ESO Forward Plan 2019-21

Fintan Slye
Head of UK System Operator

Kayte O’Neill
Head of Strategy & Regulation
Housekeeping & Agenda

Break - 11.15-11.30

Lunch - 13.10
Our Forward Plan

ESO Forward Plan 2018-2019

ESO Draft Forward Plan 2019-2021

Long Term Vision

Plan of work and our plan to deliver consumer benefit in 2019-21

Performance metrics

Stakeholder engagement approach
Our SO Mission focuses us on delivering value

We keep the lights on and the gas flowing round the clock for GB energy consumers; we play an essential role in enabling the transition to a more sustainable energy future.

Therefore we believe that:

• We deliver value for consumers first and foremost, while also ensuring that we build and maintain trusted partnerships with our customers and stakeholders
• We influence the energy debate positively with our independent perspective
• Through using markets, data and networks in new ways across gas and electricity, we help move GB towards a more reliable, affordable and sustainable energy world
• An incentivised for-profit model ensures we deliver the best long-term outcomes for consumers, society and the GB economy
Delivering consumer benefit

Improved safety & reliability
Lower Bills
Improved Quality of Service
Benefits for Society as a whole
Reduced Environmental Damage

Average electricity customer’s year bill
2017/18: £577

Our four ESO roles

#1 Managing system balancing and operability

#2 Facilitating competitive markets

#3 Facilitating whole system outcomes

#4 Supporting competition in networks

Richard Smith, Head of Commercial
Ro Quinn, Head of National Control

Julian Leslie, Head of Networks
Cathy McClay, Head of Future Markets
### Delivering exceeding outcomes in 2019-21

#### Operations

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🕒</td>
<td>Uninterrupted, safe and secure system operation</td>
</tr>
<tr>
<td>💰</td>
<td>Managing system balancing costs</td>
</tr>
<tr>
<td>📈</td>
<td>Operability reports</td>
</tr>
<tr>
<td>⌛</td>
<td>Energy forecasting</td>
</tr>
<tr>
<td>📝</td>
<td>Data portal</td>
</tr>
</tbody>
</table>

#### Markets

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🧐</td>
<td>Reforms of balancing services</td>
</tr>
<tr>
<td>🔑</td>
<td>Wider access to the BM</td>
</tr>
<tr>
<td>🧘</td>
<td>Thought leadership on electricity network charging</td>
</tr>
<tr>
<td>📀</td>
<td>Transform industry frameworks</td>
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</tbody>
</table>

#### Networks

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🌍</td>
<td>Commercial contracts and enhanced systems to facilitate balancing services from DER</td>
</tr>
<tr>
<td>🧘</td>
<td>Whole electricity system thought leadership</td>
</tr>
<tr>
<td>🔄</td>
<td>Whole system data exchange &amp; operability</td>
</tr>
<tr>
<td>🎲</td>
<td>Pathfinder projects &amp; study tools</td>
</tr>
</tbody>
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*Image: National Grid ESO*
Shaping our plan: next steps

Consultation Close

February 14th

Final Forward Plan 2019-21 & ESO RIIO2 Ambition Published

March 21st

April

2019-20 Monthly Report

May 22nd

2018-19 ESO End of Year Report

Legal Separation

2018-19 Monthly Report

2018-19 Monthly Report
Role #1: Managing system balancing and operability

Richard Smith
Head of Commercial

Ro Quinn
Head of National Control
Our Long Term Vision

Principle 1
Support market participants to make informed decisions by providing user friendly, comprehensive and accurate information

Principle 2
Drive overall efficiency and transparency in balancing services, taking into account impacts of ESO actions across time horizons
Principle 1: Support market participants to make informed decisions by providing user friendly, comprehensive and accurate information

We are going to deliver

<table>
<thead>
<tr>
<th>Insights Documents</th>
<th>Stakeholder interactions</th>
<th>Operational insights</th>
<th>Forecasting</th>
<th>Information Access</th>
</tr>
</thead>
</table>

This will facilitate

<table>
<thead>
<tr>
<th>Better informed decisions taken by market participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater understanding of system operation and our needs</td>
</tr>
<tr>
<td>Reduced uncertainty for market participants</td>
</tr>
</tbody>
</table>

Benefiting energy consumers in 2019-21

- Enabling consumers to make informed consumption decisions.
- Better functioning markets leading to lower costs.
- Creating awareness of current and future operability challenges, informing short-term investment strategies, and commercial and operational plans resulting in:
  - Safe and reliable system in the future as it rapidly transforms with low-carbon, intermittent, non-synchronous and distributed generation sources.
  - Lower BSUoS costs than would be otherwise through optimising our spend on balancing and operating the system.
- Controlling spend on system operation due to uncertainties.
- Facilitating better self-balancing, reducing the intervention and spend by the ESO.

Post 2019-21

- Robust investment decisions being made, leading to optimum markets, network development, and system operation costs.
- Creating awareness of future operability challenges, informing long-term investment strategies, and commercial and operational plans resulting in safe and reliable system in the future as it rapidly transforms with low-carbon, intermittent, non-synchronous and distributed generation sources and lower bills for end consumers by reducing TNUoS by ensuring the most economic options are chosen when planning, developing and investing in the network.
## Principle 1 Deliverables

