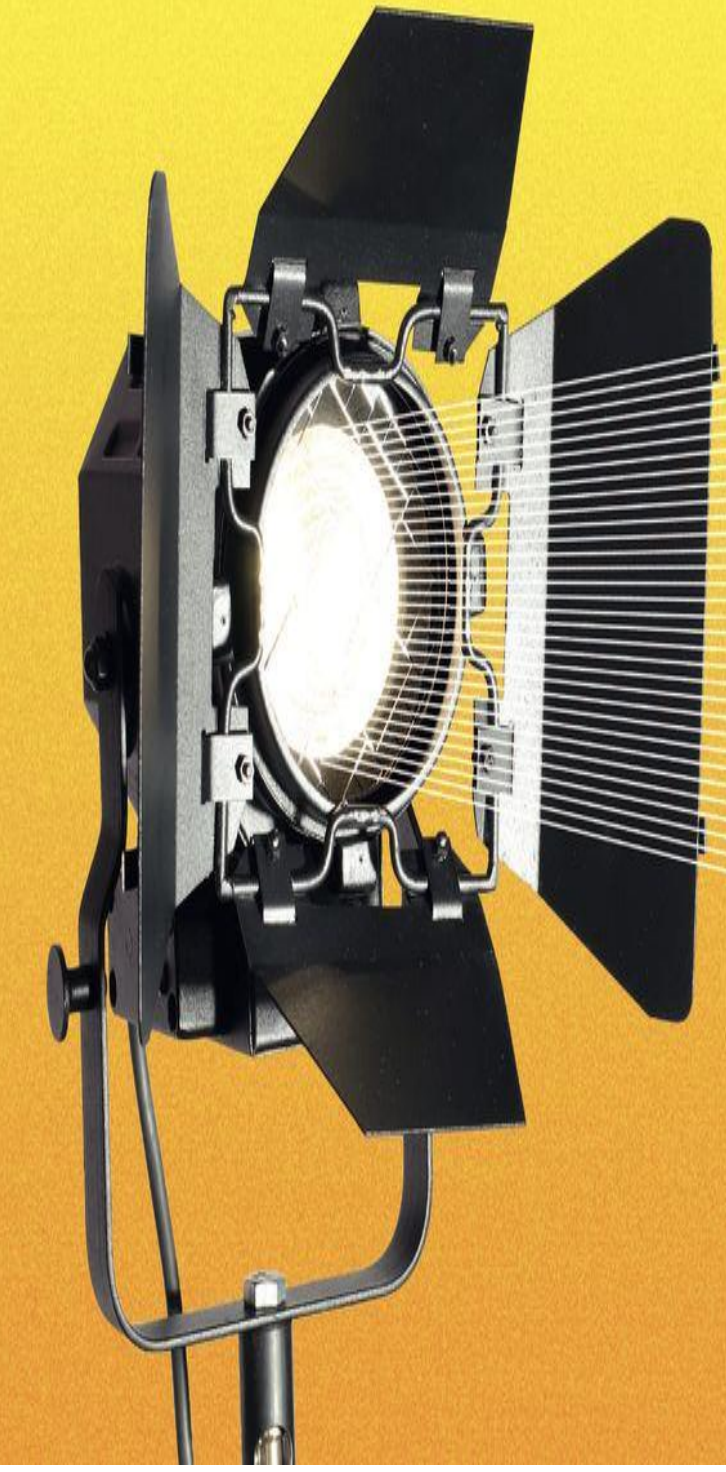
nationalgridESO

ESO Forward Plan FY 18/19

October reporting

21st November 2018



Executive summary

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October saw us deliver strong baseline performance. Reflecting the updates to our Forward Plan for Principles 4, 5 and 6, we are now reporting updates across all deliverables and two new metrics: Metric 20 - Month ahead BSUoS forecast vs outturn and Metric 21 - Right first time connections offers. Under Principles 1 and 2, we hosted both our Operational and IS Change Forums on 15th October providing updates on balancing costs, recent operational challenges, and developments in balancing services and operability, as well as latest news on our IS projects. In response to feedback we provided more information on Electricity Balancing System (EBS) at the IS Change Forum including an overview of delivery to date and next steps. Alongside this, we started our engagement on the process we will be following to update our Procurement Guidelines throughout the coming months.

Highlights for Principle 3 in October were hosting our Power Responsive Flexibility Forum, beginning our industry consultation on exclusivity clauses to improve the ability to stack products and the successful go live for a second aggregated BM provider.

As set out in our refreshed Principle 4, we hosted the Charging and Settlement forum for BSUoS and TNUoS Customers on the 16th and 17th October 2018 bringing together our network charging forums to better structure them around our customers rather than our charges. In response to stakeholder feedback we also published our Managing Customer Profitability Action Plan and Code Administration ESO Improvement Plan. These documents outline the actions we are taking to improve the TNUoS and BSUoS charging processes and the service we provide as a Code Administrator.

Under Principle 5, our Regional Development Programmes (RDPs) continue, we have established two further RDPs, with Western Power Distribution (WPD) and Electricity North West. We received positive feedback from our Customer Connection Seminars and continue to collaborate with the ENA Open Networks Project leading the assessment of the responses to the Future Worlds Consultation under Principle 6. Under Principle 7, we continue to engage stakeholders as we prepare our 2019 Network Options Assessment (NOA) and Electricity Ten Year Statement.

Your feedback is essential

After publishing our Mid-Year Report, we have been reflecting on how we report progress against our Forward Plan. We've refreshed the style of our monthly reports to provide a more concise status update approach and will continue to reflect on how we can best provide updates on our progress against our Forward Plan, for further details of our metrics please see our Performance Metrics Document.

Please do tell us what you think of our progress so far, and also, specifically on this report: Does it provide useful information? The right level of detail? Is it clear and accessible? Please provide feedback on this report or any element of the ESO Forward Plan and incentives to box.soincentives.electricity@nationalgrid.com.

Principle 1

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

Long term vision

For this Principle, our vision is to be a transparent ESO who provides accurate information to help market participants make investment decisions and facilitate the transition towards balancing across shorter timescales. We are committed to improving the “user experience” in everything we do.

