

ESO Forward Plan 2019-20

Monthly Reporting - August

20 September 2019



Foreword

Welcome to our monthly performance report for August 2019. Each month we report on a subset of metrics, which have data available at monthly granularity. Our first quarterly report of this year was [published](#)¹ in July, and detailed our performance against our wider metric suite together with an update on our progress against the deliverables set out in our current [Forward Plan](#)².

We have carried out an extensive review of the performance of our system throughout the incident on Friday 9 August; this was consistent with our expectations. Details of the event, impacts to consumers, and communications during and after the event are reviewed in detail in the ESO Final Technical Report to Ofgem^[1], which was submitted on 6th September 2019. We do not cover the event in further detail within this report, except where it has impacted on our monthly metrics.

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

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Metric	Performance	Status
Balancing cost management	£105.3m outturn against £87.4m benchmark	●
Energy forecasting accuracy	Demand forecast error met target; Wind forecast error met target.	●
Month-ahead BSUoS forecast	16% forecasting error	●
System access management	0/1000 cancellations	●
Connections agreement management	100%	●
Right first time connection offers	88%	●

●	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 website³. We welcome feedback on our performance reporting to box.soincentives.electricity@nationalgrideso.com.



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1 <https://www.nationalgrideso.com/document/148691/download>

2 <https://www.nationalgrideso.com/document/140736/download>

[1] <https://www.nationalgrideso.com/document/152346/download>

3 <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

August 2019 Performance

For monthly breakdown of costs, please refer to our [balancing costs webpages](#)⁴.

	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	91.0	82.6	81.9	81.1	1064
Additional cost forecast due to WHVDC fault (£m)	11.3	11.3	1	0	0.5	1	0	0	0	0	0	0	22.5
Benchmark adjusted for WHVDC (£m)	94.5	108.7	76.3	85.6	87.9	97.6	103.3	98.4	91.0	82.6	81.9	81.1	1089
Outturn cost (£m)	78.7	60.5	85.3	65.5	105.3								289.4 [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 and September 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 (£1064m) across the 12 months in the same ratio as our [year-ahead monthly BSUoS forecast](#)⁵.

⁴ <https://www.nationalgrideso.com/balancing-data>

⁵ <https://www.nationalgrideso.com/document/141946/download>

Supporting information

August was an expensive month with some very high wind and very low demand days resulting in a challenging month. Energy and Constraint costs were significantly more in August than July and were the highest so far in FY19/20. The high levels of wind and solar combined with low summer demands meant a large number of actions were required to deal with RoCoF, voltage levels and thermal constraints. There were also a number of transmission system outages planned and unplanned that required additional balancing actions to manage. The Western Link tripped on 30th August and was then constrained until early September leading to balancing costs in excess of £7m for the last 2 days of August.

Details of the Friday 9th August event, impacts to consumers, and communications during and after the event are reviewed in detail in the [ESO Final Technical Report](#) to Ofgem which was submitted on 6th September 2019.

