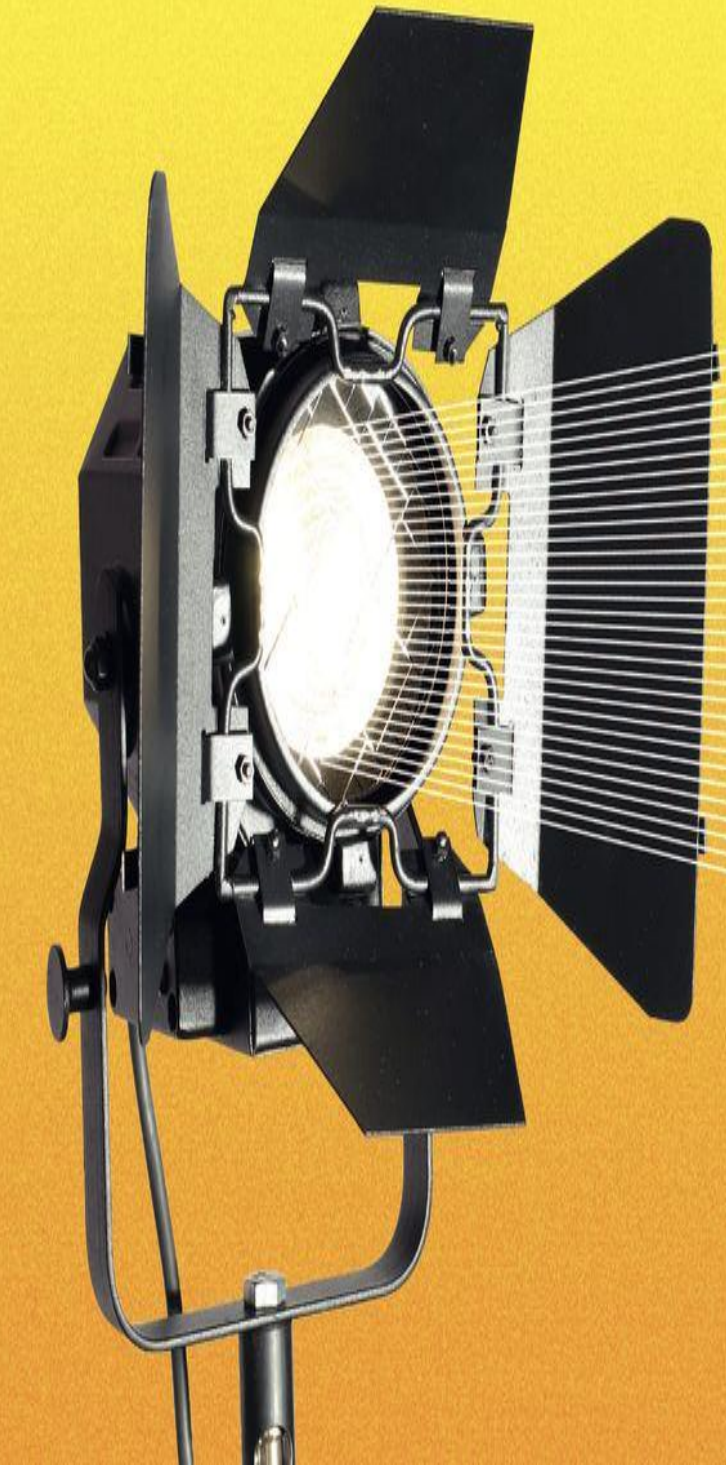
nationalgridESO

ESO Forward Plan FY 18/19

November reporting

21st December 2018



Principle 1

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

Summary table of Deliverables

2018/2019 Deliverable	Status
Baseline Performance	
Half hourly BSUoS forecast	We have completed work on the new half hourly BSUoS forecast, and it is published on our website each day.
Publish daily balancing cost and the monthly balancing service summary (MBSS)	In November we started publishing the daily balancing costs broken down by each service category for the financial year to date. This also includes a daily forecast of balancing costs to the end of 19/20.
Provide all energy forecasting data in one location	We have completed the publication of historic demand data and incentivised forecasts in our new subscription enabled website. Work still ongoing on making them more accessible to market by working on improving site URL.
Trial new Electricity National Control Centre (ENCC) visit days once every two months alongside Principle 2	We are currently setting this up and plan to start the visits in the new year.
Publish boundary capacity status forecast for high cost constraints.	Progress made and a draft boundary capacity status report is in development.
Improvements to Monthly Balancing Services Summary (MBSS) and FFR Market Information Report (MIR) from customer feedback	We are working on a Glossary of terms for the MBSS, to clarify what is included in each service category.

