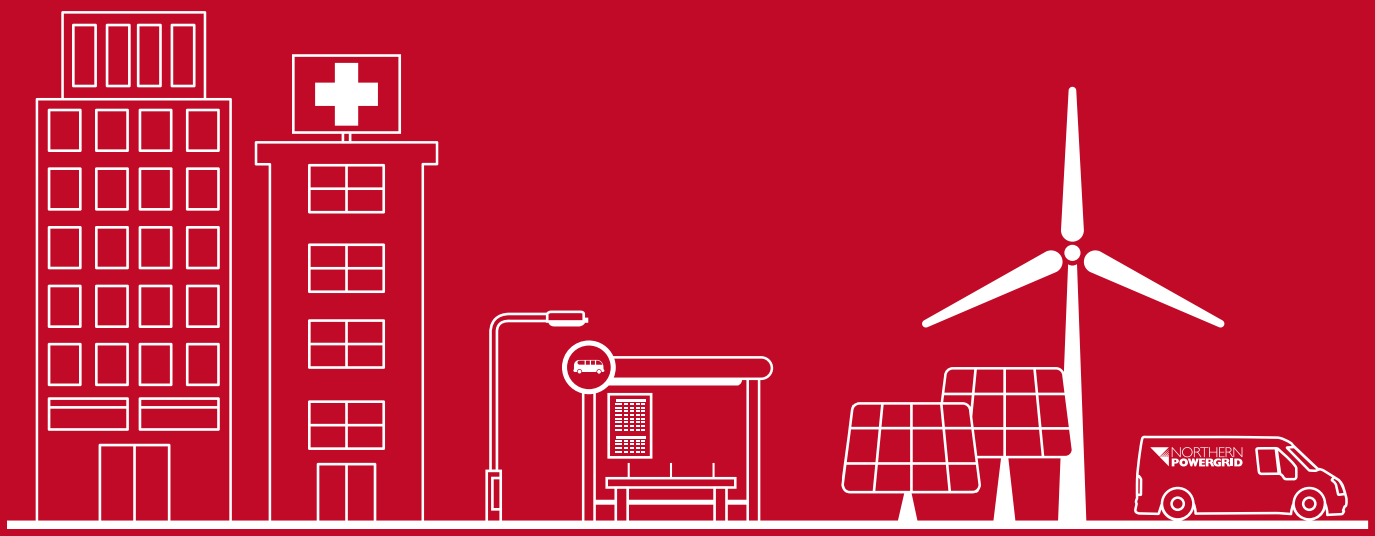
OFGEM INCENTIVE ON CONNECTIONS ENGAGEMENT (ICE)

2017/18 SUBMISSION INCORPORATING OUR LOOKING FORWARD AND LOOKING BACK REPORTS



NORTHERN POWERGRID

Welcome

Welcome to our Incentive on Connections Engagement (ICE) submission.

Ofgem's ICE incentive drives network operators to continually improve services to major connections customers. In this submission, we will demonstrate how we are not only listening to the views of our connections stakeholders, but acknowledging and acting on their feedback, translating their comments into meaningful service improvement actions.

Our work on ICE is continuous; delivering the current year's service improvement work plan whilst engaging with customers to listen to, understand and react to emerging issues. This submission is the culmination of a year's work and in it we describe our strategy and approach to engagement and describe how we have implemented it. ICE forms an important part of our overall programme of stakeholder engagement. Where issues arise from the ICE process they are fed into the wider business and when connections issues are raised in, for example, general stakeholder forums they are fed back into the ICE process.

In this submission, we look back at how we delivered on the actions in our 2016/17 plan and set out the service improvement commitments for the forthcoming year.

We continue to work hard to understand the needs of our connections customers and to continually improve the service we provide. In resolving issues it is important not only that we build our plans based on our stakeholders' feedback but that our stakeholders are also satisfied with the outcomes of the actions that we have implemented. It is therefore important that we have received and included in this submission a number of positive customer endorsements and validations which recognise the outcomes we have already delivered and support the actions we have proposed to address the areas for improvement identified.

This submission covers the activities of both our licensees, Northern Powergrid (Northeast) and Northern Powergrid (Yorkshire).

Contents

Foreword

I am pleased to be able to present the changes we have made and are making to our major works connections business in this our 2017/18 ICE submission.

Our work to improve customer service is a continuous cycle which depends on our effective engagement with stakeholders and an understanding of their needs. This is the third year we have developed detailed connections service improvement work plans that are based on our stakeholders' suggestions and ideas both as its own exercise and integrated into our wider programme of stakeholder engagement. These work plans are specifically designed to address our customers' requirements and deliver the service improvement outcomes they need.

The main areas of improvement this year have been about ensuring that customers can exploit new technologies; continuing to develop flexible methods of connection; improving contractual obligations to ensure that as much capacity is available as possible; gaining better clarity of National Grid system constraints and improving the provision of information to customers via a range of different communication channels.

Through our actions we have continued to build on the strength of some of our existing services and also introduced new ones. We have further improved the information made available through our heat maps with the generation and demand information now updated more regularly, in response to customer feedback, the information in our contracted capacity register is also now updated every month. Our customers continue to tell us how useful this information is in helping them with their initial assessment of project viability.

In 2016/17, we have offered customers more face to face interactions with our experts not only to discuss emerging issues, such as the development of Transmission System Operator (TSO) and Distribution System Operator (DSO) roles and innovation but also to participate in practical workshops, including tutorials about how to determine points of connection and how to access network information effectively. Offering these opportunities has been well received by customers as they quickly contribute to the effectiveness of their businesses.

"We wholly support Ofgem in its introduction and operation of the ICE incentive as a positive move to ensure the electricity industry is incentivised to continue to improve the services that it provides to customers. It is a continual process and we will strive to deliver improvements year on year which meet our customers' needs."

PATRICK ERWIN, POLICY AND MARKETS DIRECTOR

Network constraints is an issue that continues to drive our improvement agenda. Having made improvements in this area in previous years through the development of our Active Network Management (ANM) scheme we have recently sought the views of a broad range of customers via a written consultation which has concluded that our current improvement plans are adequate; however, this is an issue that we continue to diligently monitor.

Following the deployment of our first ANM scheme in Driffield, East Yorkshire, we continue to develop ANM flexible connection offers, enabling more customers to get connected. We now have over 700MW of distributed generation (DG) connected on flexible connections.

We actively support the connection of DG to our network, with the result that we now have 3.5GW of DG connected. This is 23.4% of the nation's total DG market and equates to 890W per customer (per MPAN) which we understand to be the highest rate of penetration of DG in the country.

We have reaffirmed our commitment to releasing distribution network capacity as we have now contacted all customers who are using less than 75% of their contracted capacity and sought to have the spare capacity released. The output of the Ofgem Quicker More Efficient Connections (QMEC) initiative has given us the opportunity to improve our contract milestones and enable capacity from slow moving or underutilised projects to be recovered. The outcome of these actions will allow us to continue to strengthen our position in helping to ensure the maximum network capacity is available for use by our customers. This is a journey that we acknowledge will be long but it is one that we are committed to for the economic success of our region.

Throughout the year Ofgem has made reference in public consultations to issues that customers have raised directly with Ofgem, including constrained networks; emergency support services for Independent Distribution Network Operators (IDNOs) and the management of unmetered asset inventories. We also recognise these issues from our own discussions with stakeholders and have been actively engaged to ensure that these problems are resolved. Our response to these issues is covered in more detail in the Looking Forward section of this submission.

We show in our Looking Forward report that we are listening to our customers and acting accordingly; and in the Looking Back report we demonstrate that we have delivered on the commitments we have made. Although this is a formal report for submission to our regulator Ofgem, I hope that all our connections stakeholders will also find it an informative and interesting read.

The essential ingredient of the ICE process is effective stakeholder engagement and I am grateful to all those connections customers and stakeholders who have taken the time to assess our performance and provide us with their feedback. We are aware that time is a scarce resource and therefore we strive to optimise the use of customers' time which is reflected in some of the actions we have developed for our 2017/18 work plan. It is only through continued and effective dialogue that we can ensure we are improving the connections service we provide and meeting our customers' requirements.

Patrick Erwin
Policy & Markets Director
Northern Powergrid

Who we are and what we do

Northern Powergrid is a wholly-owned subsidiary of Berkshire Hathaway Energy (BHE), one of the world's largest energy companies. BHE is an international group made up of integrated power companies; electricity transmission and distribution network companies and gas pipeline operators.

In the UK, Northern Powergrid runs the electricity distribution network that provides power to customers in the Northeast, Yorkshire and northern Lincolnshire. We are responsible for the safe, secure and cost-effective delivery of electricity to around eight million people in 3.9 million homes and businesses.

In practice we operate as one company, but we are regulated by the energy regulator, Ofgem, as two licensed businesses: Northern Powergrid (Northeast) Ltd. and Northern Powergrid (Yorkshire) plc.

We are one of the largest businesses in our region, directly employing over 2,400 people and a similar number of contractors. The majority of our annual investment in the UK is in regulated electricity networks – we typically invest £340m per annum.

Our network underpins the economy in Yorkshire, the Northeast and northern Lincolnshire, connecting homes and businesses to the powergrid and linking generators with consumers of power. We are directly important to our local economies through our commitment to on-going investment in our network and see our role as facilitating the effective and efficient operation of the overall energy system and thereby supporting growth in our region.

Berkshire Hathaway Energy

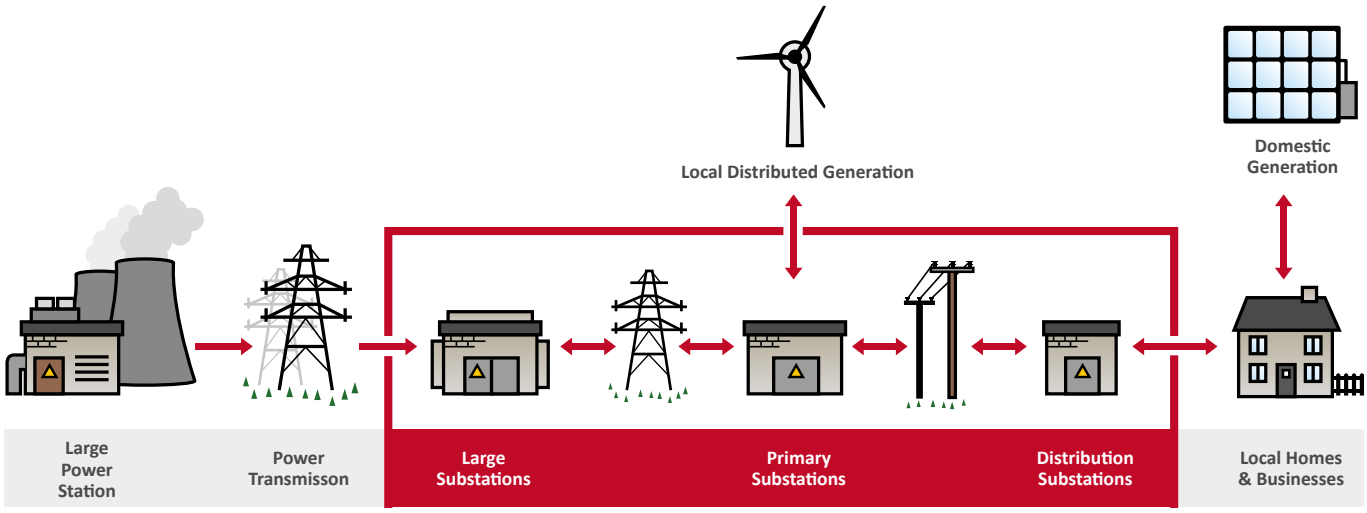
Although it is a separate regulated business, Northern Powergrid benefits from being part of the BHE group. BHE is a multinational energy company active across the entire energy supply chain through its various subsidiaries, most of which are in North America. BHE employs 21,000 employees worldwide, owns £53bn worth of assets, and invests more than £3bn per annum. BHE has 11.6m customers and runs 34GW of generating assets. It operates 233 thousand miles of power transmission and distribution lines and 43 thousand miles of gas pipelines[1].

In addition to developing transmission and distribution networks, we are also responsible for developing some of the largest wind and solar projects in North America; as of early 2017 we own 7% of US wind generation and 6% of US solar generation.

BHE believes that the best way to protect and build the value of the business is to:

- provide excellent customer service at competitive prices, with a commitment to continuous improvement;
- strive to meet the highest standards of safety and security (both physical and cyber); and
- strategically invest for the long term.

Being part of Berkshire Hathaway Inc. means we focus on building value rather than paying dividends. We believe that this long-term approach to investing and relatively conservative approach to running businesses is a powerful strategic fit with energy systems which require significant capital investment in assets that will last a long time.



NORTHERN POWERGRID

1 For more information about BHE, refer to: www.berkshirehathawayenergyco.com/news/berkshire-hathaway-energy-fact-sheets

Introduction to ICE

The purpose of the ICE mechanism

At the last price control review Ofgem introduced a new mechanism – the Incentive on Connections Engagement (ICE) to encourage distribution network operators (DNOs) to provide better customer service to larger connection customers. This incentive complements other connection-related incentives in the new price control such as the time to connect incentive and the customer satisfaction surveys that cover the needs of smaller customers.

The ICE mechanism is a penalty only incentive. If a DNO fails to provide evidence that it has engaged with connection stakeholders and responded to their needs, it can incur a penalty where it has not met the prescribed assessment criteria.

Ofgem explains that ICE is designed to drive improvements in both contestable and non-contestable activities that DNOs provide to major connections customers in the Relevant Market Segments (Metered Demand Connections; Metered Distributed Generation; and Unmetered Connections) of the local connections market as outlined in the table opposite. ICE does not capture performance in the Excluded Market Segments (LV connections of up to four domestic premises).

The aim of ICE, as outlined in Ofgem's guidance document, is to provide the incentive to good customer service that is associated with competitive markets. This may involve improving the timeliness of connections, extending the provision of information or enhancing the overall customer experience. This incentive also recognises innovative connection solutions for customers which may include:

a) improved coordination with other utility connection providers and between connection customers;

b) innovative commercial arrangements with customers; or

c) the introduction of new technologies that reduce connection charges for customers.

To recognise the importance of competition in connections within our work plans, where we identify which market segment an action applies to we have also included a column for independent connections providers (ICPs) so that it is easy for ICPs to see how much of our work plan is relevant to them.

This ICE submission consists of a Looking Forward and Looking Back report. In the Looking Forward section we outline our strategy for engaging with our connections customers and stakeholders, the activities we have undertaken to solicit their views and how we have incorporated these into our Looking Forward work plan of service improvement actions.

In describing the actions in our Looking Forward work plan we are able to identify clearly the originator of the action, the outcome they expect to deliver and the target measure by which we will judge success. We also demonstrate how we have consulted with our stakeholders to ensure the actions in our work plan are supported by, and useful to, a broad range of connections customers.

In the Looking Back section we report on the 31 actions in our 2016/17 work plan and the outcomes we have achieved. Importantly, we also describe how we have closed the loop with these customers and sought their endorsement of the outcomes we delivered. As evidence of our broad and inclusive approach to engagement, we include comments from a range of different connections customers, who told us what they think about the improvements we have made.

OUR LINESMAN WORKING TO MAINTAIN THE CONNECTION TO SPURN POINT LIFEBOAT STATION, HUMBER ESTUARY

Table 1: Summary of Relevant Market Segments

Metered Demand Connections (M)	Low-voltage (LV) work: LV connection activities involving only LV work, other than in respect of an Excluded Market Segment
	High-voltage (HV) work: LV or HV connection activities involving HV work (including where that work is required in respect of connection activities within an Excluded Market Segment)
	HV and extra-high-voltage (EHV) work: LV or HV connection activities involving EHV work
	EHV work and above: extra-high-voltage and 132kV connection activities
Unmetered Connections (UM)	Local Authority (LA) work: new connection activities in respect of Local Authority premises
	Private Finance Initiative (PFI) work: new connection activities under PFIs
	Other work: all other non-LA and non-PFI unmetered connections work
Metered Distributed Generation Connections (DG)	LV work: low-voltage connection activities involving only low-voltage work
	HV and EHV work: any connection activities involving work at HV or above

Meeting the criteria set by our regulator

Looking Forward and Looking Back reports

In May last year, we published our second ICE submission, which for the first time included both a Looking Forward and Looking Back report. The Looking Forward report set out the service improvement commitments we were making; the Looking Back report demonstrated that we had delivered against the 72 commitments we made in the first year of the ICE incentive (2015/16). This publication is our third ICE submission and follows the same format.

In the first part of this ICE submission we present our Looking Forward report. Here we set out the service improvement actions we are going to deliver in the coming regulatory year. We also describe our stakeholder engagement strategy, the outputs of which have shaped our plans for 2017/18.

The second part of this submission presents our Looking Back report. In this part we explain what we have done to discharge the commitments that we made in our 2016/17 work plan and provide evidence of how we have implemented our engagement strategy.

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Our performance against Ofgem's assessment criteria

A penalty may be applied where a licensee is unable to demonstrate that it has met the ICE assessment criteria as published by Ofgem. We are confident that we have met all of these criteria as evidenced in this submission and summarised below. The passages in italicised text are the criteria specified by Ofgem.

- *"The licensee published a Looking Forward section in its previous ICE submission, in accordance with paragraph 3.4 [of the Ofgem guidance]."*

Our 2016/17 ICE submission featured a detailed Looking Forward report that described our robust and comprehensive strategy for engaging with our connections customers and how we were facilitating joint discussions to inform our work plan of actions.

Founded upon the feedback of our stakeholders, our Looking Forward report set out a comprehensive work plan of actions (with forecast delivery dates) to meet their requirements.

We specified the outputs that we planned to deliver during the year (including the key performance indicators and targets, for each output) and we explained how our engagement with a broad and inclusive range of connection customers and stakeholders had informed our strategy, activities and outputs.

- *"The licensee has implemented its comprehensive and robust strategy for engaging with connection stakeholders. If not, then the reasons provided are reasonable and well justified."*

In the Looking Forward section of this submission we describe our robust and comprehensive strategy for engaging with our connections stakeholders; and in the Looking Back section provide evidence of how we have implemented it. We have continued with our tried and tested approach to solicit and understand our stakeholders' requirements in formulating our 2017/18 Looking Forward work plan and importantly, we have sought to close the loop on any completed actions with the customer who suggested it.

We have continued to utilise our full range of engagement channels and to investigate new ones, to understand the views of our connections stakeholders. We have therefore acted on their comments not only in preparing our Looking Forward report but also in the implementation of that plan.

- *"The licensee has undertaken its comprehensive workplan of activities (with associated delivery dates) to meet the requirements of its connection stakeholders. If not, the reasons provided are reasonable and well justified."*

Our 2016/17 ICE work plan originally comprised 22 separate actions under the following themes;

- provision of information;
- improving our application and delivery process;
- improving our communications;
- technical and commercial developments;
- enabling competition.