Metric 3 – Energy forecasting accuracy

August 2019 Demand Forecasting Performance

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

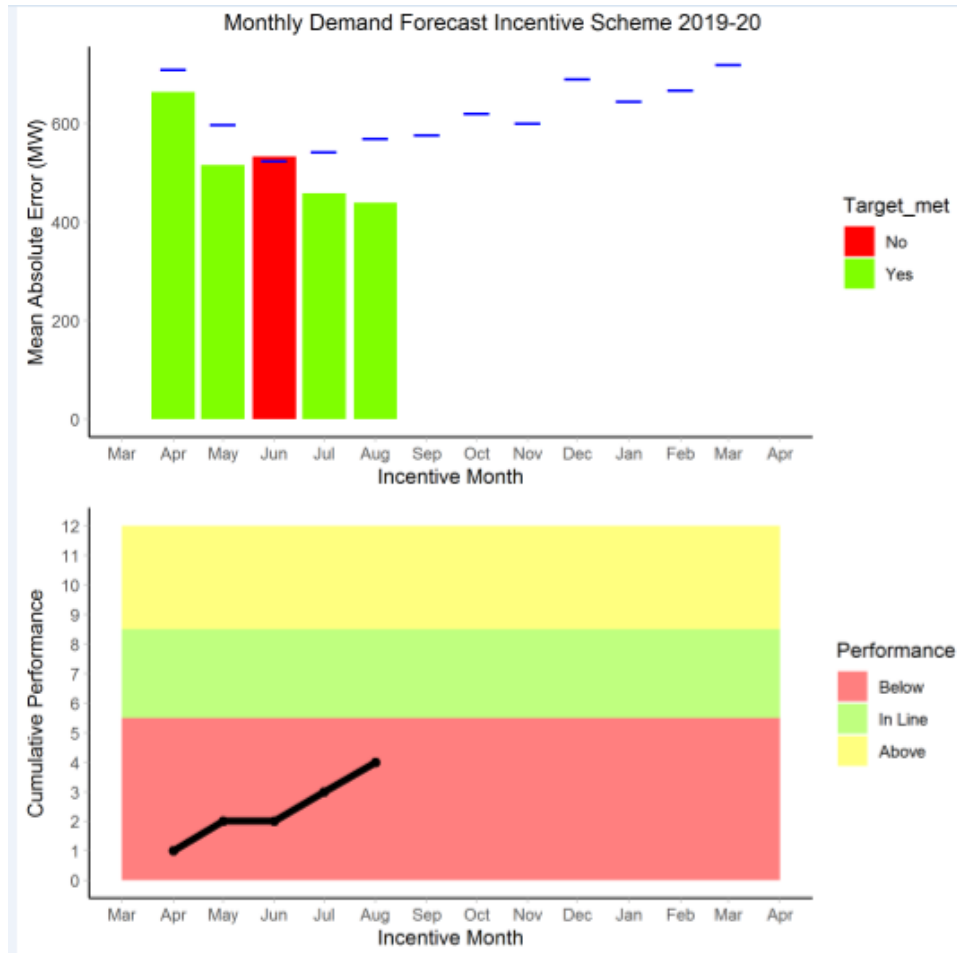


Figure 1: Demand Forecasting Performance

Supporting information

In August 2019, our day ahead demand forecast performance was 439.1 MW MMAE (monthly mean absolute error), beating our target of 569.7 MW MMAE. This was the 4th month for this financial year (2019-20) for which we have performed better than our target, and is the best performance since September 2014.

The forecasting team is continuing to trial the new forecasting tool to further improve accuracy.