<table>
<thead>
<tr>
<th>Ref</th>
<th>Deliverable</th>
<th>Delivery Date</th>
<th>Meeting or exceeding baseline expectations</th>
<th>Delivering Consumer Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Summer Outlook</td>
<td>Q1 2019-20 &amp; 2020-21</td>
<td>Meeting baseline</td>
<td></td>
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<tr>
<td>1.2</td>
<td>FES</td>
<td>Q2 2019-20 to Q3 2020-21</td>
<td>Meeting baseline</td>
<td></td>
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<tr>
<td>1.3</td>
<td>Winter Outlook and Winter Review and consultation</td>
<td>Q1 2019-20 to Q3 2020-21</td>
<td>Meeting baseline</td>
<td></td>
</tr>
<tr>
<td>1.4</td>
<td>Electricity Operational Forum</td>
<td>Q2, Q3 and Q4 2019-20 and 2020-21</td>
<td>Meeting baseline</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>Electricity National Control Centre (ENCC) visit days</td>
<td>Bi-monthly open door visits in Q1, Q2, Q3, Q4 2019-20 and 2020-21</td>
<td>Meeting baseline</td>
<td></td>
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<tr>
<td>1.7</td>
<td>Insight on constraint boundaries</td>
<td>Q2 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
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<tr>
<td>1.8</td>
<td>Publish Forecasting Strategy Project roadmap</td>
<td>Q1 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>1.9</td>
<td>Publish half-hourly photovoltaic (PV) forecasts to market, 24 times a day</td>
<td>Q1 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
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<tr>
<td>1.10</td>
<td>Publish four additional wind forecasts to the market</td>
<td>Q2 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
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<tr>
<td>1.11</td>
<td>Publish an additional Day-Ahead demand update at 12:00pm every day</td>
<td>Q2 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
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<tr>
<td>1.12</td>
<td>Make energy forecasts more accessible via a dedicated website and Applications Programming Interfaces (APIs)</td>
<td>Q3 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
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<tr>
<td>1.13</td>
<td>Open Data</td>
<td>Data explorer page on website: Q1 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>New data portal: Q3 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
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</tbody>
</table>
Principle 1 Metrics

Metric 1 - Information provision scorecard
We publish data and information to the market on a regular basis; some required by our licence or code obligations and others as our commitments to the market. We will use a scorecard to summarise the information provision per quarter to show that we are continuing to provide the information needed by the market. This will include:

Metric 2 – Firm Frequency Response (FFR) information provision improvement metric
During this year, our performance has improved from more than 70% of tenders received being for periods when we have no requirement to less than 50% of the tenders being for periods when we have no requirement. To measure this outcome, we will measure the percentage of dynamic tenders that are submitted for periods when we do not have a requirement.

Performance Benchmarks
Exceeds benchmark: Less than 40%
In line with benchmark: Between 40-50%
Below benchmark: Greater than 50%

Metric 3 – Energy forecasting accuracy metric
To measure our performance, we will use the monthly forecasting accuracy of our day ahead demand forecast and day ahead Balancing Mechanism Unit (BMU) wind forecast. To do this, we will use the following steps:
• Create the monthly and seasonal targets based on the average forecasting error over the past three financial years.
• Compare each monthly forecasting accuracy with the predefined target to identify whether we have achieved our target for the month.
• Count the number of months where we have met the target and compare it to a pre-set scale defining the success criteria.

Managing and forecasting the electricity system is becoming more and more difficult. This is mainly due to the growth of distribution connected generation, change in customers’ behaviours and additional penetration of technologies such as batteries and smart meters. For this reason, we believe that, in order to achieve an annual performance in line with expectations, the metric should deliver at least five months with improved forecasting accuracy compared to the same months over the last three financial years. This means that during the year we would have improved forecasting accuracy for at least 5 out of 12 months. At the same time, we strive to improve our forecasting accuracy across the whole year to provide added value to market participants and consumers.

Performance Benchmarks
Exceeds benchmark: 8-12 months In line with benchmark: 5-7 months
Below benchmark: 0-4 months
**Principle 2:** Drive overall efficiency and transparency in balancing services, taking into account impacts of ESO actions across time horizons

We are going to deliver:

- Uninterrupted, safe and secure system operation
- Operability reports and information
- Transparency around data used in the ENCC and short-term decision making
- Electricity Operational Forum and stakeholder engagement
- Addressing operational issues
- Upgrade of information systems

**This will Facilitate**

- Safe, secure, and economic uninterrupted system operation in all timescales
- Awareness of current and future operability challenges, informing short-term investment strategies, and commercial and operational plans resulting in

**Benefiting energy consumers in 2019-21**

- We build and consolidate all ESO efforts to ensure that there is ongoing access to power at times of consumer choice whilst managing down expected increases in balancing costs.
- Safe and reliable system in the future as it rapidly transforms with low-carbon, intermittent, non-synchronous and distributed generation sources.
- Lower BSuoS costs than would be otherwise through optimising our spend on balancing and operating the system.

**Post 2019-21**

- In the decarbonised, decentralised and digitalised world, our consumer outcome of access to power of access to electricity at times of consumer choice whilst managing down expected increases in balancing costs remains our focus.
- Safe and reliable system in the future as it rapidly transforms with low-carbon, intermittent, non-synchronous and distributed generation sources.
- Lower bills for end consumers by reducing TNuoS by ensuring the most economic options are chosen when planning, developing and investing in the network.
- Whilst remaining technology neutral, supporting the low carbon transition results in new providers and technologies to enter and compete in the existing and new markets.
## Forward Plan Deliverables for 19/20 - Principle 2

