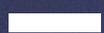


# Forward Plan 2019-21



Mid Year Performance Report

18 October 2019



# Key achievements in this six-month period



## Managing system balance and operability

- Reduced our rolling 12-month Monthly Mean Absolute Error for electricity demand forecasting by 3.3%
- Outperformed the benchmark for balancing costs by 9%, yielding a net benefit of £47m lower costs to consumers
- Hosted over 60 attendees at our Electricity National Control Centre (ENCC) visit days
- Developed the Ancillary Services Dispatch Platform (ASDP), a scalable solution which has already created competition within the Fast Reserve market.



## Facilitating competitive markets

- Delivered the first phase of our Frequency Response auction trial, expected to save £6.5m per year when fully rolled out
- Worked with industry to deliver the Balancing Services Charges Taskforce final report
- Produced helpful guidance for Power Park Modules and Firm Frequency Response providers
- Published a thought piece on the future direction of energy codes.



## Facilitating whole system outcomes and supporting competition in networks

- Accelerated connection process for embedded generators, saving approximately £1m across two regions of the country
- Progressed multiple Pathfinder projects, engaging extensively with our stakeholders
- Improved the Network Options Assessment process and methodology
- Developing proposals for the potential introduction of early competition in onshore transmission.

## Key publications in this 6-month period

[Future of the ENCC](#)

[Future Energy Scenarios](#)

[Operability Strategy Report](#)

[Winter Review and Consultation](#)

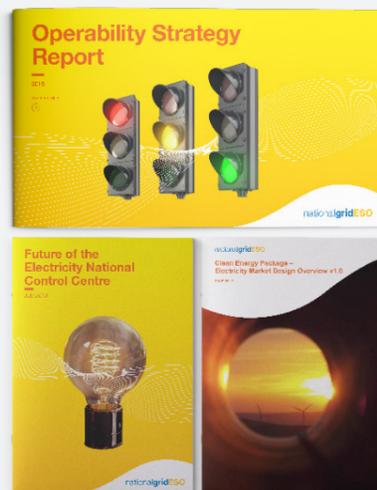
[Clean Energy Package – Electricity Market Design Overview](#)

[Balancing Services Charges Task Force final report](#)

[Reforming Energy Code Content](#)

[Power Park Module Signal Best Practice Guide](#)

[ESO Balancing Services Guidance Document](#)



# Introduction



Our System Operator (SO) mission<sup>1</sup> is to enable the transformation to a sustainable energy system and ensure the delivery of reliable, affordable energy for all consumers.

## Success in 2025 includes:



an electricity system that can operate **carbon free**



a strategy for **clean heat** and progress against that plan



**competition** everywhere



the System Operator is a **trusted partner**

Energy is the lifeblood of our economy and society. As the Electricity System Operator (ESO) for Great Britain, we hold a unique position at the heart of the nation's energy system. Our actions influence investment decisions and markets worth billions of pounds. Our role is critical for the transformation of the energy system and we are excited to work together across the industry to ensure that transformation meets the evolving needs of our customers, stakeholders and consumers.

On 2 October we launched our draft RII0-2 Business Plan<sup>2</sup> which includes ambitious new outputs to ensure safe, reliable system operation and facilitate the transition to a net zero economy by 2050. Our 2019-2021 Forward Plan<sup>3</sup> sets out how our work will enable the energy transition and deliver on our ambitions between now and 2021.

The 2019-21 Forward Plan is part of the innovative 2018-2021 Incentives framework for the ESO and this Mid Year Report demonstrates the progress we have made this year on our deliverables and metrics, including key examples of the benefits we are delivering for consumers. At this mid year stage we have already done work which will contribute to consumer benefits of over £200m.

2019-2020 is the first year of legal separation for the ESO and I am delighted to be able to present in our Mid Year Report how we, along with our stakeholders are responding to some of GB's most pressing energy challenges.

We were all reminded of the importance of safe, reliable energy when on 9 August 2019 approximately one million customers lost power as a result of a series of events on the electricity system. These events caused significant disruption to many people in their homes and businesses, and to rail services in and around London. We remain fully engaged with Ofgem, E3C and wider industry to ensure lessons are learned to minimize the risk and potential impact of any such event in future. Details of the event, impacts to consumers, and communications during and after the event are reviewed in detail in the ESO Final Technical Report to Ofgem, available on the ESO website<sup>4</sup>.

Six months into the 19/20 incentive year I am pleased with the strong progress we have made in key areas such as energy forecasting, charging reforms, and finding innovative ways of resolving network issues. There are some areas where progress has not been as fast as we would like, and we explore these in more detail in the report, including explaining where we have prioritised particular areas of work. I am confident that in the second half of the year we will see further strong progress, and I am excited to work closely with our stakeholders to create the energy system of the future.