These are broadly the areas customers told us we could improve upon and where we will continue to focus our efforts going forward.

During the year we continued to engage with stakeholders and with Ofgem. As a result of this engagement we published a mid-year update to our plan in October 2016.

This update added a further nine actions to those that were in the original plan and we confirmed or updated the forecast delivery dates for all the actions to which we were now committed. In this year's Looking Back report we report our performance against this updated plan.

The delivery of a total of 31 service improvement actions, many of which involved making significant changes to the ways we serve customers, was a challenging undertaking but as Ofgem encouraged DNOs to be ambitious in the plans they proposed, we believed there to be no major downside to having a plan with stretching targets, even if this carried the risk that we might fail to deliver some actions by the forecast date or even by the year end.

In the plan year seven actions were completed earlier, and three slightly later, than we had forecast. By the end of the year all the actions that were within our control were delivered and in three cases we delivered more than we had said we would. In the three cases where we delivered a little later than we had forecast we do not believe that any stakeholders were adversely affected.

In delivering these actions we have improved the provision of information available to our customers through our heat maps so that they continue to be a useful and accurate planning tool for both our generation and demand customers.

We also improved the accuracy of our contracted capacity register providing information about 'quoted but not accepted' and 'accepted but not connected' projects. We have further improved our application processes to enable customers to apply for separate site supplies and made it easier to progress budget estimates into firm quotations. Importantly, we have continued with our challenge to customers to release unused network capacity and as part of outcomes of the Ofgem-led initiative on QMEC, we have implemented new contract milestones within our connection offers that enable us to take action when customers are sterilising network capacity due to slow moving projects and to recover unused capacity following energisation.

The two actions that we have yet to complete and that have been carried forward into our 2017/18 work plan are both associated with our contribution to national working parties.

The first action is about improving the interface with National Grid to understand how connection requests to a DNO network can impact upon the National Grid transmission network and cause constraint issues. The working party is presently reviewing a new 'Statement of Works' process to provide DNOs with more upfront network information.

However, the work of the group is currently concentrating on the areas of the country where networks are critically constrained, which does not include the areas that we serve. Therefore, we continue to contribute to this work, keeping our customers informed of developments and will act to change any of our policies and practices as soon as this working party has reach a conclusion. This remains a valid action and is therefore carried forward into our 2017/18 work plan.

The second action that we have carried forward relates to the work taking place nationally to review and re-introduce assessment and design (A&D) fees for quotations. This work has been ongoing for a number of years now and we have taken a very active role in its development as we believe this a critical factor in the fairness of treatment of customers enquiring to connect to a distribution network.

Having taken over the work on A&D fees started by DECC[2], the Department for Business Energy and Industrial Strategy (BEIS) is now nearing a proposition for new legislation. We had expected that this would be completed by October 2017, allowing us to implement process changes to benefit customers. However, because of the general election that has now been called for June 2017, the timetable set by BEIS has been amended. This action remains valid and we have therefore carried it forward into our 2017/18 work plan and we will continue to support BEIS, monitor the situation and respond as necessary.

2 Department of Energy and Climate Change (DECC)

- *"The licensee has delivered its relevant outputs (e.g. key performance indicators, targets etc.) If not, the reasons provided are reasonable and well justified."*

In our 2016/17 work plan we set out the actions, target measures and outcomes for customers we were committing to deliver during the year. The Looking Back report of this submission provides evidence of how we delivered each of these commitments.

- *"The licensee's strategy, activities and outputs have taken into account ongoing feedback from a broad and inclusive range of connection stakeholders. If not, the reasons provided are reasonable and well justified."*

In this submission we demonstrate how engagement with a broad and inclusive range of connections stakeholders shaped not only the content of our Looking Forward plan for 2017/18, but the way we went about implementing that plan.

Throughout the delivery of our work plan we have taken account of stakeholders' views and further suggestions for improvements. During the year a number of new comments and issues arose which led us to include the additional nine actions to our 2016/17 work plan which we then implemented during the remainder of the year. In closing out our actions we have sought validation of the outcomes from the originating stakeholders and also the views of a significant group of customers through our market research.

The stakeholders who have helped us formulate our plans include Local Authorities, street lighting authorities, housing developers, IDNOs and ICPs, providers of residential electrical storage devices, distributed generator developers and officers from our National Parks. We are grateful to all of them for helping us to shape our service improvement plans and for their continuing contributions as we put those plans into action.

Ofgem's assessment of DNOs' ICE submissions

As part of their assessment of DNOs' 2015/16 ICE submissions, Ofgem issued a consultation to stakeholders seeking their views. In response to the feedback they received, Ofgem documented in an open letter[3] dated 27 October 2016 a number of expectations that it expects DNOs to be cognisant of in preparing future ICE submissions. Extracts from the open letter are given below.

- *"While we are pleased with the progress made by DNOs since the introduction of the ICE, it is vital that they carry on engaging with their stakeholders on a continuous basis, adapting their practices and services to meet the evolving needs of customers."*

The service improvement work plan that we have proposed for 2017/18 is built not only on the outputs of continued customer engagement but also includes a number of actions which seek to evolve the ways in which we engage and communicate with customers to understand their issues, discuss topics of interest and agree ways of improving the service we provide to meet their needs.

- *"It is important that DNOs' decision-making is informed by a thorough understanding of their customers' requirements."*

In its qualitative assessment, Ofgem highlighted Northern Powergrid's presentation of its engagement process as being, 'an example of good practice'. We continue to implement and develop our engagement approach to ensure that all feedback is considered in detail and influences any improvement plans that we make.

- *"While all DNOs' work plans detailed outputs of their activities these were often not specific, measurable, achievable, relevant and time bound (SMART). This was noted by a high number of respondents to our consultation."*

In compiling our work plan the development of SMART actions is very important if the plan is to communicate the required work and achieve successful outcomes. Following on from previous years we have continued to provide SMART actions, including clear and measurable KPIs within our 2017/18 work plan and we will continue to deliver improvements against them.

- *"We have clearly stated that where the DNO sets itself an ambitious plan, failure to deliver some elements of it does not necessarily mean that the DNO will be considered to have missed the minimum criteria. But the reasons for failure to deliver needs to be properly understood and explained – especially where the failure to deliver has had an impact on stakeholders."*

We continue to embrace Ofgem's guidance on stretching targets when we develop our improvement plans, as we wish to challenge ourselves as much as possible to improve the service that we provide. We have described in this submission how we have needed to carry forward two actions from our 2016/17 work plan into 2017/18 and have fully explained why this is the case. As the issues remain valid in both of these cases and we are relying on the outcome of national working parties to conclude pieces of work, it is appropriate that we continue with these actions that will in due course result in improvements for customers.

By the end of the year we had completed all but two of the 22 actions that were in our original plan, together with nine that we added in our October revision. So by the year end, we had completed all the actions that we said we would complete in the ICE plan year. Although three of the actions took a little longer than we had forecast, all the actions that were within our control were completed by the year end and no stakeholders expressed any dissatisfaction about the short delays in implementing these three actions within our ambitious plan.

- *"All DNOs need to ensure that they are considering how they structure their connections business and in particular what this means in terms of how connections customers' accounts are managed."*

The consideration of how we manage customer interactions has been the subject of actions in our previous improvement plans. In 2016/17, we introduced the concept of single points of contact, providing customers with named experts to act as their advocate, accountable for overseeing the delivery of services in either the quotation or delivery phase of a connection.

We continue to consider how to change our structure further to improve customer interactions and this is an area that we will focus on.

In relation to grid constraints Ofgem's public consultation stated:

- *"Having published stakeholders' responses to these specific questions, we would now consider that the DNOs are well aware of the issues and have ample input from which to ensure that their stakeholder engagement and work plan of activities for 2016/17 are suitable for meeting the needs of their stakeholders."*

We have recognised the needs of stakeholders in regards to constrained networks through our previous and ongoing engagements on the issue.

In line with the commitment we made in our 2016/17 work plan, we undertook a consultation with our connections stakeholders on constrained networks. We held a roundtable discussion to discuss the results from the consultation, debate the issue and understand what we could do over and above the flexible connections offers that already exist and the ANM scheme we have already introduced. Although the consultation did not result in any significant changes being made to our plans, this remains an important issue on which we will continue to engage with our stakeholders.

3 Incentive on Connections Engagement: Qualitative Assessment of the distribution network operators' (DNOs) performance in 2015-2016 https://www.ofgem.gov.uk/system/files/docs/2016/10/ice_qualitative_assessment_final.pdf

Market segments overview

WE HAVE 3.5GW OF GENERATION CONNECTED TO OUR NETWORK; 23.4% OF THE NATION'S TOTAL DG MARKET

We have chosen to write a single ICE submission for both Northern Powergrid licensee companies that covers the Relevant Market Segments described here.

Metered demand M

Metered demand connections continue to make up a significant proportion of our overall workload; we carried out approximately 9,700 connections in 2016. We also received extensive feedback on our Looking Forward work plan from customers operating in this segment, which we translated into 14 improvement actions.

Our support for the development of competition in connections in this market segment continues to strengthen, with ICPs delivering the majority of high-voltage and associated low-voltage connections. We have delivered more focused actions this year to help ICPs to be able to carry out technical assessments and to access network information more readily. As a direct result of their feedback we have also included four specific actions targeting further improvements to our processes that serve ICP customers, to help them improve the efficiency of their business and to make them able to better compete in the market place.

The issue of lack of capacity in some areas of distribution networks continues to be an issue aired at a national level and we continue to play a lead role in trying to propose solutions. We have continued with our challenge to release as much unused capacity from customers as possible with the introduction of new contract milestones in our connection offers. Our 2017/18 work plan continues to acknowledge its importance and we will continue to work to release unused capacity and exercise the commercial controls in our connection offers to prevent capacity being sterilized when it could be used by another connectee.

We will continue to work closely with other DNOs and Ofgem to resolve the issues relating to the transmission and distribution interface and quotation assessment and design fees.

Communicating information to our customers and engaging them in discussions and workshops about particular topics remains an important aspect of our stakeholder engagement strategy. Time is a scarce resource for our customers and therefore we have set a number of actions within our 2017/18 work plan that look to engage customers in different ways, optimise the use of their time to make sure that they benefit as much as possible from the interactions they have with us.

Overall, we believe the actions and associated outcomes included in our work plan address all the issues our metered demand customers have raised with us and will drive a significant improvement in the service we provide, and the ways in which we support ICPs to offer competitive alternatives to their clients.

"Providing competitive services to customers in the current economic environment is challenging and we seek to differentiate ourselves through our expertise and service. In that way the ICE incentive aligns perfectly to our business goals and so we seek every opportunity to listen to our customers and resolve any issues so that we can ensure we provide customers with the services they require. I believe we have a robust plan of improvement actions that will really benefit our customers."

ANDY MACLENNAN, BUSINESS DEVELOPMENT DIRECTOR

Unmetered UM

Unmetered connections are an important part of our business, particularly as Public Lighting Authorities (PLAs) continue with their extensive street lighting asset replacement and upgrade programmes. During 2016 we delivered approximately 16,250 connections to the unmetered market segment.

Unmetered connections make up a large proportion of our repeat business, and as such, we have established strong relationships with our PLAs and other unmetered customers. As a result, the actions in our Looking Forward work plan focus on how we can continue build upon on these relationships through the provision of information and by improving our communications.

From our conversations with PLAs and other unmetered customers to understand their ongoing needs, nine of the actions we have included in our 2017/18 work plan are relevant to this segment. Not only are we targeting improvements in the way in which we communicate and engage with unmetered customers but we are also actively contributing to help ICPs improve their position in competing to deliver more unmetered works and hence increase the amount of market share delivered by competition.

Distributed generation DG

We received approximately 2,700 DG enquiries in 2016. DG continues to be the market segment where the most dynamic change and innovation is taking place, both nationally and within our region. If we are to take advantage of the efficiencies innovation can provide and respond to industry developments, we will need to be proactive about keeping our customers informed and responding to their evolving needs.

We received the most feedback from our generation customers and used it to inform the actions in our plan. In total, 20 of the actions that we have proposed in our Looking Forward work plan benefit DG customers across the range of improvement themes.

We seek to improve the way in which we engage with these customers on important topics including the development and deployment of new technologies, we will continue to run the focussed workshops and discussion sessions they have requested, together with providing customers with a 'Low Carbon Connection Gateway' on our website to try to assist and speed up connection enquiries.

The ongoing work on the introduction of A&D fees and the improvements in the T/D interface will benefit customers in this segment. In all cases, our aim for this market segment continues to be to react to our customers' needs by creating a technical and commercial environment that will allow as many generation projects to connect to the distribution network as possible.

Independent Connections Providers ICP

Although not a relevant market segment, in recognition of the feedback we received and Ofgem's guidance, we have included ICPs as a category in our 2017/18 ICE work plan. We want to demonstrate that we are considering the particular needs of ICPs and how their feedback continues to drive the development of our improvement actions.

The eleven actions proposed in our 2017/18 work plan that are relevant to ICPs centre around improving their ability to compete in the market and in so doing either reducing the number of input services they require from us or speeding up the services that we provide.

To assist their in-house capability we have committed to provide clearer and more transparent information about lead times for quotations and design approvals, extend the design matrix to enable ICPs to self-quote a higher market share of work and publish information about the extent and price of the input services we provide, again making it more efficient for ICPs to provide quotations to their customers.

We are pleased with our levels of positive engagement and interaction with ICPs during the course of the past year and look forward to building on this in 2017/18. Our twice-yearly ICP Forums and monthly surgeries continue to be well attended and support for our Looking Forward work plan was high amongst ICPs who responded to our survey.

"Our role in 'Connections Input Services' is to provide efficient services to support the needs of Independent Connections Providers. As a result of our continued good relationships and engagement with ICPs we have been able to include actions in our 2017/18 service improvement plan which will directly benefit ICPs and help improve the services they provide to their customers."

GEOFF EARL, DIRECTOR OF SAFETY, HEALTH AND ENVIRONMENT

Looking Forward report

Introduction to our Looking Forward report

The main purpose of our Looking Forward report is to describe the detailed work plan of service improvement actions we will deliver in 2017/18 and the process by which we developed it. Improving our connections customer service is an ongoing process and in this, the third year of the ICE incentive, we continue to learn from our experiences and improve our approach.

Effective stakeholder engagement is central to our service improvement activities. Only through effective engagement with our stakeholders and customers can we fully understand how best we can serve them and positively contribute to the viability and long term growth of their businesses.

Improvements to customer service come from listening to customers, understanding their views and changing what we do to deliver the right service that meets their needs.

The process of engagement, consultation and translation of feedback into meaningful actions is the cornerstone of the process we employ to develop our service improvement work plan. This process is not a one-time only action each year but a continuous process that we engage in at every opportunity with every customer interaction.

Our approach to connections engagement aligns to and feeds into our overall Northern Powergrid stakeholder strategy. We give our customers and stakeholders every opportunity to provide us with feedback. We continue to learn about what works well and to investigate new methods of communication and engagement.

Having received feedback from customers it is important that we are able to consider that information and develop it to a conclusion whether that be simply answering a customer's query or creating an improvement action to resolve a pressing issue. We continue to operate a robust method of processing and analysing feedback which engages technical and commercial experts within our organisation together with our Executive team when deciding appropriate courses of action. In its review of DNO ICE submissions Ofgem recognised our process as 'an example of good practice' and we continue to employ and build upon this established formula.

Feedback from stakeholder interactions has shaped our 2017/18 work plan which contains 23 improvement actions, all of which we have endeavoured to validate with the customer who raised the issue and with a broad range of connections stakeholders.

One of the outcomes of Ofgem's consultation with stakeholders on DNOs' 2015/16 ICE submissions was guidance on areas which DNOs should consider going forward. These included; making sure that we carefully consider the feedback submitted by customers; the management of 'customer's accounts'; considering the needs of ICPs and taking effective steps to manage grid constraints. We have taken account of all of these issues within our Looking Forward work plan.

Ofgem also mentioned two other issues for consideration. The first was the management of unmetered asset inventories and problems experienced by IDNOs in the adoption of these assets by Local Authorities. This issue was taken forward at national level through the DCUSA[4] governance panel in which we participated. Following a trial conducted by Electricity North West, a change was proposed to the DCUSA which Ofgem directed should be made on 18 May 2017.

The second issue raised by Ofgem was the provision of emergency response cover for IDNOs. This issue was raised with Ofgem by some stakeholders but since it concerns the provision of contracting services to another distributor to help them operate their distribution network, we do not think it falls within the proper scope of the ICE arrangements that are limited to connections services.

The provision of engineering contracting services to another distributor also presently falls outside the ring-fenced electricity distribution business activities that our distribution licensees are permitted by their licences to carry out. However, we can confirm that Integrated Utility Services Ltd, an electrical contracting business within our group of companies, is willing to provide such services on commercial terms to any IDNO that requires them.

Overall, the robust process we have employed has given us confidence that our 2017/18 work plan is truly stakeholder-driven.

We have also taken account of Ofgem's guidance in its open letter of 27 October 2016 in making our actions SMART and applying forecast delivery dates against which we will report in next year's Looking Back report. In each case our commitment is to deliver the action by the end of the ICE plan year unless it is not within our control to do so. The forecast completion dates that we provide in our Looking Forward report represent our present view of when we expect the action to be completed.

From the ways in which we have engaged with our stakeholders, both to understand opportunities for improvement and to allow them to comment on our plans, we believe that we have demonstrated a broad and inclusive approach.

We look forward with our teams to delivering these improvements and to sharing the outcomes with our customers.

4 The Distribution Connection and Use of System Agreement (DCUSA) is a multi-party contract between licensed electricity distributors, suppliers and generators in Great Britain concerned with the use of the electricity distribution system.

Connections stakeholder engagement

CUSTOMERS CONTINUE TO SUPPORT AND ATTEND OUR TWICE-YEARLY CONNECTIONS CUSTOMER FORUMS

We work hard to understand the views of our connections stakeholders and to continually improve the service we provide.

Effective engagement is central to our service improvement programme. We recognise that we have a wide range of stakeholders with an interest in our connections business. We actively encourage all of them to give us feedback on what we do well and what we could do better. It is only through this continued dialogue that we can ensure we are fully meeting the needs of our diverse range of connections customers and stakeholders.

We have a well-established and effective programme of connections engagement which is endorsed by our stakeholders and customers. We engage using a range of engagement channels and activities and the feedback we receive is used to drive our improvement plans. Our approach is constantly evolving however as we look for new ways to engage with our stakeholders and gain their feedback.