Summary table of Deliverables

2018/2019 Deliverable	Status
Baseline Performance	
Publish 'Investor Roadmap' – timeline of our forecast and outturn reporting.	On track for planned delivery in Q4
Joint Charging and Settlement Forum	We held our Charging and Settlement forum for BSUoS and TNUoS Customers on the 16th and 17th October 2018. The event is held over 2 days with a focus on generators on one day and suppliers on the other. The event was successful with very positive feedback from customers on the day.
Run webinars to share the results of tender assessments	We ran the Firm Frequency Response (FFR) feedback webinar on the 22nd of October. This is an opportunity to explain the tender round result, receive feedback from providers, and for them to ask questions about the tender and assessment process.
Ongoing commitment to provide an FAQ document following each new information feed provided to the market	Commenced with delivery of new FAQ document for tender round webinars.
Operational Forum and IS change Forum	The combined Operational Forum and IS Forum were delivered on the 15th of October. We presented an update on balancing costs, recent operational challenges, and developments in balancing services and operability, and latest news on our IS projects. The forums provide an opportunity for market participants to ask questions and provide feedback, they were well attended and we received positive feedback.
Publish a list of information we don’t publish, and what we are thinking of sharing	On track for Q4
Trial new Electricity National Control Centre (ENCC) visit days once	On track for Q4

2018/2019 Deliverable	Status
every two months alongside Principle 2	
Publish boundary capacity status for high cost constraints.	On track for Q4
Improvements to Monthly Balancing Services Summary (MBSS) and FFR Market Information Report (MIR) from customer feedback	Ongoing
Publish daily balancing cost and the monthly balancing service summary (MBSS)	The daily balancing cost report was published on our website, providing a summary of balancing costs and volumes throughout the day, a BSUoS charge estimate, and commentary on the actions that we took. The monthly Balancing Service Statement (MBSS) was published covering the costs and volumes of our balancing actions, across the Balancing Mechanism (BM), trading, ancillary services.
Provide all energy forecasting data in one location	Historic data to be published on website in November
BSUoS Forecast report	The BSUoS forecast report was published on the 12th October with an update provided on the 23rd. The update was issued with a new forecast following the return to service of the Western Link HVDC on the 16th October. The report provides a 24 month forecast of BSUoS and 12 months of outturn. This is broken down into the balancing cost categories that make up the BSUoS charges.
Publish demand forecasting improvements roadmap.	On track for Q4
Increase frequency, granularity and provide underlying assumptions of our energy forecasts	To be delivered during Q1 FY19/20
Exceeding Baseline Performance	
Provider customer journey deliverables	On track to begin delivery in Q4
Data portal and central information access point and news feed for ESO stakeholders	Originally scheduled for Q3. On track for Q1 19/20. This has been delayed as we are considering what is the best enduring solution for providing this data.

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
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 assessment results were published on time in October. However, following the publication of the results it came to our attention that in the assessment of tenders submitted for TR106, we omitted awarding two contracts that should have been awarded. The results were republished on 6th November 2018.
- No tenders were received for Fast Reserve during October, therefore no assessment took place.
- No STOR results were due to be published this month.

FFR

This month's FFR tender was for month ahead delivery only. 59 tenders were received, made up of 25 non-dynamic and 34 dynamic tenders.

Webinars

No webinars took place this month for Fast Reserve and STOR as no assessment took place.

The FFR feedback webinar was held on 22nd October. Webex data shows that there were 18 attendees dialled in. A webex poll was used during the webinar to capture feedback; 9 participants responded. The survey results were positive with respondents indicating that the results webinars are useful (3.44/5) and that providers have the information they require to understand the results (3.11/5).

In addition to the usual feedback on the assessment results, we reminded participants of the improvements that have been made to the tender submission sheet in order to reduce the possibilities of providers submitting non-compliant tenders. This is a message that we have been

delivering over recent months. For tender round 106, no non-compliant tenders were received demonstrating the success of our communications on this topic.

We also explained that some additional information will be included in the Market Information Report in preparation for the next long term tender. In response to feedback that we have received via the FFR webinars, additional information is included to provide clarity to the market on the periods in which the ESO is looking to procure FFR.

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

Final testing of the BSUoS forecasting systems has been taking place during October. The half-hourly BSUoS forecast will start to be published on our website during December.

Metric 3 - Trades Data Transparency

Performance

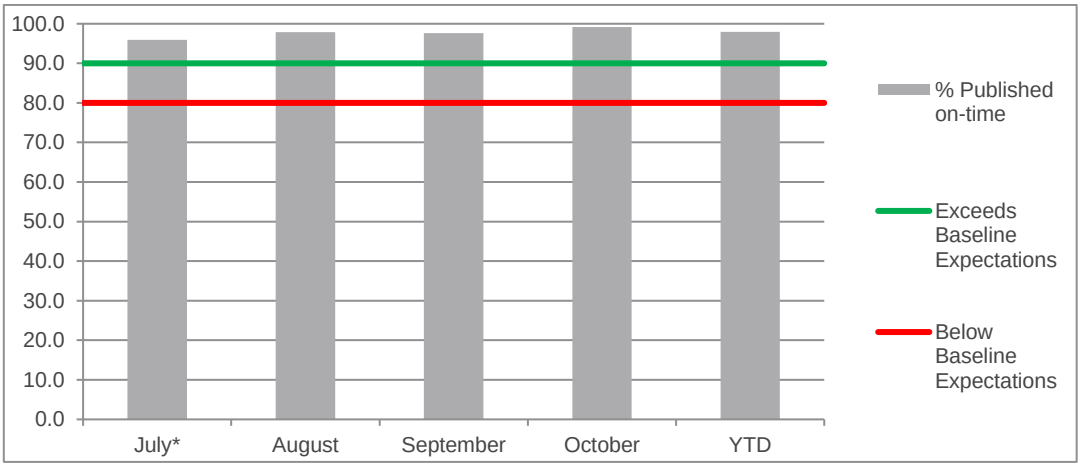

Figure 2 - Metric 3 Trades Data Transparency Performance

*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 October 593 trades have been published and of these 588 within 10mins of capture which is 99.2%.

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

In October 2018, we achieved a day-ahead (DA) demand forecast performance above our baseline expectation. To achieve this, we met demand monthly accuracy targets 58% 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 from the last three years.