Fintan Slye, Director of UK System Operator

1. Our mission applies to both our Electricity System Operator and our Gas System Operator businesses.  
 2. [www.nationalgrideso.com/about-us/business-planning-riio/riio-2-draft-business-plan](http://www.nationalgrideso.com/about-us/business-planning-riio/riio-2-draft-business-plan)  
 3. [www.nationalgrideso.com/document/140736/download](http://www.nationalgrideso.com/document/140736/download)  
 4. [www.nationalgrideso.com/information-about-great-britains-energy-system-and-electricity-system-operator-eso](http://www.nationalgrideso.com/information-about-great-britains-energy-system-and-electricity-system-operator-eso)

# The ESO reporting and incentive arrangements

In April 2018, Ofgem introduced a new regulatory framework for the ESO<sup>1</sup>.

The ESO must engage with its stakeholders, and produce a Forward Plan<sup>2</sup> before the start of each regulatory year.

The ESO reports<sup>3</sup> on its performance throughout the year, including monthly reporting on the performance metrics, quarterly reports, a Mid Year Report (this document) and an End of Year report.

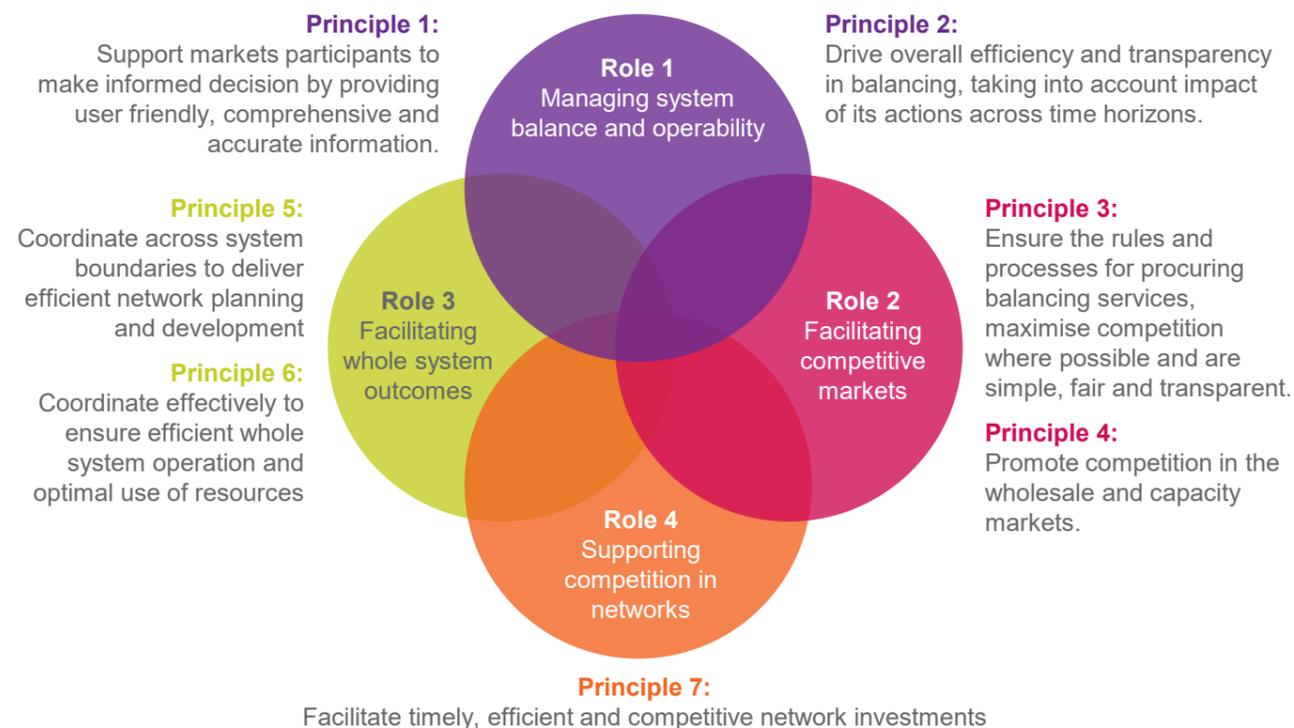
A Performance Panel of independent experts and stakeholder representatives are responsible for reviewing the ESO's Forward Plan and evaluating its performance.

At the end of each year, Ofgem will take into account the recommendation of the Performance Panel, and make a decision on the level of incentive reward which the ESO should receive.

The financial incentive has a maximum/minimum value of ±£30m, where each of the Role Areas<sup>4</sup> are equally weighted at ±£10m each.