Connections Customer Forums

Our Connections Customer Forums continue to be our primary engagement activity. These twice-yearly events are well attended and supported by our connections customers who view these events as an opportunity to meet with our senior team and subject experts and tell us what more we can do to help them to get connected.

We receive the vast majority of feedback from these events, and accordingly most of the actions in our Looking Forward work plan have originated from these forums.

At our November 2016 and April 2017 forums we offered attendees opportunities to 'Ask an Expert' live, an extension of the online service we offer. Customers were able to book time with commercial and design engineers to discuss current or planned projects. The concept proved popular with attendees who appreciated the opportunity to engage with our engineers one on one.

We provide attendees at these forums with an update on what's happening in our connections business and on the progress and outcomes of national debates and consultations that may affect them. The afternoon sessions are devoted to target workshops where they can talk to us about what we can do to improve the connections service we offer them and customers like them.

We understand that attending these forums requires a significant time and cost investment for some of our stakeholders and we appreciate all of those who continue to support and attend our forums year after year. This year, acting on feedback we have received, we will continue to look at how we can improve the scope and usefulness of these events, as well as investigating alternatives like smaller, subject-specific workshops and making the content available online for any stakeholders unable to attend our forums.

"Thank you for inviting me to this event, it has been interesting and really helpful for my understanding of what you offer and are putting in the pipeline."

PHILIP ELBORNE, P3P PARTNERS LLP, CONNECTIONS CUSTOMER FORUM, NOVEMBER 2016

"I think they are one of the best, if not the best electricity company for connections."

RICHARD STAVELEY, AECOM, CONSULTATION ON OUR 2017/18 ICE WORK PLAN

"I deal with gas and electric companies on a daily basis and Northern Powergrid is the best one out of them all. I am very happy with the service they provide to me and there is noting I could suggest to improve."

RAY HARRISON, JOMAST DEVELOPMENTS, CONSULTATION ON OUR 2017/18 ICE WORK PLAN

Watch a video from our Connections Customer Forum in April 2017

View at https://youtu.be/R3bQTU3wXPs

ICP Seminars

We hold dedicated ICP Seminars twice a year. At these seminars ICPs have the opportunity to talk to us about any process-related issues they may have experienced and suggest how we can work together by adopting best practice methods to continue to develop and support competition in connections. At our November 2016 seminar we talked to ICPs about the ICE process and invited them to give us feedback and comments to help shape our Looking Forward plans.

Additionally, ICPs continue to make good use of our monthly connections surgeries where they are able to sit down with our technical and commercial experts to discuss planned or existing projects. In 2016/17, 39 separate ICPs made use of this service and we continue to receive positive feedback.

"This is something that I raised in a previous CinC Workshop in Wetherby last year. I am pleased to see that my comments about the tile tape dimensions and its use with ducting were listened to, investigated and acted upon ... On behalf of Green Frog Connect, I would like to take this opportunity to say thank you for listening to Green Frog's comments and making the difference."

HUW CROCOMBE, GREEN FROG CONNECT, EMAIL IN RESPONSE TO A BRIEF SENT TO ICPS

Furthermore, during Q1, 2017 we ran three targeted workshops with ICPs to discuss access to mains records and self-determination of points of connection (PoC), all of which were very well received, with 100% of respondents telling us they were very satisfied or satisfied by their experience on the day.

During our access to mains records workshop, this collaborative approach meant that we were able to identify and resolve an access issue for attendee Simon Dawson from GTC. Following detailed discussions, it became apparent that the use of an incorrect system had been restricting his ability to self-determine a point of connection (POC); subsequently we were able to provide further access details for the correct system. Having resolved his issue, Mr Dawson gave a positive endorsement of our systems.

"Not worked with NPg to date regarding mapping systems but on the surface the systems look very good and better than some other DNO LV offerings."

SIMON DAWSON, GTC, ABOUT OUR MAINS RECORDS WORKSHOP, MARCH 2017

"Really good, need more workshops to discuss ongoing issues and sharing ideas with other ICPs."

SARAH GREENWOOD, LINBROOKES ABOUT OUR MAINS RECORDS WORKSHOP, MARCH 2017

Targeted workshops

Following the success of the workshops we ran in Q1, 2017 and acting on the feedback we received, we made a commitment to do more. These targeted workshops will support our already established programme of engagement events. We will ask our customers what topics they want us to cover and develop the content accordingly.

Access to technical experts

We continue to operate our monthly connection and ICP surgeries which are bookable via our website. We launched this service in 2012 and our customers continue to make good use of the opportunity to sit down with a Northern Powergrid technical expert to discuss a current or planned project. Looking forward, we intend to do more to promote our surgeries via social media and to engage more with community energy groups, who have told us access to this resource will be invaluable in helping them to establish the viability of their projects.

Our online 'Ask the Expert' service remains popular and, acting of feedback we received in the latter part of 2016, we have been facilitating more upfront conversations between our commercial and design engineers and major works customers. These conversations can be beneficial to both us and our customers as it can help to assess the viability of potential connections sites and reduce the need for multiple speculative applications. Contact details for all our technical experts are available on our website and we encourage customers to make use of them.

"To be honest I would say that NPg have a better customer and client working relationship than any other DNO."

DAVID OGDEN, SMITH BROTHERS LIMITED, VIA EMAIL, MARCH 2016

"Gary Camplejohn and Martin Bell [Northern Powergrid commercial engineers] were very helpful and provided early engagement and informal advice on costs upfront."

ALEX THORNTON, WINDCARE, CONNECTIONS CUSTOMER FORUM, NOVEMBER 2016

"I am very happy with the service I get from Northern Powergrid. I deal with them for about 30 connections a month so I am happy."

RACHEL HINCHLY, CARILLION TELENT, CONSULTATION ON OUR 2017/18 ICE WORK PLAN

""As head of the team responsible for delivering our ICE plan nothing pleases me more than when I get positive feedback from a stakeholder that our staff have gone the extra mile to meet their needs."

MIKE HAMMOND, HEAD OF CONNECTIONS SERVICES

Market research

We think it is important to reach out to customers who may not choose to proactively engage with us but who will still have a view about the connections service we provide. We commission our own monthly satisfaction survey for large and medium works customers, the outputs of which are used to identify any performance gaps and drive improvements.

When forming our Looking Forward plans it is necessary to engage with as broad and inclusive a range of connections stakeholders as possible. We want to understand whether the actions, outcomes and outputs we have set truly meet the needs of our diverse range of stakeholders. Every year, we commission independent market research company Explain to conduct our service improvement survey where we talk to our customers about the changes we have made and those that they are proposing. The results from this year's survey are included in the appendices of this submission.

Wider engagement

Our connections staff play an active role in supporting the activities of Team Powergrid. Our volunteering programme has seen our team working with school children across our region, helping them to understand more about the electricity network and how their homes and schools are connected to it. Members of our team have acted as tour makers for the Tour de Yorkshire, taken part in Northern Powergrid's well-established summer agricultural show programme and lent support to Northern Powergrid sponsored community energy events.

In October 2016, at the request of Yorkshire Water, we led a workshop for them and their partners. One of the objectives was to learn more about their business and the regulatory framework they operate under and help them to understand more about ours. We talked to them about the services we offer and made key introductions that will allow us to work together more effectively. Subjects covered on the day included our online application process and resources, design considerations, wayleaves and delivery.

"On behalf of YW and our capital partners I would like to thank you and your team for taking the time to present to us on the 25th. As you know, we operate in a partnering and collaborative environment and place a strong emphasis on working together for mutual benefit. Indeed, our capital commercial model is based upon collaborative working, not only with our partners but also internally between departments. Every part of your presentation was valuable and informative and I have had a number of positive comments from various attendees. I have no doubt that the information you shared with us will benefit the delivery of our remaining capital programme throughout AMP6, and hope that we can continue to build on this with future events."

ROB HOYLE, PROJECT MANAGER, YORKSHIRE WATER

We asked customers if they found it easy to engage with Northern Powergrid and give feedback 94% of respondents said they did find it easy, a 4% increase on last year.

Digital communications

In 2016/17, we stepped up use of digital communication channels to reach more of our connections customers. We used Facebook, Twitter and LinkedIn to engage with our connections customers. We used social media to raise awareness about workshops and events and key consultations. In 2017/18 we will develop this further by social media Q&A 'Ask the Expert' sessions and an increased focus on video content.

National working parties

We understand the importance of engaging at a national level on any issues that could impact on connections customers in our region. We continue to play an active role in industry working groups including the DG-DNO steering group which are driving forward change in the industry. We support industry level project work to meet our regulator's expectations, particularly in the areas of QMEC, unlocking network capacity, the DNO to DSO transition and the T/D interface. Through our participation we are helping bring about change for the benefit of our customers. During the course of the year, we have contributed to key industry consultations and debates, encouraged our stakeholders to take part and importantly, kept them informed on any outcomes.

"The progress is wholly positive. NPg has certainly taken on board comments and feedback from the industry and is shaping up as a user friendly ally when servicing our clients."

ED MILEY, KYOOB, EMAIL, JUNE 2016

How connections stakeholder feedback influences our decision-making

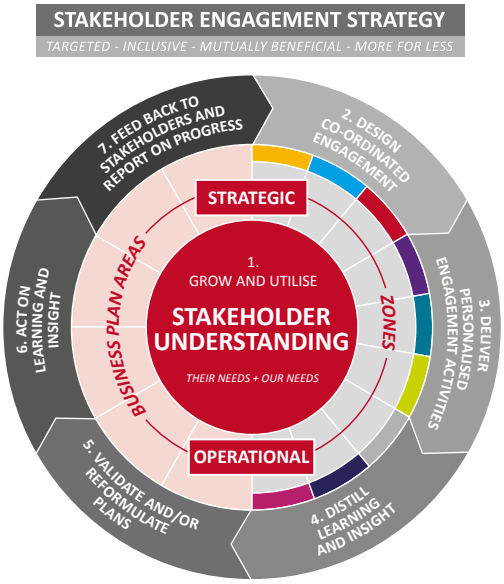
We have an established and effective programme of connections stakeholder engagement, the outputs of which feed into our wider stakeholder strategy and help support delivery of our core principles and Business Plan priorities.

The views of our connections stakeholders are fed into the process via established channels and used to inform our thinking, decision-making and future improvement plans.

Our expert Stakeholder Engagement Panel, chaired at Executive level, consists of 25 senior leaders from 23 member organisations, many of whom have an interest in our connections business. This group meets quarterly and provides input into regional and policy developments, consultations, partnering and influencing opportunities and blue sky thinking.

This year we strengthened the group's role in our connections decision-making process by introducing a regular connections workshop to discuss and debate topics like network constraints and the DNO to DSO transition. We also use it as an opportunity to update them on the progress of our improvement programmes and ask for input to help develop our forward-looking plans.

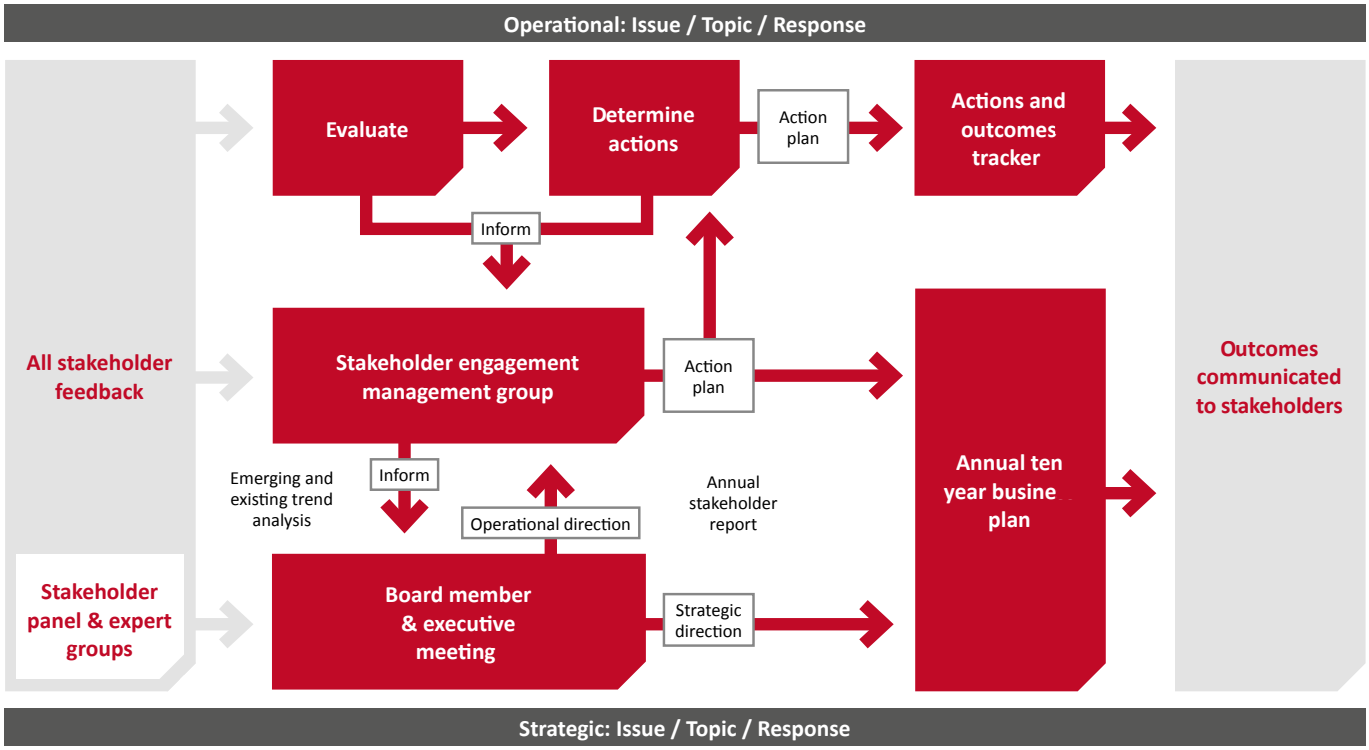
Our Stakeholder Engagement Management Group is made up of internal stakeholders from every area of our business, including connections. The group which meets monthly is led by a member of the Executive team and plays an important role in ensuring effective engagement is firmly embedded across our business. The group reviews engagement activity from across the business, identifying instances of good practice and any recommendations for improvement. This group provides a clear link to our Executive team who receive a regular engagement update.



"This year we have focused on building upon our engagement strategy, strengthening the roles of our internal and external stakeholder groups and introduced improvements to how we develop and manage our delivery programmes."

SIOBHAN BARTON, HEAD OF STAKEHOLDER RELATIONS

How stakeholder feedback influences decision-making



Our approach to engagement

We employ a robust approach to the way stakeholder feedback informs our decision-making. We use this feedback to continually develop and evolve, delivering to the high standards our stakeholders demand and our customers need.

This year, to support a more systematic engagement approach, we have refreshed our stakeholder engagement strategy and developed our toolkit. We have identified ways in which we can make better use of existing management and reporting cycles to gather engagement activity from across our business, this supports our decision-making process and in turn delivers benefit for our stakeholders.

Our approach continues to align with the principles of the Stakeholder Engagement Standard audit (AA1000) which we are assessed against annually.

Maintaining our AA1000 standard

We continue to strive to maintain the exacting standards set out in the Stakeholder Engagement Standard AA1000, for which we are voluntarily audited every year rather than every two years as required. In 2016 our ICE programme was recognised as an example of good practice in our business and this important standard remains a key aspect of how we demonstrate the strength of our engagement, activities and outcomes.

"The ICE programme is a good example of engagement being effectively integrated to drive improvements in programme design and delivery"

EXTRACT FROM OUR AA1000 AUDIT REPORT, MARCH 2016

Developing our Looking Forward plan

Our 2017/18 ICE Looking Forward work plan has been a year in the making. Throughout the course of the year we have listened to the views of our stakeholders, considered their comments and acted where appropriate.

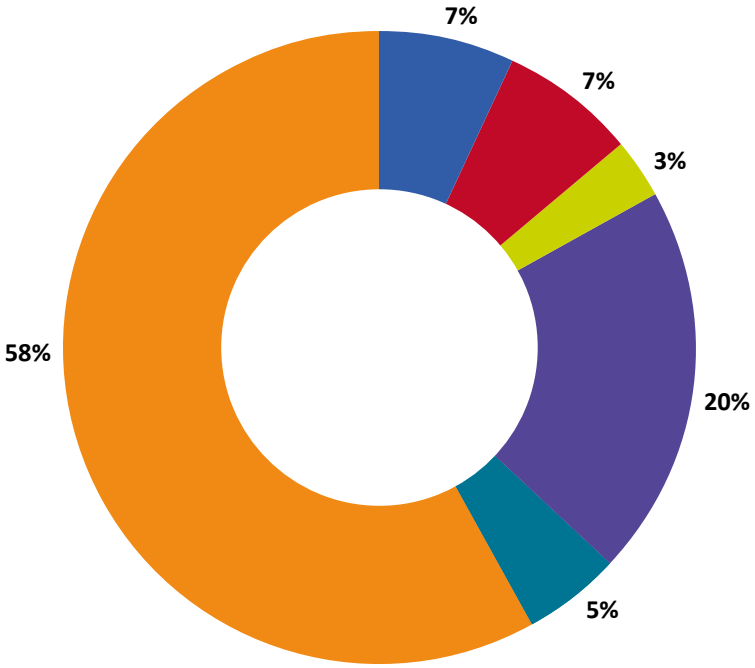
We gather feedback from a number of different sources including engagement events, monthly customer satisfaction surveys, online and face to face interactions and industry consultations. We record all the feedback we receive in our stakeholder engagement log[5] and every month, all comments are reviewed by our Head of Connections Services and our ICE Stakeholder Engagement Manager.

Where appropriate we respond to the feedback we receive. In many cases, a call or contact from a Northern Powergrid subject expert is sufficient to address the customer's comment. Where a customer's comment or request can be addressed through a straightforward change to one of our internal processes, we don't wait to include this as an action in an annual service improvement plan; we will go ahead and address this through a change to our business as usual practices.

Where we think a customer has raised an issue that is best addressed through our ICE process, we talk to the customer who raised the issue to ensure we have understood it and that the action and outcome fully addresses their concern. We then consult with a broad and inclusive range of our stakeholders to ensure they support our proposal. As such, we can be confident that the actions in our plan are endorsed by a range of our connections stakeholders and customers.

