

nationalgrid**ESO**

ESO Forward Plan 2019-20

Quarterly Report: April - June

19 July 2019



Foreword

Welcome to our quarterly performance report for April - June 2019.

This first quarterly report of this year details our performance against our wider metric suite together with an update on our progress against the deliverables set out in our current [Forward Plan](#)¹.

We report here on those deliverables which we targeted to progress during Q1.

We are also pleased to report on significant events and achievements such as: automated publication of embedded PV and wind forecasts updated multiple times daily; publication of our Energy Forecasting Strategic Roadmap; delivery of the first phase of the weekly frequency response auction trial; Power Responsive Summer Reception; and NOA stakeholder engagement events.

A summary of our monthly and quarterly metrics is shown in Table 1 below.

Metric	Performance	Status
Balancing cost management	£84.2m outturn against £76.3m benchmark	●
Information Provision Scorecard	All publications and reports within our control published in full and on time	●
Energy forecasting accuracy	Demand forecast error target not met; Wind forecast error target not met.	●
Provider Journey Feedback	2.96/5 score on Tendering survey	●
Reform of Balancing Services Markets	Deliverables to remove barriers to entry on track, and now tracking movement away from bilateral arrangements	●
Code Admin Stakeholder Satisfaction	Average webinar score of 7.4 against baseline of 6.93	●
Charging Futures	Average webinar score of 6.7 against a baseline of 7.3	●
Month-ahead BSUoS forecast	7% forecasting error	●
Whole system- unlocking cross boundary solutions	49MW of DER accepted in Q1	●
System access management	9.3/1000 cancellations in June; 5.61/1000 YTD	●
Customer Value Opportunities	2067GWh of direct savings and 87GWh of indirect savings delivered in Q1	●

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¹ <https://www.nationalgrideso.com/document/140736/download>

Metric	Performance	Status
Connections agreement management	100% of agreements updated within 9 months	●
Right first time connection offers	88% YTD of Right First Time connections offers determined from ESO related reoffers, against benchmark of 95%	●
NOA Enhancing Communication	Hosted well over 100 attendees across 5 engagement events, gaining positive qualitative feedback giving us areas to focus improvement on.	●

- **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 website².

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



Louise Schmitz
ESO Regulation Senior Manager

² <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

June 2019 Performance

For monthly breakdown of costs, please refer to our [balancing costs webpages](#)³.

	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	11.2	1	0	0	0	0	0	0	0	0	0	23.5 ⁴
Benchmark adjusted for WHVDC (£m)	94.5	108.7	76.3	85.6	87.4	96.6	103.3	98.4	91.0	82.6	81.9	81.1	1087.5
Outturn cost (£m)	78.3	59.8	84.2										222.3 [YTD]

Table 2: Monthly balancing cost benchmark and outturn.

³ <https://www.nationalgrideso.com/balancing-data>

⁴ The number has been corrected on 11 Dec 2019.

Note that we are including an adjusted benchmark figure due to the unplanned unavailability of the Western HVDC link during April, May and June.

Supporting information

Energy costs (including energy imbalance) for June 2019 out-turned at around £38.5m with little variance from the previous month with an average daily spend of £1.3m. All the energy category costs showed little variance from the previous month.

The total constraint cost for June 2019 was around £46m which is an increase from the previous month of £22m. £14m was spent in England and Wales, £0.1m for Cheviot, £1m for Scotland, £9m for Sterilised Headroom, around £20m on ROCOF, and over £1m on Ancillary Services costs.

The Western Link was unavailable until 3rd June, which impacted constraint costs on Sunday 2nd and Monday 3rd when sustained high wind resulted in a large volume of wind generation being constrained via BM actions. As a result, the daily spend for this category peaked at over £7m per day on both days.

RoCoF spend also contributed to the higher cost in June. The RoCoF spend for June 2019 doubled over the previous month spend, outturning at around £20m. High cost days for this category were recorded on Saturday 1st, Sunday 9th, and Sunday 16th, with values of around £1.7m, £1.5m and £1.7m respectively. The higher costs in June 2019 were due to the increase in wind and solar generation along with interconnector flows which displaced synchronous generation.

Metric 2 – Information Provision Scorecard

Q1 2019 Performance

This metric demonstrates our performance in publishing a large range of information in full and on-time.

Information Provision	Frequency	Deadline and target	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Overall status
MBSS	Monthly	Each monthly report published by the end of the following month	●	●	●										●
Daily Cost Summaries	Daily	85% of reports produced within 2 working days	●	●	●										●

Trades	Daily	97% of trades published within 1 hour	●	●	●	●
BSUoS Reports	Monthly	Monthly BSUoS report published by the 10th working day	●	●	●	●
Market Information Reports	Monthly	FFR Monthly report published on time (as per schedule) and right first time 100% of the time	●	●	●	●
Market Information Reports	Monthly	FR Monthly report published on time (as per schedule) and right first time 100% of the time	●	●	●	●
Market Information Reports	3x/year	STOR market report published on time (as per schedule) and right first time 100% of the time	N/A	N/A	N/A	N/A
Daily BSUoS Forecast	Daily	100% of forecasts published by 08:00 at day ahead stage for Tues-Sat and 17:00 on Fri for Sun & Mon	●	●	●	●
Demand Forecasts	Daily	100% of forecasts published on time. Forecasts published every day no later than 9:15am	●	●	●	●

Wind forecasts	Daily	100% of forecasts published on time. Forecasts published every day no later than 9:15am	● ● ● ●
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Table 3: Information Provision Scorecard

For full details of this quarterly metric, see page 24 of our [Forward Plan](#).

Supporting information

This quarter we published the information which is important to our customers and stakeholders on time and in full, apart from a few instances detailed below, where the point of failure was outside our control.

The Trading team experienced a problem in April where there was a failure to publish a number of trades. We have investigated the reason for this and found it to be an IT issue. This was not an issue that could have been foreseen by us. We have put a new process in place where the trade updates are checked weekly (it used to be monthly) and all team members can run the check. This should help us to identify and resolve any issues earlier.

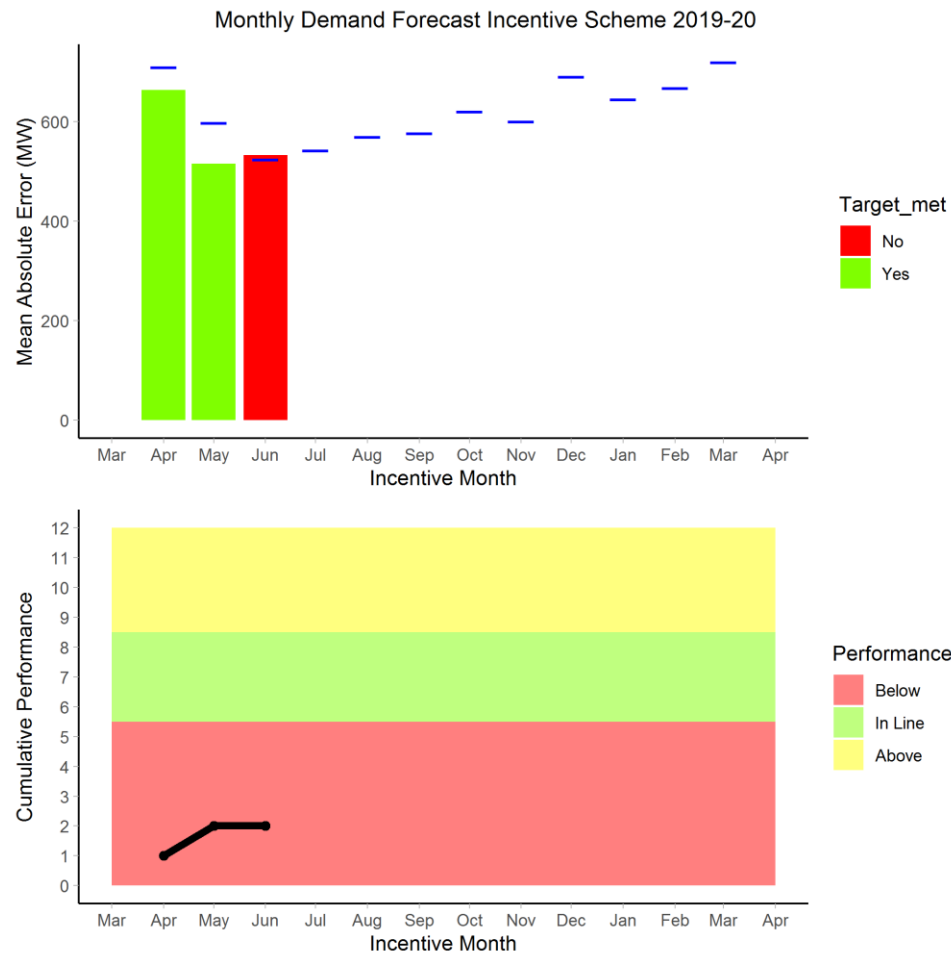
The Performance Review team also experienced some problems in April hindering the production of the Daily Cost Summaries and the Monthly MBSS report. These were both due to unforeseen IT issues. The processes have both been improved to create greater resilience and additional training of staff along with a re-focus of resource to ensure deadlines are met.