## Purpose and structure of this report

### ESO Roles and Principles



1. [www.ofgem.gov.uk/system/files/docs/2019/03/esori\\_guidance\\_document\\_2019-20.pdf](http://www.ofgem.gov.uk/system/files/docs/2019/03/esori_guidance_document_2019-20.pdf)

2. [www.nationalgrideso.com/document/140736/download](http://www.nationalgrideso.com/document/140736/download)

3. [www.nationalgrideso.com/about-us/business-plans/how-we-are-performing](http://www.nationalgrideso.com/about-us/business-plans/how-we-are-performing)

4. There are currently four Roles, however there will be three Role Areas for the purposes of evaluation in 2019-20 – consisting of Role 1, Role 2 and Roles 3 & 4. Roles 3 & 4 will be combined to form one Role Area).

A central part of the ESO incentives scheme is the ESO performance reports. These, along with evidence from stakeholders, are assessed by the Performance Panel in its twice yearly reviews.

The Performance Panel uses the following criteria when assessing the ESO's performance:

- Evidence of delivered benefits
- Evidence of future benefits and progress against longer term initiatives
- Plan delivery
- Stakeholder views
- Outturn performance metrics and justifications.

This document provides an introduction to our mid year performance report and is accompanied by evidence chapters providing more specific information relating to each role. Throughout the first year of this scheme we have listened to feedback from the panel, Ofgem and our stakeholders. At this mid year stage therefore, we present to you a report which aims to respond to feedback and set out a fair and balanced report of our performance in structured evidence chapters. Specifically following a request from Ofgem in its Formal Opinion we have chosen to provide an introductory section in this document giving information about how our performance in 2019-20 is contributing to the System Operator's 2025 ambitions which were set out in our Towards 2030<sup>1</sup> publication in April 2019.

We received positive feedback from the panel about our end of year report evidence chapters and therefore we have continued to structure these in line with the assessment criteria used by the panel in order to provide a clear format for our reporting.

Following discussions with Ofgem and in response to panel feedback in its end of year evaluation we explain more about our approach to reporting on consumer benefits in this document highlighting how we have focussed on providing robust and well-justified evidence for each of the Roles in our evidence chapters.

Feedback gathered from our customers and stakeholders, performing our core role and in delivering against the Forward Plan is also set out in our evidence chapters. In delivering value for consumers we recognise that our actions and decisions will not always be welcomed by all of our stakeholders, but we are committed to ensuring that our decisions and actions deliver value for consumers, and are transparent, well-communicated and understood.

In reporting on our plan delivery and metrics we aim to ensure we have explained where activities and performance is not meeting our original expectations and what impacts this may be having on our stakeholders. This approach aims to provide you with full and objective reporting of our performance.

1. [www.nationalgrideso.com/document/141141/download](http://www.nationalgrideso.com/document/141141/download)

# Our 2025 ambitions



## An Electricity System That Can Operate Carbon Free



When the market can economically and efficiently despatch generation to meet all GB demand for energy with zero carbon solutions, then ESO will be able to operate this carbon free system safely and securely. In order to make this happen, by 2025 we will have introduced new tools and technologies in to the market to manage real-time challenges such as thermal constraints, voltage and inertia.

Our updated **Operability Strategy Report<sup>1</sup>**, published this summer, outlines the future operability challenges we expect to face, and the steps we are taking to tackle these challenges. The report explains the many complex changes that will need to be taken to reach our ambition, and how stakeholders can get involved in creating the electricity system of the future.

Working closely with Distribution Network Operators (DNOs), we are implementing the **Loss of Mains Change Programme**, setting up first of a kind contractual arrangements between parties, a portal to receive applications and a governance structure to ensure appropriate project oversight. These protection changes will ensure that renewable generation remains connected for a wider range of system disturbances. Being confident that renewable generation will remain connected in the event of a system disturbance will allow us to accommodate more renewables on the system without compromising system security, which is an important step towards facilitating zero carbon operation. This process will also enable a much more efficient way of operating the system, and hence drive value for the consumer.

Our work on **voltage and stability pathfinder projects** gives us a more complete picture of the range of options and technologies available in the market to resolve system issues, helping us to identify how we can manage a zero carbon electricity system by 2025.

“[The Operability Strategy Report] provides a clear and transparent view for stakeholders on the work the ESO is undertaking and on how they can get involved in the process”.

Cornwall Insight

1. [www.nationalgrideso.com/document/146506/download](http://www.nationalgrideso.com/document/146506/download)



## A Strategy For Clean Heat, And Progress Against That Plan



The ESO is using its unique perspective and established expertise in the future of energy to support a critical challenge in reaching net zero: decarbonising heat. We are working closely with government and industry to ensure that the UK's strategy for clean heat creates an affordable and reliable whole energy system for the benefit of all consumers.

We have been working with industry stakeholders including the department for Business, Energy, and Industrial Strategy (BEIS) and the Committee for Climate Change to develop a strategy for clean heat.