Performance metrics

Metric 1 - Commercial Assessment Transparency

Performance

Month	FFR		Fast Reserve		STOR	
	On time	Right first time	On time	Right first time	On time	Right first time
April	●	●	●	●	n/a	n/a
May	●	●	●	●	n/a	n/a
June	●	●	●	●	●	●
July	●	●	●	●	n/a	n/a

August	●	●	●	●	n/a	n/a
September	●	●	●	●	●	●
October	●	●	●	●	n/a	n/a
November	●	●	●	●	n/a	n/a
YTD	●	●	●	●	●	●

● Published on-time ● Published right first time

● Not published on-time ● Not published right first time

Figure 1 Metric 1 Commercial Assessment Transparency Performance

Supporting Information

- The FFR and Fast Reserve assessment results were published on time in November.
- No STOR results were due to be published this month.

FFR

- 61 tenders were received, made up of 25 non-dynamic and 36 dynamic tenders.
- The FFR feedback webinar was held on 22nd November. Webex data shows that there were 6 attendees dialled in. A webex poll was used during the webinar to capture feedback. The survey results were positive with respondents indicating that the results webinars are useful (3.75/5) and that providers have the information they require to understand the results (4/5).
- In addition to the usual feedback on the assessment results and in response to feedback from previous webinars, we gave an overview of the assessment process and how we arrive at the decision to accept or reject tenders. In response to feedback we have provided further information in the webinar and the Market Information Report on the periods we are looking to procure volume in in accordance with our procurement strategy. The presentation and the Q&A session has been uploaded onto the ESO's website.

FR

- Despite indicating in the Market Information Report that we were not going to procure further volume at this stage, two tenders were received.
- The Fast Reserve feedback webinar was held on 20th November. The attendees were provided with an overview of the tenders that were received, the assessment of them and why they were ultimately rejected. A webex poll was used during the webinar to capture feedback. The survey results were positive with respondents indicating that the results webinars are useful (4/5) and that providers have the information they require to understand the results (4/5). The presentation and the Q&A session has been uploaded onto the ESO's website.

The schedule of webinars, dial in details and access codes are published on National Grid's website for FFR, FR and STOR.

Metric 2 - BSUoS Forecast Provision

Performance

We have completed development and testing of the half hourly BSUoS forecast and plan to start publishing in the first week of December in this location.

Metric 3 - Trades Data Transparency

Performance

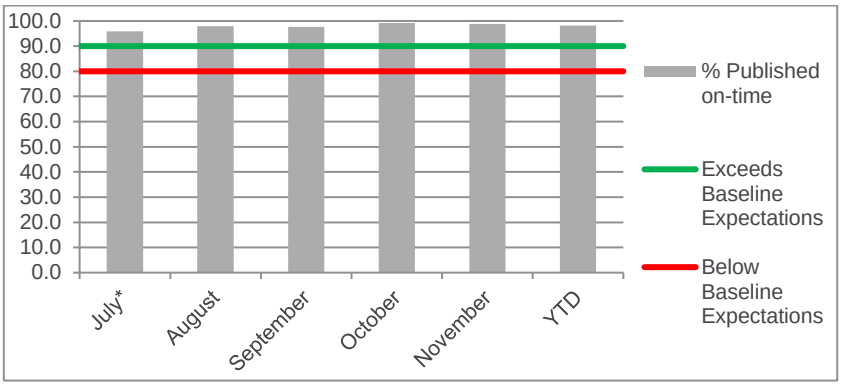


Figure 2 - Metric 3 Trades Data Transparency Performance

*indicates that July performance only shows performance from 16th-31st July

Supporting information

We have been publishing information about our trades on our new web portal (https://trades.nationalgrid.co.uk/) since April. Since July we have been able to time stamp the trade allowing us to measure the elapsed time following the trade to its publication. In November 684 trades have been published and of these 692 within 10mins of capture which is 98.8%.

Metric 4 - Forecasting Accuracy

Performance

This metric will cover the accuracy of our published DA Demand and Balancing Mechanism Unit (BMU) wind generation forecasts. To access the data that sits behind these metrics please click here.

