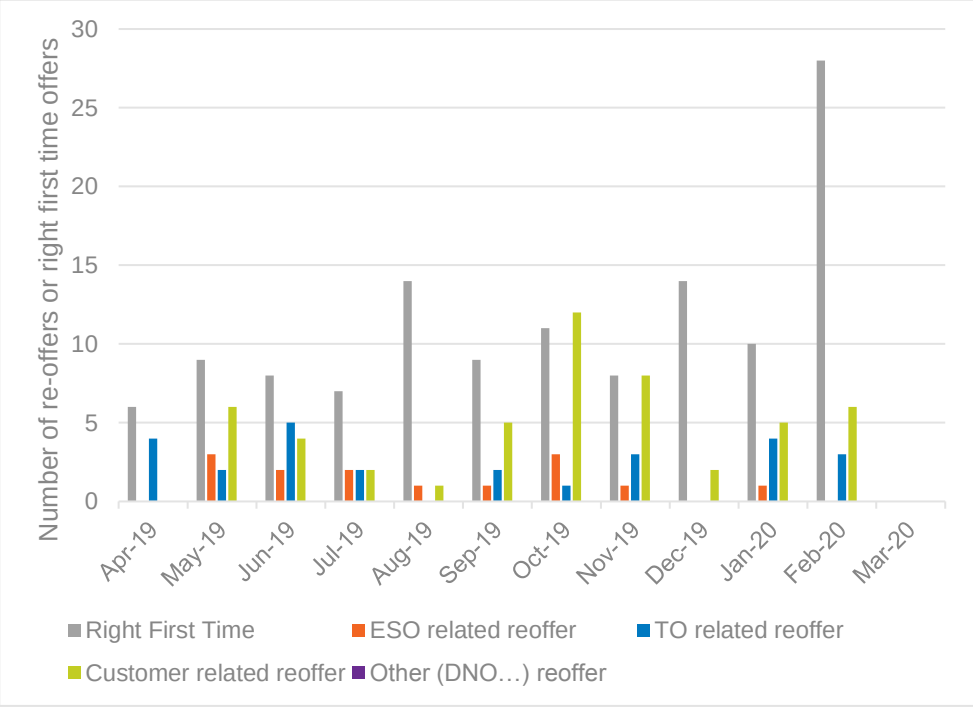

Figure 5: Connections offers monthly performance

Supporting information

In February, we processed 34 offers. There were no ESO related re-offers this month.

There has been an improvement in our performance compared to last month. Our year to date performance is now 92%.

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

Early Network Competition

In February we published our Phase 1 Update to Ofgem for Early Network Competition. Early Competition is where a need has been identified on the Transmission Network and at the design stage, competition can be introduced. By introducing competition at this early stage, we can help to drive consumer benefit through innovative solutions. Two models have been identified, Design Only (DO) and Design Build and Own (DBO), DO will be taken forward by the Innovation Team and the Early Competition Team will look at DBO. Over the next 12 months the Early Competition Team, consisting of ESO and KPMG employees, will work alongside stakeholders to collaboratively develop implementation plans for an end to end process. Co-creation with stakeholders will ensure barriers to entry are minimised and a level playing field created.

The Phase 1 update sets out the development of models to date and how we plan to deliver the Early Competition Plan.

We set up a webinar for the phase 1 update held in early March. This also set out how we plan to engage stakeholders in the development of the Early Competition Plan. The presentation can be accessed here: https://uknationalgrid.webex.com/recordingservice/sites/uknationalgrid/recording/play/ed654bca5001438d94b8396a1d6457bf

More information can be found here: https://www.nationalgrideso.com/publications/network-options-assessment-noa/network-development-roadmap or by contacting: .Box.earlycompetition@nationalgrideso.com.

ETYS and NOA Review Session

On 4 February we held a review session with all three Transmission Owners. This session is held annually following the publications of ETYS and NOA. It allows us to collect group feedback post-process that provides a better understanding of what worked well and identify where improvements can be made.

We gathered a significant amount of data from this session. Some positive highlights include feedback on our newly designed NOA report with comments such as “the report is more visual” and “good use of interactivity”. We also received constructive feedback on our data handover process through our System Requirement Forms. We intend to improve this by utilising Office 365 applications such as SharePoint, which will open a more collaborative approach. Our improvements will also increase the robustness of the process, validating the data as it is submitted.

Over the coming months, we will continue to work closely with our stakeholders to understand their needs and make any further improvements to the NOA and ETYS cycles.

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