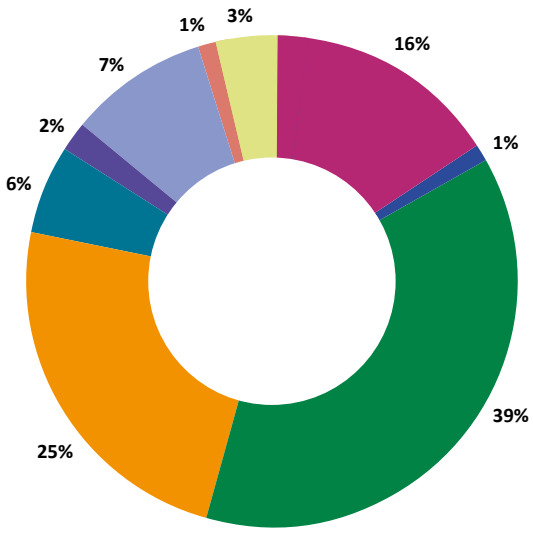
During the 2016/17 regulatory year, we collated and considered 243 individual comments from our connections customers and stakeholders. The graphs opposite show where these comments originated from. The diagram on page 25 shows the rigorous process we go through to develop our Looking Forward plans and shows how, using the process we describe, we have translated these 243 comments, requests and feedback into 23 service improvement actions in our 2017/18 work plan.

We collated and considered 243 individual stakeholder comments during the course of the year and this feedback drove the development of our improvement plans.



- The stakeholder's comment generated an action in our Looking Forward plan
- An action in our Looking Back plan already addressed the stakeholder's comment
- The customer's comment generated an action in our October mid-year update
- We will maintain a watching brief on the issue and act when appropriate
- Following an internal review and impact assessment, the proposed action was not suitable for an ICE action
- We considered the customer's feedback and responded where neccessary but the comment was not suitable for ICE

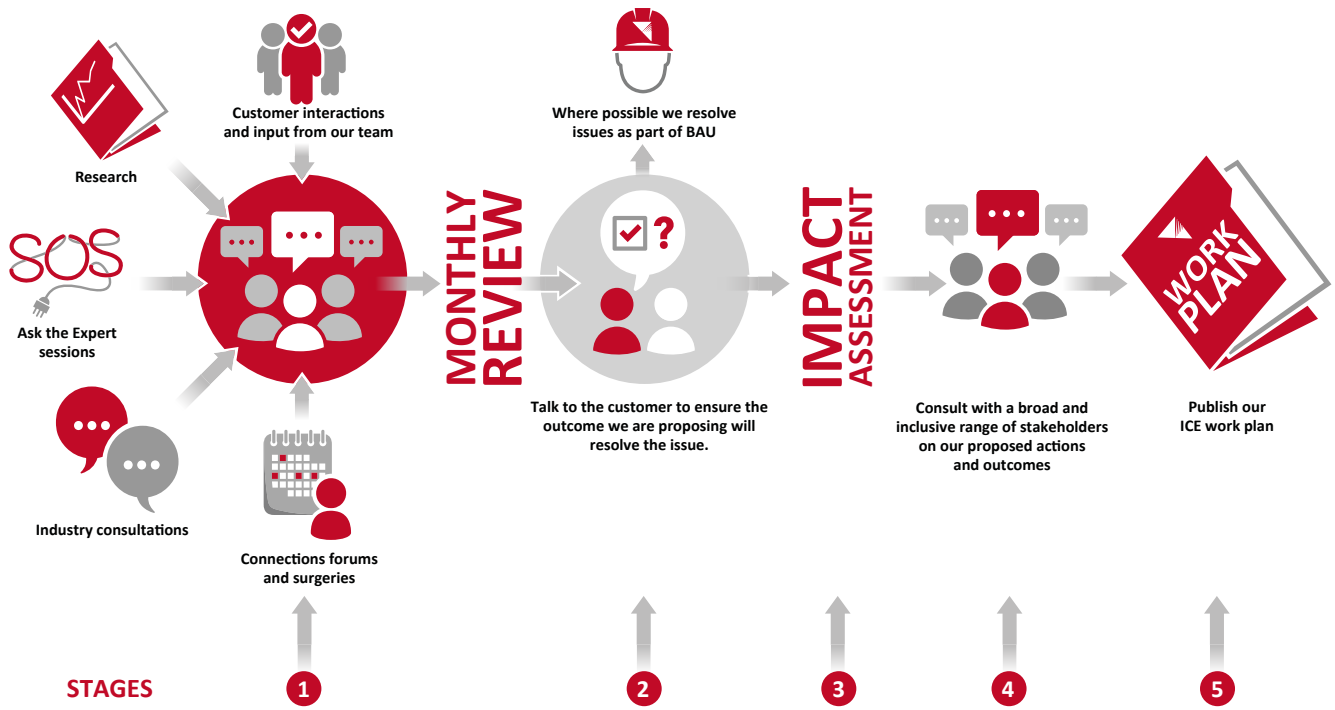
Comments by stakeholder type



We received the majority of comments and feedback during the course of the year from our DG and ICP customers.

5 In our stakeholder engagement log we record the customers comment or verbatim, where the comment originated from (was made) our interpretation of their issue, any interaction or discussions which have taken place and next steps.

Developing our Looking Forward work plan



The rigorous process we go through when developing our Looking Forward work plan is driven by our stakeholder engagement programme and consists of five key stages;

1

We gather feedback from a wide range of stakeholder interactions during the course of the year.

2

All comments are collated and reviewed on a monthly basis. If suitable for ICE, we will engage with the customer who raised the issue to ensure our interpretation of their comment is correct and that the outcome we are proposing fully addresses their need.

3

Our work plan proposal is reviewed by our Executive team. In agreeing to support the action they assign a lead responsible for its delivery.

4

We consult with a broad and inclusive range of stakeholders to gain their views on the actions and outcomes we are proposing and the outputs and target measures we have set ourselves.

5

We finalise and publish our Looking Forward work plan.

Our stakeholders support our plans

Our approach to stakeholder engagement is that it is an ongoing and evolving process that drives our improvement programmes. We talk to our customers and stakeholders about ICE at every opportunity – at our connections and ICP forums, at our stakeholder panel and online – but in developing our Looking Forward plan we employ a tried and tested process to develop and validate our plans.

To ensure all our improvement actions are supported by and of benefit to a broad and inclusive range of our connections stakeholders and customers, and not just the individual who made the request, we undertake an exhaustive programme of consultation and engagement before publishing our Looking Forward work plan.

This year we contacted 5,600 of our connections customers pointing them to our proposed work plan and inviting their feedback. Building on our established approach, we used market research company Explain to conduct our annual customer satisfaction survey and ICE work plan consultation.

This activity complements the monthly satisfaction surveys which we commission and we also invited ICPs to take part in our research this year to ensure they had every opportunity to give us feedback on our plans.

Explain contacted 300[6] Northern Powergrid connections customers to discuss the actions we completed for our Looking Back work plan and ask whether they had noted an improvement in the connections service we provide.

Explain then talked respondents through each of the 23 actions in our proposed Looking Forward plan, giving them the opportunity to tell us about any other areas they thought we should be focusing on. The results of this survey are presented throughout the remainder of our Looking Forward report.

70% of customers surveyed said our connections service had 'got better' or 'much better' due to the improvement we made in 2016/17.

Building on our learning from last year's consultation process, we brought the date of our Spring Connections Customer Forum forward to April so that those attending had a chance to preview our work plan and give us any feedback before we submitted it to Ofgem. Mike Hammond, Head of Connections Services, talked them through each of our proposals, and for the first time they were asked to vote as to whether or not they thought the actions we were proposing would improve our connections service.

In line with our increased focus on digital communications, we promoted our plans via social media and asked our online community for their views.

This extensive programme of engagement gives us the confidence that our Looking Forward work plan meets the requirements of our customers and that our strategy, activities and outputs have been informed and endorsed by a broad and inclusive range of our connection stakeholders.

6 Metered: 207, DG: 68, Unmetered: 22, ICPs: 3

We engaged with a broad and inclusive range of connections stakeholders to gain their views on our 2017/18 Looking Forward work plan

300
telephone surveys

New for 2017/18

We recognise the importance of keeping stakeholders informed; so much so that it forms one of the four pledges we made to our customers in 2017. We think it is important that our connections stakeholders are able to see that we are acting on the feedback they have given us. In our first (2015/16) ICE submission we said we would write to customers every quarter with an update on our ICE actions and we did so.

In 2017, we will launch an online version of our ICE work plan, which will be updated in real-time so that customers can always see how we are delivering against the commitments we made and the target measures we have set ourselves. The plan can be filtered to show all actions or only those relevant to certain market segments allowing customers a more targeted view. It provides an overview of the commitment, the latest status and links to any outputs including policy documents, FAQs and other online resources.

Stakeholders who attended our Connections Customer Forum in April 2017 had the opportunity to preview the online work plan and give feedback on its usefulness and functionality.

CUSTOMERS AT OUR CONNECTIONS CUSTOMER FORUM HAD THE OPPORTUNITY TO PREVIEW OUR ONLINE WORK PLAN AND GIVE US THEIR FEEDBACK

2017/18 ICE Looking Forward work plan

Theme	Area for improvement	Action	The outcome for customers	Performance metric	Our measure of impact and/or success	Status	Voltage	Applicable to				Q2 2017			Q3 2017			Q4 2017			Q1 2018		
												Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1.0 Provision of information	1.1 Digital communications	We will trial recording the content of our connections forums and workshops and posting it to the web.	Customers will be able to view content from Northern Powergrid events at a time that suits them.	Two connections forums recorded and posted to web by Q3, 2017.	Number of YouTube views and customer feedback.	On track	All	M	UM	DG	ICP	◇	—	—	—	—	◆						
	1.2 Social media	We will trial social media 'Ask the Expert' Q&A sessions on topics identified by our connections customers.	Customers will have access to Northern Powergrid subject experts and will be able to pose questions and receive answers in real-time.	Four social media Q&A sessions held, one per quarter.	Numbers of customers participating and customer feedback.	OK to plan	All	M	UM	DG	ICP			◇			◆			◆			◆
	1.3 Timescales for protection settings	We will conduct a formal business process review on the provision of protection setting information to our customers, with a view to developing service solutions that close any performance gaps identified.	Implementation of a revised process to provide customers with protection setting information in a more timely manner following the acceptance of a connection offer.	Formal business review completed and revised process implemented where necessary.	Customers issued settings within agreed timescales.	On track	HV	M		DG		◇	—	—	—	—	—	—	—	—	—	—	—	◆
	1.4 Implementation of contract milestones	We will produce a simple guide to the implementation of new contract milestones.	Customers will have a guide that explains the new milestones being implemented in Northern Powergrid connections contracts.	Guide produced and published on web.	Customer feedback.	On track	EHV HV	M	UM	DG	ICP	◇	—	—	—	◆							
	1.5 Access to mains records	We will hold a workshop for connections customers on how to access Northern Powergrid's mains records.	Customers will understand how to access Northern Powergrid's mains records.	Workshop held .	Customer feedback.	On track	All	M	UM	DG		◇	—	—	—	◆							
2.0 Improving our application and delivery process	2.1 Storage applications	We will modify the G59 application form on our website to include an option to connect energy storage.	Customers will have a quick and easy method of applying for an energy storage connection online.	G59 form modified and new option available.	Number of applications made using the new process.	OK to plan	EHV HV LV			DG				◇	—	—	—	—	—	◆			
	2.2 Distributed generation connections	We will create a quick cost calculator for generation connection applications and make it available on our website.	Customers will be able to obtain an upfront, indicative cost for their generation connection.	Generation calculator available online.	Usage rates and customer feedback.	OK to plan	HV LV			DG				◇	—	—	—	—	—	◆			
	2.3 Multi-optioneering service	We will create a new page on our website that promotes our multi-optioneering service and explains the process to customers.	Customers will be made aware of the multi-optioneering service available to them and given a better understanding of the process and how to access it.	New web page available online.	Webpage usage and customer feedback.	On track	EHV HV	M		DG		◇	—	—	◆								
	2.4 MPAN online service	We will benchmark our find my MPAN online service against other DNOs and make improvements as required.	Customers will be able to locate MPANs more quickly and will have more accurate information.	System benchmarked and improvements made if necessary.	Customer feedback on any changes made.	OK to plan	All	M	UM	DG	ICP		◇	—	—	—	—	—	—	—	—	—	◆

Key ◇ Start Date | ◆ Forecast completion date | — Forecast timescale for delivery | M Metered | UM Unmetered | DG Distributed Generation | ICP Independent Connections Providers

Theme	Area for improvement	Action	The outcome for customers	Performance metric	Our measure of impact and/or success	Status	Voltage	Applicable to	Q2 2017 Apr	Q2 2017 May	Q2 2017 Jun	Q3 2017 Jul	Q3 2017 Aug	Q3 2017 Sep	Q4 2017 Oct	Q4 2017 Nov	Q4 2017 Dec	Q1 2018 Jan	Q1 2018 Feb	Q1 2018 Mar
3.0 Improving our communications and engagement	**3.1** Targeted workshops	We will hold targeted workshops on emerging connections topics suggested by our customers.	Customers will be able to shape our workshop programme and gain access to Northern Powergrid subject experts.	Four targeted workshops held, one per quarter.	Attendee numbers and feedback from events.	On track	All	M UM DG ICP	◇											◆
4.0 Technical and commercial developments	**4.1** Assessment and Design (A&D) fees	We will continue to contribute to the national debate on A&D fees and keep our customers informed of the outcomes. On conclusion of the BEIS consultation, we will implement any changes to our existing policies or practices required and communicate these to our customers.	Customers will be kept informed on the outcome of the national A&D fees debate. We will revise our approach to A&D fees as necessary.	Progress reported and new policy and processes implemented as necessary.	Revised processes applied to all relevant connection applications.	On track	All	M DG	◇											◆
	4.2 Transmission/ Distribution (T/D) interface	We will continue to support customers through the T/D interface and engage on their behalf in the activities of the national working parties. Where necessary, we will implement changes to our existing policies and working practices to reflect best practice recommendations.	Customers will be better informed and supported through the T/D interface.	Progress reported and new policy and processes implemented as necessary.	Revised processes applied to all relevant connection applications.	On track	EHV	M DG	◇											◆
	4.3 Undergrounding of networks in Areas of Outstanding Natural Beauty (AONB)	We will engage in a discussion with Ofgem on behalf of our stakeholders on the treatment of the costs for undergrounding of rural network in AONB.	Improved visual impact of the distribution network in AONB whilst optimising the use of the ED1 allowance to carry out such works.	Discussion held with Ofgem on whether AONB ED1 allowances can be incorporated into the provision of connections.	Number of customer connections in AONB incorporated into the programme of undergrounding.	OK to plan	All	M UM DG ICP			◇										◆
5.0 Enabling competition	**5.1** ICP input services	We will develop an end-to-end process map that covers all aspects of our input services and explains how ICPs can interface with us more effectively.	ICPs will have a better understanding of the input services Northern Powergrid provide and how best to access them.	End to end process map produced and published.	Customer feedback on changes made.	On track	All	ICP	◇		◆										
	5.2 ICP input services	We will publish a schedule of rates for the input services available to ICPs so that they can 'pick and mix' the services they require.	ICPs will have a better understanding of the costs of input services Northern Powergrid provide.	Schedule of rates produced and published.	Customer feedback on changes made.	OK to plan	All	ICP		◇	◆										
	5.3 ICP design matrix	We will update our standard design matrix rules to include unmetered connections and simplify the technical specification.	The action will extend the scope and ease with which ICPs can self-determine point of connections.	Updated standard design matrix produced and published.	Customer feedback on changes made.	OK to plan	LV	UM ICP			◇						◆				
	5.4 ICP design approvals	We will publish the average time it takes us to issue ICP point of connection and design approvals on our website.	Customers will have visibility on the time it takes Northern Powergrid to issue point of connection and design approvals to ICPs.	Data published every quarter.	Webpage usage and customer feedback.	On track	All	M UM DG ICP	◇		◆										

Key ◇ Start Date | ◆ Forecast completion date | — Forecast timescale for delivery | M Metered | UM Unmetered | DG Distributed Generation | ICP Independent Connections Providers

Theme	Area for improvement	Action	The outcome for customers	Performance metric	Our measure of impact and/or success	Status	Voltage	Applicable to	Q2 2017 Apr	May	Jun	Q3 2017 Jul	Aug	Sep	Q4 2017 Oct	Nov	Dec	Q1 2018 Jan	Feb	Mar
6.0 Innovation	6.1 Transmission System Operator (TSO) / Distributed System Operator (DSO) roles	We will continue to support and contribute to the national working party on the development of TSO/DSO roles and keep customers informed of the outcomes.	Customers will be better informed about the development of TSOs and DSOs.	Communicate the outcomes of the national working party on TSO/DSO to our customers.	Customer feedback.	On track	All	M, DG	◇					◆					
	6.2 Distributed Network Operator (DNO) to Distributed System Operator (DSO)	We will share our vision for the transition of DNOs to DSOs. We will describe the work taking place at Northern Powergrid and seek our customers views on how to shape the outputs of this work.	Customers will be kept informed about Northern Powergrid's transition and will have the opportunity to engage and shape future outputs.	Vision and strategy shared with interested stakeholders.	Customer feedback.	On track	All	M, UM, DG, ICP	◇					◆					
	6.3 Energy storage	We will engage with storage developers to create a suite of standard storage service offers.	The application process will become easier and more understandable	Suite of storage offers developed and available for use.	Number of applications made using new process and customer feedback.	On track	EHV HV	DG	◇											◆
	6.4 Energy storage	We will develop and publish case studies that share future use cases and applications for energy storage.	Customers will have access to a suite of energy storage case studies to help shape their future business plans and direction.	Two case studies produced and published on our website.	Customer feedback.	OK to plan	EHV HV	DG						◆						◆
	6.5 Active Network Management (ANM)	We will engage with customers on the progress of our first replicable ANM scheme in Driffield, South East Yorkshire.	Customers will understand how the Driffield ANM scheme works, the network communications, charging policy and how it can be applied to other areas of the Northern Powergrid network.	Progress communicated.	Customer feedback.	On track	All	DG	◇											◆
	6.6 Connecting Low Carbon Technologies (LCTs)	We will develop and launch a new 'Low Carbon Connection Gateway' on our website.	Customers will have access to a new resource that provides information on different types of LCTs, how to apply for a connection and when to notify Northern Powergrid about their installation.	New Low Carbon Connection Gateway available on our website.	Webpage usage and customer feedback.	OK to plan	All	DG						◆						◆

Key ◇ Start Date | ◆ Forecast completion date | — Forecast timescale for delivery | M Metered | UM Unmetered | DG Distributed Generation | ICP Independent Connections Providers

Looking Forward report

LAURA BROWN OF NAREC ASKED US IF WE COULD MAKE THE CONTENT FROM OUR EVENTS AVAILABLE ONLINE

1 Provision of information

1.1 Digital communications

M UM DG ICP

"Attending these events is costly for SMEs – why don't you provide live webinar of the presentations for stakeholders?"