Demand Forecast

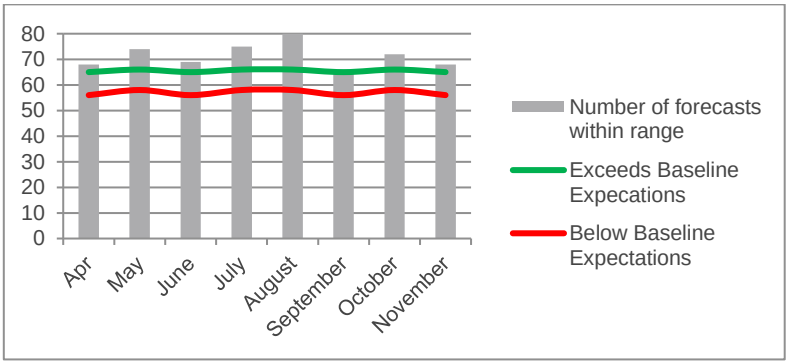


Figure 3 - Metric 4 Demand Forecasting Performance

Wind Forecast

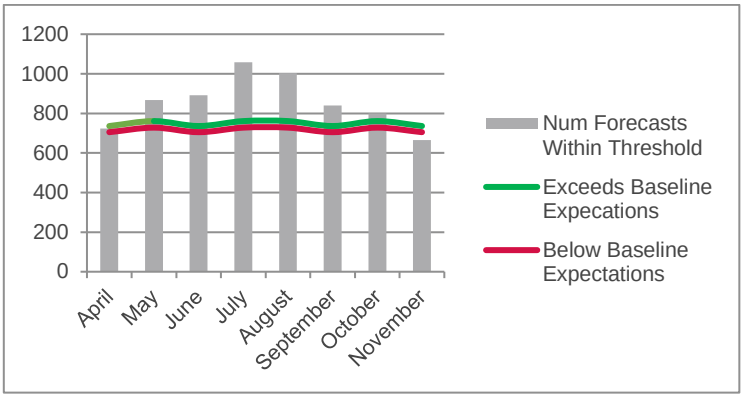


Figure 4 - Metric 4 Wind Forecasting Performance

DA Demand Forecasting Performance

In November 2018, the Energy Forecasting Team (EFT) achieved a day-ahead (DA) demand forecast performance above our baseline expectation. To achieve this, the EFT met demand monthly accuracy targets 56.7% of the time. Targets have been set to deliver a 5% reduction in error, on a monthly basis, against the average of the monthly performance over the last three years.

Wind BMU Forecast Performance

In November, the Energy Forecasting Team (EFT) achieved a DA Wind BMU performance on this metric in line with below expectation for the first time during this financial year. To reach this outcome, the EFT delivered wind BMU monthly accuracy targets 46.2% of the time. Targets have been set to deliver a 5% reduction in error, on a monthly basis, against the average of the monthly seasonal performance over the last three years.

Weather Insights

November was a particularly windy month, with higher wind outturns than any of the previous year's winter months. Analysis of the forecasts for November has shown a trend towards under-forecasting at the highest wind-speeds and outturns – which may have contributed towards the higher than normal errors.

The EFT is continuing to review its wind power models and plans to implement new cubic spline for some wind BMUs we currently forecast. This should bring improvements to the forecasting accuracy at the highest wind speed conditions.

Additional Energy Forecasting Deliverables

In our continuous effort to increase forecasting data accessibility and transparency, in November, we have added a new publication to the new ESO Energy Forecasting website: the daily demand data updates. This is to allow market participants to access all forecasting information from a centralised location.

We are currently working on implementing static document links to allow automatic download from external users and we are involving some market participants to test this new addition to our website. This is to ensure that this functionality is fit for purpose and delivers the right value to our customers.

Principle 2

Drive overall efficiency and transparency in balancing, taking into account impacts of ESO actions across time horizons.

Summary table of Deliverables

Outcome	2018/2019 Deliverable	Status
Baseline performance		
Efficient management of the costs of balancing the system	Balancing cost management	November: £105.3m Year to date: £741.1m Year to date benchmark adjusted for unavailability of HVDC: £669.7m
	Significant upgrading of IT systems to prepare for implementation of European network codes	On track for TERRE prequalification and registration in February 2019.
Exceeding baseline performance		
Implement new systems access	Deliver new systems capability to enable participation of distributed resources within our balancing markets.	Option to extend current capability of Ops Metering Solution for aggregated suppliers. Testing with existing Market Participants to be able to release this capacity to other participants.
Transparency of our requirements and balancing activities	Publication of improved Procurement Guidelines, and report, with a framework on our current approach to the procurement of Ancillary and Balancing Services	Format updated based on initial feedback following webinars. External workshop to be held on the 6th December, to discuss proposed changes.
	Future GB system security planning	Drafted and agreed outline implementation plan with DNOs for retrospective change of RoCoF and Vector Shift relays. Working with TOs and DNOs to investigate short-circuit levels and its impact on protection and generator stability.
Solve operability challenges and prepare for the future	Publish Operability Report on challenges, planned activity and stakeholder engagement	Operability report published on 30th November.
	Embedding of enhanced inertia modelling tools and new inertia measurement capability	Inertia requirement now out for tender for Q3 2019/20.

Performance metrics

Metric 5 - Balancing cost management

Metric description

This metric measures the total incentivised balancing costs excluding Black Start spend compared with the benchmark. For full details of how this was calculated please see the performance metrics definition document here.

Performance

For monthly breakdown of costs, please refer to the hotspots and the accompanying data tables found here.