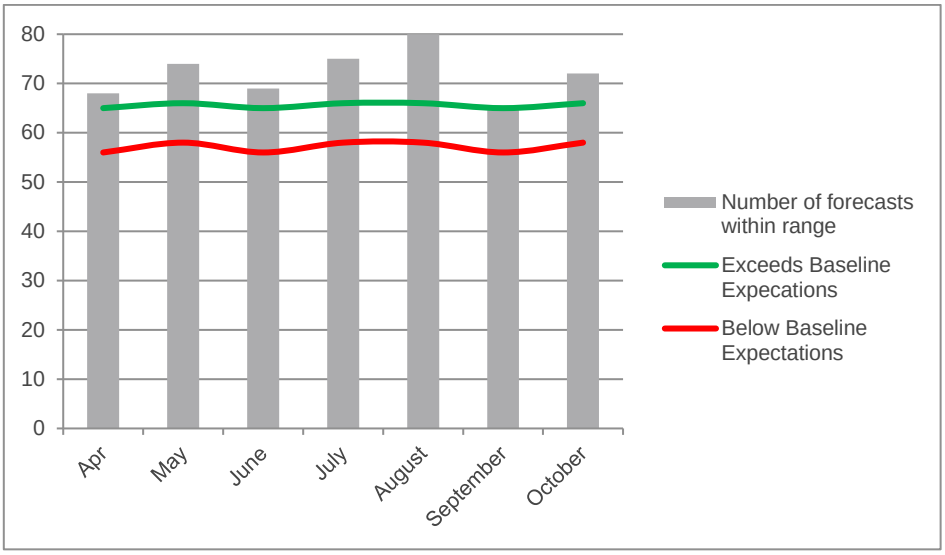

Figure 3 - Metric 4 Demand Forecasting Performance

Wind Forecast

In October, we achieved a DA Wind BMU performance on this metric in line with exceeds baseline expectation. To reach this outcome, we delivered wind BMU monthly accuracy targets 53.7% 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 from the last three years.

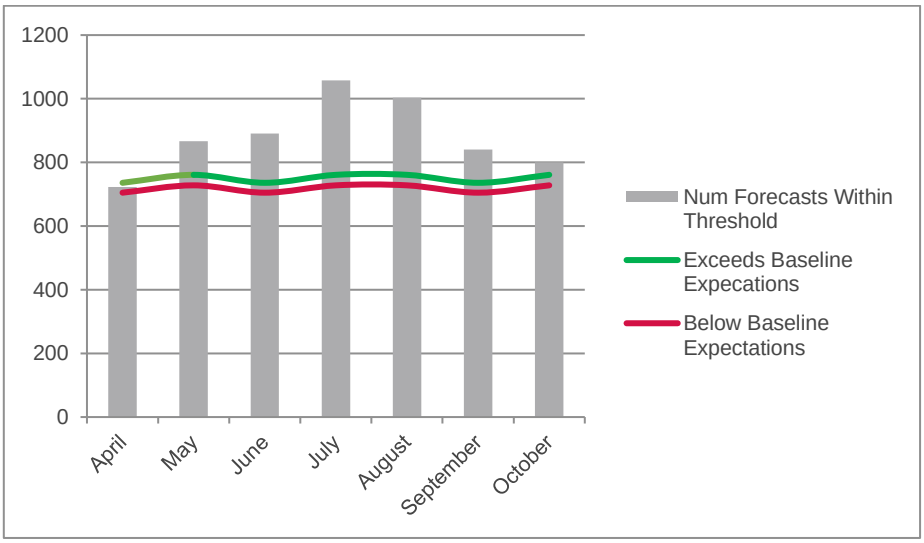

Figure 4 - Metric 4 Wind Forecasting Performance

Special Mention

Extensive preparation was dedicated to ensure accurate demand forecasts and system resiliency during the clock change night.

Principle 2

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

Long term vision

For this principle, our vision is that we drive overall efficiency and transparency in balancing, taking into account impacts of its actions across time horizons.

Looking to 2030 we intend that the optimal way to deliver secure, sustainable, affordable supplies of electricity is understood for a low carbon, decentralised and digitalised world. We will act as residual balancer, taking actions needed to balance and operate the system efficiently, ensuring stable balancing costs amongst a world of change.

As energy resources connected across the system change this presents new questions on how to best operate it and presents a new and widening range of potential providers, connecting across transmission and distribution. We must match the outcomes we need to deliver with the services offered by the growing market, coordinated through systems fit for the future which have been developed transparently. To achieve this, we will maintain our sharp focus on costs of balancing and operating the system safely and securely. We will support integration of new and existing resources by enhancing our existing IT systems and delivering new ones as needed. We will share our thinking on where changes may be needed to balancing services and codes. We will listen to our stakeholders to ensure we benefit from their experience and ideas as we form our views.

Summary table of Deliverables

Outcome	2018/2019 Deliverable	Status
Baseline performance		
Efficient management of the costs of balancing the system	Balancing cost management	October: £145.6m Benchmark adjusted for unavailability of HVDC: £129.1m Year to date: £638.8m Year to date benchmark adjusted for unavailability of HVDC: £599.7m The Western HVDC was unavailable for the first half of the month, leading to higher costs.
	Significant upgrading of IT systems to prepare for implementation of European network codes	On track for TERRE Go-Live in Q3 2019/20.
Develop our information portals and events	Initiation and delivery of the SO IS Change Forum with terms of reference based on feedback from customers and stakeholders. Topics identified for the forum include the change roadmap, communication of project delivery and technical aspects of projects which will impact user groups	The second IS Change Forum took place on the 15th October. Following positive feedback from the first forum, it was again run as a trade stand event alongside the Electricity Operational Forum. Responding to feedback, we expanded the number of stands, our representatives, the level of technical detail as well as running a separate breakout session in the afternoon focusing on the migration of Non-BM STOR. The post event survey window is currently still open, however the initial set of responses whilst positive are not as strong as for the previous event. We will be