August 2019 Wind Generation Performance

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

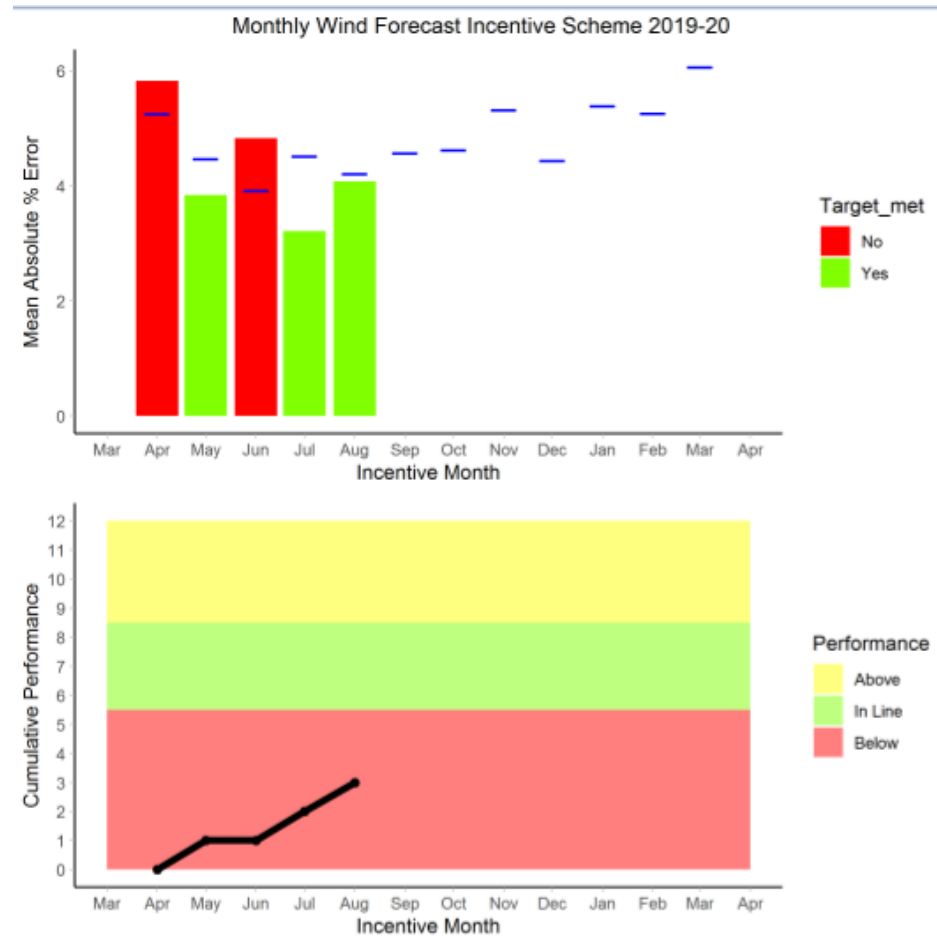


Figure 2: Wind Forecasting Performance

Supporting information

In August 2019, our day ahead wind forecasts were within the target of 4.21%. August's MMAPE (monthly mean absolute percentage error) was 4.08%. The target is the average MMAPE (%) calculated by considering the past three financial years.

August experienced benign weather conditions except for the week beginning Monday 5th August where widespread thunderstorms passed over the UK. Thunderstorms are normally associated with a type of weather where the wind speeds are more difficult to predict accurately.

Work has continued in August to further refine the forecasting models associated with the new large offshore wind farms to make the best use of the new weather data mentioned in last month's report. Forecasting model refinement will continue to be necessary as these wind farms continue through the commissioning process to completion.

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.

Notable achievements and events this month/quarter

Loss of Mains Change Programme

We have worked closely with the distribution licensees to implement the Loss of Mains Change Programme which we recommended to the Authority following the outcome of the DC0079 Working Group. This has involved setting up first of a kind contractual arrangement between parties, a portal to receive applications and a governance structure to ensure appropriate oversight of the project. This programme will allow us to reduce balancing spend and support system resilience.

Improved forecasting accuracy

We implemented the latest multi-model blend forecast from the Met Office; we now have weather forecasts 8 times a day, up from 4 at the beginning of last year and we have added forecasts for additional weather locations to improve forecast accuracy for large new offshore wind farms.

During the trial of National Demand Forecasting tool, we have observed improvement in short term demand forecasting from 6 hrs ahead to 1hr ahead.

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 BSUs

August 2019 Performance

Month	Actual	Month-ahead Forecast	APE	APE>20%	APE<10%
April-19	2.86	3.02	0.05	0	1
May-19	2.47	3.12	0.26	1	0
June-19	3.35	3.07	0.08	0	1
July-19	2.73	3.23	0.18	0	0
Aug-19	3.97	3.34	0.16	0	0

Table 3: Month ahead forecast vs. outturn BSUs (£/MWh) August 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.

