nationalgridESO

Electricity System Operator Forward Plan 2018/19

Principle 4

September 2018

Contents

Foreword

Principle 4: Promote competition in the wholesale and capacity markets

The future of our energy system is digital, decentralised, decarbonised and democratised. Our future markets need to evolve to provide the enabling architecture that will realise value for the end consumer.

In our Forward Plan, we set out the case for change and a plan for the important role National Grid Electricity System Operator (NGESO) has to play in facilitating competition in these future energy markets.

We believe that successful businesses operating in competitive markets, with simple, transparent rules deliver value for the end consumer. This relaunch presents our commitment to this principle and a refreshed view on our commitment to facilitating more competitive markets.

This document provides an update on what has been delivered since the launch of the 2018/19 NGESO Forward Plan in April 2018[1], our lessons learnt and our next steps to facilitate efficient, competitive markets that deliver value for the end consumer. As a reminder, our baseline activities are set out to the right and our approach to this relaunch aims to explain how our role delivers on these and can exceed expectations.

Since publishing the Forward Plan we've listened to our customers and stakeholders, who told us to be more ambitious and we want to use this document to share the learnings, course corrections and expanded scope of delivery that has come from this extensive engagement.

This document sets out our holistic long-term vision for this principle, introduces its new stretching ambition and the key enabling activities to unlock consumer value through competitive markets now and in the future.

Our Key Baseline Activities:

- We are the code administrator for a number of codes and processes that govern the electricity markets
- We ensure that the rules of participation and the commercial arrangements for using the system are clear, fair and promote competition
- We are the administrator for the BSUoS and Transmission Services Use of System Charges (TNUoS).
- We collect TNUoS charges on behalf of the Transmission Owner and offshore transmission owner companies, and distribute these funds.
- We are the EMR delivery body and we administer the running of the capacity mechanism auctions.
- We undertake complex modelling work to provide strong evidence that the capacity secured through the CM delivers value for money to the consumer
- We are a part of the European body for Transmission System Operators, ENTSO-E.

[1] https://www.nationalgrideso.com/sites/eso/files/documents/NG_SO_Forward_Plan_270318.pdf

Our vision

Globally technological disruption is transforming energy markets. In 2010 only 3% of all the electricity consumed in the UK was produced by solar and wind generation. By 2017 this share had increased dramatically to 18%. Over the same period the coal generation share of electricity consumed plummeted from 32% to 6.5% and since publishing the NGESO Forward Plan we have had more than 1500 hours without coal generation synchronised on the system.

Disruptive change is not only transforming market dynamics it is also creating regulatory gaps because laws and industry frameworks have not kept up with the rapid advances. The dramatic shift towards renewable generation has been accompanied by significant growth in Distributed Energy Resources (DER) such as small gas generators, aggregated sources and batteries which provide increased flexibility on the system. This rapid evolution has produced a more distributed electricity system with a wide range of technologies supported by a range of business models.

Innovators and disruptors with new challenger business models are forcing us all to think differently. In this rapidly evolving world innovation is crucial to healthy, competitive markets that reduce costs and ensure we continue to deliver security of supply to the end consumer.

For this to occur, the diverse range of market participants must be able to make efficient business decisions: what technologies to invest in and when; which combination of markets to participate in; when to close assets; when to dispatch their assets. Competitive markets with clear price signals are essential to allow these decisions; this can be achieved by focusing on the transparency and liquidity of markets together with removing unnecessary barriers to entry.

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

In an increasingly complex world, markets will need to evolve and it is important that this change happens sufficiently quickly. Many of these changes will need to be delivered through the rules and obligations that we and market participants must adhere to. Today we set out a renewed and refreshed commitment to our belief in markets and the pivotal role the ESO can play in enabling the required change at pace.

We have also listened to what our customers and stakeholders have told us; this relaunch document affords us the opportunity to reflect on what has gone well, what lessons have been learnt and reflect upon the growing scope of work and ambition in this area. Today we set out a plan of genuine ambition detailing the actions the ESO will take and outcomes we will deliver to support the transition to a more cost-effective energy system by working hand in hand with the market so together we can realise the benefits of a distributed, smart, flexible electricity system.

Cathy McClay
Head of Future Markets

1. Managing customer profitability

What is it?

Our customers pay more than £4bn a year in network charges to NGESO. You pay these charges to access, and use the GB transmission networks[2] yet you have told us you don't understand our charges, and how they can change. This has an impact on your businesses and your ability to be profitable.

Consumers want a reliable and value-for-money electricity system. Each time they turn on the light they want it to work but, they also want to know it is costing them a fair price. Part of that cost is our network charges. Helping you to be a successful business, ultimately drives down costs to the end consumers.

Successful businesses operating in a competitive market delivers value for consumers. We want everyone to understand network charges so they can take part in the market. We want to give you access to clear data, and we want to remove any unnecessary barriers to market entry.

We want to make your experience with network charging simpler and easier.

The "Customer Journey" approach

To address how your experience with network charging can be improved, we've followed a "Customer Journey" process to gather feedback, prioritise where to make improvements and set action plans.