We have discounted these occurrences from the metric performance calculation, as they were outside of our direct process control and therefore not process failures.

Metric 3 – Energy forecasting accuracy

June 2019 Demand Forecasting Performance

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



Supporting information

For both day-ahead metrics (demand and wind forecasting performance) the predefined targets for June were the lowest in the set of monthly targets for the 2019/20 scheme. That would indicate that the years on which the targets were based benefited from steady seasonal conditions.

In June 2019, our day ahead demand forecast performance was above the target of 524 MW. June's MMAE (monthly mean average error) was 533MW.

The main reason for this was the very unsettled weather affecting the UK in the first and middle part of the month. Monthly rainfall was 152% of the average. Consequently, very cloudy, highly changeable weather conditions lead to difficulties in forecasting the solar generation component of the demand forecast.

Figure 1: Demand Forecasting Performance

June 2019 Wind Generation Forecasting Performance

Figure 2: Wind Forecasting Performance, shows our performance for June as the red histogram, against the blue monthly target.

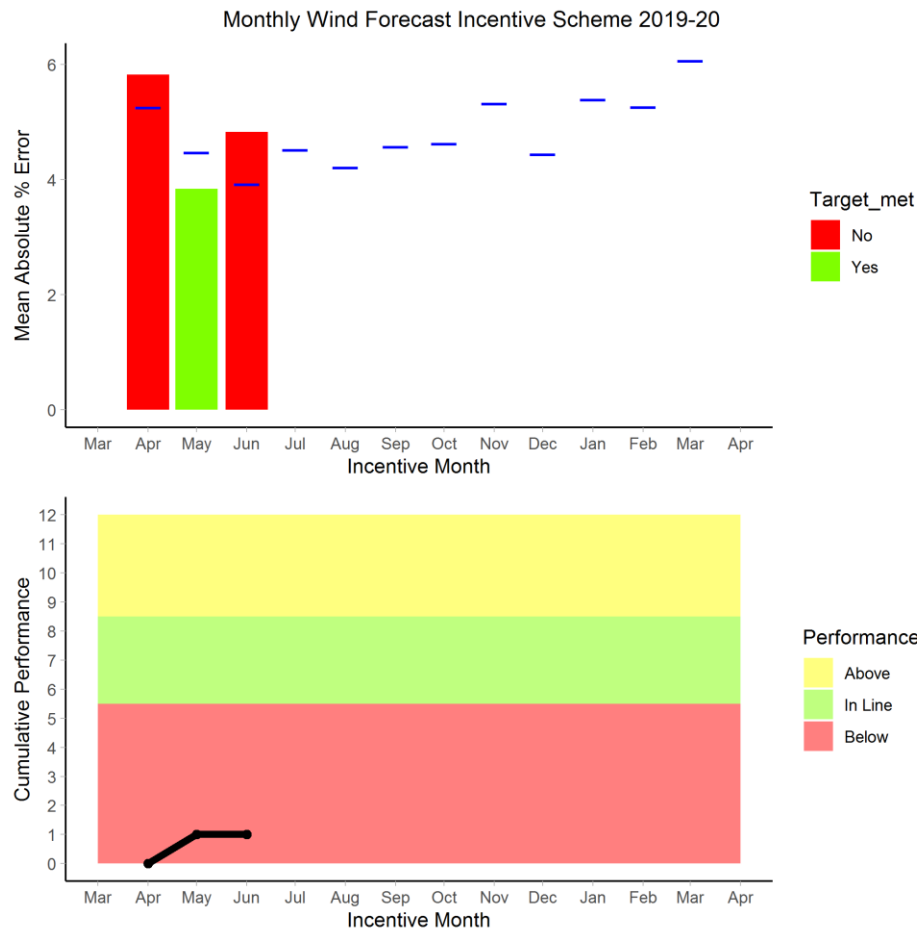


Figure 2: Wind Forecasting Performance

Supporting information

In June 2019, our day ahead wind forecasts were above the target of 3.92%. June's MMAPE (monthly mean absolute percentage error) was 4.83%.

There were a number of unseasonal storms across the UK during the month of June. This made forecasting wind output particularly challenging due to extreme weather conditions: there were wind power cut-out and preventative shutdowns that were challenging to forecast because of the geographical granularity limitations of the meteorological forecasts.

We believe that some wind generators may be actively managing their output using on-site storage to maximise revenue. Such activity cannot be forecast using a meteorologically driven wind forecast model. We will continue to review the data to see if we can gather evidence to support this hypothesis.

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.

Deliverables

Deliverable	Target delivery date	Actual delivery date	Role			Status
			1	2	3&4	
Uninterrupted, safe, secure system operation						
System security metrics	Q1 – Q4 2019-20		<input checked="" type="checkbox"/>	✓	✓	In progress
Transparency of data used by our ENCC in our close-to-real-time decision making						
Future of the ENCC	Ongoing		<input checked="" type="checkbox"/>	✓	✓	In progress
Electricity Operational Forum and stakeholder engagement						
ENCC visit days	Q1-Q4 2019-20 and 2020-21.		<input checked="" type="checkbox"/>	✓	✓	Completed - 10 April, 14 May, 11 June, 9 July Planned – 13 August, 10 September, 8 October, 12 November, 10 December
Interconnector programmes	Ongoing		<input checked="" type="checkbox"/>	✓	✓	In progress
Insights documents						
<i>Summer Outlook</i>	Q1 2019-20 & 2020-21		<input checked="" type="checkbox"/>	✓	✓	Published on 30 March https://www.nationalgrideso.com/document/140411/download
<i>Operability Strategy Report</i>	Q1 and Q3 2019-20 & 2020-21		<input checked="" type="checkbox"/>	✓	✓	Update document Published on 28 June https://www.nationalgrideso.com/document/146506/download
Forecasting						
Publish Forecasting Strategy Project roadmap	Q1 2019-20		<input checked="" type="checkbox"/>			Published on 21 June https://www.nationalgrideso.com/document/145941/download

Deliverable	Target delivery date	Actual delivery date	Role			Status
			1	2	3&4	
Publish half-hourly PV forecasts to market, 24 times a day	Q1 2019-20		<input checked="" type="checkbox"/>			We have started publishing these as of 27 June here http://cdsasharedprod.uk.corporg.net/efs_demand_forecast/faces/%20DataExplorer
Information access						
Data explorer page on website	Q1 2019-20		<input checked="" type="checkbox"/>	✓		Complete. https://www.nationalgrideso.com/balancing-data/data-finder-and-explorer
Whole system operability						
Roll out of Loss of Mains Protection setting	Commencing Q1 2019-20		<input checked="" type="checkbox"/>	✓		In progress

Table 4: Role 1 Q1 Deliverables

Notable achievements and events this month/quarter

As of 27 June, we are publishing embedded PV & Wind forecasts to market every hour through our [website](#) using a fully automated service.