		reflecting on how to respond to this feedback to improve future events.
Exceeding baseline performance		
Transparency of our requirements and balancing activities	Deliver new systems capability to enable participation of distributed resources within our balancing markets.	A Flexitricity aggregated unit went live in the Balancing Mechanism in October. Similar to, Limejump in August, this has involved updates to a number of processes in the ESO including BMU registration, testing, metering, and settlement. It has also required updates to ENCC systems to ensure these BMUs are visible and training to enable the engineers to understand the system impact of dispatching a BMU which can be aggregated across several GSPs.
	Publication of improved Procurement Guidelines, and report, with a framework on our current approach to the procurement of Ancillary and Balancing Services	First stakeholder webinar took place at end of the October to update stakeholders on the process we will be following to update the Procurement Guidelines. A further Q&A webinar to gather feedback is planned for Friday 9th November.
	Future GB system security planning	Rate of change of frequency (RoCoF) and Vector Shift relay retrospective change program planning started. Update on RoCoF and planned mitigation provided at Operational Forum in October. Please see the delivered this month section for further information.
Solve operability challenges and prepare for the future	Publish Operability Report on challenges, planned activity and stakeholder engagement	On track for publication in November.
	Publication of the Future of ENCC Study, recommendations and scope of future work	We have sought feedback from stakeholders on the Future of the ENCC thought piece and they have told us that it is difficult for them to contribute to a discussion on the Future ENCC as they do not fully understand the activities that are undertaken by the ENCC now. To provide a clearer picture on this we are going to be focussing on providing transparency of real-time requirements and balancing activities.
	Embedding of enhanced inertia modelling tools and new inertia measurement capability	On track for delivery in summer 2019
	Deliver new systems capability within the ENCC, specifically ASDP (Ancillary Services Dispatch Platform), and progress an update of the dispatch module for our energy balancing processes	On track. Short term operating reserve (STOR) providers will start to be moved across to the ASDP during Q2 2019

Delivered this Month

In October, we have been working with the Energy Networks Association (ENA) and Distribution Network Owners (DNOs) to develop a detailed implementation plan for retrospective changes to RoCoF relay settings and for the removal of Vector Shift relays. This work is a national programme affecting around 50,000 distributed generators at a cost of circa £30million. So far this year we have spent £90 million in managing the risk posed by RoCoF and Vector Shift. Once this programme is complete we forecast saving £300million by 2024. This month we have:

1. Agreed the overall delivery programme including four delivery elements: Engagement, Incentives, Assistance & Enforcement
2. Discussed how network licensees can best support the Embedded Generation in assistance programme
3. Outlined the detailed Embedded Generation information requirements from DNOs
4. Proposed how to measure the value delivered during the programme and how to determine when the programme should be stopped
5. Shared the draft plan with DNOs for comments

A further meeting is scheduled for 13th November to map out the key programme deliverables, stakeholder engagement plan and resource requirements.

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	YTD	Full year
Benchmark cost (£m)	56.9	68.3	90.7	65.2	72.4	57.5	99.6	510.5	843.52
Benchmark adjusted for WHVDC (£m)	62.6	72.9	102.9	74.3	86.5	71.4	129.1	599.7	
Outturn cost (£m)	56.5	59.3	85.8	78.4	72.4	140.8	145.6	638.8	

Figure 5 - Metric 5 Balancing Cost Management Performance

Metric performance detail

Throughout October

- Reassessment of voltage areas in London and South East meant a unit could support volts in two regions, resulting in synchronising 1 fewer units on many occasions, saving approx. £250k per night.

- Daily assessment of optional contract – most economical solution to enact contract for period of 8 hours or trade on interconnectors for 1 or 2 hours.
- Tripping scheme in Scotland was modified to allow some generation to generate (during times they were otherwise not allowed to under their BCA), as they would now trip for certain system faults.

Details per day

1/10 – additional trades on interconnectors taken to mitigate against more expensive System Operator to System Operator actions.

2/10 – trades on interconnectors for margin displaced actions on BM units, saving approx. £303k

2/10 – interconnectors traded to replace volume of constrained wind due to North England constraints. The market was already short and 5 units were required for the peak. Mitigated need to buy on machines in excess of £99/MWh

2/10 – machine in Scotland allowed to run (instead of issuing bids) due to real time assessment – was otherwise being bid down for security reasons

3/10 – early assessment of Scotland security position meant network could be operated without key unit, reducing wind bid volumes for constraints

5/10 – re-assessment of Scottish constraint limit allowed a unit to run, which offset replacement energy costs elsewhere, saving approx. £20k per hour

5/10 – interconnector trades for 1 hour preferable to running a unit for 5 hours, saving approx. £79k

10/10 – real time constraint assessment allowed for increase to Scotland-England boundary, saving approx. £14k per hour

12/10 – plant despatch was configured to provide additional response to increase constraint limit in North Wales area, providing flexibility and cost savings

19/10 – change to market despatch reduce available margin – trades taken on interconnectors which delivered value against synchronising other BM units

23/10 – interconnector trade for 1 hour to reduce power flow swing and reduce amount of response required to cover – saving £142k

24/10 – real time studies in control room allowed for increase to Northern England constraints, saving 500MW of wind bids for 5 hours (approx. £200k)

27/10 – real time studies in control room allowed for increase to North Wales constraint due to changes in forecasts – saving £140k

30/10 –unit warmed ahead of time to mitigate risk of interconnector swing over the demand peak

31/10 – interconnector profiling to allow access to high frequency response service saving £180k against other options

Principle 3

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

Long term vision

Our vision for this principle is to have simple, fair transparent rules for procuring balancing services to maximise competition where possible. In our Forward Plan, we described how we will use this to facilitate new business models and technologies into the market to deliver a distributed, smart, flexible electricity system.