The Customer Journey means we think differently from how we have in the past. We look at the experience our customers have with us, and what they need from us. We then redesign our processes – removing your pain points, and making prioritised action plans - to improve business processes and tools. The Customer journey approach truly puts the customer at the heart of what we do. In contrast, our old approach was often designed around our internal systems and processes, with these driving our interactions with customers.

We began this process for network charging last year, taking feedback from a sample of customers. Several of you will have been involved in these bilateral listening sessions. The customers we spoke to represented a cross-section of the industry. We all know that the industry continues to fundamentally change, with an increasing number of small parties. We have heard from you that to be agile in the consumer market you do not have time or resource to dedicate to understand the complexities and nuances of network charging, but they have a big impact on your profitability. You reflect that whether you have big regulatory or charging teams or not, we should be better at helping you understand your charges.

We listened to your concerns and we sought your feedback. We consolidated this in to a series of areas where we would focus. We shared our initial thinking with the sample of our customers through further bilateral meetings.

Since April 2018, we have been working on delivering an Action Plan delivering changes to improve the customer experience, and putting customer at the centre of our network charging processes. However, we recognise that we've not done enough to tell you what we are doing.

We are therefore going to make some further commitments to you. We will tell you what we have done so far this year in response your feedback, and we will tell you what we still plan to do. We will do this starting at our first joint Charging & Settlement Forum in mid-October. As always, we will seek your input and feedback to continue to refine our plan and our approach.

[2] We call these charges Transmission Network Use of System (TNUoS) charges and Balancing Services Use of System (BSUoS) charges. TNUoS is an annual charge and the revenues are passed through the Transmission Owners. BSUoS is a half hourly charge to recover the ESO costs of balancing the system.

What you said

You told us through the feedback process that there are three key areas in which we can improve to drive value for consumers by supporting you to manage your profitability. The Action Plan that we have developed based on feedback will address each of these three areas specifically.

You said "when thinking about network charging"

Your feedback	What we need to do
I need to understand information and data	• Content to give information on what charges we will face, with relevant updates • Content to explain how charges are calculated • Forecasting data that is transparent and clearer on accuracy • Experts who can support with finding relevant information
I need better access to information and data	• Improvements to digital access to information • Improvements to how we can interact with data • Access to relevant experts and knowledge of how to reach the right people
I need to understand the onboarding and exit process	• Knowledge of who to contact and what to know for new entrants

What we are already doing

We have been making improvements to our processes to ensure that we are providing bills on time with expectations; the improvements made have ensured we are now consistently delivering timely bills. We will continue to maintain this standard of delivery, whilst committing to improve in the areas where we have been given direct feedback. We will continue to monitor our metrics on billing and query management but we recognise that these are evidence that we are maintaining expected performance and service levels while delivering a customer transformation. As a result, these metrics are no longer expected to be measures of how we are exceeding expectations.

We have made the first set of changes to our website to make it clearer who pays which charges and why. We know there is more we can do in this space.

We have continued to refine our TNUoS tariff reports, including better structures and clearer data. We also aim to be clearer about how tariffs might change, what is fixed and what external changes may impact our tariff publications. This helps you to better understand how and when tariffs may evolve.

We consulted on our five-year view of TNUoS to understand what you value from the report and what you want in future. Our latest report was published on 14 September and reflects your feedback.

We have introduced new email newsletters with upcoming key dates and topics. We will continue to see how we can refine these to make them really useful for you.

We utilise technology and now record our webinars and publish these to the website afterwards. This means that even if you are not able to make the webinar, you can get the benefit of our experts talking you through the updates to the tariffs.

What we are doing next

Our key milestones upcoming are as follows;

16-17 October 2018 – Joint Charging & Settlement Forum (TNUoS/BSUoS/Ancillary Services). Each day focused on either Generators or Suppliers

In response to your feedback, this will be the first time we have brought our network charging forums together. This means you need only attend on one day to understand everything for your business. By recasting our forums around our customers – rather than our charges – you should get higher value for less time away from your office.

Mid-October 2018 – publishing our Action Plan for ongoing improvements based on the three key areas of feedback

This year's plan will focus on delivering on the feedback you have said:

- Making further progress on the areas we have already started and described above.
- Continuing to improve our website, documents, letter and emails, making them easier to understand, and ensuring they are at the right level for your business.
- Publishing data in a timely and useful way. Making sure you have the best available data on which to make informed decisions to enable you to be fully informed.
- Designing a new holistic onboarding process, a complete suite of support for new suppliers wanting to join the market to help them understand their interactions with National Grid, the charges they will face and their obligations. This will include dedicated web content, checklists, beginners' guides, webinars and one-to-one support. This means that parties understand their obligations and can get active in the market as quickly as possible.
- Continuing to listen to our customers – making sure we understand we are in tune with their evolving needs, as the industry continue to change.