We have worked with BEIS to understand their approach and identify which areas should be explored in greater depth. We have identified the areas where the ESO can add most value, which will primarily focus on how the decarbonisation of heat impacts on whole system operability issues.

As part of our Future Energy Scenarios work, we are engaging extensively with stakeholders to determine the best way of exploring the uncertainty of heat pathways in our 2020 document.





## Competition Everywhere



Efficient well-functioning markets are essential if we are to operate a carbon free system by 2025 and unlock the full consumer benefits of flexibility. We have a vital role in delivering this complex task by working with a wide range of stakeholders to develop competitively procured balancing services markets, seeking competitive network and non-network solutions to a range of system challenges, ensuring our codes and charging arrangements are fit for the future and promoting competition in wholesale and capacity markets.



[We] welcome and support initiatives from National Grid ESO to maintain and improve resilience and operability, including the network development roadmap approach and, in particular, this stability pathfinder.

Generator/supplier



We have progressed several **pathfinder projects**: this involves analysis of system requirements, engagement with our stakeholders to familiarise them with our needs, and publication of a request for information (RFI). The RFIs we have held to date have resulted in a large number of high-quality submissions, showing our ability to create a competitive environment where innovation can flourish.

In addition to our Distributed ReStart project NIC project, we have successfully demonstrated a **new market approach to Black Start** in the Midlands and South West, receiving over 30 expressions of interest. More than half of the expressions of interest we received came from non-traditional technologies, showing that we had removed barriers to entry, driven increased competition for black start services and will be able to restore the system in the absence of traditional providers.

As part of the **Network Options Assessment (NOA)**, we assess the required levels of energy transfer across the network, the options available to meet these requirements, and make recommendations as to which options should be developed further. In line with our Network Development Roadmap, we are extending the range of needs covered by the NOA approach, as well as extending the participants and types of options that can be put forward: for this year's NOA we will be assessing around eight ESO led options alongside the TO options, compared to two ESO led options last year. Our analysis as part of the NOA demonstrates how a competitive approach can lower overall system costs for consumers.

In addition to the activities set out in our Forward Plan, Ofgem asked the ESO to develop proposals for the potential introduction of **early model competition** in onshore transmission. This aims to drive innovation and consumer value through the introduction of competition for major network reinforcements. In September we held an introductory webinar, providing an overview of the Early Competition Plan, and an ESO Model Development Workshop for parties who would be directly impacted by onshore competition. Further workshops with industry are planned over the coming months to ensure full stakeholder engagement. In December, we will present to Ofgem our preferred models and set out how we intend to take forward the next stage of this project, through to February 2021.



## The System Operator Is A Trusted Partner



The ESO is at the centre of the energy transition. In order to successfully enable all the changes needed over coming years, we will work collaboratively across the industry, and seek to build trust with our customers and stakeholders. We are therefore focussing on building strong, cooperative relationships through reliability, credibility and demonstrating our impartial position, in order to ensure that we are a Trusted Partner.



Since legal separation, the ESO has developed a new **Customer and Stakeholder Experience Strategy**, which sets out our ambition to become a Trusted Partner and a roadmap to get us there. This includes setting up new governance arrangements for the delivery of customer experience improvements, chaired by Fintan Slye, SO Director.

In terms of delivery of our activities:

- We took a strong leadership position with the **Balancing Services Charges task force**. This was the first time the ESO had led such an industry task force and from the outset (when we formally launched the task force at the Charging Futures Forum in January 2019) we stated our commitment to be transparent and engaging throughout the process. The task force members supported this aim and worked collaboratively to deliver on the Terms of Reference, but ensuring we did so in a manner where other industry stakeholders could feel confident with the process and outcome. We believe we achieved our aim, as evidenced by feedback from both task force members and wider industry stakeholders
- Through our involvement in **Charging Futures**, we have provided an inclusive stakeholder experience by providing the latest developments in strategic reform of electricity network charging with a strong focus on building the understanding of new parties that had not previously been actively involved in charging reform
- Finally, we have also continued to step up engagement in our **Power Responsive** events, bringing together 250 demand side stakeholders to listen and share on future market priorities.



We acknowledge National Grid [ESO]'s significant positive engagement with industry providers. We are happy that National Grid [ESO] has listened to and taken on board the concerns.

FFR aggregator





## Role #1 Managing system balance and operability

### Delivered benefits in 2019-20

- With the development of the Ancillary Services Dispatch Platform (ASDP), the ESO has a scalable solution which has already created competition within the Fast Reserve market
- We have introduced new forecasting tools, resulting in a significant improvement in accuracy for wind and demand forecasts
- We have reduced the effort needed to access our information, and published additional information which is useful to stakeholders
- We have outperformed the benchmark cost for balancing by 9%, yielding a net benefit of £47m lower costs to consumers.