- We publish half-hourly PV forecasts from the Machine learning model, with 24 updates a day for the in-day to 14-day-ahead timescales. *This is a significant improvement from twice a day for the 7-day-ahead ahead period.*
- The embedded Wind forecast is an additional service to the market and will be updated 6 times per day for the in-day to 14-day-ahead timescales *This is a significant change from once per day for the 7-day-ahead timescale.*

This will support market participants to make informed decisions by us providing user friendly, comprehensive and accurate information.

We published our Energy Forecasting Strategic Roadmap on 21st June. Our energy forecasting function is undergoing a strategic transformation to create new forecasting capabilities to support both our system operations, and market participants, to make informed decisions by providing user friendly, comprehensive and accurate information.

To deliver this transformation, we initiated the energy forecasting strategic project to replace our existing forecasting capabilities and Energy Forecasting System (EFS) with a new advanced Platform for Energy Forecasting (PEF). We will redesign current processes and apply advanced machine and deep learning modelling techniques & automation to drive efficiency.

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 4 – Provider Journey Feedback

Q1 2019 Performance

This metric measures feedback from four areas.

1. Stakeholder on-boarding.

The survey questions remain as detailed in our Forward Plan. Surveys were sent to 5 providers. To date no responses have been received. Three reminder triggers have been incorporated to encourage Providers to feedback.

2. Tendering.

We received an average of 2.96 across the 3 questions detailed in our Forward Plan, which is below benchmark. The details are:

Question	Score
National Grid System Operator provided me with the information I need to complete the tender process easily	3
The Management Information (MI) report clearly presents the information I require	2.44
The Post Tender Results report is easy to understand	3.44

Supporting information

The feedback has been reviewed and an action plan will be developed to make improvements to the Management Information Report and address the other comments on how we can improve.

Feedback to the question *“How else could we improve your experience of tendering with us?”* was:

- *“Better market data”*
- *“For the Fast Reserve it would be beneficial to split the utilisation data between Optional and Firm so more analysis can be carried out.”*
- *“Consistency, longer term contracts and a sense check of information supplied. Having spent time and money on preparing volume for FFR for it to fail tenders because of typos or misinterpretation of proformas is very frustrating.”*
- *“Easy to find timely information and better access to data.”*

We have decided to change the questions from what we have been using, to the following, to make them the feedback more useful to us:

1. Which Tendered Service did you participate in?
 - a. Firm Frequency Response (FFR)
 - b. Fast Reserve (FR)
 - c. Short Term Operating Reserve (STOR)
 - d. Constraint Management
2. National Grid System Operator provided me with the information I need to complete the tender process easily (On a scale of 1 – 5 with 1 being disagree and 5 being agree).
Please suggest how we could improve the tender process further (free text).
3. The Management Information (MI) report clearly presents the information I require (scale 1 – 5).
Please suggest how we could improve the Market Information report (free text).
4. The Post Tender Results report is easy to understand (scale 1 – 5).
Please suggest how we could improve the Post Tender Results report (free text).
5. How else could we improve your experience of tendering with us (free text).

3. Contracting.

Rather than have another survey this is now taking the form of a check-in with Providers prior to their Contract Start to make sure everything is ready on both sides for them to start service delivery.

4. Query Management questions.

The following questions have been developed and are now in use:

1. My query was resolved right first time
2. Whilst my query was being resolved I was regularly updated with progress (1-5 scale)
3. My query was resolved within an acceptable time frame
4. What would have been a more acceptable time frame for this type of query?
5. What can we do to improve your experience?

To date we have not received any responses to this survey.

Performance benchmarks

In the absence of any historical data, a benchmark of 2.5 has been chosen as it is the mid-point of the 1-5 rating. However, we will keep this under review as we start to receive feedback and will revise it as appropriate throughout the Plan period.

Exceeds benchmark: average of 4/5 or above

In line with benchmark: average of 2.5-4/5 or above

Below benchmark: average of less than 2.5/5

For full details of this quarterly metric, including the survey questions, see page 46 of our [Forward Plan](#).

Metric 5 – Reform of Balancing Services Markets

In response to stakeholder feedback at the mid-year ESO performance panel in November 2018, we have developed a metric that covers the removal of barriers to entry for different technologies in different services. This is supplemented by tracking the distribution of balancing services spend across bilateral and open procurement approaches (competitive tenders and auctions) in order to tell the full story. Our intention is to use this metric to communicate progress against a fundamental element of Role 2 deliverables. We would value stakeholders' views on how to articulate this and benchmark progress in the simplest and most transparent manner.

Q1 2019 Performance

Metric Part 1

Deliverable in 2019-20	BM Wind through 2019-20					Embedded wind through 2019-20				
	Current	Q1	Q2	Q3	Q4	Current	Q1	Q2	Q3	Q4
Mandatory Frequency Response (MFR)	●	●	●	●	●	●	●	●	●	●
Commercial Frequency Response (FFR/auction trial)	●	●	●	●	●	●	●	●	●	●
Obligatory Reactive Power Service (ORPS)	●	●	●	●	●	●	●	●	●	●
Reserve Products	Consultations and developments will be made throughout 2019-20 for delivery in future years									
Black Start services	Consultations and developments will be made throughout 2019-20 for delivery in future years									
Balancing Mechanism	●	●	●	●	●	●	●	●	●	●

Deliverable in 2019-20	Solar through 2019-20					DSR through 2019-20				
	Current	Q1	Q2	Q3	Q4	Current	Q1	Q2	Q3	Q4
Mandatory Frequency Response (MFR)	●	●	●	●	●	●	●	●	●	●
Commercial Frequency Response (FFR/auction trial)	●	●	●	●	●	●	●	●	●	●
Obligatory Reactive Power Service (ORPS)	●	●	●	●	●	●	●	●	●	●

Reserve Products	Consultations and developments will be carried out throughout 2019-20 for delivery in future years									
Black Start services	Consultations and developments will be carried out throughout 2019-20 for delivery in future years									
Balancing Mechanism	●	●	●	●	●	●	●	●	●	●

- significant barriers to entry with no solution implemented
- interim solution implemented
- enduring solution implemented to enable commercial access

Table 5: Relationship between deliverables and barriers to market participation

Supporting information

The change of status between 'current' and 'end Q4 2019-20' is driven by the expected changes from completing relevant role 2 deliverables. These deliverables have been identified as addressing identified barriers to market participation, however there may not be a direct and immediate effect on the market associated with each one. This is because changes in product design or market structures take time to filter through into changes in participant behaviour, and cannot easily be unpicked from natural variations or the impact of external factors such as regulatory changes.

There have been no changes to the forecast RAG statuses in this quarter, indicating that our deliverables are on track to reducing the relevant barriers to entry as shown in the table, demonstrating performance which is exceeding the benchmark.

Performance benchmarks

The timing of the deliverables is achievable but challenging, particularly for those classed as 'Exceeding Baseline', and therefore a target of >75% for being above the benchmark has been chosen.

Exceeds benchmark: Completing >75% of deliverables.

In line with benchmark: Completing 50-75%.

Below benchmark: Completing <50% deliverables.