Introducing new metrics for BSUoS

You have shared with us how the volatility and predictability of BSUoS can be very challenging to manage when you are pricing your customer supply contracts. We have already made progress in our transparency and forecasting of BSUoS which is part of our Principle 1 commitments but we understand for our electricity supplier customers that you are also seeking better information on an annual and monthly basis. Our proposed new metrics described in the appendices will measure our annual and monthly forecasting performance will help you have confidence in the data we publish. This will in turn enable lower risk pricing of energy contracts with the direct aim of reducing consumer costs.

Conclusion

The delivery of this customer journey is developed around your feedback and will help make your experience of electricity network charges more simple to understand and engage with. This will help you to be a successful business ultimately driving down costs to end consumers. We promise to keep listening to your feedback because we are always aiming to deliver continuous improvement.

2. Facilitating code change

What is it and who are we?

NGESO is the Code Administrator responsible for facilitating changes to a number of key industry codes: the Connection Use of System Code (CUSC); Grid Code; System Operator to Transmission Owner Code (STC) and the GB Security and Quality Supply Standard (SQSS). We play an important role in allowing industry parties to propose changes, debate important issues and drive key outcomes in code modification processes, and to help protect the interests of small market participants and consumers through the adoption of key code administration principles (CACOP)[3].

What's changed?

Year on year the industry is becoming more diverse and complex resulting in an increased appetite from industry parties to propose changes to the codes. This naturally increases the stress on industry resources and makes it more challenging to identify key priorities. You have told us that there is a sense of real frustration with the current code process, primarily driven by the timescales to manage code change efficiently and the resource commitment to inform the debate.

We have been listening to you, and to tackle this, we have put in place a three-step plan to transform your customer experience with us:

- Implementation of an improvement plan, based on your feedback, which is focused on quick wins and tactical improvements
- Launch of the customer journey 'Manage a Code' with the aims of redefining the customer experience and implementation of a Code Manager approach
- Launch of a regulatory horizon project to consider how the benefits of a Code Manager led service could be enhanced, how this will drive consumer value and how this might be funded in the future.

Each of these will now be discussed in turn.

Improvement plan

We have recently received an early indication from Ofgem of your feedback from Ofgem's latest CACOP survey[4]. We understand that we are moving in the right direction as there has been an increase in overall satisfaction of our service compared to last year. You have told us that the support we provide has increased significantly for smaller organisations, and smaller businesses have reported greater confidence in their ability to deal with codes. However, we acknowledge that there is still significant scope for improving our performance as a Code Administrator. Our approach to building our improvement plan has been primarily focused on your frustrations.

Your feedback	What we need to do
I need to understand information and reports more easily	• Simplify and target the information we provide to help you to manage and stay on top of the key changes, and what it means for you
I need it to be easier to take part in the process	• Better coordination and technology used for workgroups and Panels, providing greater opportunity for participants to attend and to be at the heart of the debate. • Creating a website that is easier to navigate

[3] www.ofgem.gov.uk/licences-industry-codes-and-standards/industry-code-governance/code-administration-code-practice-cacop.

[4] Ofgem will publish its full findings in due course

Your feedback	What we need to do
I need more support	• Help you navigate through the governance process easier, to meet the complexity of the code landscape removing barriers to add value

The content of our plan will include tangible actions and a commitment on timescales for completing the actions; we will publish this plan to you this autumn. As part of our approach to working through our plan we will be asking for regular feedback from customers at working groups and via the code Panels so that we can keep checking that our plan is delivering against your needs.

Manage a Code Change - Customer Journey

In April 2018, we began work on "Manage a Code Change" Customer Journey. The Customer Journey concept means we look at creating the right customer experience for you in the future, removing inefficiencies and areas of frustration you have with the approach today. The Customer Journey outputs will be designed to make our process work for your future business needs. We can only achieve success by designing this future experience in collaboration with you. As part of this commitment we have conducted over 10 bilateral discussions with consumer bodies, trade associations and customers with different wants and needs, to understand their views on the current process and what needs to change.

You said "when thinking about code change"

Your feedback	What the issue is
No target to aim at	• Decisions on what issues are put into the code change process are not guided currently by what the vision of the energy system should be in the future; • Decisions are often tactical.
Code change process is opaque	• How the process works and what the options for change are isn't clear • Awareness on how to engage with the code governance process amongst new customers is low • For those that are engaging, learning guidance is limited
Hidden Motives	• A lack of upfront engagement from industry parties who are initiating changes can often mean that wider stakeholders lack transparency on motives and the drivers for change
The Missing Consumer	• The consumer voice isn't heard and gets lost in the complexity of proposals
How to find the time	• Most participants struggle to find the time to resource areas of change well or at all

Your feedback	What the issue is
Complexity of interpretation of changes	• It takes huge resource to work out what changes will mean for all parties. Only option is to sometimes fund this via a third party

Your feedback has helped us to begin redesigning our code governance service. As part of this process we are designing case studies of different customer groups, where we will test the desires that each group will have at different stages in the process lifecycle. In October, we will also commit to play back our thinking to those customers we initially met with on a bilateral basis. The feedback from this phase of the project is critical to help us fine tune proposals.