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	YTD
Benchmark cost (£m)	56.9	68.3	90.7	65.2	72.4	57.5	99.6	70.0	580.5
Benchmark adjusted for WHVDC (£m)	62.6	72.9	102.9	74.3	86.5	71.4	129.1	n/a	669.7
Outturn cost (£m)	56.2	59.3	84.5	78.2	72.0	140.2	145.3	105.3	741.1

Figure 5 - Metric 5 Balancing Cost Management Performance

Metric performance detail

In November, we spent more than the benchmark costs for the month. The high costs in November are due to ongoing system security issues that require significant actions in the balancing mechanism and constraint contract costs totalling around £20 million. In addition, we have seen £9 million of additional spend associated with managing system inertia and RoCoF risk.

2nd – optional contract enacted as not enough wind in group to secure against MW loss

6th – operated assets in standby mode allowing a 140MW increase to constraint limit saving ~£250k in wind bids

8th onwards – delivery of bolt on to online stability tool allowed for increase to Northern England constraint since return of Western Link

10th – generator run in a different mode (ran additional GT) which reduced need to synchronise a further voltage unit

11th – trades on interconnector removed the need to synchronise additional voltage units saving ~£140k

11th – interconnector trades in the morning for margin replaced need for synchronising at least two additional units

15th – real time assessment of Scotland constraint allowed a unit to synchronise, saving ~£120k

17th – trades on interconnector negated need to synchronise additional voltage units saving £100k

20th – within day assessment of South East constraint allowed 750MW increase outside of evening peak saving ~£500k

23rd – contingency unit not required saving ~£243k in warming costs

26th – re-switched substation in Midlands and increased flow on Western Link to increase local constraint in Midlands, saving ~£270k

26th – real time assessment of demand and power flows in South East allowed for 800MW increase to constraint limit saving ~£400k

28th – interconnector trades taken overnight for margin during period of short market, saving ~£80k/hour

- Assessment of option contract – was often cheaper to take BM actions for 1hr than enact the contract for 8hrs
- Worked with Scottish TO to deliver commissioning programme – certain level of wind required for tests – kept costs to a minimum

Principle 3

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

Summary table of Deliverables

Outcome	2018/19 deliverables	Status
Baseline performance		
Grow participation and promote fair access in provision of balancing services	Support new and existing providers to help them participate in the ancillary and balancing services markets and tenders.	Following feedback from the Provider Journey work, there was a clear need to support and help providers with signposting what they need to do. A new Guidance Document has been drafted and we'll publish an initial draft in December. We're taking an agile approach to publishing it, adding further information as it becomes available and are sharing with providers to gather feedback. The guidance document covers the end to end provider journey, from signing a Framework Agreement to Settlement. It will also act as the "one stop shop" for updates on balancing services market reform.
Exceeding baseline performance		
Promote competition and develop new markets in balancing services	Deliver actions set out in the Reactive Power Roadmap	South Wales RFI closed with 10 responses received. CUSC Panel supported CMP305 (removal of ERPS). These actions are key steps towards our long-term vision and approach to improving the market for reactive power services by broadening competition and participation in our voltage markets to reduce costs for the end consumer.
	Publish and consult industry on exclusivity clauses to improve the ability to stack products	The feedback was broadly positive, and in response to the feedback, we will be publishing a matrix of stacking options to show clearly which products can be stacked under current contractual terms. We have also engaged the DNOs via the ENA Open Networks project with further collaboration planned in 2019.
Grow participation and promote fair access in provision of balancing services	Accelerated access for early adopters entering the BM	In November, we launched an interim solution to enable accelerated units in the BM to bid into the FFR market enabling increased revenue stacking and greater confidence around investment cases. We published an FFR update note on the website which outlines that we have developed a viable interim solution for aggregated BMUs and stand-alone battery BMUs to bid into FFR via a BM Framework agreement. This enables new types of active BMU's to access balancing services to deliver value for the end consumer. This work has been a hot topic for a number of parties who have recently entered the BM or have a connection agreement with us for stand-alone battery units coming into the BM. These framework agreements will be offered to anyone who is a position to bid into FFR with an active BMU. The units will be assessed under the same principles and rules as all other units. As this is an interim solution, we do not expect it to be perfect, but we are committed to making progress and expect to learn from this as we move towards enduring solutions