Summary table of Deliverables

Outcome	2018/19 deliverables	Status
Baseline performance		
Grow participation and promote fair access in provision of balancing services	Grow the Power Responsive campaign, including the annual conference	Flexibility Forum held on 23rd October. Delegates gave 7.5/10 for overall satisfaction with the event.
	Support new and existing providers to help them participate in the ancillary and balancing services markets and tenders.	We only procured Firm Frequency Response (FFR) in October and the next Short Term Operating Reserve (STOR) round is December. For Fast Reserve (FR) we have already contracted sufficient volume against our procurement strategy in September, we informed stakeholders of this via the Market Information Report and because of this we received no tenders in October. There were no new units in October. Rolled out approach to capturing feedback at 4 key moments in provider journey
Promote competition and develop new markets in balancing services	Publish new testing and compliance/performance monitoring policy for response and reserve providers	Published a consultation on the overarching policy for performance monitoring of all active power balancing services at the end of September. The proposed changes to the performance monitoring calculation in the FFR outline change proposal (OCP) generated lots of feedback from providers, we are in the process of finalising the OCP response and clarifying our position on performance monitoring of FFR and future products
	Deliver new, standardised products for response and reserve together with simplified contracts.	Fast Reserve OCP received 6 responses. Highlights from proposals in the OCP include standardised FR windows, reduced entry level to 25MW, Detailed Change Proposal scheduled for December. Standardisation of STOR will be superseded by wider reform of reserve services which is coming early 2019
Exceeding baseline performance		

Promote competition and develop new markets in balancing services	Deliver actions set out in the Reactive Power Roadmap	Modifications to the CUSC with regard to reactive services: Enhanced Reactive Power Service (ERPS) and Obligatory Reactive Power Service (ORPS). We have raised a modification to remove ERPS which is now out to consultation until November. We have published Expressions of Interest for South Wales and the Mersey Ring which are open until 5th November.
	Publish and consult industry on exclusivity clauses to improve the ability to stack products	Consultation was published on time and in line with Forward Plan expectations. The feedback window closed at the end of October. Next steps are to review feedback and hold internal workshops.
	Develop an integrated approach to buying standard and faster-acting frequency response	On track for publication in December.
	Detailed auction trial publication	Contract with provider has been signed.
	Improve metrics to provide more transparency on costs and capacity requirements	Cost transparency element complete and remaining elements on track for delivery in Q4 2018/19
	Deliver a new, highly scalable and flexible dispatch solution for reserve – Phase 2 roll out for STOR providers	STOR onboarding Due Q2 2019/20
Grow participation and promote fair access in provision of balancing services	Accelerated access for early adopters entering the BM	October saw the successful go live for our second aggregated BM provider.
	Progress TERRE and related code developments, supporting smaller parties accessing the Balancing Mechanism	Final modifications on track for delivery in Q4

Principle 4

Promote competition in the wholesale and capacity markets

Long term vision

Globally technological disruption is transforming energy markets. In 2010 only 3% of all the electricity consumed in the UK was produced by solar and wind generation. By 2017 this share had increased dramatically to 18%. Disruptive change is not only transforming market dynamics, it is also creating regulatory gaps because laws and industry frameworks have not kept up with the rapid advances. Competitive markets with clear price signals are essential to allow efficient business decisions; this can be achieved by focusing on the transparency and liquidity of markets together with removing unnecessary barriers to entry.

Our vision and commitment under this principle is to work alongside our stakeholders to embrace the opportunities created by these advances. We will facilitate the evolution of the markets, providing thought leadership and insight to unlock the full potential that a greater diversity of technologies, market participants and business models can deliver for the consumer.

In an increasingly complex world, markets will need to evolve and it is important that this change happens sufficiently quickly. Many of these changes will need to be delivered through the rules and obligations that we and market participants must adhere to at the required change at pace.

Summary table of Deliverables

Outcome	2018/2019 Deliverable	Status
Baseline performance		
Managing Customer Profitability – helping our customers be successful ultimately driving down costs to end consumers	Joint Charging and Settlement Forum	October customer forums held on BSUoS and TNUoS on the 16th and 17th. There were two events held: one for generators and one suppliers. Links to the all the materials can be found in Metric 9 BSUoS billing metric.
	Publish Improvement Action Plan	We have published our managing my profitability improvement plan here.
	Delivery of improvements	In line with our improvement plan throughout Q4 we will update and improve our guidance documents to help customers better understand information and data on charging
Facilitating Code Change – our work aims to ensure that all our changes contribute to delivering consumer value	Publish Improvement Action Plan	We have published our Code Admin Improvement plan and it can be viewed here.
	Delivery of improvements	In line with our improvement plan we will improve access for modification working groups in November
	Communicate manage a code change project plan	This deliverable is on track but no updates were scheduled this month
	Engagement on regulatory horizon project	This month we held a webinar with industry on the future Code Manager approach and how different funding models could work with that concept. We received some positive feedback and are developing our thoughts on how we provide a further update in the coming months.

Exceeding baseline performance		
Facilitate and deliver code change under Charging Futures	Deliver Charging Futures Forums that are open to all network users. 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.	Next Charging Futures forum is planned for 15th January. We have been engaging with stakeholders on the facilitation of the progress of access and forward looking charges. In particular, the likely interactions of the significant code review with ENA-led work and the potential for a licence obligation on ESO and DNOs
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	Confidential information has been shared with Ofgem and BEIS and onward publication is in discussion with BEIS
	Comprehensive review of BSUoS	Following discussions at the transmission charging methodology forum (TCMF) we have initiated a more comprehensive review of BSUoS and will work with customers to determine appropriate next steps Two BSUoS workshops and a webinar have been held reaching a total of 77 individuals. We had positive feedback from customers with an average of 88.5% finding the workshops useful and an average satisfaction rating of 8.
	Initiate consideration of changes to the SQSS	No update this month
	Update on our thinking on security arrangements for transmission schemes	No update this month
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	Our model and draft results have now been presented to BEIS, Ofgem and the Panel of Technical Experts (PTE). We await formal endorsement from the PTE and an appreciation of BEIS's next steps following its 5-year review of the CM prior to undertaking our industry engagement.
	Consult on our distributed generation derating method and results	Following receipt of data from Electralink under the contract we agreed with them in August we continue to progress with a data cleansing exercise prior to undertaking analysis and our planned industry engagement