We are looking to sign off our approach under this project in Q3 of this financial year, and we will communicate a project plan to industry on how we implement those recommendations in Q4 of this year.

Regulatory Horizon Project

The scale of change in the energy market has highlighted the need for a change in our approach to managing code change. In August 2018, we started our thinking on the type of environment that needs to be created to efficiently support a Code Manager. Whilst we are still in the early parts of this project we are keen to engage with you for your views. Our engagement plan will include bilateral discussions and interactive sessions at our customer seminars, your views will be central to the creation of a preferred option. We see an agile and consumer focused funding model as a fundamental part of enabling the Code manager to drive consumer led outcomes.

Conclusion

We are putting together an ambitious programme of work in response to your feedback. Our aim is that all our changes contribute to delivering consumer value and while you won't necessarily see an immediate transformation we will ensure you receive regular updates on our progress.

3. Delivering code changes

What is it?

A key focus of NGESO in facilitating competitive markets is working with the industry and wider stakeholders to deliver the necessary electricity market change. In the previous section we talked about our role as code administrator but in addition we have another role - participating in the change processes as subject matter experts. This means as NGESO we also provide our own unique perspective on changes. Consumer benefits beyond the baseline can be delivered by enhancing the way we perform this role through stepping up further to facilitate and contribute to the debate.

We believe that we are strongly placed to provide a central role in facilitating change in industry frameworks due to our unique perspective as the ESO and our focus on value for consumers. We realise that to take this central role we need to be trusted by our stakeholders and that this is not always the case at present. As we move to being a legally separate entity in April we wish to step up and play a central role in debating key policy and industry change areas matters and through the process gain increased trust in our independent view point and our focus on consumers. To achieve this we will be transparent, sharing our thought processes and governance of our decision making. We will use our expertise in a way that can best serve the breadth of market issues in the interests of consumers because we feel convinced that this approach is the best use of our time and talents.

What are we already doing?

Delivering value by engaging and supporting you

We've heard from you how difficult it is to engage in industry frameworks and after reflection on this we have already started to bring about changes to the way in which we facilitate this as industry experts.

We will continue to improve the way in which we share learning, explain issues and bring about greater contribution from market participants in industry change processes. Charging Futures provides an example of where we have started to facilitate stakeholder-led change. Charging Futures has enabled us to work with Ofgem to deliver a new approach to early engagement with all interested parties on network charging and access issues. We get broad participation by using more tailored approaches to presenting on complex topics such as downloadable webcasts and podcasts (our podcasts have been listened to over 700 times). We have provided numerous easy to read guidance documents and regular email newsletters. Finally Charging Futures also includes a quarterly forum to enable attendees to learn, ask and contribute to reforms which are led by Ofgem. Tools such as sli.do and menti have opened up these sessions to allow records of views and comments to be shared both with Ofgem and also across all stakeholders.

This approach brings greater efficiency to the industry change processes which in turn allow for timely changes to market arrangements. As a result, value to consumers is delivered at the earliest opportunity via continuous improvement of effective competitive markets. Efficient industry change processes have engagement and involvement from a broad spectrum of market participants. That the change is developed and influenced by subject matter experts who can ensure that it is practical and will best deliver the outcomes which are being sought.

Working for you on European matters

It's not just in Great Britain where we are active in promoting competition in markets. Many of the market changes domestically are driven by projects which are initiated within Europe. We provide a critical role in promoting the interests for GB consumers to mitigate risk and unlock future value. Many of the other European networks have very different operational characteristics from those in of the GB network and so it is important that when creating new European codes these differences are recognised and accommodated. We are currently engaged in three key European areas: BREXIT; development of the European Network Codes and The Clean Energy Package.

- BREXIT is a topic that is almost constantly in the news. At present there is a great deal of uncertainty regarding the outcome of the BREXIT negotiations. We are therefore working with BEIS and Ofgem on a range of different negotiation outcomes to understand the potential outcomes from a security of supply, operability and codes and licences perspective. Our input will help inform the publication of market adequacy and operability updates by the end of the year. This will help to provide clarity on an area of uncertainty for many market participants.
- All EU Network Codes (ENCs) have now entered into force, and are EU Regulations in their own right. Implementation activities in Britain will continue for a number of years. We are central to the development of the detailed solutions for the domestic market. Our approach develops these solutions in collaboration with other European TSOs and stakeholders in GB. As part of the engagement with the market you have told us that being prepared for future legislation changes is vital to managing your business needs efficiently. We have therefore committed to a range of podcasts, webinars and information guidelines to provide confidence on the development and implementation of these solutions.
- The Clean Energy Package is the next step in European legislation for electricity markets and system operation. We play a key role in shaping and influencing the development this legislation by working in a collaborative fashion with BEIS, Ofgem and other European stakeholders to provide positive outcomes for the GB energy sector. Our ongoing work in these areas will provide key inputs into future negotiation discussions between the Commission, Council and Parliament in Europe. As part of this role we will also provide monthly stakeholder forums with customers and industry trade bodies to provide transparency on developments in the negotiations and to listen to feedback that can be fed back into the negotiations to drive positive outcomes.