LAURA BROWN, NAREC, CONNECTIONS CUSTOMER FORUM, MAY 2016

At one of our Connections Customer Forums, Laura Brown of Narec stated that attending such events costly for SMEs and asked whether we could provide a webinar of the content presented for any stakeholders who were unable to attend.

We thought the point made was valid. We recognise that the time our customers give to us to attend events is time away from their own business and therefore the events must be beneficial to all parties. Face to face interactions with customers at these events and at other engagement opportunities that arise as part of our broader stakeholder engagement activities are very important as we are to be able to discuss and understand current issues and, where appropriate, turn the feedback into service improvement actions that can benefit a broad range of customers.

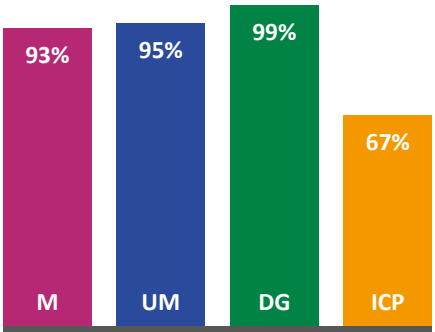
It is important in reaching out to customers that we recognise that time is a scarce resource not only for SMEs but for all businesses and that despite time pressures customers still want the ability to interact, learn from and contribute to our improvement plans. As we value everyone's feedback it is essential that we make as much of our information as possible available to customers to access, whether they are able to contribute or not in real time.

To that end, we will record the content from our stakeholder events and make it available on our YouTube channel and website. We will monitor the number of views and ask stakeholders whether it is useful. If the response is positive we will add this to our arsenal of communication methods and make it part of our engagement strategy going forward.

Action: We will trial recording the content of our connections forums and workshops and posting it to the web.

Customer outcome: Customers will be able to view content from Northern Powergrid events at a time that suits them.

Key performance metric: Two connections forums recorded and posted to web by Q3, 2017.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

1.2 Social media M UM DG ICP

"Can more question and answer sessions be internet based i.e. Skype / webinar?"

IAN FOTHERGILL, NIFES CONSULTING, CONNECTIONS CUSTOMER FORUM, NOVEMBER 2016

On a similar theme to the previous action, Ian Fothergill from NIFES Consulting asked whether we could do more internet based question and answer sessions.

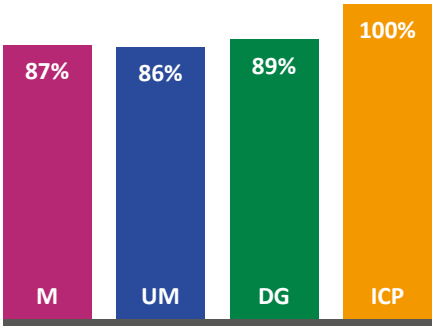
This comment again raises the issue about the importance of time being a scarce resource and how customers can best contribute to the ongoing debate on service improvement. We continue to evolve our channels of communication and it is important that we give customers every opportunity to link to our technical and commercial experts on all connections subjects.

We continue to investigate ways to engage and communicate with our customers and so have committed to run live social media 'Ask the Expert' Q&A sessions with our subject experts on emerging connections topics. We will seek the opinion of customers as to what topics they would like us to cover during the sessions and we will develop the content based on their feedback.

Action: We will trial running live 'Ask the Expert' Q&A sessions on emerging connections topics once a quarter using different social media channels.

Customer outcome: Customers will have access to Northern Powergrid subject matter experts and will be able to pose questions and receive answers in real-time.

Key performance metric: Four social media Q&A sessions held; one per quarter.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

1.3 Timescales for protection settings M DG

"UKPN have provided a commitment and timeframe to provide protection settings, and other design-related detail including fault level. Please consider."

DR GRAHAM PANNELL, RES, OFGEM CONSULTATION ON DNOS' 2015/16 ICE SUBMISSIONS

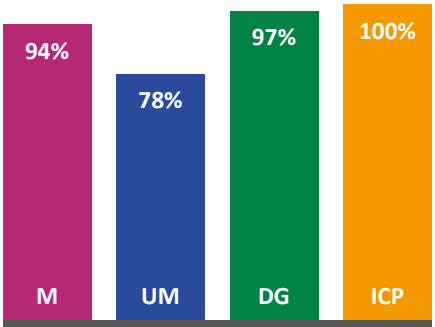
It is important that we build on industry best practice and learn from what other DNOs have done to improve service so that customers can expect to receive the same level of service in whichever part of the country they decide to develop projects.

The timeliness of provision of technical information including fault level and protection setting data at the start of the build phase of a connection is important to enable the construction phase to run to plan. Taking on board Dr Pannell's comment, we commit to develop a process for the provision of technical construction information to our customers in a timely manner which will benefit a broad of customers.

Action: We will conduct a formal business process review on the provision of protection setting information to our customers, with a view to developing service solutions that close any performance gaps identified.

Customer outcome: Implementation of a revised process to provide customers with protection setting information in a timelier manner following the acceptance of a connection offer.

Key performance metric: Formal business review completed and revised process implemented where necessary.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

1.4 Implementation of contract milestones M UM DG ICP

Last year, as part of the work initiated by Ofgem on QMEC, we collaborated with other DNOs and the ENA to produce a best practice guide to the implementation of contract milestones. The implementation of standard contract milestones was intended to address the issue of underutilised capacity on a distribution network, with unused capacity locked into contracted projects that do not proceed to energisation.

Following on from that work, we made changes to our standard terms and conditions to make it possible to bring a connection contract to an end should its construction fail to make progress in accordance with an agreed milestone plan and to recover unused capacity following the energisation of a connection if all of the capacity is not used within and agreed period of time.

"Is there a 'simple' guideline for the new connections milestones. I would like to issue to some of our developer/ landowner clients so they can understand the process and associated risks."

SIMON MALARKEY, BSAP LTD, CONNECTIONS CUSTOMER FORUM, NOVEMBER 2016

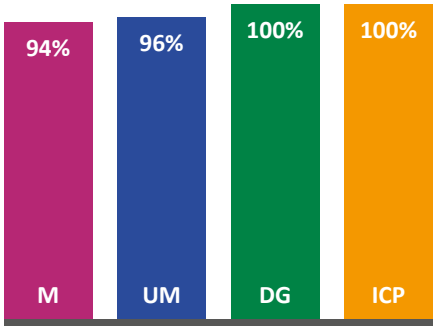
During the course of the year we kept customers informed about the changes we were making. At our Connections Customer Forum in November 2016, Simon Malarkey asked us to develop a simple guide he could share with his clients.

It is important that we take every step to ensure our customers understand the conditions under which we offer a connection to the distribution network. Therefore, to help customers to understand the terms of our connection offers we will produce a simple guide to the implementation of new contract milestones and make it available to our customers.

Action: We will produce a simple guide to the implementation of new contract milestones.

Customer outcome: Customers will have a guide that explains the new milestones being implemented in Northern Powergrid connections contracts.

Key performance metric: Guide produced and published on web.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

1.5 Access to mains records

M UM DG

"Should have links in appropriate places to notify customers how they can access records. Maybe training will be required."

CHRIS DOOLEY, KEEPMOAT HOMES, CONNECTIONS CUSTOMER FORUM, NOVEMBER 2016

During Q1, 2017, our Connections Input Services team who deal with the requirements of ICPs ran a workshop to help them understand how they could gain access to our mains records. This approach, which allowed us to work together with ICPs in small groups to identify and and solve any issues they encountered, worked well with 100% of ICPs who attended telling us they found the content of the day 'very useful' or 'useful'.

"Develop a process for stakeholders on how to apply for access to mains records as mains records are needed early on in projects when initial planning/designing of schemes starts."

BEN BYATT, AMEY, CONNECTIONS CUSTOMER FORUM, NOVEMBER 2016

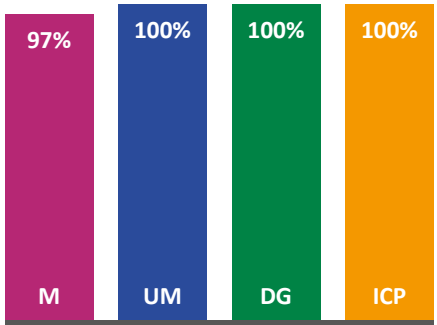
During our Connections Customer Forum, Ben Byatt of AMEY and Chris Dooley from Keepmoat Homes, told us about their experience of trying to access to our mains records.

Demand customers have an equally important need to be able to access mains record information to enable their projects to be undertaken safely. Although this information is freely available and we have included a page on our website[7] about how to access it, based on the feedback we have received we think we can still do more to help customers access this information. We are therefore committing to run a workshop for any connections customer needing help to access our mains records.

Action: We will hold a workshop for connections customers on how to access Northern Powergrid's mains records.

Customer outcome: Customers will understand how to access Northern Powergrid's mains records.

Key performance metric: Workshop held.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

7 We added a page to our website that tells customers how to access our mains records http://www.northernpowergrid.com/getting-access-to-our-records

2 Improving our application and delivery process

2.1 Storage applications DG

During our engagement with a customer carrying out works at Newcastle University who was trying to connect battery storage it became apparent that our current G59 generation application does not cater well the specifics of connecting this type of technology.

Battery storage is an emerging technology and although most of the connections requests for storage that we receive are presently confined to EHV networks, it is likely that this technology will permeate down throughout the network and therefore it is essential that we make it as easy as possible for customers to make applications for connections.

"The one that we're particularly interested in is battery storage – that's a main area but it sounds like Northern Powergrid are making progress with that. I would have to say that I've been dealing with them for five years and that the levels of communication has always been extremely good."

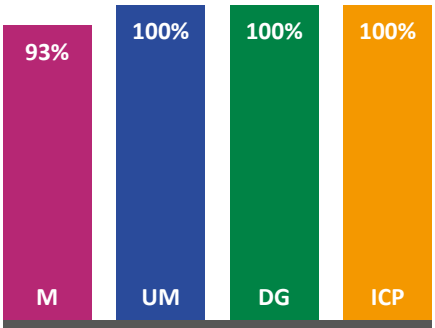
DEAN STAVELEY, NEWGEN, CONSULTATION ON OUR 2017/18 ICE WORK PLAN, APRIL 2017

Our current generation application process is not tailored enough to record the technical requirements of this type of technology and so in response to the feedback from this customer we are committing to modify the G59 application form on our website to include an option to connect energy storage. We believe that this action and change to our process will benefit a wide range of customers requiring a quotation for this type of connection.

Action: We will modify the G59 application form on our website to include an option to connect energy storage.

Customer outcome: Customers will have a quick and easy method of applying for an energy storage connection online.

Key performance metric: G59 form modified and new option available.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

2.2 Generation connections DG

"One aspect that is an issue when developing a business case is the cost of a connection which requires a budget estimate/application to yourselves. Would it be possible to create an online calculator giving a rough estimate of costs based on data from the heat map/register? That way we can quickly provide an indicative cost for a client as sometimes the connection cost can kill a project."

JAMES DAVEY, AMERESCO, CONNECTIONS CUSTOMER FORUM, NOVEMBER 2016

We ask delegates at our Connections Customer Forums to tell us what we could do to improve our overall connections service. At our November 2016 event, Mr. James Davey of Ameresco made a comment about the availability of budget and estimate information for generation connections.

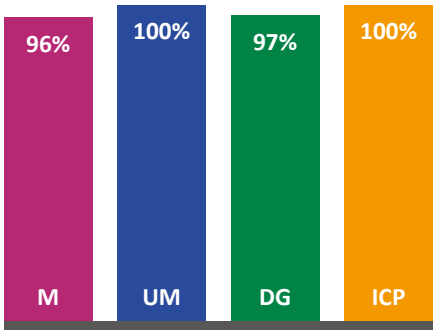
We recognise that having access to cost information is important to customers who are evaluating portfolios of projects and who do not necessarily have the time to go through a formal process to receive the information but instead would like to be able to generate it themselves, at a time that suits them.

We have already developed an online quick calculator to help demand customers understand the likely costs of their connection. A wide range of customers have benefited from this facility and therefore as a result of Mr Davey's comment we commit to developing a similar tool for our generation connections.

Action: We will create a quick budget cost calculator for generation connection applications and make it available on our website.

Customer outcome: Customers will be able to obtain an upfront, indicative cost for their generation connection.

Key performance metric: Generation calculator available online.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

2.3 Multi-optioneering service M DG

During discussions at our Connections Customer Forum DG workshop, it became evident than a number of stakeholders were not aware of the multi-optioneering process we introduced as part of our 2015/16 ICE work plan. The process allows customers to consider multiple connections options whilst maintaining their position in the formal connections queue.

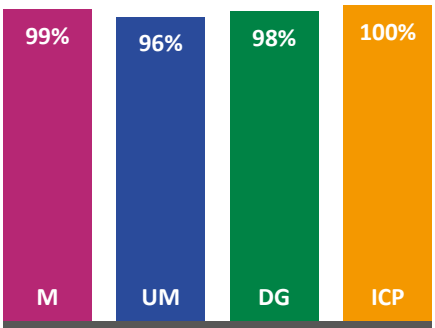
Scottish Power operate a process called Quote+ and following feedback from customers and as part of our ongoing understanding and adoption of industry best practice we introduced a similar process in early 2016. It is important that customers recognise that they have the opportunity to optioneer with us as part of the connections quotation process without it detrimentally impacting their place in connections queue.

This service has the potential to benefit a large range of customers and therefore we are committing in this plan to significantly improve our customers' awareness of this process by promoting its use through the internet whilst giving better information as to how it works and how customers can access it.

Action: We will create a new page on our website that promotes our multi-optioneering service and explains the process to customers.

Customer outcome: Customers will be made aware of our multi-optioneering service available to them and given a better understanding of the process and how to access it.

Key performance metric: New web page available online.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

2.4 MPAN on-line service

M UM DG ICP

"NPg's online 'find my MPAN' service is not great compared to WPD's which is best or even UKPN. WPD's allow one to search by address or meter serial number and there is an immediate response with no delay."

RACHEL WOOD LARK, ENERGY COMMERCIAL, CONNECTIONS CUSTOMER FORUM, MAY 2016

At our Connections Customer Forum in May 2016, Rachel Wood of Lark Energy Commercial gave us some feedback on our online 'find my MPAN' service.

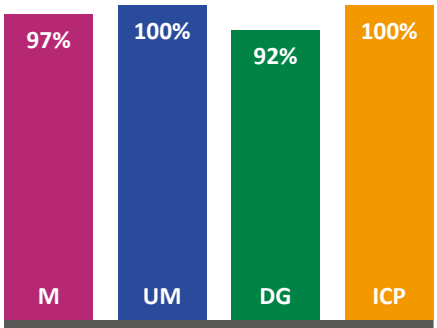
The ability for all customers to have easy access to MPAN[8] information is important and although the process that we currently have has been adequate so far if we can learn from other best practice DNOs and improve the service that we provide this will benefit a large range of customers.

We are therefore committing in our 2017/18 work plan to engage with our customers to understand any issues they are encountering and to examine other DNOs' systems that might be classed as industry best practice, benchmark what we do against the service that these DNOs offer and then make changes to our systems, if we think this is appropriate.

Action: We will benchmark our find my MPAN online service against other DNOs and make improvements if required.

Customer outcome: Customers will be able to locate MPANs more quickly and will have more accurate information.

Key performance metric: System benchmarked and improvements made if necessary.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

8 Meter Point Administration Number (MPAN)

3 Improving our communications and engagement

3.1 Targeted workshops

M UM DG ICP

"It would be useful to have small workshops on various emerging topics - storage; DNO service procurement, flexible connections…and any more you think would be relevant."

LOIC CERVLUS, ARENKO, CONNECTIONS CUSTOMER FORUM, NOVMEBER 2016

At our Connections Customer Forum in November 2016, customer Loic Cervlus of Arenko asked us if we could run smaller, more subject specific workshops on emerging connections topics.

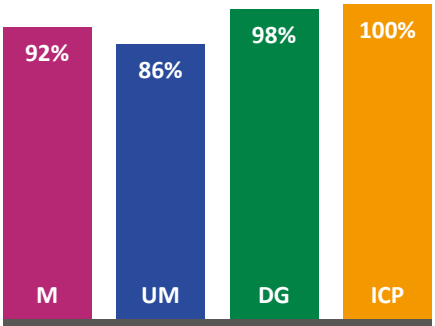
We recognise, from previous customer comments, how scarce time is as a resource and therefore when we arrange engagement events we try to make sure that we reach out to a broad and inclusive range of customers and provide them with useful, relevant and topical information that is of real value to them in managing their businesses.

It is always better if we can offer customers a range of engagement options which helps them to optimise their time and we had great success with the targeted, subject-specific workshops that we ran with our DG and ICP customers in Q1, 2017. Building on this, we have included an action in our Looking Forward plan to deliver a number of targeted workshops that put smaller groups of like-minded customers in a venue with our technical and commercial experts to discuss single topics in depth. We will ask our customers what topics they want us to cover and build our programme of content accordingly.

Action: We will hold targeted workshops on emerging connections topics suggested by our customers.

Customer outcome: Customers will be able to shape our workshop programme and gain access to Northern Powergrid subject experts.

Key performance metric: Four targeted workshops held, one per quarter.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

4 Technical and commercial developments

4.1 A&D fees M DG

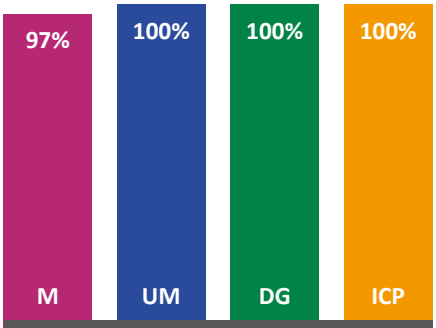
Fundamental changes in the way in which customers are charged for the preparation of quotations have been prepared by BEIS and the changes are now being processed into law.

Until the appropriate legislation is changed, DNOs are unable to implement any changes and we understand that the June 2017 general election has impacted the timeline for any changes to be implemented. However, the changes that are being proposed are important to ensure fairness and equality in the charging mechanism and therefore we commit to continue to work with Ofgem and BEIS to close out the development of the new charging mechanism and to implement these changes into our business processes.

Action: We will continue to contribute to the national debate on A&D fees and keep our customers informed of the outcomes. On conclusion of the BEIS considerations, we will implement any changes to our existing policies or practices required.

Customer outcome: Customers will be kept informed on the outcome of the national A&D fees debate. We will revise our approach to A&D fees as necessary.