Metric Part 2

This metric measures the direction of travel away from bilateral arrangements, towards open and accessible market opportunities. We have attributed balancing spend to three categories that describe the openness of the procurement approach: Commercial (bilateral contract); Mandatory; Tendered. On a quarterly basis information will be presented in a chart for each service that shows cumulative spend broken down into the three categories of procurement approach to provide supporting narrative on our progress.

Data for 2019 Q1 is shown in *Figure 3: Cumulative spend on services per procurement category*. Final figures for balancing services spend are produced at M+1, so these are final figures for April and May 2019, with provisional data for June 2019.



Figure 3: Cumulative spend on services per procurement category in £ millions

Supporting information

- **Frequency Response:**
The majority of the costs of commercial frequency response are for Enhanced Frequency Response availability payments, with a small remainder for legacy FCDM contracts and interconnectors.
- **Reserve:**
Tendered Reserve covers STOR and Fast Reserve tenders, with the commercial reserve being made up of non-tendered reserve payments.
- **Reactive:**
This is almost entirely mandatory, with a small amount being commercial payments for synchronous compensation operation by BMUs.
- **Black Start:**
Entirely through commercial arrangements at present.
- **Constraints & SO/SO trades**
Entirely through commercial arrangements at present.

Performance benchmarks

There are no performance benchmarks set here, as creating an incentive on the ESO to procure in a certain way would limit our ability to deliver our balancing services at the lowest cost to consumers. However, we believe that reporting the information in a regular and transparent way will allow for more open conversations around balancing services procurement and the effect Forward Plan deliverables have on the markets.

For full details of this quarterly metric, including the survey questions, see page 47 - 49 of our [Forward Plan](#).

Metric 6 – Code Admin Stakeholder Satisfaction

Q1 2019 Performance

18/19 Baseline	GC127 & 128 Webinar - May 19	CMP 315 Webinar - May 19	CMP317 Webinar - June 19
6.93	7.75	7.66	6.9

Table 6: Webinar Satisfaction Performance

Supporting information

The scoring information available at this point indicates that we are above target. However, the next survey is currently being carried out, so we will have a fuller picture of our performance at the mid-year reporting point. Both deliverables for facilitating code change in Q1 have been achieved to plan.

Performance benchmarks

Exceeds benchmark:

- Increased overall performance across all our three codes (STC/CUSC/Grid Code) in the 2020- 21 CACoP survey due to be carried out in spring 2020; benchmarked with our previous scores.
- All exceeding baseline deliverables achieved to plan.
- Stakeholder survey taken periodically throughout the year - Increased overall performance across all our three codes (STC/CUSC/Grid Code); benchmarked with our previous scores.

In line with benchmark:

- Maintained performance across all our three codes (STC/CUSC/Grid Code) in the 2020-21 CACoP survey due to be carried out in spring 2020; benchmarked with our previous scores.
- All baseline deliverables delivered to plan.
- Stakeholder survey taken periodically throughout the year - maintained performance across all our three codes (STC/CUSC/Grid Code); benchmarked with our previous scores.

Below benchmark:

- Decreased performance across all our three codes (STC/CUSC/Grid Code) in the 2020-21 CACoP survey due to be carried out in spring 2020; benchmarked with our previous scores.
- Not all baseline deliverables delivered to plan.
- Stakeholder survey taken periodically throughout the year - decreased performance across all our three codes (STC/CUSC/Grid Code); benchmarked with our previous scores.

For full details of this metric see page 50 of our [Forward Plan](#).

Metric 7 – Charging Futures

Q1 2019 Performance

18/19 Baseline	Active Network Management Webinar - May 19	Access Webinar - May 19	DUoS and Locational Granularity Webinar - May 19	Balancing Services Charges Taskforce Webinar - May 19
7.3	6.1	6.2	6.3	8.1

Table 7: Charging Futures Webinar Satisfaction

Supporting information

Part of the reason for the poor performance score for this metric is that we have limited influence over the content and presentation for some of the webinars that we are recording scores for, due to the multi-participant nature of the work being undertaken. We will look at how we can work with other content providers and presenters to try to make the webinars more useful to the attendees and stakeholders.

Performance benchmarks

Exceeds benchmark: Average scores from surveys undertaken throughout the year are higher than the baseline score.

In line with benchmark: Average scores from surveys undertaken throughout the year equal the baseline score.

Below benchmark: Engagement scores achieved throughout the year fall below the baseline score.

For full details of this metric see pages 51 - 53 of our [Forward Plan](#).

Metric 9 – Month ahead forecast vs outturn monthly BSUoS

June 2019 Performance

Month	Actual	Month-ahead Forecast	APE	APE>20%	APE<10%
April-19	2.81	3.02	0.07	0	1
May-19	2.45	3.12	0.27	1	0
June-19	3.31	3.07	0.07	0	1

Table 8: Month ahead forecast vs. outturn BSUoS (£/MWh) June 2019 Performance:

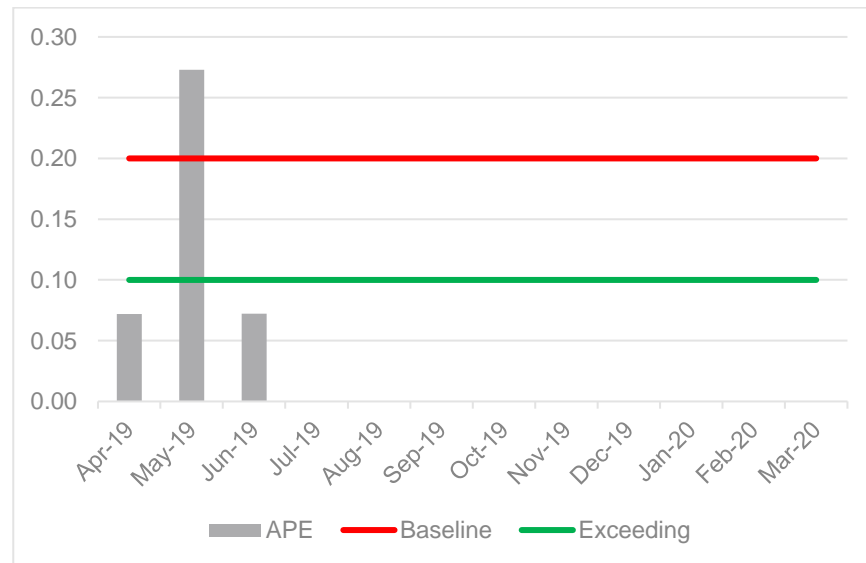


Figure 4: Monthly BSUoS forecasting performance

Supporting information

The forecast error for June was 7%, which is exceeding our performance target.

The BSUoS figures came back into line with expectations following very low wind levels in May and therefore Western Link unavailability had a smaller impact than expected. No uplift was applied to the model for Western Link as it returned as expected on 3rd June. RoCoF costs increased as expected due to seasonality but this was offset by a seasonal decrease in thermal constraints and these were incorporated into the forecast for June.

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.