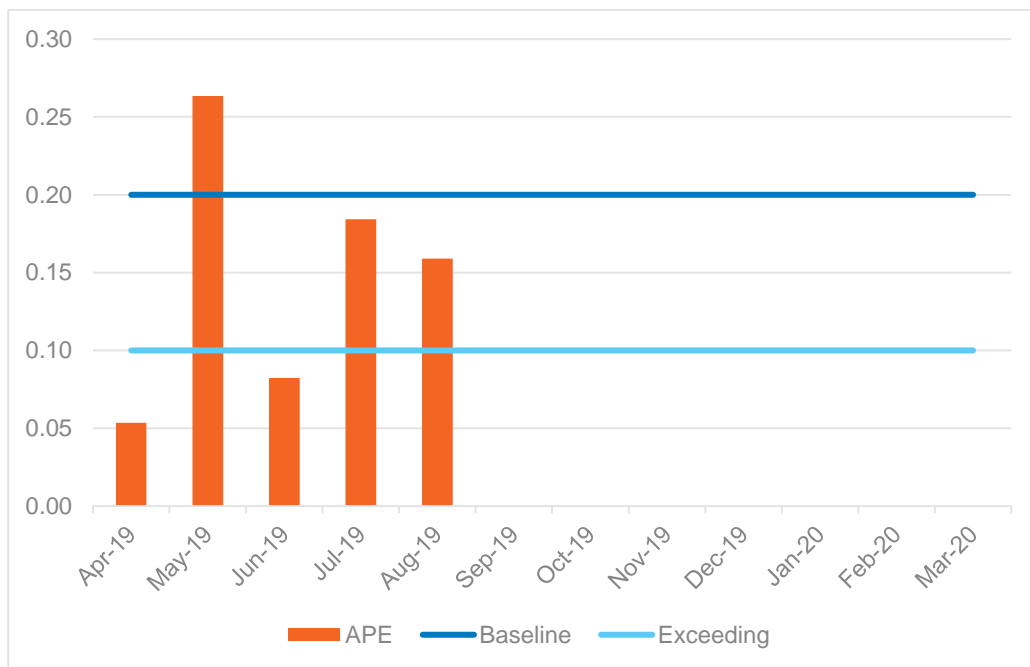


Figure 3: Monthly BSUoS forecasting performance

Supporting information

We were expecting constraint costs to be higher through August due to planned system outages and lower demand, however on some days costs were observed to increase beyond expected levels due to high winds and unplanned outages.

Energy prices on the continent also impacted on interconnector flows, meaning that additional actions had to be taken to manage the interconnectors, which resulted in increased costs.

Notable achievements and events this month

We have now gone live with a “Balancing Mechanism Wider Access” webpage on the 6th August 19 to share our first “BM Wider Access Guidance Document” and updated “BM Registration Guidance”.

This supporting material should help all parties interested in entering the Balancing Mechanism ahead of Wider Access and in their decision-making process ahead of the Virtual Lead Party route that will come into play in December 19.

<https://www.nationalgrideso.com/balancing-services/reserve-services/wider-access>

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

August 2019 Performance

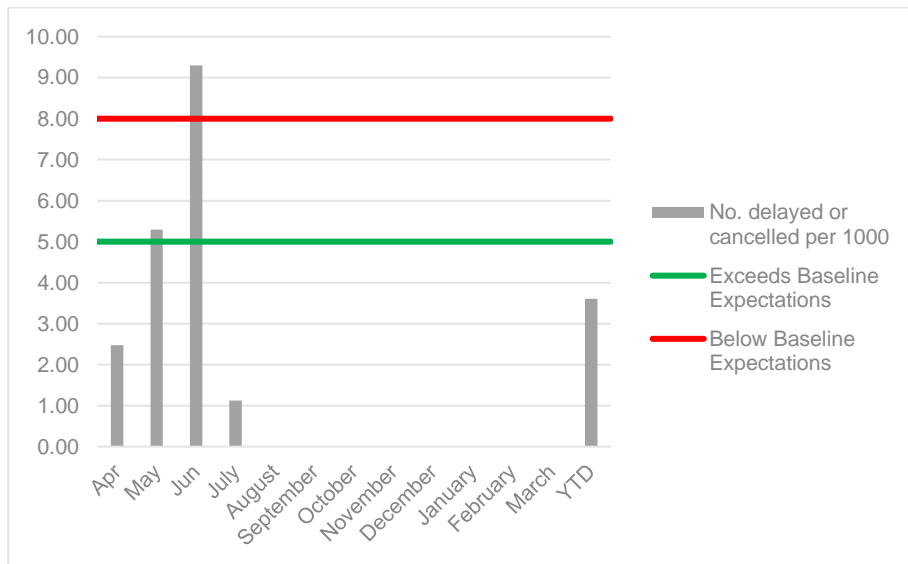


Figure 4: Number of outages delayed by > 1 hour, or cancelled, per 1000 outages

Supporting information

This month we exceeded the benchmark for this metric. We did not have any cancellations or delays over an hour that were caused by issues in the ESO's processes (shown as zero in adjoining chart for August). There were slightly less outages planned than in preceding months and our continued focus on driving down process errors resulted in zero failures.