<table>
<thead>
<tr>
<th>Activities</th>
<th>Deliverables</th>
<th>Meeting or Exceeding Baseline</th>
<th>Delivery Date</th>
<th>Delivering Consumer Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Uninterrupted safe, secure system operation</td>
<td>Security Metrics</td>
<td>Meeting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2  Operability reports and information</td>
<td>Operability Strategy report and updates</td>
<td>Exceeding</td>
<td>Q1 &amp; Q3 19/20</td>
<td></td>
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<tr>
<td>3  Transparency around our data used in our ENCC and close-to-real-time decision making</td>
<td>Publication of operational planning data</td>
<td>Exceeding</td>
<td>Q1 19/20</td>
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<tr>
<td></td>
<td>Future of the ENCC</td>
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<tr>
<td>4  Electricity Operational Forum and Stakeholder engagement</td>
<td>Electricity Operational Forum</td>
<td>Meeting</td>
<td></td>
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<tr>
<td>5  Addressing operational issues</td>
<td>Rollout of loss of Main Protection Settings, including procurement methodology, tender rounds, reviewing methodology</td>
<td>Exceeding</td>
<td>19/20</td>
<td></td>
</tr>
<tr>
<td>6  Upgrade Information Systems</td>
<td>Frequency and Time Equipment</td>
<td>Meeting</td>
<td>Q4 19/20</td>
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<tr>
<td></td>
<td>Ancillary services dispatch platform (ADSP)</td>
<td>Meeting</td>
<td>Q2 19/20</td>
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<td></td>
<td>European Network Codes</td>
<td>Exceeding</td>
<td>Q3 19/20</td>
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<tr>
<td></td>
<td>Pi gateway refresh (Scottish Tos)</td>
<td>Meeting</td>
<td>Q4 19/20</td>
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<tr>
<td>7  Balancing Cost Management</td>
<td>Balancing Metric</td>
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Forward Plan Metric for 2019/20 – Principle 2

Benchmark

A new simple benchmark for expected balancing costs will be derived from the application of a linear trend through five year moving averages of historic balancing cost (excluding Black Start), beginning with the rolling mean for 2009-2013 to 2013-17.

We intend to use historical data to develop a baseline of costs. By applying a historical dataset that intrinsically reflects a broad range of operational situations we can capture a sufficient number of observations that the System Operator has encountered to establish a baseline for costs.

The historical data produces a benchmark for 2019-20 of £1018.7m

Adjustments

In recognition that there are a number of foreseeable fundamental drivers that might impact balancing costs but which historical costs might not reflect, we will also include additional adjustments. The adjustments for these foreseeable fundamental drivers this year are:

**HVDC availability**

Availability of the Western HVDC Link will continue to have a downward impact on the rolling average, reducing the constraint spend we would anticipate for managing flows from Scotland into England.

We forecast a reduction in balancing spend of £136.4m

**RoCoF and Vector Shift**

A programme of work is planned to start in 2019-20 to change the settings of existing RoCoF relays and replace Vector Shift relays

We forecast an increased balancing spend of £100m and £10m for direct payments to generators to change their settings

**South East reinforcement work**

We anticipate higher costs in operating the system caused by the unavailability of transmission assets in the South East of the network. This will be for 12 weeks and is to deliver reinforcements recommended by the Network Options Assessment (NOA) process.

We forecast an increased balancing spend of £60m to manage transmission network flows during this work.

**Other Drivers**

Scottish Security – additional cost to manager generator outages in Scotland

Capacity Market Suspension could increase balancing costs where margins are short

Overall Benchmark for 2019-20

£1052.3m
Shape our Forward Plan

#FPr1

https://www.sli.do/
Role #2: Facilitating competitive markets

Cathy McClay
Head of Future Markets
Our Long Term Vision

**Principle 3**
Ensure the rules and processes for procuring balancing services maximises competition where possible and are simple, fair and transparent

**Principle 4**
Promote competition in the wholesale and capacity markets
**Principle 3:** Ensure the rules and processes for procuring balancing services maximises competition where possible and are simple, fair and transparent

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**We are going to deliver**

<table>
<thead>
<tr>
<th>Product Roadmaps:</th>
<th>Power</th>
<th>Wider ESO access to intermittent generation</th>
<th>Enhanced Provider Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response and Reserve Implementation</td>
<td>Responsive</td>
<td></td>
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<tr>
<td>Reactive Implementation</td>
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<tr>
<td>Restoration Implementation</td>
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<tr>
<td>Wider Access to BM Implementation</td>
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<table>
<thead>
<tr>
<th>This will facilitate</th>
<th>Benefiting energy consumers in 2019-21</th>
<th>Post 2019-21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better alignment of products to operational needs</td>
<td>Reduced ESO spend, due to more competitive markets and access to non-BM providers.</td>
<td>Further implementing the learnings from innovation projects that look to understand the role of smaller scale assets and technology innovation to reduce barriers to entry for non-traditional providers and maximising opportunities for accessible and competitive markets</td>
</tr>
<tr>
<td>Increasing the number of regional providers and GB-wide providers of relevant services</td>
<td>Development of competitive markets where none exist, lowering ESO spend on services.</td>
<td></td>
</tr>
<tr>
<td>Reduced barriers to market entry for non-traditional providers</td>
<td>Reducing barriers to market entry for non-traditional providers creating more competitive markets through enabling demand-side flexibility and more efficient product procurement and usage of products ensuring we are procuring the right products at the right time to lower costs</td>
<td>Further increasing the number of options and market participants available to our control room allowing intermittent generation to participate more effectively in balancing markets reducing bills</td>
</tr>
<tr>
<td>More efficient product procurement and usage of products</td>
<td>Increasing the number of options and market participants available to our control room allowing intermittent generation to participate more effectively in balancing markets reducing bills</td>
<td></td>
</tr>
<tr>
<td>More reflective energy utilisation prices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved experience for providers</td>
<td>Implementing a self-service approach delivering greater transparency, real-time data visibility and online contract management ensuring we are procuring the right products at the right time, to lower costs</td>
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</table>
Principle 3 Deliverables