Deliverables

Deliverable	Target delivery date	Actual delivery date	Role			Status
			1	2	3&4	
Product Roadmaps for Response and Reserve implementation						
Market design for reformed reserve products	H1 2019-20		✓	☑		<p>The interconnected nature of response and reserve means that any work to develop new reserve products must first have a solid understanding of how new response products will work, modelling for which is ongoing. We must also consider reserve design in light of how the new pan-European Standard product TERRE will be used, and what the impact of wider access will be on the makeup of the Balancing Mechanism. We will be progressing reformed reserve products once we have more clarity on these areas, but in the interim we have opened up the Fast Reserve market to aggregated BMUs, commenced rollout of an API communications and dispatch system for STOR, lowered the Fast Reserve entry requirement from 50MW to 25MW, and implemented simplified contracts in both markets.</p> <p>More information will be provided through the Future of Balancing Services page and the relevant Market Information Reports in due course.</p>
Report on our plan for retaining specific products	Q1 2019-20	18 June 2019	✓	☑		Completed on time and submitted to the Authority, who now have 6 months to decide on our recommendations.
Implementation of Pan-European replacement reserve standard products	2019-21		✓	☑		<p>TERRE: A number of TSOs, including NGESO, have applied for a derogation against the original target implementation date of December 2019. We are continuing work to be ready for December, but without the ability to link through France to the wider continental market there is no benefit to introducing the product.</p>
Product Roadmap for Restoration implementation						

Deliverable	Target delivery date	Actual delivery date	Role			Status
			1	2	3&4	
Alternative Approaches to Restoration	2019-20		✓	☑		The final reports for the NIA project on black start from non-traditional sources were due Q1; the consultant reports have been received, and are now being prepared for publication.
Power Responsive						
Deliver innovation projects to unlock demand flexibility	Q1-Q4 2019-20		✓	☑		<p>On 24 June 2019, the Innovate UK-funded project “Vehicle 2 Grid Britain” published a desktop study on the feasibility and potential revenue streams for V2G services to the ESO and DNOs. This is vital information for future market design and business models to unlock the potential of V2G to increase competition and lower costs to consumers.</p> <p>The V2GB project is a consortium project consisting of Nissan Technical Centre Europe, Energy Systems Catapult, Cenex, Western Power Distribution, National Grid ESO, Moixa and Element Energy.</p>
Power Responsive Stakeholder Engagement	Q1 2019-20 – Q4 2020-21		✓	☑		The Power Responsive Summer Event was held on 26 June 2019, with around 250 attendees. Surveys have been sent out to attendees and will be reported in due course.
Wider Access to Balancing Mechanism Roadmap implementation						
Clearer accession requirements for BM participation and enable aggregated BMU participation in balancing services	Q1 2019-20	01 April 2019 / ongoing	✓	☑		Clearer accession requirements ensure that clear and proportionate arrangements are in place to tie parties into the relevant GB codes and BM obligations for BM participation. CUSC modifications 296 and 297 were implemented on 1 April 2019, while CUSC modification CMP 295 (creation of a contract under CUSC for VLPs) has been slow to progress due to problems achieving sufficient workgroup members to meet the CUSC quoracy requirements. The workgroup has now concluded and the report will go the CUSC Panel in July.

Deliverable	Target delivery date	Actual delivery date	Role			Status
			1	2	3&4	
Use better technology/systems to improve efficiency of installing communications with BM providers and optimising BMU dispatch	Delivery throughout 2019-20	02 July 2019 / ongoing	✓	☑		<p>Draft IT specs for the alternative to EDL/EDT have been made available to market participants on the 2nd July</p> <p>The Fast Reserve Framework Agreement has been updated to enable battery BMUs to participate in the provision of Fast Reserve and to tender into the July tender ahead of the wider access 'go-live' date of Dec 2019.</p>
Intermittent Generation						
Raise code modification to apply Power Available consistently across technical & commercial codes	Q1 2019-20	01 April 2019	✓	☑		<p>We raised CMP314 to align the CUSC with the Grid Code definition of Power Available for Power Park Modules. This is to allow greater participation by wind generators in mandatory frequency response markets, which will lower costs in balancing services due to greater participation across technologies in frequency response.</p> <p>After discussions with the CUSC panel on some of the details we have progressed this to a point where Ofgem can make a decision on whether or not to implement. We expect this decision in Q2.</p>
Provider experience						

Deliverable	Target delivery date	Actual delivery date	Role			Status
			1	2	3&4	
Feedback approach	Q1 2019-20			<input checked="" type="checkbox"/>		<p>A survey framework for getting feedback from our providers at key points in the journey including onboarding, tendering, contracting and query management has been developed and feedback will be used to inform process improvements. This will help us to better understand our Providers and improve their experience, making NGESO a better buyer of Balancing Services enabling our Balancing Services market to function better leading to more liquid markets and lower prices.</p> <p>On a quarterly basis, surveys for feedback on Onboarding are being sent directly to new providers who we've had contact with; and for Tendering to those who are currently on the invitation to tender for STOR, FFR, Fast Reserve and Constraints; Query surveys are being sent as and when we resolve queries that Providers raise with us.</p>

Deliverable	Target delivery date	Actual delivery date	Role			Status
			1	2	3&4	
Improved online resources	Q1 2019-20			<input checked="" type="checkbox"/>		<p>The ESO Balancing Services Guidance Document has been published on our website https://www.nationalgrideso.com/document/142726/download</p> <p>As the document was drafted we sought feedback from Providers on what content they would like to see and how the document could be improved, including adding more detail to the Electricity Market Overview section, inclusion of a revenue and service stacking table to make it easy to identify how this can be done.</p> <p>The Guidance Document is the place we direct all potential providers towards as it has all the information they need as a one-stop-shop. Throughout the document there is an opportunity to feedback on how the content could be improved and where received this will be reviewed and actioned where possible.</p>
Facilitating code change						
Meeting calendar & transparency of workgroups – Targeted website improvements to ensure all meetings are available within our code modification calendar with meeting outcomes available and transparent	Q1 2019-20	Q1 2019 - 20		<input checked="" type="checkbox"/>		Complete - All meetings held are now available on our code modifications calendar. Summary notes are now published following every workgroup meeting, sharing the key progress and outputs

Deliverable	Target delivery date	Actual delivery date	Role			Status
			1	2	3&4	
Engage all parties to understand information requirements for code modifications and provide executive summaries on modifications – Work with stakeholders to understand how they want to better access information on code modifications and implement solutions in a timely manner.	Q1 2019-20	Q1 2019-20		<input checked="" type="checkbox"/>		During Q1 2019-20 we have conducted bilateral discussions and industry surveys to build a full view of how stakeholders want us to target further improvements. We have used this to build a plan of activities across the next 18 months. We have shared key messages from this to industry via our improvement newsletter and will incorporate changes into the next iteration of the forward plan.
Transform industry frameworks to enable decentralised, decarbonised and digitised energy markets						
Leadership in the successful transformation of electricity access and charging – Publication of ESO-led Balancing Services Charges Task Force final report	Q1 2019-20	Q1 2019-20		<input checked="" type="checkbox"/>		Complete - In Q1 the Balancing Services Charges Task Force published their draft report, held a consultation (which received very good stakeholder feedback) and then published their final report. This report was widely supported by those in industry who responded to the task force consultation and this final report (and other task force documentation) can be found as follows. http://www.chargingfutures.com/charging-reforms/task-forces/balancing-services-charges-task-force/resources/
Leadership in the successful transformation of electricity access and charging – Leadership in network access and forward-looking charges review	Ongoing	Ongoing		<input checked="" type="checkbox"/>		In Q1 we continued to provide leadership in relation to Future Charging and Access reforms e.g. via providing input into option development and contributing to the Delivery Group

Deliverable	Target delivery date	Actual delivery date	Role			Status
			1	2	3&4	
Leadership in the Energy Codes Review – Publish ESO thought piece	Q1 2019-20	Q1 2019-20		<input checked="" type="checkbox"/>		In Q1 our Thought Piece was published as planned and can be found as follows: https://www.nationalgrideso.com/codes/energy-codes-review We have started to engage with stakeholders on our thought piece and our thinking will feed into the Energy Codes Review and our Business Plan for RIIO-2.
Unlocking whole system network development opportunities - Continue to review potential options under the SQSS review.	Q1 2019-20	On hold		<input checked="" type="checkbox"/>		In our end of year report for 2018/19 we noted that whilst there had been some changes to the SQSS throughout the year we had re-prioritised our broader development work in this area in anticipation of the Engineering Standards Review and that we expect to be involved with this review in the future to shape the future evolution of the SQSS. This remained the case for Q1 and so this deliverable is effectively on hold at this point in time.
Developing and driving targeted market improvements - Continue our review of new commercial security arrangements for long lead time high value transmission schemes.	Q1 2019-20	Q1 2019-20		<input checked="" type="checkbox"/>		In Q1 we attended TCMF (Transmission Charging Methodology Forum) and then based upon industry feedback we have since continued to develop our internal thinking on this deliverable and plan to revisit TCMF in Q2 We have also continued to consider and develop other targeted market improvements such as CMP316 which is exploring TNUoS arrangements for co-located sites or CMP311 which is exploring whether the balance of risk between suppliers and consumers remains appropriate in respect of credit arrangements.