What will we do next?

We will demonstrate these new approaches by taking forward substantial topics for change in agreement with Ofgem and stakeholders, providing our unique perspective on broader energy policy matters. We have identified several areas where were we believe that there is significant potential to unlock current and future value for consumers:

- A comprehensive assessment and review of BSUoS.
- A proposal for new commercial security arrangements for long lead time high value transmission schemes.
- Consideration of how whole system thinking can drive changes to the SQSS[5].

A comprehensive review of BSUoS

Many of our customers are keen to see changes in BSUoS charging arrangements and Ofgem has recently highlighted the interaction of BSUoS charging with its reform of network access arrangements. BSUoS is a system cost which ultimately is fully borne by consumers and so ensuring charging arrangements are in the best interests of market competition is vital. We will take this forward with industry this Autumn and aim to ensure code modifications can be raised in a timely manner to ensure changes are progressed for charging year 2021/22 at the earliest. Any earlier than this and it is likely that expected BSUoS costs are already featured in market participants contracts and pricing arrangements. In previous discussions on BSUoS stakeholders have highlighted that sufficient lead time is required to ensure updated forecast costs can be appropriately accounted for. We also consider that if fundamental changes are made to the recovery of balancing costs then the nature of our financial obligations to this process might also

[5] Security and Quality of Supply Standard. The rules for measuring transmission system investment needs whenever new demand or generation is connected

need to change, e.g. managing over or under recovery of costs. Therefore timing changes in line with our new price control and funding arrangements would be necessary.

Consideration of changes to the SQSS

The work that NGESO has led on Network Options Assessment has demonstrated that whole system thinking can drive down the need for large transmission system investment where better value alternatives are available and made visible. The existing transmission network development processes, including for example the application of the SQSS, were developed in the absence of the Network Options Assessment. Changes to the SQSS could be fundamental and we think significant network assessment and industry engagement is necessary to take forward appropriate process, information provision or changes efficiently. However, we are keen to commence this work in 2018/19 with the ambition to develop options for the future and seek feedback on our progress and thinking in 2019.

Security arrangements for transmission schemes

As we move towards a world of competition in onshore transmission, securing the cost of transmission system development prior to the use of network assets becomes more important. Security arrangements for transmission build can help avoid unnecessary spend by transmission owners in the first place and therefore avoid any unnecessary works being paid for by consumers.

We have already started work on potential new commercial security arrangements for long lead time high value transmission schemes with an open letter to industry this summer. We will discuss this further with our customers at our Autumn seminars to establish what options there are that result in the best outcomes for consumers. If appropriate the outcome of this work would be a code modification later this financial year.

Conclusion

Our role here has potential to add real value to consumers so we are setting ourselves the challenge to gain increased trust in our independent view point and our focus on consumers through the way in which we perform. We are also setting out some areas where we feel we can particularly add value on specific issues for our customers and consumers which have been chosen because we feel as NGESO we can provide a unique perspective to add to and facilitate the debate.

4. Capacity market modelling

What is it?

The Capacity Market (CM) is central to delivering GB electricity security of supply. In our role as the EMR Delivery Body we undertake complex modelling work to provide strong evidence that the capacity secured through the CM delivers value for money to the consumer. We are supporting the continued development of the CM by undertaking innovative modelling, not anticipated when the CM was set up, that will facilitate a level playing field for all technologies to participate in the CM. At the same time, our modelling will help ensure the consumer only pays for what each technology can deliver. We work with BEIS, Ofgem and the Panel of Technical Experts (PTE) to agree regular incremental improvements to our modelling process. In addition, this year we will be undertaking two new major market development projects. These projects go over and above what we would normally deliver. The first facilitates new technologies entering the CM in the case of renewables. The second will focus on new techniques to model distributed generation that ensures their contribution to security of supply, as more flexible plant connects, is appropriately calculated and delivers value of money to both the technology operator and the consumer.

Renewables in the CM

The CM was designed to be technology neutral and open to all technologies that weren't receiving any energy policy support (subsidy) such as a Renewable Obligation, Feed in Tariff or Contract for Difference. Originally the design didn't expect renewable technologies, like wind, to participate for many years until after their existing subsidies ran out. However, new technologies have been looking to enter the CM much earlier than anticipated which means they require an appropriate derating factor for the auction. Recent examples of new entrants were batteries and now unsubsidised renewables e.g. wind and solar.

Ofgem in their CM Rules consultation recommended that we should undertake new analysis and estimate derating factors for wind and solar technologies. If participation of these technologies is approved by Ofgem and BEIS, the derating factors will enable them to enter the CM auctions. This project will investigate the value wind (onshore and offshore) and solar bring to the CM by developing a process for calculating derating factors that give the appropriate contribution that those technologies bring to security of supply. The correct derating factor is therefore crucial to ensuring consumers get value for money. Our analysis will consider not just the average contribution from wind (as per the current method) but what the contribution of the next MW of wind would deliver to security of supply. In addition, we will need to consider the potential interaction between wind, solar and storage to quantify any impact on security of supply. Once we have developed the modelling method and indicative results we will look to obtain PTE approval ahead of engaging with industry.