### Future benefits and long term initiatives

- We are working closely with distribution licensees to implement the Loss of Mains Change Programme
- We are publishing our forecasting data more frequently, which will allow market participants to make use of the latest data
- We are making our publications more accessible to stakeholders by adding a Data Explorer page to our website.

### Plan delivery and new ways of working

- Shared insight on our balancing actions, publishing details of thermal constraints and actions taken
- ENCC visit days have enabled stakeholders to learn about real-time system operation
- Future Energy Scenarios, Winter Outlook and Operability Strategy Report published
- Data Explorer page added to ESO website to improve navigability, working towards creating data portal
- Improved planning process for Bank Holidays and significant events
- Improvements in Demand and Wind Forecasting accuracy due to new processes and tools
- Reviewed events of 9 August to inform future operational planning
- Worked closely with distribution licensees to implement Loss of Mains Change Programme
- Improved management of balancing costs through daily reviews, strategy meetings and greater interaction between control room and commercial departments.

### Stakeholder

- Regular visits to the ENCC have received an overwhelmingly positive reception from stakeholders
- We have published information on our constraint boundaries in response to stakeholder feedback
- The Electricity Transmission Operational Forum we held in July 2019 gave stakeholders an opportunity to learn about and discuss our ongoing activities and flagship projects
- We are working collaboratively with DNOs and generators to roll out changes to Loss of Mains Protection
- Stakeholders found the Future Energy Scenarios documents and launch events useful, and welcomed the new format we have introduced for the Outlooks reports
- In response to stakeholder feedback we have published a Data Explorer page on our website.

### Performance metrics

Metric	Performance	Status	Justifications
1. Balancing Cost Scorecard	£503m year to date outturn against £1089m end of year benchmark	●	We have focussed heavily on balancing costs, reviewing daily across teams and promoting best practice
2. Information Provision Scorecard	All publications and reports within our control published in full and on time	●	This metric has consistently delivered green for the first half of the 2019/20 performance year
3. Energy Forecasting Accuracy	Demand forecast error target not met; Wind forecast error target not met	●	We are slightly underperforming our target for cumulative performance for Demand and Wind forecasting



## Role #2 Facilitating competitive markets

### Delivered benefits in 2019-20

- Improved our charging query process and produced guidance material
- Delivered phase 1 of the frequency response auction trial, with phase 2 to be delivered in the second half of the year
- Chaired the Code Administrator Code of Practice, driving efficiencies in code management
- Improved tariff publications and meetings, meaning our customers are better informed about the network charges they face
- By raising a code modification relating to unsecured credit, we are reducing the risk of consumers facing additional costs due to supplier failures.

### Future benefits and long term initiatives

- Successfully demonstrated a new market approach to Black Start in the Midlands and South West
- Led the Balancing Services Charges Task Force, producing a final report in Q1. The task force assessed whether there is value in seeking to improve cost-reflective signals through BSUoS, or whether it should be treated as a cost recovery charge
- We are providing ongoing leadership in the Targeted Charging Review, redesigning electricity network residual charges to reduce distortions and increase fairness
- We have facilitated and enabled network charging reform through delivery of two Charging Futures Forums
- We have started procurement of Frequency Reserve through a new auction platform.

### Plan delivery and new ways of working

- Delivered Phase 1 of frequency response auction trial
- Demonstrated new market approach to Black Start in Midlands and South West, receiving 3 expressions of interest
- Chaired Code Administrator Code of Practice, developing first Forward Work Plan and holding industry event in July
- Providing ongoing thought leadership in the two significant code reviews: Targeted Charging Review, and Electricity Network Access and Forward-Looking Charging
- Led on European matters, publishing a high-level impact assessment of Clean Energy Package and engaging with stakeholders
- Led Balancing Service Charges Task Force and published a final report with great stakeholder feedback throughout the process
- Held two Charging Futures Forums
- Published a thought piece on the future of energy codes
- Improved charging query processes, and produced guidance material to make code change process more accessible to industry.

### Stakeholder

- Power Available industry workshop sought views from renewable generators, leading to publication of Power Park Module Signal Best Practice Guide
- Webinars and mock auctions held in preparation for frequency response auction trial, ensuring a smooth roll out
- Information Systems Change Forum continued industry dialogue regarding changes to support wider BM access and TERRE
- Webinar and tool for Firm Frequency Response (FFR) testing allowed us to seek stakeholder feedback
- After proactively engaging with stakeholders throughout the process and receiving strong support, the Balancing Services Charges Taskforce published its final report
- Throughout the first quarter, ESO has been represented across all of the Significant Code Review (SCR) sub-groups
- The September Charging Futures Forum enabled network users to share their views on the first working paper on Access and Forward Looking Charges.