Facilitate electricity network charging reform through Charging Futures

Deliverable	Target delivery date	Actual delivery date	Role			Status
			1	2	3&4	
<p>Facilitate electricity network charging reform through Charging Futures</p> <ol style="list-style-type: none"> 1. Targeted Charging Review 2. Access and Forward Looking Charges SCR 3. Reform of the Balancing Services Charges 	Throughout the year	Ongoing		<input checked="" type="checkbox"/>		In Q1 2019-20 we have facilitated a number of webinars across charging reform including the Balancing charges taskforce. Prepared for hosting a Charging Futures Forum in July with short notice in order to provide an opportunity to bring more parties up to speed with electricity network charging reform.
Transform the customer experience for network charging						
Improve our ESO charging query processes - Communicate clear routes of contact for all charging queries and publish updated query management standards	Q1 2019-20	Q1 2019-20	✓	<input checked="" type="checkbox"/>		We have clarified contact details on the website . We now manage charging queries through our customer relationship management system and acknowledge queries within 24 hours. We have not published the standards on the website as these are communicated in our correspondence with customers.
Improve understanding of our onboarding processes and streamline to meet our customer needs - Publish guidance to help and support new suppliers in understanding our charges, our obligations, and what they need to do.	Q1 2019-20	Q1 2019-20	✓	<input checked="" type="checkbox"/>		In April we updated our Connections Charges annual charge and application fee calculator. In April we updated our TNUoS charges for generators guidance and in June we published new Transmission Losses guidance. These documents are written in plain English and help users to understand complex charging arrangements. https://www.nationalgrideso.com/charging/charging-guidance

Deliverable	Target delivery date	Actual delivery date	Role			Status
			1	2	3&4	
New data reports for BSUoS - Publish new Balancing Services Charging report to show more granular costs by settlement period to enable customers to see different cost components and model future prices	Q1 2019-20	Q1 2019-20	✓	☑		The new Balancing Services Report is now being sent to customers alongside the previous version of the Balancing Services Report. A communication will be sent out to customers in July to explain the new report and how they can use it.

Table 9: Role 2 Q1 Deliverables

Notable achievements and events this month/quarter

We published revised FFR testing guidance on 24 June for consultation. Following on from the consultation that closed in September 2018 we reviewed the responses and engaged with the ADE to take the testing guidance forward. We then published the revised [Draft FFR Testing Guidance Document](#) for consultation on the proposed changes along with the [Covering Letter](#). The deadline for responses on the proposed Guidance was 01 July 2019, and since this we have been progressing with finalising the guidance.

We delivered the first phase of the weekly frequency response auction trial in June. This was successfully rolled out with four participants, all of whom secured some capacity across the week. We are now seeing additional units being introduced, more volume being secured, and more participants in the process of prequalification. This is part of our move to closer to real-time procurement of balancing services, something that the industry has been eagerly awaiting and aligns with our ESO Forward Plan Role 2 of facilitating competitive markets. Ultimately, moving to closer to real time procurement removes barriers to entry for providers with variable demand and generation, this increases participation and promotes competition, which delivers value for end consumers. Phase 2 of the auction is being delivered with EpexSpot and will go-live in September.

Power Responsive Summer Reception: This took place on 26 June in London to 250 demand side flexibility stakeholders with a focus on 'Delivering Zero Carbon Ambitions'. We were joined by senior figures across the industry including BEIS, Ofgem, and DNOs to present the latest demand side developments across policy, regulation, and markets. Key areas of interest to delegates included short vs. long term market contracts to support investment cases, and, if zero carbon operation is achievable given the ESO's technology neutrality. The next step is the publication of a written event summary.

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 10 – Whole system- unlocking cross boundary solutions

Q1 2019 Performance

This metric is an assessment of the effectiveness of our whole system actions, measured in terms of their consequences. The measure is the contracted MW capacity of distributed energy resources (DER) connections as a result of the UKPN/ESO collaboration in the South-East Coast region.

Grid Supply Point (GSP)	MW	Commentary on DER technology types
Bolney	0	No new DER in Q1
Canterbury	0	No new DER in Q1
Ninfield	49	A new acceptance for 49MW of battery storage
Sellindge	0	No new DER in Q1
Total	49	

Table 10: DER Connections Released

Supporting information

During April to June 2019 we contracted a further 49MW of new DER battery schemes with UKPN. Since the introduction of the RDP Agreements in 2017 we have contracted 392.51MW of new DER.

Western Power Distribution have RDP Agreements at 9 GSPs in the South West, with their first contracted DER. RDP principles are being rolled out across WPD regions for battery connections 'flexible forward power flow limit' and this is ongoing. Work is also ongoing with Scottish Power Energy Networks for RDP Appendix G trials across 11 GSPs in South West Scotland. We will provide further details on these programmes as the work progresses through the year.

For full details of this metric see pages 75 - 76 of our [Forward Plan](#).

Metric 11 – System access management

Q1 2019 Performance

June 2019 Performance

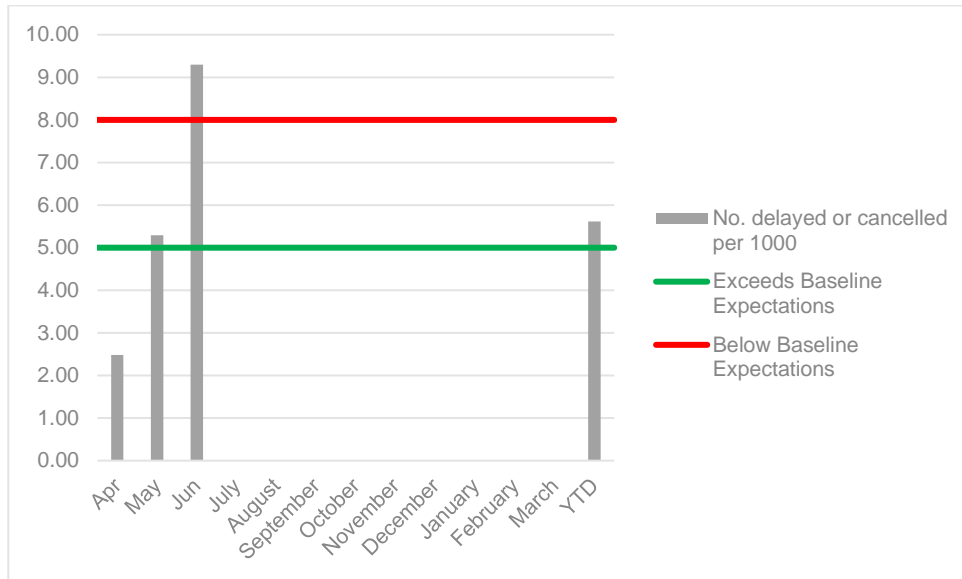


Figure 5: Number of outages delayed by > 1 hour, or cancelled, per 1000 outages

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

Supporting information

The reason for the fall in performance was due to discrepancies in the power system modelling tool and the data fed into the model. The data feed from the Energy Forecasting System which provides network demand data was identified as the root cause of the outages being delayed or cancelled. The system is presently being reviewed and the replacement being worked on as described in the ESO forward plan.