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<thead>
<tr>
<th>Ref</th>
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<th>Delivery Date</th>
<th>Meeting or exceeding baseline expectations</th>
<th>Delivering consumer benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Rollout of full functionality in frequency response auction trial</td>
<td>Q2 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>Report on development of new frequency response product suite</td>
<td>Q4 2020-21</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>3.3</td>
<td>Report on auction trial</td>
<td>Q1 2021-21</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>3.4</td>
<td>Market design for reformed reserve products</td>
<td>Q4 2019-20</td>
<td>Exceeding baseline</td>
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<tr>
<td>3.5</td>
<td>Report on our plan for retaining standard products</td>
<td>Q1 2019-20</td>
<td>Meeting baseline</td>
<td></td>
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<tr>
<td>3.6</td>
<td>Start migration of non-BM Short-Term Operating Reserve (STOR) providers to ASDP</td>
<td>Q2 2019-20</td>
<td>Meeting baseline</td>
<td></td>
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<tr>
<td>3.7</td>
<td>Implementation of Pan-European replacement reserve standard products</td>
<td>Throughout 2019-21</td>
<td>Meeting baseline</td>
<td></td>
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<tr>
<td>3.8</td>
<td>Communicate reactive power requirements &amp; historic spend</td>
<td>Q2 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>3.9</td>
<td>Implement approach for efficient reactive power flows between networks</td>
<td>Q2 2020-21</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>3.10</td>
<td>Work with industry to determine future role for reactive power and design more competitive reactive power services</td>
<td>Q4 2018-19 – Q2 2020-21</td>
<td>Exceeding baseline</td>
<td></td>
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<tr>
<td>3.11</td>
<td>Commence implementation plan to enable rollout new approach to competitive reactive power services</td>
<td>Q3 2020-21</td>
<td>Exceeding baseline</td>
<td></td>
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<tr>
<td>3.12</td>
<td>Power Potential trial with UK Power Networks (UKPN)</td>
<td>Q2 – Q4 2019-20</td>
<td>Exceeding baseline</td>
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<tr>
<td>3.13</td>
<td>Review learning from Power Potential</td>
<td>Q4 2019-20</td>
<td>Meeting baseline</td>
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<tr>
<td>3.14</td>
<td>Alternative Approaches to Restoration</td>
<td>Q1 2019-20</td>
<td>Exceeding baseline</td>
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<tr>
<td>3.15</td>
<td>Develop and evolve a market approach for the procurement of Black Start services</td>
<td>Q4 2019-20</td>
<td>Exceeding baseline</td>
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</table>
## Principle 3 Deliverables

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</thead>
<tbody>
<tr>
<td>3.16</td>
<td>Deliver innovation projects to unlock demand flexibility</td>
<td>Q1-Q4 2019-20</td>
<td>Exceeding baseline</td>
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<tr>
<td>3.17</td>
<td>Power Responsive Stakeholder Engagement</td>
<td>Q1 2019-20 – Q4 2020-21</td>
<td>Meeting baseline</td>
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<tr>
<td>3.18</td>
<td>Clearer accession requirements for BM participation and enable aggregated BMU participation in balancing services</td>
<td>Q1 2019-20</td>
<td>Meeting baseline</td>
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</tr>
<tr>
<td>3.19</td>
<td>Use better technology/systems to improve efficiency of installing communications with BM providers and optimising BMU dispatch</td>
<td>Delivery throughout 2019-20</td>
<td>Meeting baseline</td>
<td></td>
</tr>
<tr>
<td>3.20</td>
<td>Support industry work on providing and delivering against Physical Notifications (ELEXON led) and also support on work on accurate settlement for behind the meter</td>
<td>Q3 2019-20</td>
<td>Meeting baseline</td>
<td></td>
</tr>
<tr>
<td>3.21</td>
<td>Raise code modification to apply Power Available consistently across technical &amp; commercial codes</td>
<td>Q1 2019-20</td>
<td>Meeting baseline</td>
<td></td>
</tr>
<tr>
<td>3.22</td>
<td>Publish Power Park Module signal best practice guide</td>
<td>Q2 2019-20</td>
<td>Exceeding baseline</td>
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<tr>
<td>3.23</td>
<td>Deliver Power Available integration phase 1</td>
<td>Q3 2019-20</td>
<td>Exceeding baseline</td>
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<tr>
<td>3.24</td>
<td>Publish wider strategy on flexibility from intermittent generation</td>
<td>Q4 2019-20</td>
<td>Exceeding baseline</td>
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<tr>
<td>3.25</td>
<td>Deliver Power Available integration phase 2</td>
<td>Q1 2020-21</td>
<td>Exceeding baseline</td>
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<td>3.26</td>
<td>Feedback approach</td>
<td>Q1 2019-20</td>
<td>Meeting baseline</td>
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<tr>
<td>3.27</td>
<td>Improved online resources</td>
<td>Q1 2019-20</td>
<td>Meeting baseline</td>
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</tbody>
</table>
**Principle 3 Metrics**

**Metric 5 - Provider Journey Feedback**

**Metric**
Feedback score from the four key points identified in the provider journey:

1. Onboarding Survey Questions
   1.1 I found it easy to find the information I needed?
   1.2 I was provided with information of sufficient quality to enable me to make an informed decision?
   1.3 What can we do to improve the accessibility of our information? (Free comments box)

2. Tendering
   1.4 What type of participant are you?
   1.5 I have the information I need to understand Firm Frequency Response tender results. On a scale of 1-5, with 1 for disagree and 5 for agree.
   1.6 On a scale of 1-5, with 5 being the most useful how would you rate the usefulness of the Firm Frequency Response results webinar?
   1.6 What can we do to improve transparency of the Firm Frequency Response tender results?