What are we doing?

- Developing a method for calculating derating factors for each technology utilising an Equivalent Firm Capacity approach. This new process of developing incremental derating factors for wind as opposed to average derating factors as currently used ensures the value of the next MW of wind to connect is correctly valued regarding both its contribution to security of supply and what value it delivers to the consumer
- Engage with academic consultants followed by BEIS, Ofgem and the PTE to ensure that the model is fit for purpose and the implications of the approach taken are well understood. This is essential given the complexity of the modelling and the critical impact that derating factors have on the capacity market participants
- Run model, validate results and present to BEIS, Ofgem and PTE to obtain PTE endorsement
- Consult industry on both method and indicative derating factor results (this approach follows feedback on the 'limited duration storage' consultation last year when industry stated they would like both together rather than separate). We plan to be ready to consult industry from

December 2018, however, the timing of this consultation is dependent on BEIS's review of the CM.

Distributed connected generation derating factors

The original CM was based around the availability of large conventional generation. However, the market place is changing with distributed generation now playing a greater role than ever before. Consequently, it is vital that the contribution to security of supply of this distributed small-scale generation is calculated correctly. Currently the derating factors applied to this distributed generation are based on the transmission connected generation technology which is deemed most similar e.g. large scale OCGTs for reciprocating engines. Clearly this isn't sustainable into the future as their reliability could be quite difficult and new analysis is required to update this assumption to better model a growing element of the generation mix.

Our development project will therefore investigate the use of distributed connected generation historical data to determine more accurate derating factors for the CM rather than the closest Transmission connected technology thus delivering better value for money for the consumer. This has been challenging in the past due to a lack of available data on historic performance of distributed generation.

What are we doing?

- Contract with Electralink to receive historical generation output data by technology and site for as many years as possible while ensuring all legal GDPR obligations are met. This has been challenging as the data has not previously been made available for this type of study.
- The derating factors in the CM depend on the availability of generation but this data is not available for distributed generation. Instead only metered data is available which if used directly will underestimate the derating factors. We will investigate the available data to develop innovative methods for converting output data into availability data and agree the method for calculating derating factors with BEIS, Ofgem and PTE.
- Following the endorsement from the PTE on our method and indicative results for each technology we will consult industry. We plan to be ready to consult industry by early in the new year, however, the timing of this consultation will need to align with Ofgem's CM Rules Consultation to ensure they are implemented successfully.

Conclusion

The delivery of these two major market development projects will help facilitate the participation of renewable generation in the CM thus increasing competition and the use of appropriate derating factors for renewable and distributed connected generation that ensures value of money for consumer. We will engage with our stakeholders to ensure that they understand the modelling approaches taken and their implications, thereby increasing confidence in Capacity Market outcomes.

A

Appendices

Principle 4 deliverables

Our new FY2018/19 Deliverables

Outcome	Deliverables	FY2018/19 Delivery Date
Managing Customer Profitability – helping our customers be successful ultimately driving down costs to end consumers	• Joint Charging and Settlement Forum	• October 2018
	• Publish Improvement Action Plan	• October 2018
	• Delivery of improvements	• As detailed on Improvement Action Plan
Facilitating Code Change – out work aims to ensure that all our changes contribute to delivering consumer value	• Publish Improvement Action Plan	• October 2018
	• Delivery of improvements	• As detailed on Improvement Action Plan
	• Communicate Manage a Code Change project plan	• Q4
	• Engagement on regulatory horizon project	• Q4
Delivering Code Change - enhancing the way we perform this role in order to support the delivery of consumer value through quality debate on policy and industry change matters	• Publish energy adequacy and operability updates in the context of Brexit	• Q3
	• Comprehensive review of BSUoS	• Q3
	• Initiate consideration of changes to the SQSS	• Q4
	• Update on our thinking on security arrangements for transmission schemes	• Q4
Capacity Market Modelling – facilitating broader participation in the CM to provide security of supply at best value for consumers	• Consult on our renewables derating method and results	• Q4 (expected[6])
	• Consult on our distributed generation derating method and results	• Q4 (expected[7])

An update on our FY2018/19 Deliverables which we committed to in April 2018

	Deliverable	Update
Managing customer profitability Continual improvement of network charging processes	• Improved transparency and publication of charging data – Phase 1: Customer access to information.	• These deliverables will remain but more explanation is provided in Chapter 1 and we will provide more

[6] Our ability to undertake external engagement is contingent upon BEIS
[7] Our ability to undertake external engagement is contingent upon BEIS