Metric 12 – Customer Value Opportunities

The TOs need access to their assets to upgrade, fix and maintain the equipment. They request this access from us and we then plan and coordinate this access. This metric will sharpen our focus on creating and capturing added value for the customers and stakeholders as part of the network access process.

We will look for ways to minimise the impact of outages on energy flow and reduce the length of time generation is unable to export power into the network. We will measure the outcome of the metric in terms of avoided MWh lost (or constrained 'off').

This work can benefit end consumers if we spend less managing system constraints, and can benefit connected customers (e.g. generators) if the volume of MW and/or duration they are constrained off is reduced (particularly if they have non-firm connections agreements). There are indirect benefits to the end consumer as a result of the direct customer benefits, for example the less time a wind generator is constrained off then the less time it is being prevented from providing low-carbon energy to the system. Another indirect consumer benefit of minimising constrained generation is that it reduces the impact on market liquidity and competition.

Q1 2019 Performance

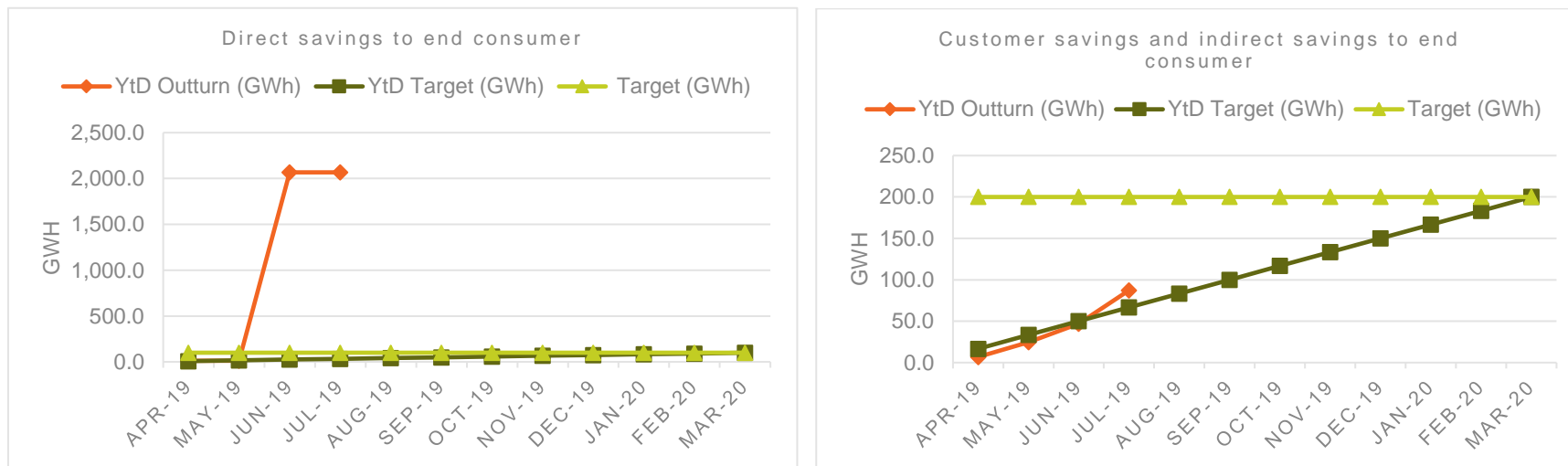


Figure 6: Customer Value Opportunities

Supporting information

Our Scotland and England and Wales Network Access Planning (NAP) Teams have successfully started to record the value added to the end consumer by finding ways of doing things differently and better.

We made good progress this quarter, and are currently exceeding our monthly targets for both direct and indirect savings to the end consumer. Currently, NAP has identified and recorded 22 cases where we have used our engineering expertise and judgment to propose innovative ways of planning system access, and gone over and above our network access planning policies and procedures to add value to the end consumers and the connected customers.

There is a large spike in the 'direct savings' chart, showing we have out-performed the target for the year already. This is due to one significant piece of work which was not anticipated, where we re-phased re-conductoring works on a specific outage in 2020 in order to achieve full line-rating capability one year early. This translated to increasing the relevant boundary capability by approximately 1000MW for 20 weeks for up to 12 hours per day.

Irrespective of this early success, we will of course continue to vigorously pursue more savings for consumers and customers via this metric, and will report on our progress quarterly.

Performance benchmarks

The target values for Scotland Outage Planning are set from historic measurements and performance. At this moment, we do not have historical data for the Outage Planning teams who cover England and Wales. Through the year post legal separation from the NG TO we will develop the metric to cover England and Wales. In this first quarter, we have set the targets for the combined GB metric to be twice what the Scotland targets are as a starting point. Given that we have significantly outperformed the target so far, we will consider revising the baseline so that the target is still challenging.

Direct savings to end consumer:

Exceeds benchmark: Greater than 110,000 MWh

In line with benchmark: Between 100,000 MWh and 110,000 MWh

Below with benchmark: Less than 100,000 MWh

Customer savings and indirect savings to end consumer:

Exceeds benchmark: Greater than 220,000 MWh

In line with benchmark: Between 200,000 MWh and 220,000 MWh

Below with benchmark: Less than 200,000 MWh

For full details of this metric see pages 77 - 78 of our [Forward Plan](#).

Metric 13 – Connections agreement management

June 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	1	100%	●

Table 11: 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

Ensuring that connection agreements correctly reflect any changes to the transmission system benefits consumers by preventing unnecessary constraint costs.

This metric measures the number of connection agreements updated within 9 months of notification.

So far 3 agreements have been identified

- One was completed in April 2019, within the 9-month timeframe.
- The second is within 9 months and is now with the customer
- The remaining one in progress
- One agreement reported in May has been removed as the changes will not apply until 2023.

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

June 2019 Performance

Connections Offers	Results
Year to date number of connections offers	42
Year to date ESO related reoffers	5
Year to date percentage of Right First Time connections offers determined from ESO related reoffers	88%

Table 12: Connections re-offers data

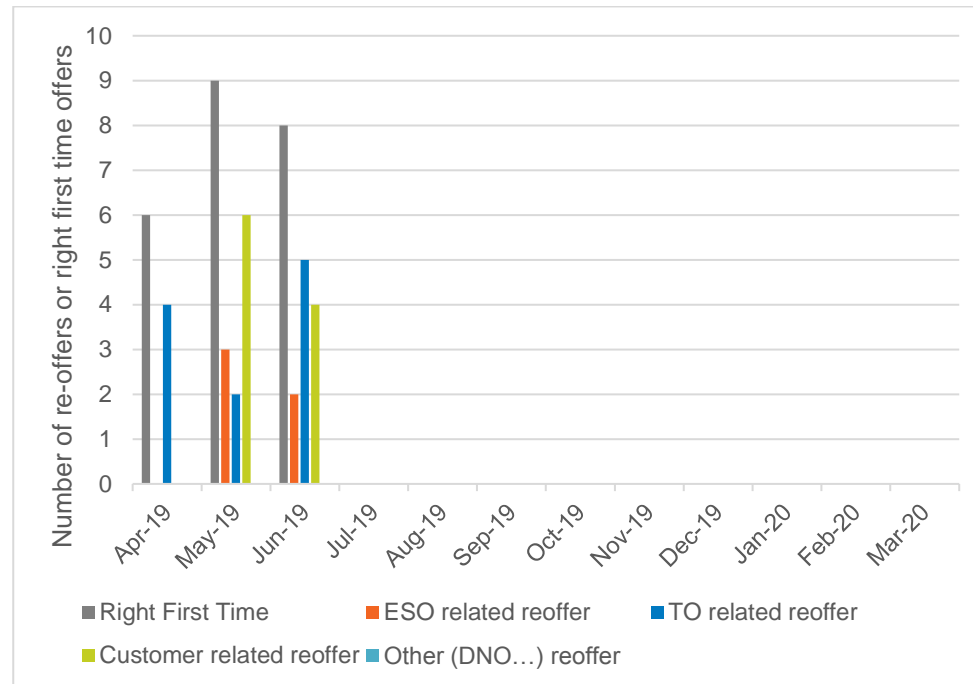


Figure 7: Connections offers monthly performance

Supporting information

We have been processing an increasing number of offers over the quarter, just over half being right-first-time. Most re-offers are due to TO and customer issues, however we (as ESO) are running slightly below our benchmark target.