3. Contracting
   **Query management**
   (Questions 1 & 2 are rated on a 5-point scales: strongly agree to strongly disagree)

**Performance Benchmarks**

- **Exceeds benchmark**: average of 3.5/5 or above
- **In line with benchmark**: average of 2.5 or above
- **Below benchmark**: average less than 2.5
Principle 3 Metrics

Metric 6 - Reform of balancing services markets

Metric

**Metric part one:**
This metric will measure how reforms are facilitating the entry of non-traditional providers into balancing markets. We will map service provider technology types against current services and the accessibility of these services has been categorised into three groups:

- Red – significant barriers to entry with no solution implemented
- Amber – interim solution implemented
- Green – Interim solution implemented to enable commercial access

**Metric part two:**
This metric will measure the direction of travel away from bilateral arrangements, towards open and accessible market opportunities. We have attributed balancing spend to three categories that describe the openness of the procurement approach:

- Commercial (bilateral)
- Mandatory
- Tendered

On a quarterly basis information will be presented in a chart for each service that shows cumulative spend broken down into the three categories of procurement approach to provide supporting narrative on our progress.

Performance Benchmarks

*Exceeds benchmark:* Completing >75% of deliverables, and the shift in service accessibility, would constitute the metric exceeding the benchmark.

*In line with benchmark:* Completing 50-75% deliverables, and the associated shift in service accessibility, would constitute the metric being inline with the benchmark.

*Below benchmark:* Completing <50% deliverables would constitute below the benchmark.
**Principle 4:** Promote competition in the wholesale and capacity markets

We are going to deliver:

<table>
<thead>
<tr>
<th>Facilitating Code Change</th>
<th>Transform Industry Frameworks</th>
<th>Electricity network charging reform through Charging Futures</th>
<th>Transform the Customer Experience for Network Charging</th>
<th>Enable Broader Participation in the Capacity Market</th>
</tr>
</thead>
</table>

**This will facilitate**

<table>
<thead>
<tr>
<th>Transparent, simple and accessible charging</th>
<th>Working with industry to ensure codes keep pace with the rapidly changing energy generation and supply landscape so that industry can operate efficiently and effectively.</th>
<th>Transparent, simple and accessible code frameworks lowering bills through enabling better functioning markets and supporting new entrants which stimulates competition.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimising and avoiding market distortions</td>
<td>Getting the best outcome for consumers during the implementation of network codes, with a focus on European issues.</td>
<td></td>
</tr>
</tbody>
</table>

| Fundamental code reform | 
|-------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Improving stability and predictability of charging | Lower bills through enabling better functioning markets and supporting new entrants which stimulates competition. | 

<table>
<thead>
<tr>
<th>Reform across the industry through the Charging Futures framework.</th>
<th>Removal of barriers to market entry, greater provision of more data and information which will lower bills through greater market participation and competitiveness.</th>
<th>Further removal of barriers to market entry, greater provision of more data and information which will lower bills through greater market participation and competitiveness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applying cost-reflectivity of transmission assets onto users of the system</td>
<td>Lower bills through enabling better functioning markets.</td>
<td></td>
</tr>
</tbody>
</table>

| Support of the capacity market mechanisms | Ensuring there is adequate generation provision to meet demand at the right price. | 

---

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# Principle 4 Deliverables

<table>
<thead>
<tr>
<th>Ref</th>
<th>Deliverable</th>
<th>Delivery Date</th>
<th>Meeting or exceeding baseline expectations</th>
<th>Delivering Consumer Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Meeting calendar &amp; transparency of workgroups</td>
<td>Q1 2019-20</td>
<td>Meeting baseline</td>
<td></td>
</tr>
<tr>
<td>4.2</td>
<td>Governance process FAQs, improved guidance material and critical friend review</td>
<td>Q2 2019-20</td>
<td>Meeting baseline</td>
<td></td>
</tr>
<tr>
<td>4.3</td>
<td>Facilitation of pre-modification discussions</td>
<td>Q3 2019-20</td>
<td>Meeting baseline</td>
<td></td>
</tr>
<tr>
<td>4.4</td>
<td>Incorporation of all 14 Code Administrator Code of Practice (CACoP) Principles</td>
<td>Q3 2019-20</td>
<td>Meeting baseline</td>
<td></td>
</tr>
<tr>
<td>4.5</td>
<td>Engage all parties to understand information requirements for code modifications and provide executive summaries on modifications</td>
<td>Q1 2019-20</td>
<td>Meeting baseline</td>
<td></td>
</tr>
<tr>
<td>4.6</td>
<td>Code administrator website</td>
<td>Q3 2019-20</td>
<td>Meeting baseline</td>
<td>Exceeding baseline</td>
</tr>
<tr>
<td>4.7</td>
<td>Governance surgeries</td>
<td>Q2 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>4.8</td>
<td>Historical timelines &amp; horizon scanning: cross-code</td>
<td>Q2 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>4.9</td>
<td>Horizon scanning: strategic</td>
<td>Q3 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>4.10</td>
<td>Stakeholder seminars</td>
<td>Q4 2019-20</td>
<td>Exceeding Baseline</td>
<td></td>
</tr>
<tr>
<td>4.11</td>
<td>Leadership in the successful transformation of electricity access and charging</td>
<td>Q2 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>4.12</td>
<td>Leadership in the Energy Codes Review</td>
<td>Q1 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>4.13</td>
<td>Working for you on European matters</td>
<td>Q1 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>4.14</td>
<td>Unlocking whole system network development opportunities</td>
<td>Q1 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>4.15</td>
<td>Developing and driving targeted market improvements</td>
<td>Q1 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>4.16</td>
<td>Facilitate electricity network charging reform through Charging Futures</td>
<td>2019-21</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
</tbody>
</table>
## Principle 4 Deliverables