Performance metrics

Metric 9 - BSUoS Billing

Performance

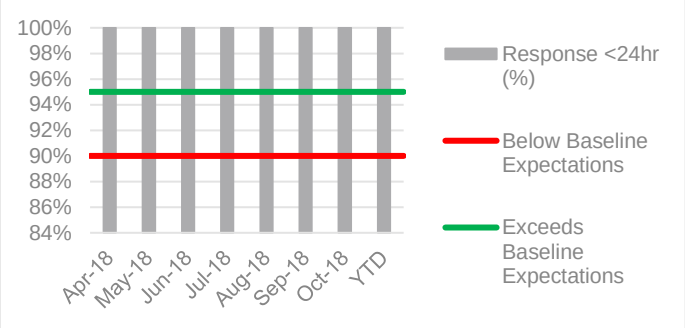

Figure 6 - Metric 9 BSUoS query response time

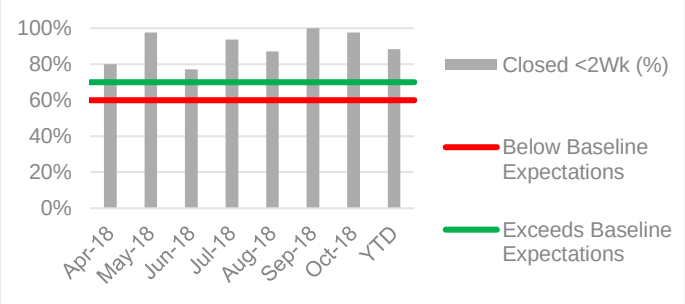

Figure 7 - Metric 9 BSUoS query resolution time

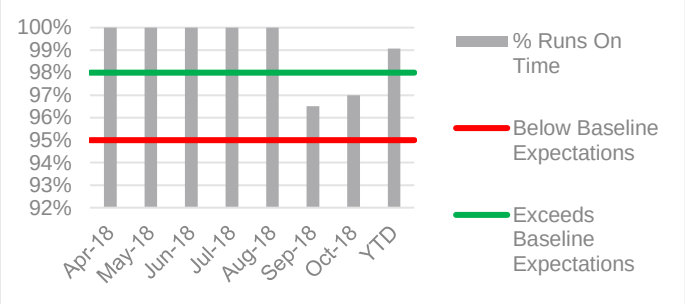

Figure 8 - Metric 9 BSUoS bills timeliness

Supporting information

- We closed 41 queries in the month, 40 of which were within the two-week target.
- We received 52 new queries in October, some of which were attributed to discussions and knowledge shared via the Charging and Settlement forum. We received 3 customer survey results following query closure all with a rating of excellent. (Ratings available are: - Very Poor / Poor / Good / Excellent)
- Billing October – We suspended billing on the 26th October due to a planned outage on our SAP system that produces the BSUoS invoices. We informed customers of this outage a week beforehand via a circular that was sent out to our distribution list and published on our website in the BSUoS news section. This was a planned outage but was deviation from the originally published calendar. All other runs were completed on time.

- On the 23rd October we issued a circular to the industry advising them that we had released a revised BSUoS forecast due to the Western HVDC link being available again.
- We held our charging and Settlement forum for BSUoS and TNUoS Customers on the 16th and 17th October 2018. The event was a great success with very positive feedback from customers on the day.
- The follow up materials where published on our website
  - Charging and Settlement Forum: Generation Focused Day Slides,
  - Charging and Settlement Forum - Demand Focused Day Slides
  - Charging and Settlement Forum – Questions and Answers

1) TNUoS Tariffs and Forecasting (length: 45 minutes)
2) TNUoS Charging and Billing (length: 15 minutes)
3) BSUoS Reporting and Forecasting (length: 15 minutes)
4) BSUoS Billing (length: 20 minutes)

Metric 20 - Month ahead BSUoS forecast vs outturn

Metric Description

This metric will count the number of times the absolute percentage error (APE) for our monthly BSUoS forecast is outside a baseline performance band of 10-20%. To achieve baseline expectations, the APE cannot be above the band on more than 4 occasions in a financial year; and to achieve exceeding expectations, the baseline expectation must be met and the APE must be below the band 5 or more occasions in a financial year.

Performance

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

Balancing costs in September and the first half of October were significantly higher than expected. This was driven by transmission outages in Scotland, the Western Link HVDC being out of service and high volumes of wind over the period. Western Link HVDC has returned to service on the 16th of October, and we are forecasting that balancing costs return to normal levels. For further information see our Monthly BSUoS Forecast on our website.

Principle 5

Coordinate across system boundaries to deliver efficient network planning and development

Long term vision

It is essential that we, as the ESO, coordinate and work effectively with other Network Operators to deliver the most efficient and economic outcomes for the whole system.

Under principle 5 we aim to develop ways of working and processes that enable the longer-term investments and development of the network to be coordinated across boundaries on a whole system basis.

This year, our objective is to complete three very different Regional Development Plans (RDPs) using a trial by doing basis, so that learnings can be taken and applied in other situations across the network.

There are strong links between this principle and the Operational activities in principle 6 and the Pathfinder projects in principle 7.

Summary table of Deliverables

Outcome	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 (commonly referred to as the NETS SQSS or SQSS) and trigger remedial works if not.	Initial wk24 submissions received. Currently liaising with DNOs to understand data and correct issues. This year saw a new template-based approach introduced for certain data items, to promote consistency of submissions.
Exceeding baseline performance		
Improve our cross-industry collaboration for whole system network planning and development	Publication of the Western Power Distribution and UK Power Networks Regional Development Programme Learnings	WPD: Published in June UKPN: Originally scheduled to be published in June; on track for Q3 (awaiting final review by UKPN)
	Begin two new RDPs by publishing a bespoke work plan for each region	Dumfries and Galloway RDP work is ongoing and a plan is being prepared, we are awaiting information from SP Energy Networks to be able to complete and publish this. In our fourth RDP (our second with WPD), discussions are ongoing. We now have a clear scope of work for this RDP, which is considering commercial solutions to battery storage capacity issues at peak demand times.

		We are also pursuing a fifth RDP with Electricity North West. Discussions are ongoing to determine the scope of the RDP, which is focused around Harker and is investigating ways to manage transformer capacity issues.
	Facilitate unlocking of further DER connections through: Implementation of innovative connections contracts that support the roll-out of revised Statement of Works processes on a national basis and the ability for DER to provide transmission constraint management services in our in-flight RDP areas	Bilateral connection agreements (BCAs) with UKPN have contained the necessary provisions since June 2017; and they are rolling out connection agreements with new DER on that basis. BCAs with WPD are in the process of being finalised and signed-off at the moment.
	Implementation of new commercial contracts to allow DER to participate in the provision of transmission constraint management services in our in-flight RDP areas	Contract structure and detail for transmission constraint management from DER remains under discussion – we are seeking agreement on how NGESO and DSO interact to ensure effective service delivery from DER to transmission; in a way that supports both the transition to DSO and the maintenance of routes to national (non-locational) markets for DER to provide services direct to NGESO. End-to-end process for DER provision of transmission constraint management services is being finalised.
	Implementation of enhanced systems and ways of working between transmission and distribution to support provision of transmission services by DER	Systems and process changes to enable RDP constraint management are feeding into our standard IS processes to secure the necessary resource and funding.