In June, there were 2 re-offers due to the ESO omitting required information (one as a result of TCA (Transmission Connection Assets) works not included in securities, and one as a result of TORIs (Transmission Owner Reinforcement Instructions) not being included in the Appendix).

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.

Metric 16 – NOA Enhancing Communication

Q1 2019 Performance

Engagement activities

- Commercial Solutions for Network Challenges event was held on 16 May 2019.
 - This event gave us over 20 items of feedback in seven themes. We have used this feedback to develop an action plan to improve the pathfinder projects.
- Four webinars were held in April and May covering the NOA methodology; NOA for Interconnectors; Mersey high voltage pathfinder project; and constraint management pathfinder.
- NOA for Interconnectors workshop was held on 17 April.

(For full details of this metric see pages 82 - 83 of our [Forward Plan](#))

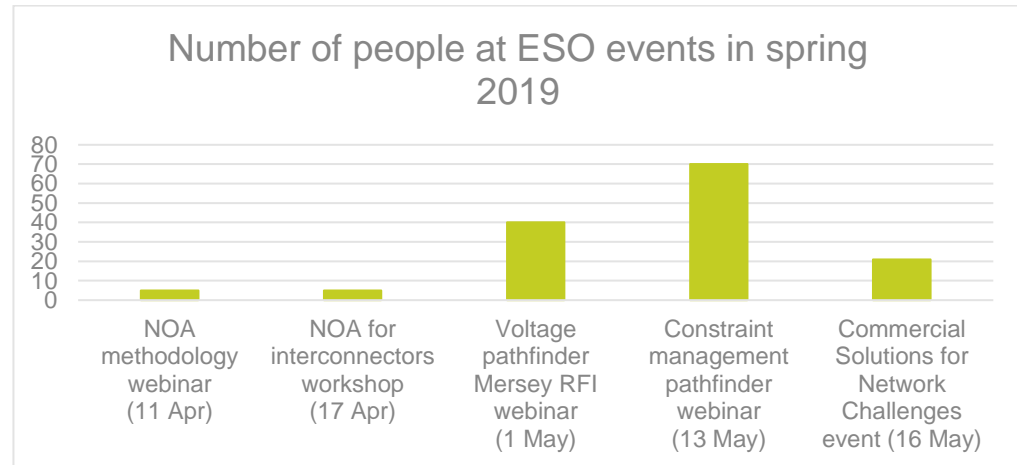


Figure 8: Attendance at ESO events

We have changed our emphasis to strengthening relationships with customers and stakeholders. This will help us gather qualitative feedback rather than depend on survey scores. We used this approach in the Commercial Solutions for Network Challenges event held on 16 May.

For the NOA and NOA for interconnectors:

- We published the NOA methodology for public consultation on 9 May. The consultation closed on 20 June and attracted ten responses. Four of these were solely about the voltage pathfinder project.
- NOA for Interconnectors: a workshop was held on 17 April to discuss and gain feedback on the proposed methodology for NOA for Interconnectors 2019/20. Five stakeholders attended the workshop. The feedback was used to shape the draft NOA for Interconnectors methodology. Three consultation responses were received regarding the NOA for Interconnectors consultation. One stakeholder requested a one to one meeting regarding NOA for Interconnectors.

For the Network Development roadmap and pathfinding projects:

We have gained a large amount of input into our pathfinding projects from a wide range of stakeholders, including from over 70 attendees at our constraint management webinar, 17 responses to the Mersey voltage RFI, and over 20 attendees at our Commercial Solutions event on 16 May. Following closure of the RFI we published in March seeking solutions to high voltage needs in the Mersey area on the transmission network, we received 17 responses. These covered a range of technologies and included both transmission and distribution connected parties. Following the level of interest and information provided to us, we confirmed our intention to tender for solutions on 28 June. This will ensure we assess TO, DNO and market solutions to identify the most economical solution to meet the need.

Performance benchmarks

Exceeding benchmark: Positive stakeholder feedback on the documents and changes we are making to them.

Meeting benchmark: Meets licence obligations. Average stakeholder feedback with clear areas for improvement.

For full details of this metric see pages 82 - 83 of our [Forward Plan](#).

Deliverables

Deliverable	Target delivery date	Actual delivery date	Role			Status
			1	2	3&4	
Whole system data exchange						
Commercial flexibility around operational connections	Q1 2019-20		✓			<input checked="" type="checkbox"/> We continue to work with DNOs to develop ways of accessing flexibility on the distribution network to alleviate transmission constraints where there is a need to do so. Several options are still on the table and but we aim to agree a way forward in Q2 and Q3. In the meantime we have continued to realise opportunities to avoid unnecessary investment and improve consistency of process across the GB system.
Whole system operability						
Roll out of Loss of Mains Protection setting	Commencing Q1 2019-20			<input checked="" type="checkbox"/>	✓	In progress
Enhanced customer experience						
Customer journey mapping – outage planning	Q1 2019-20					<input checked="" type="checkbox"/> We have been working with the England and Wales TO post legal separation to review the customer journey across the outage planning process and improve the experience where we have the influence and ability to do so.
Connections customer portal						<input checked="" type="checkbox"/> Work has commenced to help us understand whether customers believe there is benefit in this portal, RIIO 2 stakeholder workshops included discussion on this and there was agreement that it could be useful. We have discussed with TOs and both SPT and NGET are keen to develop a portal, Stakeholder feedback is indicating that this should be a joined-up approach. We are developing our thoughts for this in our RIIO 2 Business plans
Whole electricity system thought leadership						

Deliverable	Target delivery date	Actual delivery date	Role			Status
			1	2	3&4	
ESO thought leadership – how our role will evolve	Q1 2019-20		✓	✓	☑	We have delayed the timing of this deliverable to ensure clear co-ordination with both our July RII0-2 business plan submission and also Ofgem’s DSO initiatives including their recent joint letter with BEIS on the Open Networks project. Our high-level thoughts on this letter will be published later this month, and we will use stakeholder feedback to inform the nature of this Forward Plan deliverable in Q2
NOA: Enhanced communication						
Improve accessibility of ETYS and NOA publications	Ongoing		✓		☑	We are planning changes to ETYS and NOA documents based on stakeholder feedback from the event we held in May.

Table 13: Roles 3 and 4 Q1 Deliverables

Notable achievements and events this month/quarter

- We held five events during Q1 to improve our NOA communications. These included a webinar on the NOA, which we have not done previously, and two webinars relating to our pathfinder projects. One related to the Mersey High Voltage Request for Information (RFI) and the other Constraint Management. We also held a one day workshop inviting stakeholders to come and provide feedback on our projects implementing the Network Development Roadmap. This had positive feedback from stakeholders who found this forum an effective means to provide input into our projects.
- Following closure of the RFI we published in March seeking solutions to high voltage needs on the transmission network, we received 17 responses. These covered a range of technologies and included both transmission and distribution connected parties. Following the level of interest and information provided to us, we confirmed our intention to tender for solutions on 28 June. This will ensure we assess TO, DNO and market solutions to identify the most economical solution to meet the need.

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