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>4.17</td>
<td>Improve our ESO charging query processes</td>
<td>Q1 2019-20</td>
<td>Meeting baseline</td>
<td></td>
</tr>
<tr>
<td>4.18</td>
<td>Improve understanding of our onboarding processes and streamline to meet our customer needs</td>
<td>2019-20</td>
<td>Meeting baseline</td>
<td></td>
</tr>
<tr>
<td>4.19</td>
<td>New data reports for BSUoS</td>
<td>Q1 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>4.20</td>
<td>Reform of website content in to a user-centric knowledge base</td>
<td>Q2 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>4.21</td>
<td>Publications and guidance of the impact of charging reform to our customers</td>
<td>Ongoing from Q2 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>4.22</td>
<td>Introduce new ‘new entrant’ e-learning on charging</td>
<td>2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>4.23</td>
<td>Improve the digital customer experience for TNUoS, BSUoS and Connection Charging Data; including the introduction of a new NGESO billing system</td>
<td>Q1 – Q4 2020-21</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>4.24</td>
<td>Establish a ‘cross party’ approach to onboarding, mapping out whole industry requirements</td>
<td>Q1 – Q4 2020-21</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
</tbody>
</table>
Principle 4 Metrics

Metric 7 - Code administrator: stakeholder satisfaction

Metric
We acknowledge that there is considerable effort required to successfully achieve the step change required in this area, so for 2019-20, we continue to target increased performance for each of our codes when benchmarked against our previous CACoP survey scores.

Performance Benchmarks
**Exceeds benchmark:** Increased overall performance across all of our three codes (STC/CUSC/Grid Code) in the 2020-21 CACoP survey due to be carried out in spring 2020; benchmarked with our previous scores.

**In line with benchmark:** no improvement in overall performance across all of our three codes (STC/CUSC/Grid Code) in the 2020-21 CACoP survey due to be carried out in spring 2020; benchmarked with our previous scores.

**Below benchmark:** Decreased overall performance across all of our three codes (STC/CUSC/Grid Code) in the 2020-21 CACoP survey due to be carried out in spring 2020; benchmarked with our previous scores.

In addition to CACoP surveys, we will also seek feedback from our stakeholders through the use of surveys at set points in the year and following key deliverables such as the conclusion of workgroups. These survey’s will be able to target our stakeholders’ key expectations of the service we provide them and give continuous feedback for us to respond to and iterate on our improvements.

**Exceeds benchmark:** Increased overall performance across all of our three codes (STC/CUSC/Grid Code); benchmarked with our previous scores.

**In line with benchmark:** no improvement in overall performance across all of our three codes (STC/CUSC/Grid Code); benchmarked with our previous scores.

**Below benchmark:** Decreased overall performance across all of our three codes (STC/CUSC/Grid Code); benchmarked with our previous scores.
Principle 4 Metrics

Metric 8 - Charging Futures

Metric
Our success as lead secretariat should be judged against our ability to maintain the overall scores for these measures throughout the year. This will be calculated by periodically repeating the survey throughout the year and averaging these scores. These scores will then be compared against the initial baseline score.

Performance Benchmarks

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

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

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

As further evidence of the outcomes that we are achieving for Charging Futures members, we will supplement the primary survey measures through the continued collection of supporting metrics. Many of the secondary metrics will be determined through an assessment of the utilisation of the Charging Futures web portal ([www.chargingfutures.com](http://www.chargingfutures.com)).
Principle 4 Metrics

Metric 9 – Year ahead forecast vs outturn annual BSUoS

Metric definition and targets
This metric compares the BSUoS forecast made at the start of the financial year against outturn using the concept of an Absolute Percentage Error (APE)\(^7\).

- **Exceeds benchmark**: exceeding target is under 10% APE.
- **In line with benchmark**: proposed baseline target is less than 20% APE.
- **Below benchmark**: underperforming greater than 20% APE.

Performance can be driven by within year events so we won’t have a clear picture of the result until the end of the year. We therefore don’t expect to report on this measure on a monthly basis and introduce metric 9 at a monthly granularity.

Metric 10 – Month ahead forecast vs outturn monthly BSUoS

Metric
The metric will count the occurrences of absolute percentage error (APE) for our monthly forecast with outturn data available at month end

Performance Benchmarks
- **Exceeds benchmark**: Exceeding is meeting baseline performance and five or more forecasts less than 10% APE.
- **In line with benchmark**: Of the 12 forecasts over a financial year, baseline performance is less than five forecasts above 20% APE.
- **Below benchmark**: five or more forecasts above 20% APE.
Shape our Forward Plan

#FPr2

https://www.sli.do/
Roles #3: Facilitating whole system outcomes & Role #4: Supporting competition in networks

Julian Leslie
Head of Networks
Our Whole Electricity System Ambition

Our whole electricity system ambition is that:

• Planning, development, investment and operation of the GB networks will be optimised on a whole electricity system basis irrespective of ownership boundaries.

• Solutions to ESO challenges will be open to a full range of participants, facilitating both market and asset solutions.

• Best overall value for consumers will be achieved, irrespective of the ESO or DSO performing the analysis.

The story so far:

• First two RDPs progressing through their delivery phase

• Two further RDPs well under way, with a fifth in early-stage development

• Increased engagement activity across network users

• Regional WES solutions to transmission needs being tested via NOA pathfinding projects
Possible ‘Whole Electricity System’ end-state for Network Investment, Planning & Operation

1. Transmission Network Capability Requirement
   - Transmission Connection Requests
   - Distribution Connection Impacts

2. Invite Options
   - Transmission Asset Options
   - Transmission Balancing Service Options
   - Distribution Asset Options
   - Distribution Flexibility Service Options

3. CBA on Options

4. Recommendation

5. Implementation
   - T Asset Build
   - D Asset Build
   - WES Smarter Grid Solutions
   - WES Flexibility Services

6. Planning & Operation
Existing transmission approach to network Investment

RIIO Baseline

1. Transmission Network Capability Requirement
2. Invite Options
   - Transmission Asset Options
   - Transmission Balancing Service Options
3. CBA on Options

4. Recommendation
5. Implementation

"Liaison with distribution licensees on possible distribution system solutions”