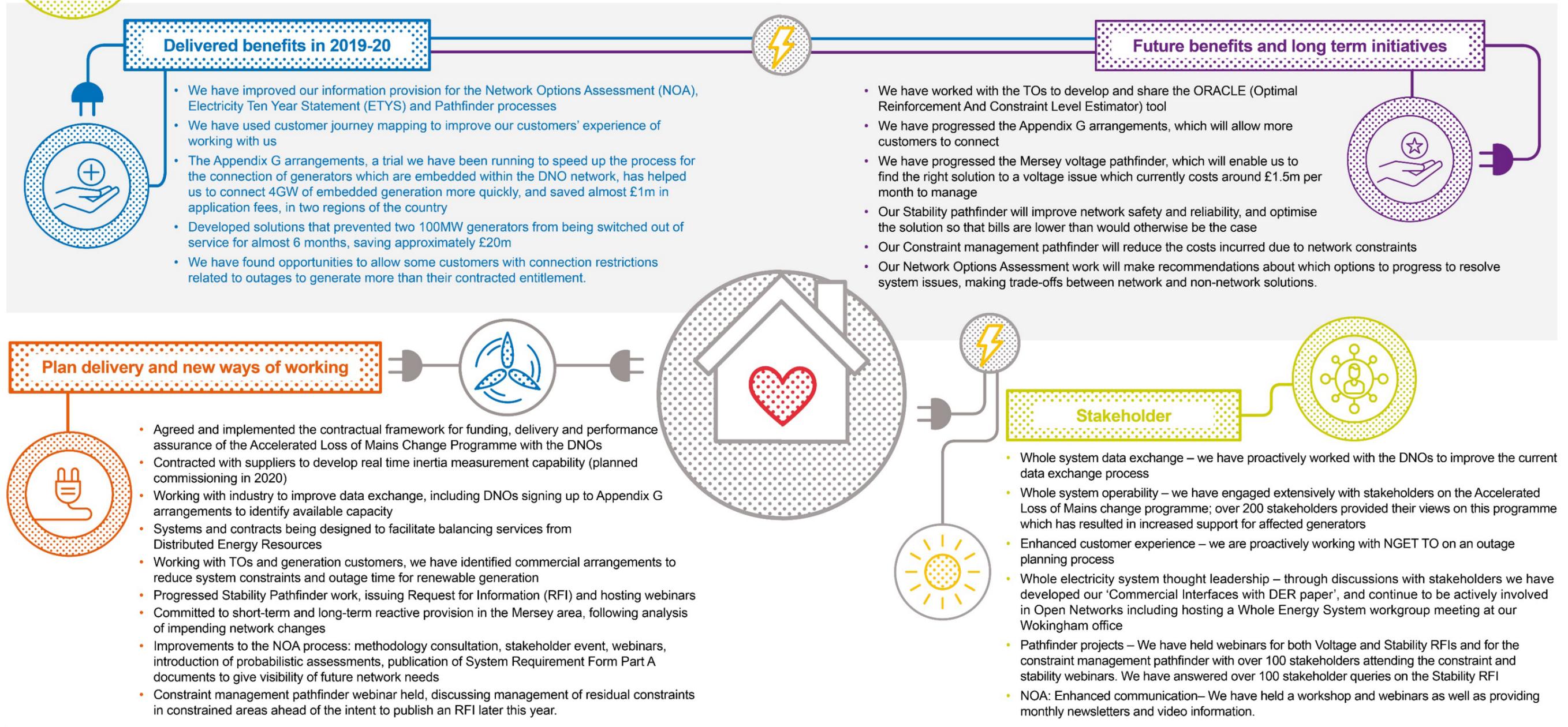
### Performance metrics

Metric	Performance	Status	Justifications
4. Provider Journey Feedback	3.2/5 score on Tendering survey	●	The feedback we have received shows we are within the tolerance for the set benchmark of 2.5
5. Reform of Balancing Services Markets	Deliverables to remove barriers to entry on track, and tracking movement away from bilateral arrangements	●	Deliverables relating to balancing products and markets gives a performance of 57%

Metric	Performance	Status	Justifications
6. Code Admin Stakeholder Satisfaction	(1) CACoP survey scores below benchmark (2) Average ESO code administration survey score of 8 against baseline of 6.93 (3) All H1 deliverables implemented	●	(1) Performance in all 3 codes are below our previous CACoP scores (2) Our average ESO code administrations survey scores are currently exceeding the benchmark, although we recognise this is a small data set (3) All commitments delivered in H1
7. Charging Futures	Average webinar and workshop score of 6.97 against a baseline of 7.3	●	We continue to work with various content providers to produce the webinars and seek out new ways of collaborating. Our workshop feedback was largely positive
9. Month ahead forecast vs outturn monthly BSUoS	7.8% Average forecasting error across first half of 2019-20 performance year	●	Forecasting has been less than 10% APE for three months and above 20% APE for only one month