Principle 6

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

Long term vision

It is essential that, we as the ESO, coordinate and work effectively with other Network Operators to deliver the most efficient and economic outcomes for the whole system. In principle 6, the aim is to develop ways of working and processes that enable whole system operation and optimal use of resources across the system.

This year our objective is to listen and act on our customers' and stakeholders' needs to inform a clear ambition and strategy surrounding whole system operation and to use this to take a leadership role within the ENA Open Networks project to design and develop ways of working. In the more near term, the objective of this principle is to make a step change in the processes and flexibility around connections and access to the networks.

There are strong links between this principle and the RDPs in principle 5 and the Pathfinder projects in principle 7.

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.	Ongoing delivery during Q3 and Q4, no specific update this month
	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.
	Identify and develop new market tools with all relevant parties to ensure efficient system solutions for operation	Ongoing work, no specific update this month.
	Demonstrate system operability related challenges to a broader range of stakeholders identifying the scale of the impact we forecast on future operation and providing opportunity for whole system solutions to be developed.	Our first Operability Report is due for publication during November.
	Design and develop replacement TOGA system working with all users to ensure solution meets requirements of all system interfaces.	Ongoing project. Next communication due later this quarter.

Improved service and information to network users	Deliver additional value to annual network customer connection seminars by creating a Whole System focus to these events, raising profile of issues experienced by users and identifying opportunities for new solutions across networks.	The Customer Connections Seminars were held during October, feedback was good.
Exceeding baseline performance		
Increase and improve our engagement activity across network users	Increasing our involvement and support of the Open Networks Project	Started work developing 2019 work programme with Open Networks Project.
	Lead the delivery of the Open Networks Future Worlds consultation, laying the framework of options for future industry structure	Positive feedback received from stakeholders on the consultation content and approach.
	Articulating our thought leadership on Whole Electricity System across a broad stakeholder base	Engaged with stakeholders at Customer Seminars and Flexibility Forum to inform our broader publication.
Cross TO system performance enhancements	Identify areas for process improvement under existing contracts between SO and TOs and lead change programmes to optimise consumer benefits.	Work in this area is ongoing
Enhanced Asset Optimisation	Engage with TOs and DNOs to identify opportunities to achieve more efficient use of existing assets, making use of weather and loading related operational capabilities thereby reducing the need for investment and lowering the volume and cost of balancing actions taken.	Some opportunities have been identified, the next steps are ongoing.

Performance metrics

Metric 14 - Connections Agreement Management

Performance

This metric is a nine-month process so we will only report the final metric from January onwards. For the interim we will use this indicative metric to show our progression towards full delivery. This indicates the percentage of milestones completed on schedule in any given month in the process. This allows us to drive performance in this area and keep our stakeholders informed of an indication of our 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. 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.

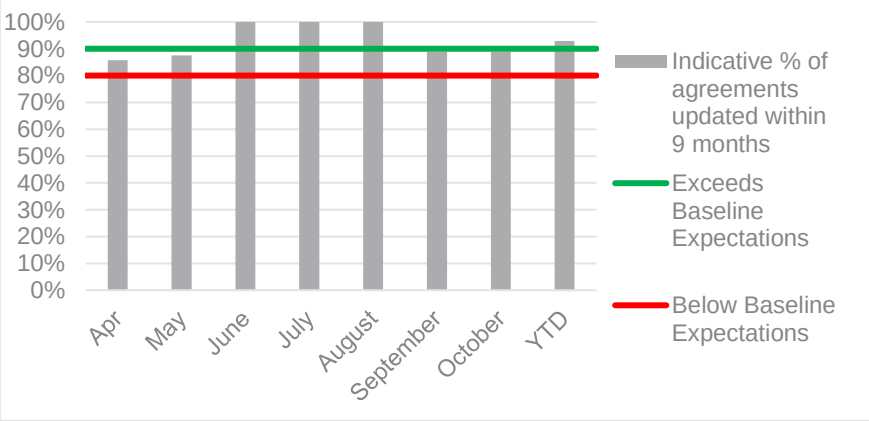

Figure 10 - Metric 14 Connections Agreement Management

Metric 15 - System Access Management

Performance

In October, we had three system access requests that were classified as fail to fly.

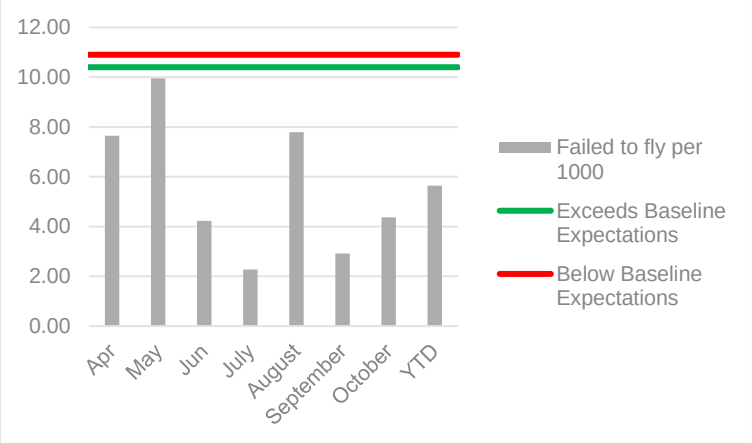

Figure 11 - Metric 15 System Access Management Performance

Metric 21 – Right First Time Connection Offers

Metric Description

Ensuring connection offers sent to customers are 100% correct ensures that the customer receives a good standard of service from the connection offer process, it minimises re-work and facilitates timely and efficient connection to the network. To measure the quality of a customer's connection offer we will use a right first time (RFT) measure. The right first time metric will report all connection offers signed within a calendar month and identify if a 'reoffer' has been made (i.e. the offer was not right first time and needed rework) and what the root cause for the rework was. Any reoffers directly attributable to the ESO will impact the performance of the metric. Any rework driven by a TO or driven by a customer change to requirements during the process will be excluded from the metric performance but reported for information only. The ESO right first time metric will be targeted at 95%.