	Deliverable	Update
	• Improved transparency and publication of charging data – Phase 2: Better forecasting and outturn information and material. • Deliver new, combined TNUoS and BSUoS customer seminar. • Targeted interventions that enhance our customers' experience of our charging processes on the 'hot spots' they have told us matter to them. • Improve TNUoS billing reconciliation, forecast and final tariff setting processes. • Implement a new charging customer on-boarding process	transparency of individual changes across the remainder of the year
Facilitate and deliver code change	• Publish an agreed code administrator strategic improvement action plan. • Deliver Charging Futures Forums that are open to all network users. • Deliver webinars, podcasts and plain English publications under the Charging Futures (CF) Brand. Adapt the content and format in response to the ongoing requirements and preferences of all CF members. • Publish a report on Charging Futures. Identify the lessons learned from cross-industry and code engagement.	• See Chapter 2 for more information on our new approach to code management deliverables • Our Charging Futures deliverables remain in scope for 2018/19
Capacity Market Modelling	• Provide additional information to support the Electricity Capacity report. • Update and evolve the way we analyse the energy system in response to input from BEIS's Panel of Technical Experts	• More details are in Chapter 4 on our role to facilitate electricity market reform and our deliverables have been updated accordingly

Principle 4 metrics

In April 2018, we told you that we will be able to demonstrate a contribution to the realisation of consumer benefit through improvements in three metrics:

9. ‘BSUoS Billing’ – quality of response to customers’ BSUoS queries.
10. ‘Code administrator stakeholder satisfaction’ – in our code administrator role, through a survey of performance across CUSC, Grid Code and STC (undertaken by Ofgem).
11. ‘Charging Futures’ – stakeholder satisfaction with our delivery of the CF facilitator role.

Following feedback from Ofgem we can agree that Metric 9 best represents the delivery of a standard which should not vary whilst we are delivering on our improvements to our charging processes. Consequently, while Metric 9 will be retained we expect no performance reward from these measures. We propose two new BSUoS metrics which are described below in more detail.

We now understand that the measure of Code administrator stakeholder satisfaction we expected to use (the Ofgem-run Code Administration Code of Practice (CACoP) survey) will not provide us with data on our 2018/19 performance in a timely manner. At the time of writing, data for 2017/18 has not been made publicly available. As a consequence, we expect to build a portfolio of evidence of our continued improvements measured against explicit stakeholder feedback. This will be reflected in the development and delivery of our improvement plan.

Metric 19 – Year ahead forecast vs outturn annual BSUoS

Consumer benefit

An annual BSUoS forecast is vital for those parties seeking to price long term products such as electricity suppliers providing fixed price supply contracts to domestic consumers. The better the forecast the lower the risk premia that need be added to the supply contract and as a result the lower the cost for the end consumer.

Context

The nature of BSUoS and the impact that significant and unexpected events during the year can have on the cost of system balancing means that there is significant uncertainty in an annual forecast. An event such as £18m spend on margin over 3 days, or significant fault outages like HVDC can cost £10s millions. Our incentive performance could easily be lost by an event could happen on day two of the incentive period. It is this level of uncertainty that has informed our development of thresholds across which our performance will be measured.

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)[8].

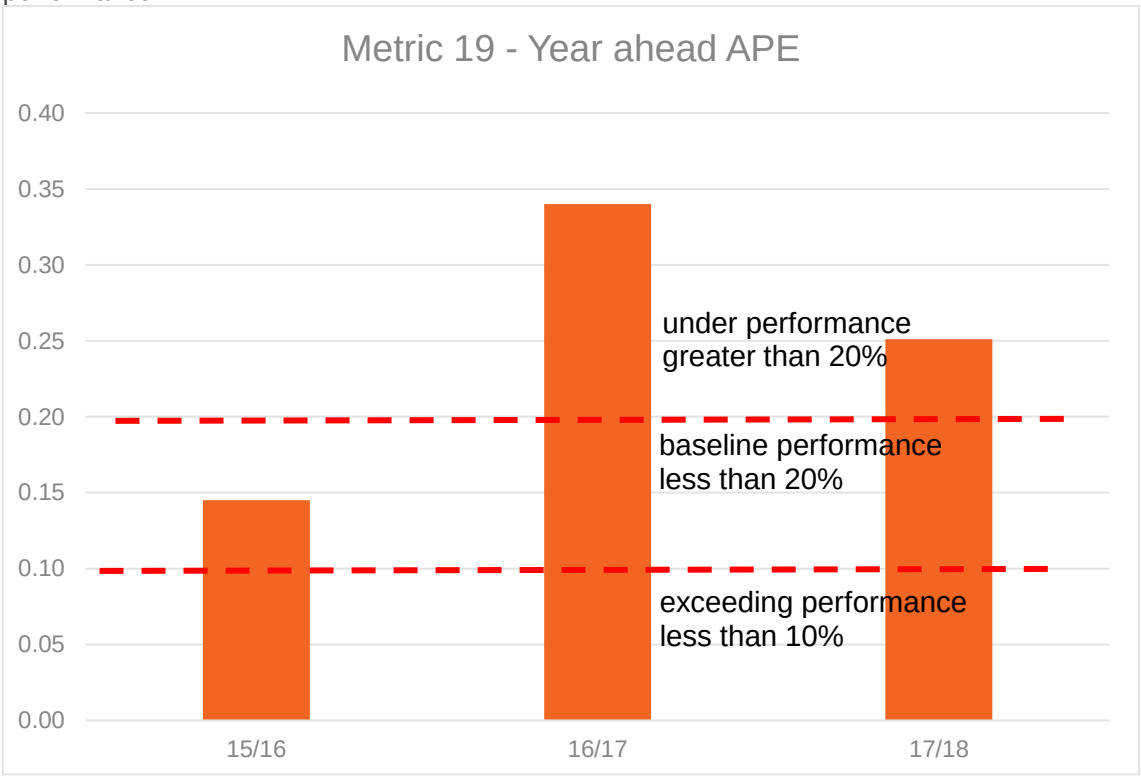
The proposed baseline target is < 20% APE, underperforming >20% APE and exceeding target is under 10%.