Key:
- Incremental improvements through RIIO-T1
- Currently out of scope for T
- FP deliverables to address gaps
Towards a ‘Whole Electricity System’ approach to network Investment

1. Transmission Network Capability Requirement
2. Invite Options
   - Transmission Asset Options
   - Transmission Balancing Service Options
3. CBA on Options
4. Recommendation
5. Implementation

Key:
- Incremental improvements through RIIO-T1
- Currently out of scope for T
- FP deliverables to address gaps

**RIIO Baseline**
- Distribution Asset Options
- Enhanced network modelling (P5)
- Enhanced needs assessment and CBA modelling (P7)
- Pathfinders for stability, voltage and thermal constraint management (P7)

**Exceeding Baseline**
- Distribution Flexibility Service Options
- New terms for DER Constraint Management Service (P5)
- New T/D operational interfaces (P5)
- Enhanced operational systems to access DER services (P5)
Network Connection
Existing Transmission approach to network connection

1. DNO Connection Request per DER
   - RIIO Baseline

2. NGESO/NGET assess transmission impact per connection
   - DNO wk24 data
   - TO asset data
   - GB model

3. No Works required

4. Proceed without reinforcement

5. Reinforce (£m; years)

Key:
- Incremental improvements through RIIO-T1
- Currently out of scope for T
- FP deliverables to address gaps
Towards a ‘Whole Electricity System’ approach to network connection

1. DNO Connection Request per DER
   - RIIO Baseline

2. NGESO/NGET assess transmission impact per connection
   - DNO wk24 data
   - TO asset data
   - GB model

3. No Works required
   - Works Required

4. Proceed without reinforcement
   - Reinforce (£m; years)

5. Key:
   - Incremental improvements through RIIO-T1
   - Currently out of scope for T
   - FP deliverables to address gaps

Exceeding Baseline

Commercial flexibility around operational T connections (P6)

Connections customer portal (P6)

WES Network Data/Modelling and Configuration Optimisation

Distribution Flexibility Service Options

New T/D operational interfaces (P5)

Enhanced operational systems to access DER services (P5)

New terms for DER Constraint Management Service (P5)

Trigger RDP

New process for identifying potential RDPs (P5)
Existing Transmission approach to network planning & operation

1. Generation and Demand
   - Non Load-Related Works
   - Load-Related Works

2. System Security Assessment

3. Maintain Energy Balance

4. Maintain System Balance

5. Wholesale Market
   - BM
   - Trades
   - Ancillary Services

Key:
- Incremental improvements through RIIO-T1
- Currently out of scope for T
- FP deliverables to address gaps
Towards a ‘Whole Electricity System’ approach to network planning & operation

New WES ways of working, driven by decarbonisation and decentralisation

1. Generation and Demand
2. System Security Assessment
3. Maintain Energy Balance
4. Maintain System Balance
5. Wholesale Market
   - BM
   - Trades
   - Ancillary Services

Key:
- Incremental improvements through RIIO-T1
- Currently out of scope for T
- FP deliverables to address gaps

Roll-out of Loss of Mains Protection Setting (P6)
Defining roles and responsibilities for voltage management across the transmission/distribution interface (P6)

Inertia measurement (P6)
## Principle 5 Deliverables

<table>
<thead>
<tr>
<th>Ref</th>
<th>Deliverable</th>
<th>Delivery Date</th>
<th>Meeting or exceeding baseline expectations</th>
<th>Delivering Consumer Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>Commercial contracts for balancing services from DER</td>
<td>Q4 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>5.2</td>
<td>Enhanced systems to facilitate balancing services from DER</td>
<td>Q2 2020/21</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>Automated dispatch capability for generation in highly constrained areas</td>
<td>To be confirmed.</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>5.4</td>
<td>RDP identification process</td>
<td>Q3 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
</tbody>
</table>
Principle 5 Metrics

Metric 11 - Whole system, unlocking cross-boundary solutions

**Metric**

Assessment of the performance will be on an ex-post basis, using:
1. The level of DER MW that have signed contracts to connect to the distribution networks; and
2. A narrative setting out how we have established the conditions under which these new connections have been made possible.

The baseline date for each region is that when the conditions to facilitate further connections were established; as follows:

<table>
<thead>
<tr>
<th>Region</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>South-East England</td>
<td>1st April 2019</td>
</tr>
<tr>
<td>South-West England</td>
<td>1st April 2019</td>
</tr>
</tbody>
</table>

This metric is designed as a measure of the effectiveness of the systems, contracts and processes we implement in 2019-21, as measured by new capacity contracted at distribution level.
<table>
<thead>
<tr>
<th>Ref</th>
<th>Deliverable</th>
<th>Delivery Date</th>
<th>Meeting or exceeding baseline expectations</th>
<th>Delivering Consumer Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Extended roll out of enhanced whole system data exchange</td>
<td>Q2 2019-20</td>
<td>Meeting Baseline</td>
<td></td>
</tr>
<tr>
<td>6.2</td>
<td>Commercial flexibility around operational connections</td>
<td>Q1 2019-20</td>
<td>Exceeding Baseline</td>
<td></td>
</tr>
<tr>
<td>6.3</td>
<td>Roll out of Loss of Mains Protection setting</td>
<td>Commencing Q1 2019-20</td>
<td>Exceeding Baseline</td>
<td></td>
</tr>
<tr>
<td>6.4</td>
<td>Defining roles and responsibility for voltage management across the transmission-distribution interface</td>
<td>Q3 2019-20</td>
<td>Exceeding Baseline</td>
<td></td>
</tr>
<tr>
<td>6.5</td>
<td>Inertia Measurement</td>
<td>Q3 2019-20</td>
<td>Exceeding Baseline</td>
<td></td>
</tr>
<tr>
<td>6.6</td>
<td>Transmission Outage and Generator Availability (TOGA) replacement</td>
<td>Q4 2019-20</td>
<td>Meeting baseline</td>
<td></td>
</tr>
<tr>
<td>6.7</td>
<td>Customer journey mapping - outage planning</td>
<td>Q1 2019-20</td>
<td>Meeting baseline</td>
<td></td>
</tr>
<tr>
<td>6.8</td>
<td>Connections customer portal</td>
<td></td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>6.9</td>
<td>ESO thought leadership – how our role will evolve</td>
<td>Q1 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>6.10</td>
<td>Whole Electricity System learnings paper</td>
<td>Q2 2019-20, update Q2 2020-21</td>
<td>Exceeding Baseline</td>
<td></td>
</tr>
<tr>
<td>6.11</td>
<td>ENA Open Networks project 2019 ESO input</td>
<td>Q3 2019-20</td>
<td>Meeting baseline (although certain roles may be exceeding)</td>
<td></td>
</tr>
<tr>
<td>6.12</td>
<td>ENA Open Networks project Whole Energy System lead</td>
<td>Q1 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
</tbody>
</table>
Principle 6 Metrics