## Roles #3 and #4 Facilitating Whole System Outcomes and Supporting Competition in Networks



### Performance metrics

Metric	Performance	Status	Justifications
10. Whole system unlocking cross boundary solutions	1113.69 MW of DER with WPD and 54.5 MW at UKPN accepted in Q1&Q2	●	New DER has continued to increase across the first half of the 2019/20 performance year
11. System access management	3.36/1000 YTD cancellations	●	Software tool is under review and the replacement being utilised to improve process
12. Consumer value opportunities	2218GWh of direct savings and 166GWh of indirect savings delivered	●	New innovative ways of planning and processing of procedures has added value

Metric	Performance	Status	Justifications
13. Connections agreement management	100% of agreements updated	●	Connection agreements updated on time within nine months of notification
14. Right first-time connection offers	As there were nine ESO-related reoffers, this means that 89% of connection offers to date this year were Right First Time, against a benchmark of 95%	●	We are experiencing challenges with embedding new processes and ways of working with the TO post legal separation, and have experienced a high volume of connection applications, particularly bespoke applications
16. NOA: Enhancing Communications	Positive stakeholder feedback on changes we are making to the documents	●	Hosted four engagement events, seven webinars and published videos gaining positive qualitative feedback and giving us areas to focus improvement on

# How the ESO's activities benefit consumers

Here we discuss the types of benefit we deliver.



## Improved safety and reliability

The on-demand provision of electricity is a fundamental part of our modern life which must be continuously attended to with the utmost importance by the Electricity National Control Centre (ENCC) and supporting functions. We will continue our focus on system balancing and security at optimum cost in line with the expectations that Government, the regulator and the consumer have of us. We look further ahead, to ensure we can facilitate the energy transition and operate the system in the future, as it rapidly transforms with low-carbon, intermittent, non-synchronous and distributed generation sources.



## Improved quality of service

Over recent years we have transformed our approach to engage deeply with all our stakeholders, listening to what they want from us, and delivering on that where we can, and where we cannot, explaining why. This rich stakeholder input has shaped how we do things and put much more of a focus for us on why and how we can improve our quality of service. Improved service quality ultimately benefits the consumer due to interactions in the value chains across the industry being more seamless, efficient and effective.



## Lower bills

We lower consumer bills by working to control, reduce, and optimise elements of the system charges which we can impact and influence. These charges are the Balancing Services Use of System and Transmission Network Use of System charges (BSUoS and TNUoS). We optimise BSUoS and TNUoS, linking our balancing decisions with our Network Options Assessments (NOA) so that in the long-term the economic and efficient outcomes are being driven when planning, developing and investing in the network. We are also introducing competition to drive down the costs of investment in the network, and using markets to lower the cost of operating the network. In the medium term we lower BSUoS costs by promoting markets, auctions, competition and new technologies.



## Reduced environmental damage

Great Britain has committed to reducing its CO2 emissions year on year, and as the ESO we are at the centre of the transition to a low-carbon electricity system. We therefore support new providers and technologies to enter and compete in the existing and new markets basing our decisions on the technical capabilities of providers. We also work innovatively to design novel solutions which ensure the system can operate safely and securely both now and in the future with large levels of intermittent and non-synchronous generation running. We are committed to being 'technology neutral', as market participants already have environmental costs priced into their products and services, for example through carbon price levies. We will not choose to procure from providers based on the fuel they use to generate power.



## Benefits for society as a whole

The actions in the Forward Plan and our ambition to be able to operate carbon free by 2025 are consistent with the UK's target of achieving net zero greenhouse gases by 2050.

We are proud to be in a position where we can facilitate the transition to a decarbonised electricity system and to play our role in supporting the UK in achieving the climate change objectives as described in the CCC Net Zero report<sup>1</sup>.

As the report states, the UK is one of the largest historical contributors to climate change, and taking a lead on the issue of climate change brings the prospect of real benefits to UK citizens: cleaner air, healthier diets, improved health and new economic opportunities from clean growth.



<sup>1</sup> [www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming](http://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming)

# How we report on consumer benefit



Across all of our activities, as Electricity System Operator we focus on how we can deliver benefit for consumers.

In response to feedback from the Performance Panel and Ofgem, we explain here how we have approached our reporting of consumer benefits.

Our activities drive value across the end to end energy supply chain benefitting consumers, for example in the near term through our role in managing balancing costs; in the medium/long term through developing new markets for balancing services, and recommending alternative lower cost options to resolve system issues.

We have already explained how our activities can contribute to consumers in terms of:

- Safety and reliability
- Improved quality of services to our direct customers and stakeholders
- Lower bills than would otherwise be the case
- Reduced environmental damage
- Benefits for society as a whole.

It can be challenging to quantify consumer benefits given the wide range of direct and indirect effects that our activities can have on the end consumer and the resulting need there would be for detailed market modelling and key assumptions to be made. In this report we use two approaches we have used to bring consumer benefits to life: our Role specific benefit maps and individual case studies which do not always result in a quantified assessment of benefits.