Performance

Year to date number of connections offers	**68**
Reoffer required due to ESO error	**3**
Year to date percentage of connections reoffers caused by ESO error	**4.4%**
Exceeds expectations; On target: Below expectations	**0-5%; >5-15%; >15%**

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

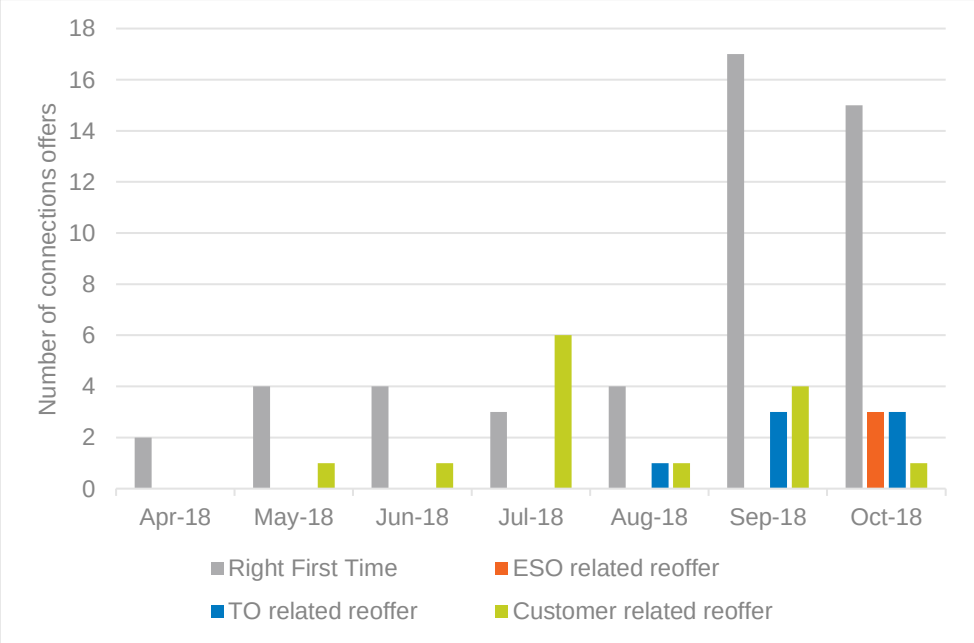

Figure 13 - Metric 21 Right first time connections offers

Principle 7

Facilitate timely, efficient and competitive network investments

Long term vision

This principle aims to drive innovation and the best value for consumers. We aim to do this through building upon the Network Options Assessment (NOA) process to identify the long term needs of the system and to engage with a broad range of solution providers.

This year, our objective is to develop a clear roadmap of enhancements to the NOA process that introduces a new form of competition to the traditional transmission asset build solutions. Following this, the Pathfinding projects will clearly define the processes and benefits of these alternative solutions, be they DNO asset or market solutions.

We will continue to provide input and leadership as to how a competitive allocation of a transmission owner could be implemented and identifying those projects that meet the current competition criteria.

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.	Our cost benefit analysis period commenced at the beginning of October. We are making good progress with optimal paths being identified. Drafts of some chapters have been circulated to the TOs for comment.
	Publication of the Electricity Ten Year Statement, which includes some of the methodology improvements mentioned.	Drafting is progressing to plan and majority of stakeholder comments have been incorporated Stakeholders have shared that they are happy with the content.
	Integrate changes in our models and methodology to include analysis of generator connections to the transmission network that are suitable for competition.	Delivered in April/July as part of the NOA methodology. The relevant connections are currently being assessed for potential inclusion in this year's NOA. However, Ofgem's licence change consultation has been delayed so we are currently confirming with Ofgem exactly what should go in this year's NOA (i.e. include the assessment in the main body of the document or as an appendix simply listing the relevant projects). Ongoing due Q4.
	Improve and develop our modelling capability, further embedding the interconnector modelling and our analysis of offshore networks.	NOA interconnector methodology incorporated in overall NOA methodology in April (consultation)/ July (final) includes a number of modelling improvements, Ongoing due Q4
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	Assessment of the Pennine region has concluded which has identified that a mix of DNO and TO connected assets is the most economic solution. Which option is best is site specific and dependant on what is driving the need. A number of questions are arising from the work which will need addressing and a further decision taken to progress this to a second phase to include market solutions. A request for information is being prepared for the Mersey and South Wales areas to seek options that could resolve foreseen long term voltage issues. A number of questions remain open on the information to be provided and that are being requested and these are being worked through. We have demonstrated value gained from considering options on the DNO network in the Pennines area. However, challenges remain in implementing the solution, including funding and ensuring that the costs submitted remain relevant
	Agree a route to fund DNO solutions in RIIO-1 and RIIO-2	There has been good progress on the development of short and long term approaches through the ENA Open Networks and Electricity Regulation Group (ERG). Proposals were taken to ERG for sign off at the end of the month and although there are a number of last minute questions these have been resolved to allow discussion of a collaborative networks position with Ofgem in early November. We hope this allows any recommended DNO solutions to progress and the longer term options to inform Ofgem's December RIIO-2 consultation. This is really good progress in this area and we have learned lessons on how we can improve the process as we go along.
	Showing up differently through our ETYS publication	We are including a case study within ETYS on the high voltage pathfinding projects, setting out the needs for the Pennine region. We are also including the early outputs from our work to look outside of winter peak issues and at a wider range of system needs.
	Progressing probabilistic year-round assessment to understand how often the network boundaries are exceeded.	A case study has been developed and circulated to the TOs for comment on the probabilistic analysis. We are now developing the technique further and starting to look outside of winter peak issues with better representation of year round needs considering more scenarios and sensitivities.
	Publication of the ENA Open Networks approach to whole system investment and operability options across transmission and distribution networks.	On track for Q3

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