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

August 2019 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	2	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

We ensure that connection agreements are correct and reflect any changes to the transmission system that benefits consumers by preventing unnecessary constraint costs.

So far 3 agreements have been identified

One was completed in April 2019, within the 9-month timeframe.

The second one was signed by a customer in July, within the 9 month timeframe.

The remaining agreement is currently being updated by the customer.

Further agreements are being checked and will be added should a requirement to change the agreement be identified.

Metric 14 – Right first time connection offers

August 2019 Performance

Connections Offers	Results
Year to date number of connections offers	69
Year to date ESO related reoffers	8
Year to date percentage of Right First Time connections offers determined from ESO related reoffers	88%

Table 5: Connections re-offers data

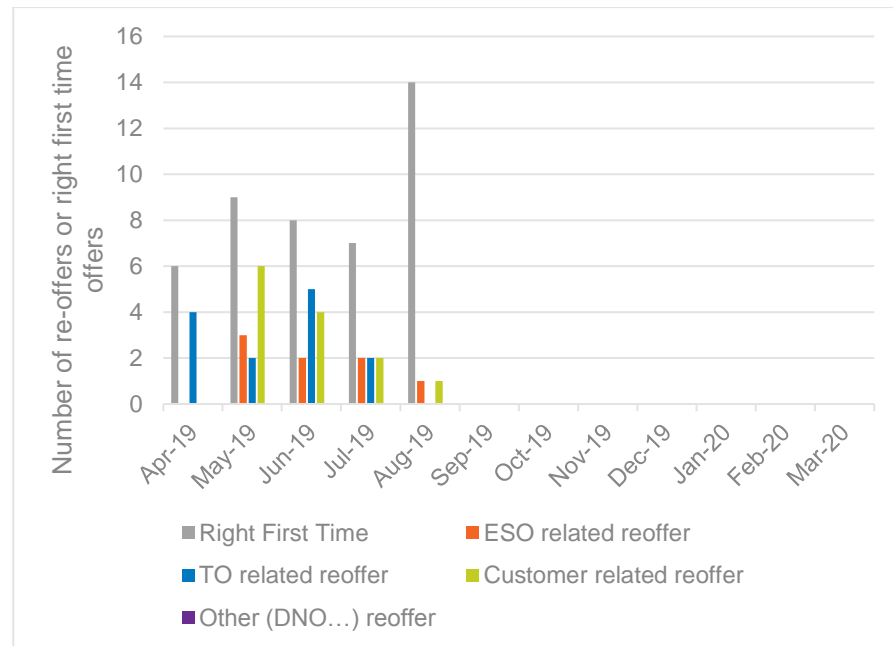


Figure 5: Connections offers monthly performance

Supporting information

In August we processed 16 offers, over double the amount from July. One of these offers was incorrect due to an ESO process issue, in that we included references that weren't required and made some typographical errors. This was re-issued following the contract corrections. Our year to date performance is now 88%

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 achievements and events this month

Stability Pathfinder

Stability is the ability of the system to withstand a network disturbance and continue operating normally. Traditionally there has been a large number of synchronous generators on the system, which has helped to maintain stability. As we move towards more renewable generation on the system, we need to replace some of the helpful properties of synchronous generators.

On 19th July we published a Request for Information pack (RFI) and we have held two webinars in August.

Our first webinar was on the overview of RFI, this was held on the 6th August 19 with around 180 attendees. The second webinar on technical specification was held on the 14th August 19 with over 100 attendees.

We have also answered and published over 100 questions as part of this process. There has been a lot of interest from manufacturers, current and new developers, TOs and existing generators, who have been keen to understand our technical requirements. The feedback has been positive and acknowledges that we have defined technical requirements that could potentially be demonstrated by any technology, and that we are thinking ahead and taking practical steps to accommodate more renewables on the system.

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