Principle 4

Promote competition in the wholesale and capacity markets

Summary table of Deliverables

Outcome	2018/2019 Deliverable	Status
Baseline performance		
Managing Customer Profitability – continual improvement of network charging processes	Improving transparency and publication of charging data phase 2: better forecasting and outturn information and material	We have started to publish two new reports. First, a new report that contains a Half Hourly (HH) BSUoS forecast for D+2 to give customers a 48 hour ahead forecast of the BSUoS price. Secondly, we are publishing a daily balancing costs report that breaks down the different categories of costs into sub-categories to give customers a more granular view of the costs that make up BSUoS charges.
Facilitating Code Change – our work aims to ensure that all our changes contribute to delivering consumer value	Delivery of improvements	Based on feedback during November we have trialled varying the location of working groups based on where our stakeholders are geographically located. We have received a positive response and will continue this method which will promote greater participation aiding industry resource requirements.
	Engagement on regulatory horizon project	We continue to develop our thoughts around this area. We note that noteworthy development is the Energy Codes Review launched by BEIS and Ofgem. We plan to be heavily engaged in this review to help shape the future of codes. During November we had discussions with the Grid Code and CUSC panels on a future approach to a Code Manager role and key funding principles. We additionally undertook a webinar (under our RIIO engagement) to additionally ask for feedback on our initial thinking with this work to date.
Exceeding baseline performance		
Facilitate and deliver code change under Charging Futures	Deliver Charging Futures Forums that are open to all network users.	Next Charging Futures forum is planned for 15th January.
	Deliver webinars, podcasts and plain English publications under the Charging Futures (CF) Brand. Adapt the content and format in response to the ongoing requirements and preferences of all CF members.	During November Charging Futures has supported the launch of Ofgem's TCR minded to decision and consultation through emails, a podcast and organisation of an industry webinar.

Delivering Code Change - enhancing the way we perform this role in order to support the delivery of consumer value through quality debate on policy and industry change matters	Publish energy adequacy and operability updates in the context of Brexit	We have provided a short update in our recently published Operability Strategy Report. We also plan to provide a broader update related to EU Exit early in Q4. We did hope to do this sooner, but the required legislation process has not yet been initiated publicly. As a relevant aside we also published a 'how code administrators are preparing for Brexit' document in November to keep our stakeholders updated on code change.
	Comprehensive review of BSUoS	In November OFGEM asked the ESO to launch and lead a BSUoS task force under the Charging Futures Arrangement to consider how network users are charged for balancing services. We anticipate holding the first BSUoS Task Force meeting late January. Further details are available on the Charging Futures website.
Capacity Market (CM) Modelling – facilitating broader participation in the CM to provide security of supply at best value for consumers	Consult on our renewables derating method and results	Method endorsed by BEIS's Panel of Technical Experts. We are running an industry consultation from 7 January till the end of February.
	Consult on our distributed generation derating method and results	Analysis is ongoing to deliver results to BEIS & Ofgem in January 2019