Our case studies include a toolkit of key questions we have asked ourselves in order to explain how our actions deliver consumer benefits now and for the future. They are structured to ensure that we can identify, measure and present consumer benefits. We look at how the activity impacts consumers with reference to the benefit categories, presenting any assumptions we have made. We describe the benefit and document what other options or actions that we have not taken.

Finally, we aim to present when the benefits might be realised and if there are any potential unintended consequences of the actions we have taken. Case studies by their very nature present on an activity which can be just one specific element of a broader role we perform and therefore the values we report are not intended to be aggregated, as this could result in inaccurate reporting of benefits delivered where we have been unable to account for these overlaps.

The interactions of our roles and activities mean that we have chosen case studies that have the clearest explanation of benefits from across our Forward Plan deliverables. In this Mid Year Report, we present case studies which refer to activities we have undertaken during the past six months, and in the End Of Year report we will present additional case studies relating to activities which have mainly been delivered in the second half of the year.

## Case Studies

The case studies we present in this mid-year report are:

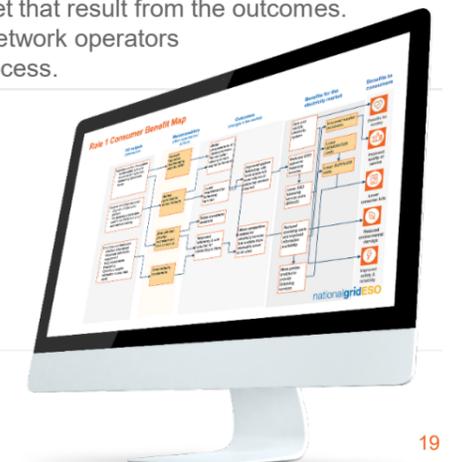
	Role 1	Role 2	Roles 3 & 4
<b>Benefit this year</b>	<ul style="list-style-type: none"> <li>• Removing barriers to entry for European Interconnector Trading</li> </ul>	<ul style="list-style-type: none"> <li>• Changing our approach to customer engagement on market frameworks (indicative consumer saving £0.2m per year)</li> </ul>	<ul style="list-style-type: none"> <li>• Appendix G process: accelerating the connection of embedded generation (indicative consumer saving £1m)</li> </ul>
<b>Benefit in future years</b>	<ul style="list-style-type: none"> <li>• Improvements in Forecasting</li> <li>• Loss of Mains Protection (future saving £170m per year)</li> </ul>	<ul style="list-style-type: none"> <li>• Frequency Response auction trial (future saving £2.5m per year)</li> <li>• Future restoration services “Black Start” (future saving £2.5m per year)</li> </ul>	<ul style="list-style-type: none"> <li>• Improved Information Provision</li> </ul>

Many of the benefits we deliver for consumers are difficult to quantify, either because it is difficult to isolate the effect of our activities from what is happening elsewhere, or because there is no robust counterfactual. However, we always endeavour to take actions which will benefit consumers, and the case studies presented in this report present our rationale to support this.

## Consumer Benefit Maps

At a broader level we also explain how our deliverables under each of the Roles contributes to consumer benefits via our consumer benefit maps: an example of a consumer benefit map is shown below. Benefit maps show the links between deliverables, changes in business and market capabilities and the desired benefits. The mapping helps identify, visualise and articulate how benefits will be realised and how they can be measured. This table explains the different sections of our benefit maps.

Term	Guidance on definition and usage
<b>SO outputs</b>	Deliverables that are produced by the Electricity System Operator as a result of projects and activities it performs. These products can be documents, physical things such as equipment and software programs, or intangible things such as policies.
<b>Market enablers</b>	Activities that need to be performed by another party (i.e. not the ESO) to help deliver the desired outcomes. These are highlighted to show they are external dependencies that the ESO is reliant upon for the delivery of the outcomes and benefits.
<b>Outcomes</b>	The resulting business and market changes that are derived from using the outputs.
<b>Benefits for the electricity market</b>	The measurable improvements for the electricity market that result from the outcomes. For example, these might include cost reductions for network operators or improvements in the average time to complete a process.
<b>Benefits to consumers</b>	The measurable improvements for consumers that are the overall objective of the SO and Ofgem. These include: <ol style="list-style-type: none"> <li>1. Improved safety &amp; reliability</li> <li>2. Improved quality of service</li> <li>3. Lower consumer bills,</li> <li>4. Reduced environmental damage</li> <li>5. Benefits for society.</li> </ol>





**[nationalgrideso.com](http://nationalgrideso.com)**

Faraday House,  
Warwick Technology Park,  
Gallows Hill,  
Warwick,  
CV34 6DA

national**grid**ESO