Metric 12 - System access management

Metric
This metric looks to drive down the number of planned outages that are delayed by more than an hour or cancelled by us in the control phase due to process failure, investigating the reason for cancellations and putting in place changes into the process where appropriate to prevent a repeat. Sometimes we should cancel system access requests that have been accepted into the plan because these are no longer securable or the costs are too high. We will continue to cancel system access requests where needed; however this number should be as low as practical to avoid costs for external stakeholders and our costs in re-planning these requests. The tension between these two aspects is dynamic and so the ESO will work to reduce the number of control phase cancellations out of every 1,000 system access requests. This measure is a count of the number of outages out of every 1,000 delayed by more than an hour or cancelled within day.

Performance benchmarks
Current performance: 11.5 delays more than an hour or cancellations within day per 1,000 outages accepted into the master outage plan.
Exceeds benchmark: Less than 10.4 per 1,000 outages (more than 10% reduction).
In line with benchmark: 10.9 -10.4 per 1,000 outages (5-10% reduction).
Below with benchmark: More than 10.9 per 1,000 outages (less than 5% reduction).
Principle 6 Metrics

Metric 13 - Connections agreement management

Metric
This metric will measure how long it takes from the point of notification for these agreements to be updated. This metric drives efficient and effective management of existing connections contracts by measuring the percentage of contracts up to date within nine months.

Performance benchmarks
- **Current performance:** = 86%.
- **Exceeds benchmark:** >90% of agreements to be updated within nine months of notification.
- **In line with benchmark:** 80-90% of agreements to be updated within nine months of notification.
- **Below benchmark:** < 80% of agreements to be updated within nine months of notification.

Metric 14 - Right first time connection offers

Metric
To measure the quality of a customer’s connection offer we will use a right first time 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.

Performance benchmarks
- **Current performance:** = 94%.
- **Exceeds benchmark:** >95% of offers right first time.
- **In line with benchmark:** 95% of offers right first time.
- **Below benchmark:** < 95% of offers right first time.
## Principle 7 Deliverables

<table>
<thead>
<tr>
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<th>Deliverable</th>
<th>Delivery Date</th>
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</tr>
</thead>
<tbody>
<tr>
<td>7.1</td>
<td>Stability pathfinder</td>
<td>Q1 2019-20 to Q1 2020-21</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>7.2</td>
<td>South Wales and Mersey Voltage pathfinder</td>
<td>Q1 to Q2 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>7.3</td>
<td>Pennines Voltage pathfinder</td>
<td>Q1 to Q2 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>7.4</td>
<td>Constraint Management Pathfinder</td>
<td>Q2 to Q4 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>7.5</td>
<td>Voltage needs identification tools/ processes</td>
<td>Q1 to Q3 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>7.6</td>
<td>Thermal probabilistic assessment tool / process</td>
<td>Q2 - Q3 2019-20</td>
<td>Exceeding baseline</td>
<td></td>
</tr>
<tr>
<td>7.7</td>
<td>Improve accessibility of the Electricity Ten Year Statement (ETYS) and Network Development Assessment (NOA) publications</td>
<td>Q1 2019-20 to on-going</td>
<td>Meeting baseline</td>
<td></td>
</tr>
</tbody>
</table>
Principle 7 Metrics

Metric 15 - NOA consumer benefit

Metric
This metric will count how many of the reduced-build options that have been submitted to the NOA process appear in the optimal path and, where this is the case, what their consumer value is. Further it will also include the number of non-TO solutions received for system needs assessed by a NOA style approach, and the consumer benefit these solutions deliver, where the need is not driven by network compliance.
For clarity, we will only include reduced-build options that have been initiated by us as this will drive us to continue to be proactive in looking for these options.
This metric will include two aspects: the number of reduced build options appearing in optimal paths and non-TO solutions, and the consumer value driven by these options. The number of options is expressed as a count and the consumer value will be based on £/kW saving for alternative options against traditional build options or against taking actions in the balancing mechanism.

Performance Benchmarks
**Exceeds benchmark:** Larger number of value-add options than target and consumer benefit greater than or equal to 10% in excess of target.
**In line with benchmark:** Number of value-add alternative options meets target and consumer benefit within 10% of target.
**Below benchmark:** Number of value-add alternative options below target and consumer benefit below 10% of target.
Shape our Forward Plan

#FPr34

https://www.sli.do/
Preparing our Final Forward Plan

Consultation Close
14th February

Final Forward Plan 2019-21 & ESO RIIO2 Ambition Published
March

2019-20 Monthly Report
22nd May

2019-2020 Incentives scheme goes live

Please send your consultation response to box.soincentives.electricity@nationalgrid.com

Please give us feedback on today’s event:
#FP19-21 https://www.sli.do/