Performance metrics

Metric 9 - BSUoS Billing

Performance

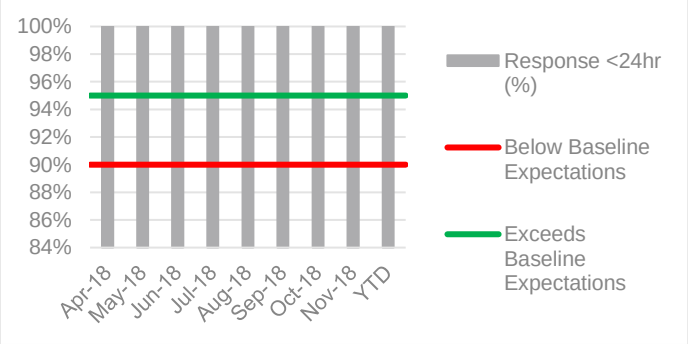


Figure 6 - Metric 9 BSUoS query response time

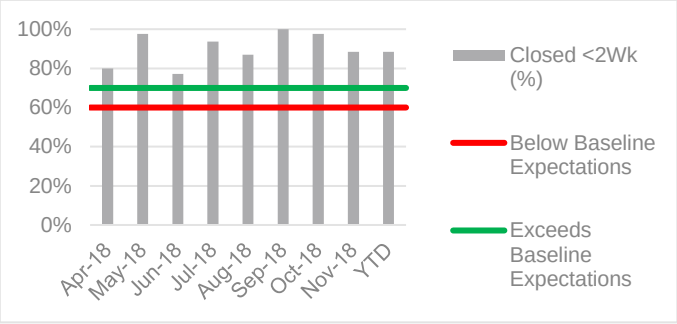


Figure 7 - Metric 9 BSUoS query resolution time

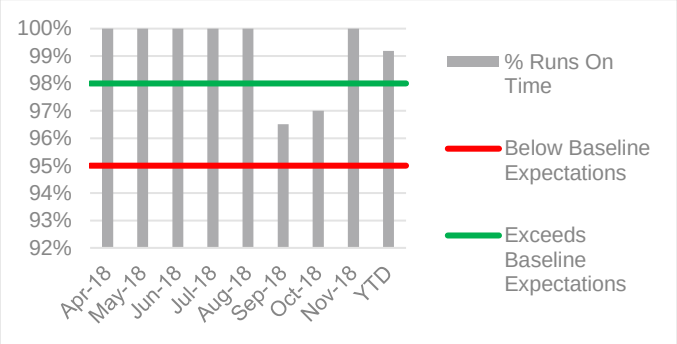


Figure 8 - Metric 9 BSUoS bills timeliness

Supporting information

- Queries November – We closed 43 queries in the month, 38 of which were within the two-week target.
- We received 39 new queries in November. We received 7 customer survey results following query closure. 5 = Excellent and 2 = Good. (Ratings available are: - Very Poor / Poor / Good / Excellent)
- Billing November – All daily Billing runs were completed on the day that they were due but on the 7th of November the email invoices to customers were delayed by several hours. We issued a circular to our distribution list and published it on our website to advise customers of the delay. https://www.nationalgrideso.com/sites/eso/files/documents/Charging%20Circular%20-%20BSUoS%20Delayed%20Invoices%20-%207th%20November%202018.pdf

Metric 20 - Month ahead BSUoS forecast vs outturn

Performance

Month	APE below 10%	APE above 20%
April	●	
May	●	
June		
July	●	
August		
September		●

October		●
November		
YTD	3	2
Target	5 or more green months	Less than 5 red months

Figure 9 - Metric 20 Month ahead BSUoS forecast vs outturn

Supporting Information

The forecast error for November was between 10-20%. For further information see our Monthly BSUoS Forecast on our website.

Principle 5

Coordinate across system boundaries to deliver efficient network planning and development

Summary table of Deliverables

2018/2019 Deliverable	Status
Baseline performance	
Wk24 data exchanges that help establish whether the system is compliant with the National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS or SQSS) and trigger remedial works if not.	As required by the Grid Code Planning Code, during week 42 (w/c 14 October) we submitted our transmission network data to other network operators. This concludes the data exchange process for 2018 – the team are now converting all the data into a format suitable for modelling with.
Exceeding baseline performance	
Publication of the Western Power Distribution and UK Power Networks Regional Development Programme Learnings	We have now received comments from UKPN on the South-East Coast RDP technical report. We will review and agree changes with UKPN so that the document can be published.
Begin two new RDPs by publishing a bespoke work plan for each region	Dumfries and Galloway (D&G) RDP ongoing. During November, we have been working to develop our IT delivery approach, and preparing to support SPT at their connections summit on 6th December. Western Power Distribution (WPD) RDP ongoing. During November, we discussed further with WPD how to capture and present case studies on how flexibility could be contracted with to facilitate further connections in constrained areas. Electricity North West (ENWL) RDP ongoing. During November, we continued work to assess whether operability options might represent a more appropriate way of managing constraints when compared with a traditional asset option (a new transformer) Publishable plans for all three of these RDPs are being finalised.
Facilitate unlocking of further DER connections through implementation of innovative connection contracts that support the roll-out of revised Statement of Works processes on a national basis and the ability of DER to provide transmission constraint management services in our in-flight RDP areas	All 8 RDP Offers for the South West have now been finalised and issued to WPD South West. We now await signed agreements from WPD by return.

Facilitate unlocking of further DER connections through implementation of new commercial contracts to allow DER to participate in provision of transmission constraint management services in our in-flight RDP areas	Contract structure and detail for transmission constraint management from DER remain under discussion between us and the DNOs.
Facilitate unlocking of further DER connections through implementation of enhanced systems and ways of working between transmission and distribution to support provision of transmission services by DER	The IT project to deliver the necessary systems and processes continues through it pre-start-up phase.

Principle 6

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

Summary table of Deliverables

Outcome	2018/2019 Deliverable	Status
Baseline performance		
Increase and improve our engagement activity across network users	Regular engagement with DNOs exists currently to share seasonal data and challenges encountered on networks. We will increase the volume of this engagement and include other network operators as well as large demand customers.	DNO engagement increased in relation to super grid transformer Tertiary applications. The November DNO Operational Liaison was well attended and received good feedback
	Build strong relationships with DNOs and review and develop contractual arrangements and processes to deliver efficient whole system focused outcomes	Ongoing discussions continue with all DNOs for migration to the Appendix G process. Energy North West (ENWL) have now signed Appendix G offers for Harker because of strong engagement from the connections team.
Exceeding baseline performance		
Increase and improve our engagement activity across network users	Increasing our involvement and support of the Open Networks Project	New projects from ENA for 2019 identified. More representation from ESO to facilitate discussions planned
	Articulating our thought leadership on Whole Electricity System across a broad stakeholder base	We have had bilateral discussions with ENWL, Western Power Distribution (WPD), UK Power Networks (UKPN), Northern Powergrid (NPG) and SSE(Manweb) regarding tertiary connected generation have taken place with commitment to engage further. For the tertiary connections discussions, there continues to be some uncertainty from the DNOs about these type of connections, but feedback on our engagement is good.