Key performance metric: Progress reported and new policy and processes implemented as necessary.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

4.2 T/D interface M DG

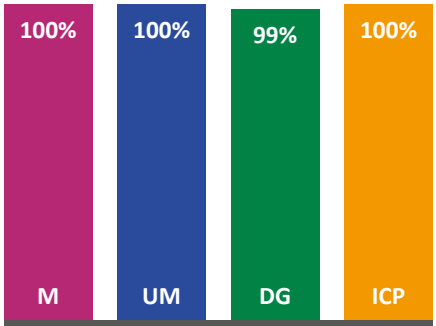
An important aspect in the preparation of any large connection scheme is understanding the potential impact on the National Grid transmission network. There is currently a Statement of Works (SoW) process operated between DNOs and National Grid that allows any proposed connections to be considered and a view of the potential impact and cost to be made.

To enable quicker and more efficient connections to be achieved a national working party, led by National Grid, has been working over the last year to understand ways of improving this process. Some conclusions have been reached and pilots of a new process are underway. However, the final process is yet to be agreed and so until that time we have committed to continue to work with the national working party, keeping our customers informed of progress and to implement the outcome into our business processes.

Action: We will continue to support customers through the T/D interface and engage on their behalf in the activities of the national working parties. Where necessary, we will implement changes to our existing policies and working practices to reflect best practice recommendations.

Customer outcome: Customers will be better informed and supported through the T/D interface.

Key performance metric: Progress reported and new policy and processes implemented as necessary.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

4.3 Undergrounding networks in areas of outstanding natural beauty (AONB) M UM DG ICP

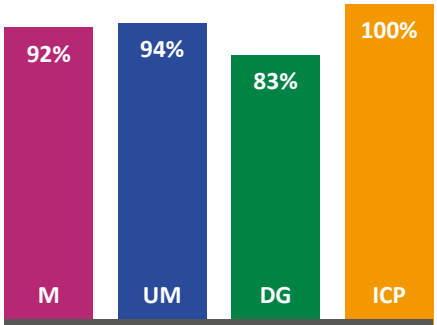
At a stakeholder forum with national parks officers the issue was raised about how the cost treatment of connections and asset replacement works differ in that DNOs are provided with allowances to underground assets within national parks as part of asset replacement programmes and in so doing improving the visual amenity to the general public, however, this is not the case with connections activities.

We recognise that it would be beneficial if the same physical outcome could be achieved for connections works and therefore we are committing to discuss this issue with Ofgem to understand if there is a way in which the same treatment of costs can be applied enabling us to optimise the visual impacts of all of our assets to the public and the natural surroundings.

Action: We will engage in a discussion with Ofgem on behalf of our stakeholders on the treatment of the costs for undergrounding of rural network in areas of outstanding natural beauty (AONB).

Customer outcome: Improved visual impact of the distribution network in AONB whilst optimising the use of the ED1 allowance to carry out such works.

Key performance metric: Discussion held with Ofgem on whether AONB ED1 allowances can be incorporated into the provision of connections.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

5 Technical and commercial developments

5.1 ICP input services ICP

Supporting ICPs in their ability to provide customers with competitively priced connections is an important issue that Northern Powergrid continues to view as a priority. Our Connections Input Services team exists to efficiently deliver the services that ICPs require from us to carry out their connections activities.

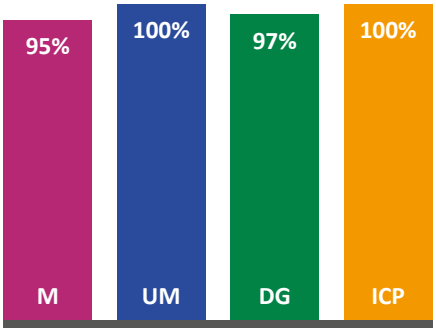
As competition in the connections market place continues to grow and the number of companies entering the market wanting to offer competitive services increases, it is important to the effectiveness of their business that they are able to quickly understand what services they are able to receive from Northern Powergrid and how they are able to interact with us.

This is an issue that has been raised by a number of ICPs at our engagement events and so, acknowledging its importance and the fact that it will benefit a wide range of ICPs, we have committed in our work plan to provide better information about what input services we provide to ICPs and how best they can interact with us.

Action: We will develop an end-to-end process map that covers all aspects of our input services and explains how ICPs can interface with us more effectively.

Customer outcome: ICPs will have a better understanding of the input services Northern Powergrid provide and how best to access them.

Key performance metric: End to end process map produced and published.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

5.2 ICP Input service prices ICP

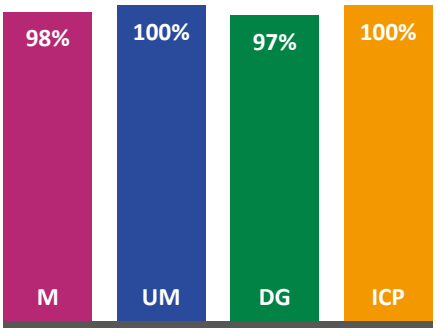
Following on from action 5.1, ICPs have raised the issue that in order to operate their businesses effectively and to be able to provide their customers with excellent customer service they need to be able to have easy access to the price of the input services that they need to procure from Northern Powergrid.

It is therefore important that we make pricing information readily accessible and we have undertaken as part of our 2017/18 service improvement plan to publish the schedule of rates for input services to enable ICPs to access it and use it in the pricing of jobs for their customers.

Action: We will publish a schedule of rates for the input services available to ICPs so that they can 'pick and mix' the services they require.

Customer outcome: ICPs will have a better understanding of the costs of input services Northern Powergrid provide.

Key performance metric: Schedule of rates produced and published.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

5.3 ICP design matrix UM ICP

At one of our forums, ICPs indicated that they would like to extend their operations further into the provision of unmetered services. Street lighting authorities are now carrying out replacement programmes which require the transfer of street lighting services, and ICPs want to be able to offer connections services for new technology, including electric vehicle (EV) chargers and heat pumps.

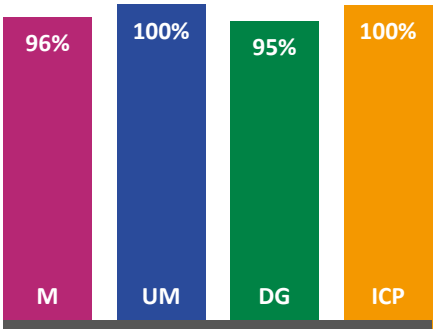
To support the development of competition it is essential that we provide ICPs with all of the necessary technical standards information to allow them to be able to quote their customers. We currently publish a design matrix which details the criteria for a connection to be designed without the need for a formal electrical design being required. The information presently covers existing domestic connections, single three phase connections, single phase commercial and new unmetered connections up to defined limits.

In response to the request from ICPs we are committing in this work plan to update our design matrix to include transfer of existing street columns, replacement of existing unmetered services and the connection of EV chargers and heat pumps.

Action: We will update our standard design matrix rules to include unmetered connections and simplify the technical specification.

Customer outcome: The action will extend the scope and ease with which ICPs can self-determine point of connections.

Key performance metric: Updated standard design matrix produced and published.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

5.4 ICP design approvals

M UM DG ICP

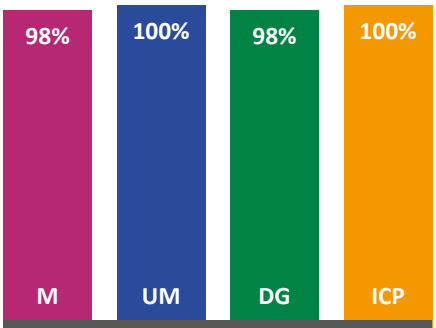
At our ICP forum, the attendees suggested that, although ICPs can self-determine points of connection, where they are not qualified to do so or do not wish to carry this out and prefer to rely on Northern Powergrid to provide an input service, it would be useful for them to have visibility of the average time it takes us to issue point of connection designs and design approvals. Providing this information would greatly help ICPs to set the expectations of their clients as to how long it will take to prepare a quotation.

As part of our efforts to continue to support the growth of competition in connections and to help improve the communications between ICPs and their customers we have undertaken to publish performance information about how quickly we prepare point of connection quotations and also how long it takes us to approve ICP electrical designs.

Action: We will publish the average time it takes us to issue ICP point of connection and design approvals on our website.

Customer outcome: Customers will have visibility on the time it takes Northern Powergrid to issue point of connection and design approvals to ICPs.

Key performance metric: Data published every quarter.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

6 Innovation

6.1 TSO/DSO roles M DG

An important development in the electricity sector is the development of the concept of a DSO to interact with the TSO. Northern Powergrid has been contributing to the national debate on this subject and the development of these roles.

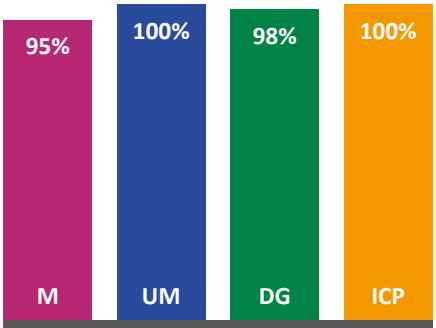
It is important that customers are kept informed of this work, what the new roles will entail and what impact the new ways of working might have on the provision of electrical services. Commercial opportunities may also emerge that customers can take advantage of in providing a DSO with network services.

At our most recent Connections Customer Forum in April 2017, when asked, very few customers said they fully understood what the TSO/DSO roles entail and what impact it may have on customers. Therefore as this debate continues we will continue to to contribute to the national working party and keep customers informed of the outcomes.

Action: We will continue to support and contribute to the national working party on the development of TSO/DSO roles and keep customers informed of the outcomes.

Customer outcome: Customers will be better informed about the development of TSOs and DSOs.

Key performance metric: Communicate the outcomes of the national working party on TSO/DSO to our customers.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

6.2 DSO transition M UM DG ICP

"Our company is interested in what is happening in the distribution network and how it is changing moving forward both technology wise and market wise as the 'network' becomes a system. We are used to providing ancilliary services to NGT and would be interested to see what services the DNOs require looking ahead. Who would be the correct person to talk to?"

JIM WEBB, DRAX POWER, CONNECTIONS CUSTOMER FORUM, NOVEMBER 2016

Although we continue to play an integral part in the national working party on the development of TSO/DSO roles there is some more work to be done in developing our own thinking and vision of the role of a DSO.

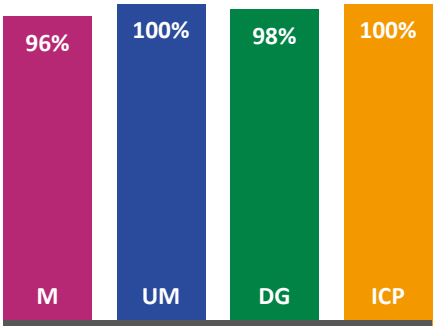
It is important to involve and share with customers the development of our thinking so that they can understand what changes may happen and how such changes might impact the way in which we operate and interact with their business operations.

To address this, we have included in this service improvement plan an undertaking to discuss this subject with customers and give them the opportunity to influence our thinking on the matter. This action will benefit a wide range of customers and help them to understand one of the most significant issues currently being developed within the industry.

Action: We will share our vision for the transition of DNOs to DSOs. We will describe the work taking place at Northern Powergrid and seek our customers' views on how to shape the outputs of this work.

Customer outcome: Customers will be kept informed about Northern Powergrid's transition and will have the opportunity to engage and shape future outputs.

Key performance metric: Vision and strategy shared with interested stakeholders.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

6.3 Energy storage service offers DG

Energy storage is a relatively new technology and we have recently seen a dramatic increase in the number of storage connections. Presently, these enquiries are most often about the connection of large units on the extra high voltage network. We anticipate that this technology will be further exploited leading to more customers requesting storage connections, perhaps at lower voltages.

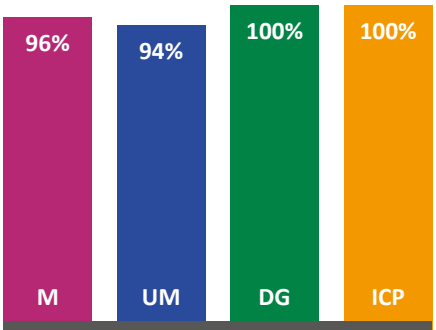
It is important that we anticipate these developments and our customers have expressed the wish that we make it as easy as possible to engage with us and obtain an appropriate connection offer as quickly as possible.

To this end we seek to make the connections application process as simple and easy as possible and we believe that we can improve the customer experience by developing a suite of standard storage service offers that customers can take advantage of. As the outcome of this will benefit a broad range of customers we have committed to include an action within our 2017/18 work plan.

Action: We will engage with storage developers to create a suite of standard storage service offers.

Customer outcome: The application process will become easier and more understandable.

Key performance metric: Suite of standard storage offers developed and available for use.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

6.4 Energy storage case studies DG

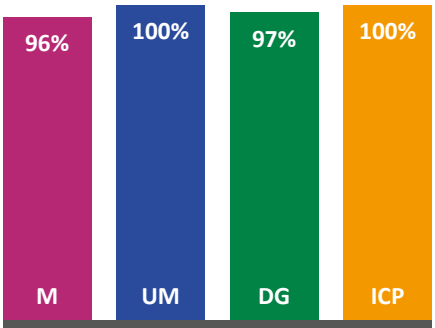
When customers are considering the use of new technology it is useful to learn from the experience of others who have already deployed the technology. Having worked on a number of energy storage connections we are able to compile information about how we have made connections to this equipment and what the associated costs are.

To benefit customers who are considering installing energy storage, we will develop case studies that we can publish to inform customers in the initial scoping and optioneering phases of a project.

Action: We will develop and publish case studies that share future use cases and applications for energy storage.

Customer outcome: Customers will have access to a suite of energy storage case studies to help shape their future business plans and direction.

Key performance metric: Two case studies produced and published on our website.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

6.5 Active Network Management DG

We deployed our first, replicable ANM scheme on our network in Driffield, East Yorkshire in 2016. Our customers continue to express interest in our ANM scheme, levels of take up and any future roll out plans.

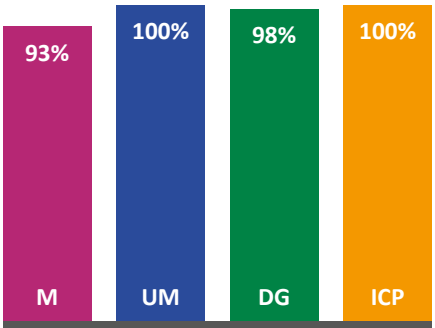
The issue of constrained networks and the development of flexible connections offers is one that is important if we are to ensure that we can continue to connect as many customers as possible where they wish to be connected.

It is important that we continue to discuss this subject with customers, keeping them informed of how this type of flexible connection has operated for those individuals who have taken advantage of it and to engage with customers about how we can continue to apply this solution and develop other flexible methods of connection. We have therefore included an action in this work plan to continue to engage with customers on this matter.

Action: We will engage with customers on the progress of our first replicable ANM scheme in Driffield, East Yorkshire.

Customer outcome: Customers will understand how the Driffield ANM scheme works, the network communications, charging policy and how it can be applied to other areas of the Northern Powergrid network.

Key performance metric: Progress communicated.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

6.6 Connecting Low Carbon Technologies DG

To embrace innovation we recognise the need for customers to have a better understanding of new Low Carbon Technologies (LCTs) that become available; how they work and what potential benefits they can bring to their businesses.

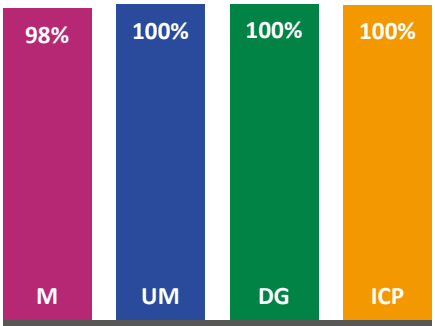
As well as understanding the technologies customers also need to understand how to apply for a new connection involving LCTs and also what procedures they need to follow to notify us of when a connection has been made.

The availability of all of this information can benefit a wide range of customers and so we thought it important from our discussions with customers that we include an action within our work plan to improve the information available on connecting LCTs.

Action: We will develop and launch a new Low Carbon Connection Gateway on our website.

Customer outcome: Customers will have access to a new resource that provides information on different types of LCTs, how to apply for a connection and when to notify Northern Powergrid about their installation.

Key performance metric: Low Carbon Connection Gateway available on our website.



Stakeholders surveyed who thought this action would improve our overall connections service.

Source: Explain market research, April 2017.

Looking Back report

Introduction to our Looking Back report

In this Looking Back report we discuss the delivery of the 31 actions in our 2016/17 ICE work plan. We describe the actions we have completed and those that we continue to work on. In delivering this plan we have continued to support these actions by implementing our comprehensive stakeholder strategy, seeking out customers' feedback and opinions in order to validate the actions and outcomes we have achieved.

In devising our ICE work plans we have continued to be guided by Ofgem's encouragement to DNOs to be ambitious in the service improvements actions they are proposing on the understanding that DNOs who are ambitious in the number and nature of their actions will not be penalised for failing to deliver stretching targets, as long as the risk of underachievement was understood at the outset and the reasons for failing to meet the target are reasonable and well justified.

We knew when we set our 2016/17 work plan that some of the actions would be challenging but we were encouraged by Ofgem to be ambitious and we were reassured by Ofgem's guidance that a failure to deliver particular elements of the plan does not necessarily mean that a DNO will be considered to have failed to satisfy the minimum criteria.

In the plan year seven actions were completed earlier, and three slightly later, than we had forecast. By the end of the year all the actions that were within our control were delivered and in three cases we delivered more than we had said we would. In the three cases where we delivered a little later than we had forecast we do not believe that any stakeholders were adversely affected.

The two actions that were not completed at the end of the regulatory year have both been carried forward into our 2017/18 work plan. Both actions are associated with work being carried out by national working parties that we are contributing to and which have been delayed. The first relates to improving the national grid transmission interface with DNOs and the second relates to the work with BEIS to implement A&D fees for quotations. These works are ongoing and we expect they will be completed during 2017/18 and therefore both remain valid improvement actions for our 2017/18 work plan.

The results of our Explain market research exercise shows that our stakeholders have acknowledged the outcomes of the work that we have achieved. The majority that overall, the changes we have made in the past 12 months have improved our connections service.

Whenever we completed an action in our work plan, we have attempted to contact the customer who generated that specific action to close the loop and validate that we had achieved the required outcome. We have been successful in some cases, whilst in others customers were unavailable to discuss the matter further. We want to ensure that what we have done resolves the original issue or concern, and, if not, we want to learn what we else we can reasonably do. It is only through such ongoing dialogue and interactions that we can be sure we are fully satisfying our customers' expectations and needs.

The remainder of this Looking Back report describes the work that we have carried out and outcomes that we have delivered to our customers.