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 20 at a monthly granularity.

[8] APE = abs((Actual – forecast)/ actual). APE calculates the difference between actual and forecast divided by the actual to give a percentage error, the absolute value is take to account for positive and negative errors.

Historic performance

The average APE for the previous 3 years is 25%. The chart below shows the historical performance.



Metric 20 – Month ahead forecast vs outturn monthly BSUoS

Consumer benefit

Some of our customers have told us they manage their price and balancing risks via month-ahead products. We also understand large consumers on pass through contracts seek to understand their month-ahead BSUoS costs. For both of these reasons the quality of our month ahead BSUoS forecast can influence the risk premia that parties are having to manage with the ultimate benefit of reducing consumer cost.

Context

There is significant volatility in the comparison of our month ahead forecast with the outturn. If we examine the percentage variance, then there can be large swings in accuracy. We propose that to ensure we are continually incentivised to improve our forecast that this metric does not just look explicitly at the volatility but at the number of occurrences outside of a 10% and 20% band. This means we will be appropriately incentivised to avoid very high errors.

Our thresholds have not been established based on historic performance: the data below shows that in 2017 we wouldn't have met either threshold, we therefore consider Metric 20 to be a realistic measure of our potential performance.

Please note too that we provide a narrative on the monthly volatility in the BSUoS report published on the NG website, and can explain why a month's error is outside the target range due to unforeseen events.

Link to August BSUoS report for info only:
https://www.nationalgrid.com/sites/default/files/documents/BSUoS_Report_August_18.pdf

Metric definition

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

Of the 12 forecasts over a financial year, baseline performance is less than five forecasts above 20% APE.

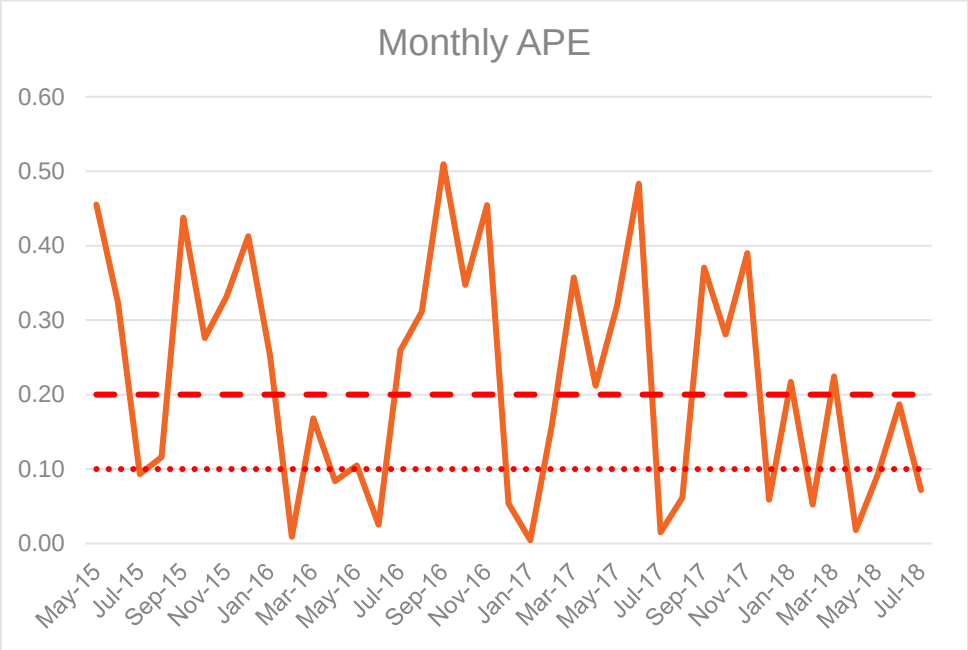
Underperformance is five or more forecasts above 20% APE

Exceeding is meeting baseline performance and five or more forecasts less than 10% APE.

i.e. if the end result was five forecasts above 20% APE and five forecasts below 10% APE this would be classed as underperforming.

Historic and year to date performance

The below chart and table provide historic information on our monthly forecast performance.



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	Financial Year	Calendar Year
16/17		
less than 10%	4	4
over 10%	7	7
over 20%	6	6
17/18		
less than 10%	4	4
over 10%	8	8
over 20%	8	7
18/19 (year to date)		
less than 10%	3	4
over 10%	1	3
over 20%	0	2

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