Performance metrics

Metric 14 - Connections Agreement Management

Performance

We are making good progress with updating connection agreements. There are currently nine connection agreements that have been identified as requiring updating. Eight of these are making very good progress and six have been issued to the customer. One of these agreements has been signed by the customer so is now updated. Two of the agreements issued to the customer are yet to be signed and are at risk of not being updated within the 9 month timeframe, despite being provided to the customer in good time. One of the connections agreements that we started working on in April has not yet been issued to the customer and we have escalated this to ensure that the agreement is issued without any further delays. We also intend to engage with the customer to explain the changes within the BCA in detail to facilitate a prompt response from the customer.

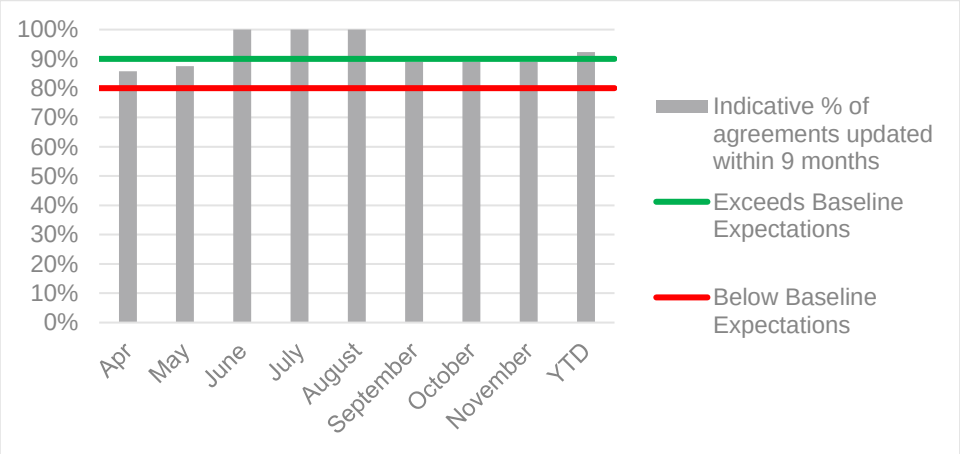


Figure 10 - Metric 14 Connections Agreement Management

Metric 15 - System Access Management

Performance

In November, we had one system access requests that were classified as fail to fly.

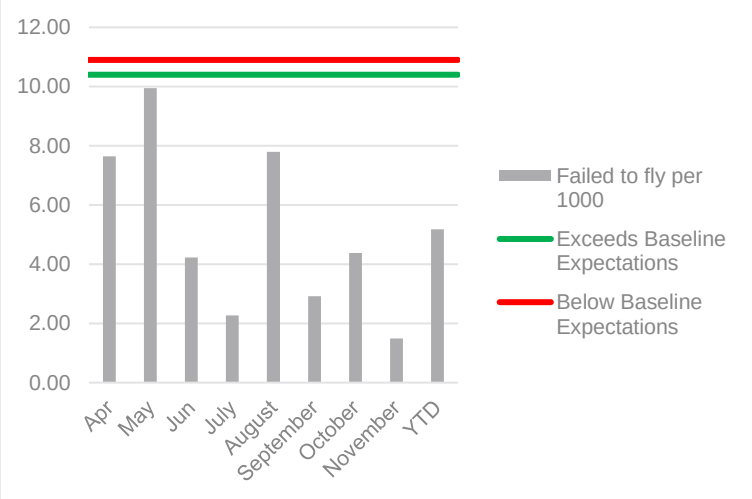


Figure 11 - Metric 15 System Access Management Performance

Metric 21 – Right First Time Connection Offers

Performance

Metric data error

The data provided last month as part of this metric did not contain all of the of connection offers produced. The complete data for the year to date is shown below.

Year to date number of connections offers	**131**
Reoffer required due to ESO error	**8**
Year to date percentage of connections reoffers caused by ESO error	**6%**
Exceeds expectations; On target: Below expectations	**0-5%; >5-15%; >15%**

Figure 12 - Metric 21 Right first time connections offers year to date performance