How we have implemented our connections engagement strategy

Successful delivery of our service improvement commitments requires a robust and comprehensive engagement programme. During the course of 2016/17 we engaged with our connections stakeholders through a range of established channels and activities, the outputs of which drove the development of our 2017/18 work plan. We increased our interactions and stepped up our online and social media activities, helping us to reach more customers. We also strengthened our approach and reporting processes, introducing a stakeholder engagement log to record all our stakeholders' comments and the steps we take to address them.

The infographic below gives a snapshot of the engagement activities we have undertaken during the course of the year.

Connections Customer Engagement April 2016 – March 2017

65,000 WEBSITE HITS

www.northernpowergrid.com/getconnected

62,000 enquiries answered via our CONNECTIONS CALL CENTRES

connections newsletters sent to **5,600** customers

100 SOS ask the expert enquiries

25 expert stakeholder panel members meeting **4 x year**

monthly medium & large works customer satisfaction SURVEY

ONLINE COMMUNITY **1,654** active members

FOLLOWERS

5,600

16,200

4,386

Connections Services

2 Connection Customer Forums
96 attendees

Monthly Connection Customer Surgeries

Connections Input Services

3x ICP Workshops
56 attendees

2 ICP Forums
60 attendees

48 ICPs attended our monthly surgeries

WORKSHOPS, ROUNDTABLES, COMMUNITY ENERGY EVENTS, AGRICULTURAL SHOWS, PRIORITIES RESEARCH, CUSTOMER MEETINGS, NATIONAL WORKING PARTIES

Engagement in 2016/17

Activity	Q2 2016			Q3 2016			Q4 2016			Q1 2017			Applicable to				
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar					
Northern Powergrid Stakeholder Panel	✓			✓						✓			M	UM	DG	ICP	
DG-DNO Steering Group	✓		✓	✓	✓		✓		✓		✓				DG		IND
Unmetered Services Meeting	✓			✓			✓				✓			UM			
Meeting with Wakefield County Council	✓		✓											UM			
Northern Powergrid Connections Customer Forum		✓						✓					M	UM	DG	ICP	
North East Chamber of Commerce			✓					✓					M		DG		
Northern Powergrid ICP Seminar			✓					✓								ICP	
Common Connection Charging Methodology Forum	✓			✓			✓			✓					DG	ICP	IND
National Grid Power Responsive Steering Group	✓			✓				✓		✓			M		DG		IND
Meeting with Sheffield City Council				✓				✓						UM			
Meeting with Stockton Borough Council		✓		✓		✓								UM			
Monthly Connections Customer Surgery	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	M	UM	DG		
Monthly ICP Surgery	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				ICP	
DNO ICE Best Practice Working Group				✓				✓									IND
Northern Powergrid Sponsored Community Energy Event						✓									DG		
The DG-DNO Fora						✓									DG		
Low Carbon Networks and Innovation Conference							✓								DG		
Engaging Communities in Network Innovation Conference							✓								DG		
Metered Connections Customer Group CiC Seminar								✓					M			ICP	
Meeting with Barnsley County Council				✓			✓			✓	✓			UM			
Northern Powergrid Consultation on Constrained Networks											✓				DG		
Connecting Innovative Technologies Workshop												✓	M		DG	ICP	
Accessing Mains Records Workshop												✓				ICP	
Self-Determination Point of Connection Workshops												✓				ICP	
Meeting with representatives from National Parks and AONB												✓				ICP	

Key M Metered | UM Unmetered | DG Distributed Generation | ICP Independent Connections Providers | IND Industry Stakeholders and National Working Groups

The table above shows the kinds of engagement activities we have undertaken during the 2016/17 regulatory year.

2016/17 ICE Looking Back work plan

Theme	Area for improvement	Action	The outcome for customers	Status	Voltage	Relevant market segments			Target measure	Outturn	Reference
1.0 Provision of information	1.1 Heat maps	We will refresh the data on our generation and demand heat maps on a monthly basis.	Up-to-date generation and demand heat map data.	Complete	EHV HV	M		DG	% of heat map updates performed on a monthly basis.	60% of monthly updates completed, heat maps now updated each month.	Page 53
	1.2 Connections case studies	We will produce case studies on different HV and EHV connections projects to help customers understand the likely cost and resources required to deliver a specific job.	Better understanding of what is required to deliver different types of HV and EHV connections.	Complete	EHV HV	M		DG	Case studies available to customers.	Case studies published December 2016 and March 2017.	Page 54
	1.3 Provision of wayleaves	We will publish quarterly wayleaves and easements performance statistics.	Better visibility on the time taken for Northern Powergrid to obtain wayleaves and easements.	Complete	EHV HV	M		DG	Publication of quarterly performance statistics.	Wayleaves performance published monthly.	Page 54
	1.4 Stakeholder updates	We will ensure customers are kept informed of the progress of our ICE work plan actions with regular stakeholder updates and by developing the ICE section of our website.	Better information available for our customers.	Complete	All	M	UM	DG	Web page usage and stakeholder surveys.	Our dedicated ICE web page was viewed 2,110 times; 76% of customers surveyed agreed that changes made to the provision of information has improved the connections service we provide.	Page 55
	1.5 Understanding of technical terminology	We will develop a jargon buster to help customers understand the technical terminology used in connections.	Better understanding of the industry and technical terminology used in connections.	Complete	All	M	UM	DG	Jargon buster available to customers on our website.	Jargon buster available on website October 2016.	Page 56
	1.6 Contracted capacity register	We will refresh the data on our contracted capacity register on a monthly basis.	Up-to-date generation contracted capacity data.	Complete	EHV HV	M		DG	% of monthly updates achieved.	N/A during 2016/17 ICE plan year.	Page 56
2.0 Improving our application and delivery processes	2.1 ICP design approval	We will review of our ICP design approval process and make any necessary changes to ensure we can provide clearer and more timely responses to ICP submissions.	Clear and timely approval of ICP design submissions.	Complete	All	M		DG	% reduction in approval time under new process.	Performance in the calendar year to date is 6% quicker than in the previous year.	Page 57
	2.2 ICP design approval	We will publish approved standard templates for 11kV, 20kV and 33kV connections for use by ICPs in their designs.	Quicker approval of schemes designed by ICPs.	Complete	EHV HV	M		DG	% of ICPs using new standard templates.	The standard templates are available for use by 100% of ICPs.	Page 58
	2.3 ICP quotations	We will implement a new process where ICPs will benefit from faster quotes for sites where we have already issued a quotation.	Quicker quotations.	Complete	EHV HV	M		DG	% reduction in time to quote under new process.	Reissued quotations delivered 10% quicker.	Page 58
	2.4 Applications	We will implement changes to our application process that make it easier for customers to apply for a separate temporary site supply.	Making it easier to apply for a temporary site connection.	Complete	All	M		DG	% of temporary connections applied for using the new process.	31% of customers now using the temporary site supply application process.	Page 59
	2.5 Public street lighting reconnection	We will run a pilot with a Local Authority to reconnect knocked down street lighting within a target of 10 working days, from receipt of notification that a new column has been erected. Post-pilot, we will consider how to roll this out to other Local Authorities in our region.	Faster reconnection of knocked down street lighting and a better service delivered to Local Authorities and members of the public.	Complete	LV		UM		% decrease in working days taken to reconnect knocked down street lighting.	Time to reconnect reduced by 98% in trial.	Page 59
	2.6 Converting budget estimates into firm quotations	We will improve how we issue budget estimates to make it quicker and easier for customers to proceed to a firm quotation.	Making it quicker and easier for customers to proceed from estimate to a firm quotation.	Complete	All	M	UM	DG	Implementation of a new process.	New process implemented.	Page 60

Key M Metered | UM Unmetered | DG Distributed Generation

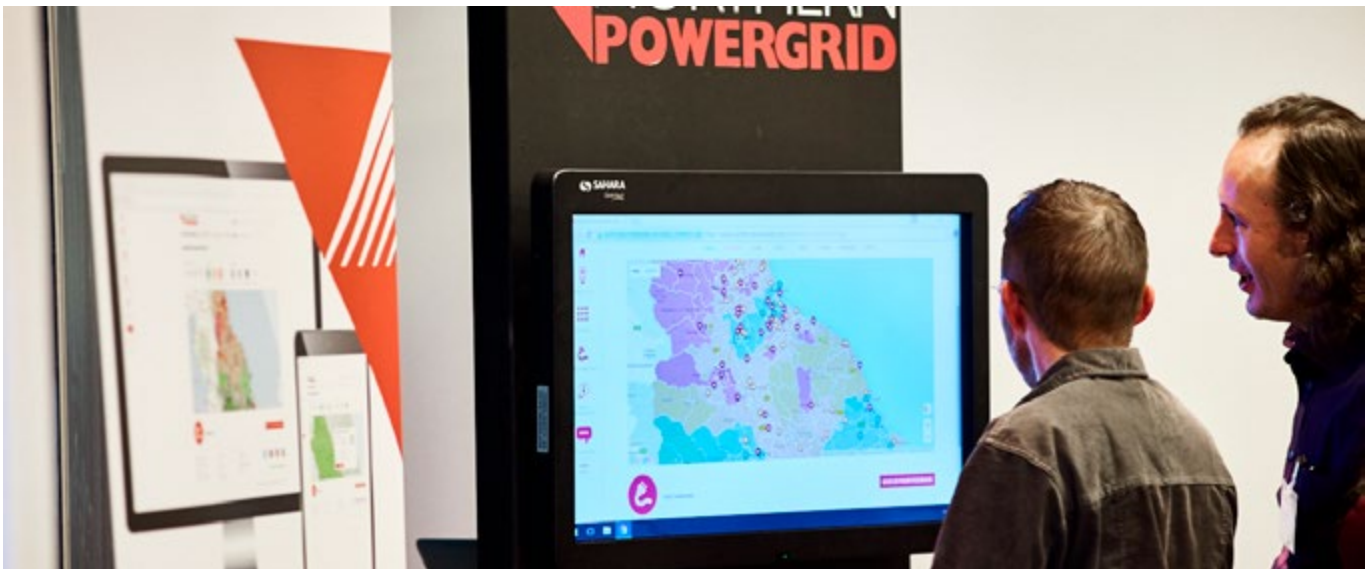
Theme	Area for improvement	Action	The outcome for customers	Status	Voltage	Relevant market segments			Target measure	Outturn	Reference
2.0 Improving our application and delivery processes	2.7 Transmission / Distribution interface	We will support the national working party on transmission processes and adopt best practice process outcomes.	Improved communication on transmission issues and support for customers through the process.	On track to revised timescale	EHV	M		DG	Progress communicated, new processes and policies implemented.	Progress communicated; action carried forward to 2017/18.	Page 61
3.0 Improving our communications	3.1 Single points of contact (key account management)	We will provide single points of contact in quotation and delivery for all connections customers.	Single points of contact in quotations and delivery for all customers.	Complete	All	M	UM	DG	% of customers issued with single points of contact.	100% of customers provided with a single point of contact.	Page 62
4.0 Technical and commercial developments	4.1 Export limiting devices	We will develop and implement policy on the use of export limiting devices for Northern Powergrid connections and communicate the policy to customers.	Ability to propose the use of export limiting devices for DG connections.	Complete	All			DG	Policy implementation and information shared.	Policy change implemented and communicated.	Page 63
	4.2 Protection policy	We will review our protection policy and confirm our position on third party witness testing.	A policy review on protection and witness testing.	Complete	All			DG	Policy review and position on witness testing confirmed.	Policy reviewed and confirmed to stakeholders.	Page 64
	4.3 Assessment & Design (A&D) fees	We will continue to support and actively engage in DECC's consultation on A&D fees and keep our customers informed of the developments. We will implement any necessary changes to our policies and processes following the outcome of the consultation.	A revised approach to A&D fees.	On track to revised timescale	All	M		DG	Progress reported, new policy and processes implemented.	Progress reported and action carried forward into 2017/18.	Page 65
	4.4 Release of unused capacity	We will continue to participate in the Ofgem Quicker More Efficient Connections (QMEC) actions being carried out by the DG-DNO steering group regarding the withdrawal of network capacity from slow moving projects. We will communicate the outcomes and implement any necessary policy and process changes resulting from these actions.	Better management of slow moving contracts to release unused capacity.	Complete	All	M		DG	Progress reported, new policy and processes implemented.	Progress reported; new policy and processes implemented.	Page 65
	4.5 Protection policy	We will review our protection policy, including the protection scheme requirements compared to the size and cost of the connection solution and advise customers our new policy.	A revised policy on protection scheme requirements.	Complete	All			DG	Policy review and information shared	Policy reviewed; change implemented and communicated.	Page 66
	4.6 Sharing our smart grid strategy	We will run a focussed session for stakeholders on Northern Powergrid's innovation strategy, incorporating storage, demand side response and active network management.	Better understanding of our innovation strategy and smart grid development plan.	Complete	All	M		DG	Information shared.	Information shared with stakeholders.	Page 66
	4.7 Active network management (ANM)	We will run a focussed session for stakeholders on active network management.	Better informed about our deployment plans for active network management.	Complete	All			DG	Information shared.	Information shared with stakeholders.	Page 66
	4.8 Contract milestones	We will continue to participate in the development of the ENA good practice guide on standard milestones for connection contracts.	Standardised milestones in DNO quotation offers.	Complete	HV EHV	M		DG	Good practice guide completed.	Good practice guide published.	Page 67

Key M Metered | UM Unmetered | DG Distributed Generation

Theme	Area for improvement	Action	The outcome for customers	Status	Voltage	Relevant market segments			Target measure	Outturn	Reference
4.0 Technical and commercial developments	4.9 Contract milestones	We will implement standard contract milestones regarding projects that fail to proceed.	Northern Powergrid standard contract milestones.	Complete	HV EHV	M		DG	Project termination milestones implemented in all (100%) of Northern Powergrid contracts.	Termination milestones included in all new contracts.	Page 67
	4.10 Capacity clawback	We will implement standard contract milestones regarding a clawback of unused capacity after a maximum build-out period.	Ability for DNOs to release unused network capacity.	Complete	All	M		DG	Build-out time limit implemented in all (100%) of Northern Powergrid contracts.	Contracts now include build-out time limits.	Page 67
	4.11 Capacity clawback	We will proactively contact HV and EHV distributed generation customers utilising less than 75% of their maximum export capacity with a view to discussing the potential of releasing unused capacity.	Ability for DNOs to release unused network capacity.	Complete	HV EHV	M		DG	All (100%) of customers in the 75% range contacted.	100% of customers using less than 75% of capacity contacted.	Page 68
	4.12 Constrained networks	We will agree actions with customers which best resolve their issues connecting to constrained networks, for implementation in 2016/17 and 2017/18.	Actions agreed to resolve constrained network issues.	Complete	HV EHV	M		DG	Necessary actions agreed with customers and improvement plan updated accordingly in Q4, 2016/17.	Issues raised by customers included in service improvement work plans where appropriate.	Page 68
	4.13 Connecting new technologies	We will run a technical workshop for stakeholders exploring all aspects of connecting storage, ANM, export limiting devices and other technical innovations.	Better understanding of the technical principles involved in connecting new technologies.	Complete	HV EHV	M		DG	Workshop delivered, number of attendees and overall satisfaction score.	Workshop attended by 22 delegates from 18 companies with 100% satisfaction score.	Page 69
5.0 Enabling competition	5.1 Part-funded reinforcement	We will run a part-funded reinforcement trial, communicate the progress and outcome to customers and post-trial consider how we can make this a business-as-usual practice.	Enable ICPs to participate in part-funded reinforcement trials.	Complete	HV LV	M		DG	Information shared and next steps considered.	Trial conducted; next steps process in place and communicated to ICPs.	Page 70
	5.2 Metered disconnections	We will design and run an ICP metered disconnections pilot.	Allow ICPs to carry out metered disconnections on brownfield sites.	Complete	HV LV	M			Pilot scheme completed and outcome reviewed.	Pilot scheme completed, outcome reviewed and communicated.	Page 71
	5.3 Metered disconnections	We will implement metered disconnections for ICPs.	Allow ICPs to carry out metered disconnections on brownfield sites.	Complete	HV LV	M			Process and policy developed and information shared.	Business process now in place.	Page 71
	5.4 ICP self-determination point of connection (POC)	We will hold a workshop and demonstration for ICPs on how to self-determine POCs.	Better understanding for ICP customers about how to self-determine POCs.	Complete	All	M	UM	DG	Workshop delivered to stakeholders.	Workshops delivered.	Page 71

Key M Metered | UM Unmetered | DG Distributed Generation

Looking Back report



1 Provision of information

1.1 Heat map updates M DG

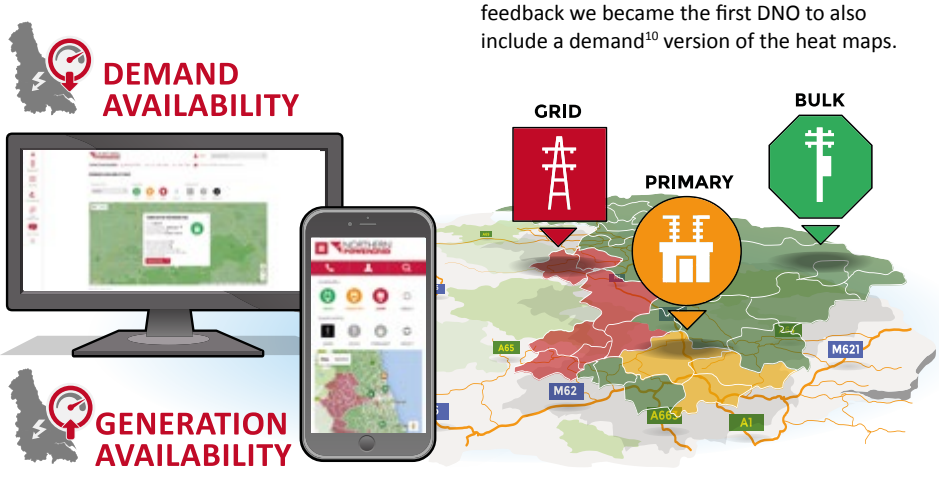
"Having a dedicated resource to update the heat maps regularly, including information regarding applications made, is something all DNOs should be seeking to emulate."

CHRIS SOWERBUTTS, BLUEBELL ENERGY, MARCH 2016

The creation of generation availability heat maps[9] was an initiative that originated from the DG-DNO steering group, in which DNOs were encouraged by the DG trade representatives to make more information about the connection capacity of distribution networks available to customers.

Northern Powergrid embraced this request and over a number of years we have developed an interactive online heat map that allows customers access to an extensive range of network information including fault levels, voltage constraints, reverse power flow capabilities, physical constraints, numbers of quoted but not accepted schemes, and numbers of accepted but not connected schemes associated with all of its primary substations.