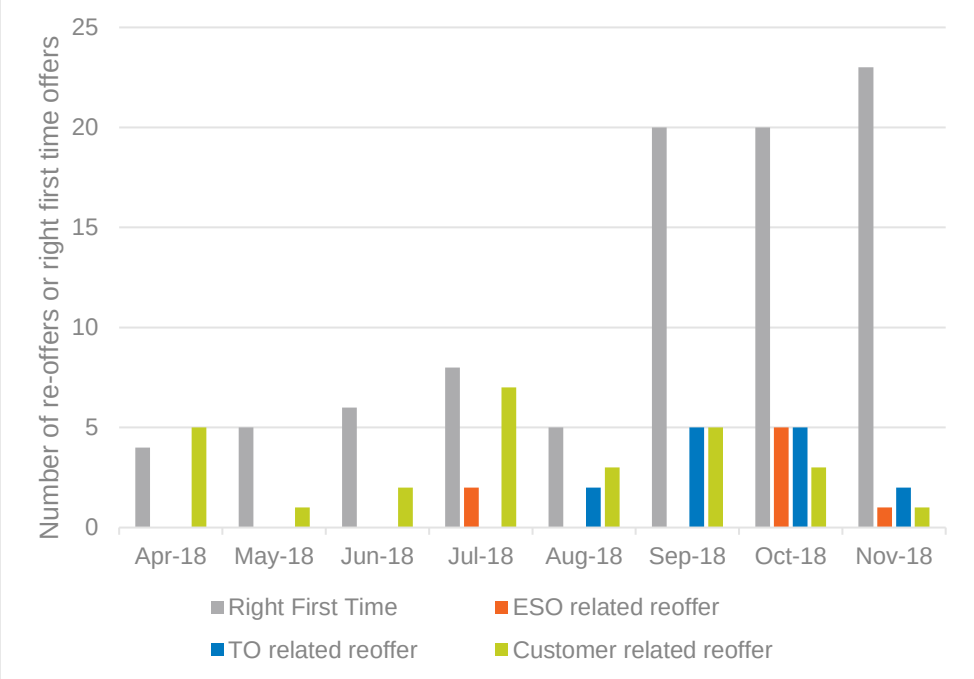


Figure 13 - Metric 21 Right first time connections offers

Principle 7

Facilitate timely, efficient and competitive network investments

Summary table of Deliverables

Outcome	2018/2019 Deliverable	Status
Baseline Performance		
Improve the Network Options Assessment models and methodologies to support Extending Competition in Transmission (ECIT)	Publication of the 2019 NOA recommendations.	We have concluded the cost benefit analysis, including the assessment of commercial solutions for the first time. The analysis recommends to proceed more network investment than last year. Commercial solutions and some new technology reduced build solutions are to be recommended. This year assumptions of commercial solutions have been competed against asset build solutions.
	Publication of the Electricity Ten Year Statement, which includes some of the methodology improvements mentioned.	We published the ETYS on 27th November. This included some improvements to how information is displayed and on the high voltage and thermal probabilistic case studies. This is work we sign posted in the Network Development roadmap as proposed improvements to our planning processes.
	Integrate changes in our models and methodology to include analysis of generator connections to the transmission network that are suitable for competition.	We are in the process of assessing relevant connections against the criteria for competition and agreeing with Ofgem how this is to be reported as part of the NOA approach this year.
	Improve and develop our modelling capability, further embedding the interconnector modelling and our analysis of offshore networks.	The analysis for NOA for Interconnectors (IC) is just commencing and will use the recommendations from the NOA cost benefit as part of the process to inform what the future network will look like. This gives greater tie up for stakeholders between the NOA and NOA for IC.
Exceeding baseline performance		
Improve the Network Options Assessment models and methodologies to support Extending Competition in Transmission (ECIT)	Progress delivery of the pathfinding projects to implement the Network Development Roadmap	The preferred set of asset based solutions has been identified along with a number of challenges which need to be resolved in order to progress any DNO based options. RFI packs for long term voltage needs in Mersey and South Wales are close to sign-off. High voltage needs have been included in the ETYS along with details on the case study on thermal probabilistic analysis. The first high voltage project has delivered significant learnings, which now need to be incorporated into the future NOA methodology. There will a delay in recommendations of solutions, particularly as this is now to go out to include commercial solutions in a second

		phase of options assessments. Developing processes and capability to include commercial solutions into the assessment process has taken longer than expected.
	Agree a route to fund DNO solutions in RIIO-1 and RIIO-2	Options have been worked up with ENA Electricity Regulation Group (ERG) and presented to Ofgem on 6th November. There is agreement on the option for RIIO-1 and options for RIIO-2 presented to inform the Ofgem consultation on the RIIO-2 framework. It's been a good achievement to get agreement from all ENA members on a route for RIIO-1.
	Showing up differently through our ETYS publication	We have looked to change the way we display some of the information in ETYS on boundary capability and have included information on system high voltage needs. We will be seeking feedback on the changes.
	Progressing probabilistic year-round assessment to understand how often the network boundaries are exceeded.	Within ETYS we have published the first half of the case study looking at how system needs are defined for a boundary using probabilistic techniques. We are demonstrating our commitment to evolve our tools and processes to adapt to the changing environment and ensure that the network is planned in such a way to meet the future challenges.
	Publication of the ENA Open Networks approach to whole system investment and operability options across transmission and distribution networks.	Work is continuing on the drafting of the ENA work stream 1 Product 1 (Investment Processes) end of year report, which details the high voltage case study work in the Pennine region, the learnings from it and the proposed next steps. This is on track for completion at the end of the year.

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