Our customers have recognised the value of this system and following further feedback we became the first DNO to also include a demand[10] version of the heat maps.



The accuracy of the information within the heat maps is important for customers if they are to use the tool effectively. Because of the dynamic nature of connections market in that enquiries and offers are being made all of the time the information changes on a regular basis.

We understand that customers want the most accurate and up to date information available. In response to their feedback, and following a comprehensive review and assessment, where we considered six monthly and quarterly updates to our heat maps that would see us align with what others in the industry were doing, we decided that a monthly update would deliver more customer benefit and we targeted a monthly heat map data update in our ICE plan.

We made the first of our monthly updates in June 2016, in line with the forecast delivery date in our Looking Forward report. Having met the initial target we embarked upon the process and system changes necessary to embed this as business as usual. That work highlighted some weaknesses whereby the information for four of the ten months was not uploaded until the next update was made. However, we have now embedded a robust process that enables the updated heat maps to be uploaded each month. During the period when we were embedding our new process we continued to liaise with stakeholders and we do not believe that users were adversely affected in the months when the heat map update process proved problematic.

9 Generation availability heat map: www.northernpowergrid.com/generation-availability-map

10 Demand availability heat map: www.northernpowergrid.com/demand-availability-map

1.2 Connections case studies

M DG

At our Connections Customer Forum in November 2015, a customer told us they used our generation heat map to estimate the likely cost of a connection. They told us that on occasion, they were surprised to find the estimate received to connect to a substation marked green on our heat map (indicating a high level of available capacity) was higher than expected.

We understood how this might cause confusion and we wanted to do more to help customers understand the likely timescales, costs and resources required to deliver different types of connections projects. We therefore made a commitment to develop case studies on different types of HV and EHV connections projects.

We published our first two case studies in December 2016 on our website, thereby meeting the forecast delivery date in our plan. Since then we have improved our case studies, taking account of other DNOs' publications. As a result we published four further case studies based on HV and EHV demand and generation connections projects.

The additional case studies focused on the following typical connection scenarios: a large warehouse requiring a new 3MVA connection (HV); a new connection for a 3MW solar photovoltaic generation scheme (HV); a wind farm developer requiring a 20MW connection (EHV) and an educational institute requiring a new firm 35MVA demand connection (EHV). The case studies give an indication of the timescales taken to deliver each project, an overview of what was involved and a breakdown of the costs which can be used as a benchmark for similar connections projects.

On completion we published the HV[11] and EHV[12] case studies on our website and promoted them via social media.

"Thank you to Northern Powergrid for acknowledging my comments with regards to the heat maps. They have now made sure the information is being updated on the heat maps once a month. NPg have also provided examples and case studies to help customers understand various grid connection arrangements and costs. Particularly useful to the work we are currently undertaking is the EHV case study for the 20MW generator, which gives examples of the work that needs to be done for the connection including contestable and non-contestables, timescales, and costs."

ALISON CHEETHAM, CARTER JONAS LLP, CLOSING THE LOOP ACKNOWLEDGEMENT

1.3 Provision of wayleaves M DG

Customers including RES and Green Frog Connect told us they wanted to see us continue to improve our pre-construction activities. They asked for an improvement in our wayleaves delivery performance and in particular a reduction in the time it takes us to secure wayleaves.

In our 2015/16 ICE work plan we introduced a 66-working-day service standard for wayleaves and in so doing reduced our lead times. In our 2016/17 plan we made a commitment to make this information more visible by publishing quarterly statistics showing our performance against this voluntary standard.

This action was completed in accordance with our forecast and we have gone further by publishing a wayleaves performance update every month rather than every quarter. This information is available to customers on the 'how are we performing'[13] section of our website.

11 HV case studies: http://www.northernpowergrid.com/asset/0/document/3220.pdf

12 EHV case studies: http://www.northernpowergrid.com/asset/0/document/3221.pdf

13 How are we performing webpage: http://www.northernpowergrid.com/performance-dashboard/Average-time-to-complete-wayleaves-(days)/north-east-yorkshire

1.4 Keeping our stakeholders informed M UM DG

"I think you've hit all the key issues that have come up in the past, just going forward it's important for us to be kept up to date or informed of all of this."

SARAH WHITTAKER, BARNSLEY MBC, ICE WORK PLAN CONSULTATION, MARCH 2016

Following feedback from one of our unmetered connections customers who told us it was important that we continued to communicate the enhancements we are making to our connections service we committed to delivering a programme of targeted stakeholder updates on ICE. This action was completed in accordance with our forecast.

One of the ways we have achieved this is by developing and regularly updating the dedicated ICE web page[14] which is clearly signposted on our get connected website and offers stakeholders a channel to give us feedback.

In October 2016 we launched a new section on our website for stakeholders called 'Your Powergrid'[15]. Through this online hub we are publishing regular updates on our service improvement actions in short-form news articles to keep the content interesting and relevant for our customers.

These stories are being promoted through social media and e-mail marketing and this evolution in the way we communicate with our stakeholders also feeds into our pledge to keep our customers informed.

Another way we have improved our communication with customers is through our connections stakeholder newsletter. We distribute our newsletter twice per a year and it is currently sent to 5,600 connections customers (our open rate in November 2016 was 37% and the PDF newsletter was downloaded 804 times).

We run twice-yearly forums for our connections customers and ICPs; in addition to being our primary method of stakeholder engagement, these events are also where we receive some of our most valuable feedback. During our Connections Customer Forum in York in November 2016, 52 connections customers from 38 companies attended, and the feedback we received has helped us shape our 2017/18 ICE work plan.

In fulfilling our commitment we have made significant improvements to the ways in which we communicate with our stakeholders and customers but we recognise we can always do more. In line with this, this year we are launching an online version of our ICE work plan which will allow users to see how we are progressing against our work plan in real time rather than once a quarter.

14 Dedicated ICE webpage: http://www.northernpowergrid.com/incentive-connections-engagement

15 'Your Powergrid' stakeholder website: http://www.northernpowergrid.com/your-powergrid

1.5 Understanding connections jargon M UM DG

"The plans seem fairly thorough; it is just that there is a lot of technical jargon used that is not explained. Maybe you need an idiot's guide"

DANIEL ELSTON, GREEN YORKSHIRE SOLAR, CONSULTATION ON OUR 2016/17 WORK PLAN, MARCH 2016

When one of our customers, Daniel Elston of Green Yorkshire Solar, was asked if there was anything else he wanted to tell us about our 2016/17 work plan proposal, he commented that it contained a lot of technical jargon that could be confusing to anyone not familiar with the connections process.

Acting on this feedback, we committed to introduce a jargon buster[16] to help ensure that all of our communications with customers are understandable, which was launched on our website in October 2016. This provides a glossary of commonly used terminology and its primary aim is to ensure that all of our customers, whatever their level of technical knowledge or experience, can decipher common industry terminology and acronyms to understand the service improvements we are making.

We developed the content for our jargon buster in collaboration with other DNOs through the ICE best practice working group. Established in 2016, this is a network of DNO managers responsible for delivering their respective ICE programme. The group meets quarterly to share best practice and look for collaborative opportunities.

We finalised the jargon buster in line with our forecast delivery date of the end of September 2016 but it was not uploaded to our website by our IT service provider until the first working day in October. We do not think that any stakeholders were adversely affected by the jargon buster not being available over that weekend.

1.6 Contracted capacity register M DG

"We are pleased that Northern Powergrid acted upon our feedback to update generator contracted capacity information on a monthly basis, in addition to heat maps. When contacted by NPg to be told that our feedback had yielded positive change I gave additional feedback on the way this information was being presented – which was acted upon very quickly to get an even better result."

NICOLA PERCIVAL, INNOGY RENEWABLES UK LTD, CLOSING THE LOOP ACKNOWLEDGEMENT

Our customers commended the commitment we made in our 2016/17 ICE work plan to update our generation and demand heat maps on a more frequent basis, but during the year they asked us to make updates to our contracted capacity register in a similar timescale. We therefore added a new commitment to our work plan in October 2016 to start work on this in January 2017 so that we were updating the data every month from the year end.

The contracted capacity register is a tool that provides useful information for developers on the number and status of other projects in an area.

It provides information on connections that have been quoted but not accepted and quotations that have been accepted but not yet constructed. It is one of a number of tools we have made available to our customers to help them understand what potential spare capacity is available on our network.

All of the information within the capacity register remains anonymous to protect the privacy of our customers.

We commenced work on this in January 2017 as we had forecast. Starting from the new ICE plan year we are now updating the register on a monthly basis.

16 Online jargon buster: www.northernpowergrid.com/jargon-buster

2 Improving our application and delivery process

2.1 ICP design approvals M DG

"Approval completed by different departments, particularly in regards to civil works" and; "Post acceptance, pre-construction activity. Improved design approval, civil works in particular and wayleave processes."

HUW CROCOMBE, GREEN FROG CONNECT, CONNECTIONS CUSTOMER FORUM WORKSHOP, NOVEMBER 2015

During a Connections Customer Forum in 2015, customers, in particular Lightsource and Green Frog Connect, advised us that they would value a quicker and more straightforward design approval for ICPs that were relying on us to approve their designs. They highlighted complexities with approvals, which were completed by different departments, as well as a range of other valuable points of feedback for these services.

As a direct result of this direct customer feedback, we committed to review our processes and improve the approvals process to provide ICPs with a clearer and more timely response to design submissions.

It was important during this review that we considered all elements of the connections works that require design approval, as it is important that ICPs receive a clear understanding which of these elements have received approval and which require further attention with an understanding of the aspects still to be resolved.

To this end we have created a design approval process which documents all of the principal activities that require approval and within ten days we are able to respond to the ICP with the document where all of the individual approvals are noted. Where it has not been possible to grant approval, we identify the aspects that are required to be resolved. In re-submitting the design, the ICP can then use this document to provide comments on how they addressed the issue. This action was completed in accordance with our forecast.

Using this new process we can provide the necessary input service in a way that is most helpful to the ICP that needs us to approve its designs whilst minimising our involvement and making the interaction as quick and efficient as possible. At our dedicated ICP Forum in November 2016 we shared our solution which was very well received by the ICPs who attended.

2.2 Standard templates for ICP designs M DG

"Guaranteed standards on post acceptance information, harmonics etc."

NICK GUDGEON, LIGHTSOURCE, CONNECTIONS CUSTOMER FORUM WORKSHOP, NOVEMBER 2015

Following direct feedback from our customer Lightsource, we included a further action in our 2016/17 work plan to improve the speed of the design approvals process by the use of pre-approved elements of the design, developing standard configuration templates for elements such as protection and civil elements of the work.

Pre-approving elements of the design by adopting standard template designs that ICPs can use consistently for similar types of jobs means that we are able to reduce significantly the time taken for approvals as it is necessary only to approve the designs once following which an ICP can then simply make reference to them being used in future schemes without the need for further approval to be granted.

We worked collaboratively with ICPs to produce an approved set of standard template designs for 11kV, 20kV and 33kV connections. This action was completed earlier than forecast and the templates made available on our Competition in Connections web page[17] for all ICPs to benefit from.

To communicate this change in process we sent a brief to our ICP customers notifying them about the new process and communicated it again in person during an ICP forum we hosted in November 2016.

Alongside these improvements we are now currently working on a new 66kV standard template design, which is over and above our original commitment, but something we think will significantly benefit ICPs and EHV customers.

2.3 Faster ICP quotations M DG

"If I have a development, lots of ICPs might quote for the work. Can you make your quote for the non-contestable part of the work available to any ICP who wants it instead of re-doing it? This would make whole process of Redrow getting quotes more efficient."

ANDREW CALVERT, REDROW HOMES, STAKEHOLDER PANEL, JANUARY 2016

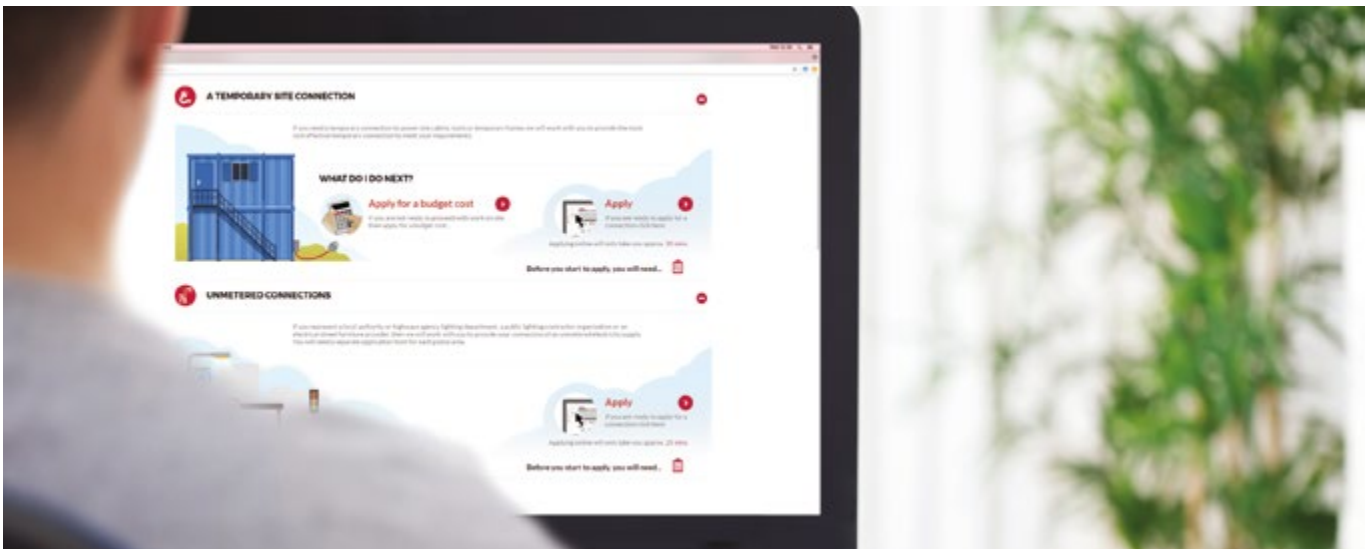
Through on-going dialogue with our stakeholders we were aware that a number of ICPs often quote for the same connections work – this could be a connection for a new housing development for instance. Customers from Redrow Homes and Lark Energy Commercial informed us that it would be quicker and more efficient for them if we could make the quotation for the non-contestable part of the work available to any ICP that requests it.

Having considered the benefits this change could have for our customers, we added an action to our 2016/17 ICE work plan to reissue our quotations to any ICP that requests it, so long as the initial quotation remains valid, the point of connection is still available and the capacity requested is consistent with the initial quotation, and they have the appropriate authority to make such a request.

This action was completed in accordance with our forecast, with a process now in place that, dependant on all of the connection factors being the same and the capacity still being available, the non-contestable work for a connection can be replicated into a new quotation for another ICP. This process speeds up the preparation time for the quotation as the design engineer is validating a previously designed scheme rather than designing the connection from the start.

To further improve timescales, when a customer asks for a quotation to be re-issued when it has reached the end of its validity period, we are now targeting a reduction in timescale from 20 or 15 days to a maximum of 10 days, enabling us to respond more quickly to any customer who wishes to proceed with the connection offer.

17 Competition in Connections website: www.northernpowergrid.com/get-connected/competition-in-connections



CUSTOMERS CAN NOW APPLY FOR A TEMPORARY SITE SUPPLY ONLINE

2.4 Applying for a separate temporary site supply M DG

"A temporary builders only application - like UKPN and others."

DANIEL SAUNDERS ISG PLC, VIA OUR CONTACT CENTRE, MARCH 2016

A customer from the construction services company ISG contacted our call centre asking how to apply for a temporary site supply and during the call he asked if we offered temporary 'builders only' applications.

Previously, a temporary site supply could be applied for only as part of a full connection application, so we gave a commitment in our work plan to implement changes to our application process that would make it quicker and easier for customers to apply for a temporary connection.

We achieved this by launching a new online service in January 2017, allowing our customers to apply for a separate temporary site supply, thus bypassing the need to complete a full connections application. Customers requiring a temporary site supply can now submit their request online which can now be accessed via our 'apply for a connection' option on our get connected webpage[18].

Whilst we are still very happy to speak to customers and manage temporary site supply applications through our contact centre, introducing an online application gives our customers greater choice and flexibility and has helped to simplify and speed up the application process.

We forecast that this change would be made by the end of December 2016, and we were ready to make the change in December. For reasons of IT system security, we put a freeze on website releases over the Christmas period and we made the change in early January. The Christmas period is traditionally a quiet period in the construction industry and we did not think that any stakeholders would be adversely affected by the very slight delay – a period of six working days – from December to early January.

To date, 72 customers have benefited from the improvement and we are continuing to promote the online application facility to our customers through a range of communication channels.

2.5 Public street lighting UM

Following feedback from Local Authority and PLA contacts, we gave a commitment in our 2016/17 work plan to work with Kirklees Council to demonstrate that we can work closely together and coordinate our resources in the case of knocked down street lamps for the council to attend site and replace the lamp and for Northern Powergrid to attend at the same time to re-service the lamp.

This action was completed earlier than forecast. We carried out a five month trial with Kirklees Council between July and November 2016. This trial aimed to improve the turnaround of accidently damaged or knocked down street lamp columns resulting in cost benefits and improved customer service. The scope of the trial period, included all 'knock down' columns reported during normal weekday working hours and aimed to deliver same day column replacement and connection.

During the trial, there were 26 reported instances of public street lighting columns being knocked down in the Kirklees area; 14 of which were reported outside normal working hours and as Kirklees council were unable to facilitate an out of hour's resource these were unable to be included in the trial.

Two knocked down columns within the scope of the trial were successfully replaced and connected on the same day. For the remaining ten, Kirklees council were unable to facilitate the same day column replacement due to resource constraints. However, through the work that we managed to complete we proved that with the correct levels of resource it is possible for us to work together with street lighting authorities to significantly improve 'knock down' replacement performance.

Although Kirklees council have decided not to progress the trial into business as usual operations we now continue to work together to prioritise delivery timescales following road traffic accidents. We have gained valuable experience from operating the trial and we continue to be available to Local Authorities to develop this process further should they require it in the future.

18 Apply for a temporary site supply at: https://myservices.northernpowergrid.com/connections/index.cfm?som_event=general.index&som_path=/connections/index.cfm

2.6 Converting budget estimates into firm quotations M UM DG

"The process would be great if it could be sped up when you do apply, you can apply for an estimate which takes a while, and then you have got to get a quote and have to wait again for an even longer period. It would be better if that could all be made more efficient, just so that you're not repeating the same information to people."

ANDREW RODGERS, AK SERVICES, CONSULTATION ON OUR 2016/17 ICE PLAN, MARCH 2016

Following feedback from Andrew Rodgers of AK Services, an electrical maintenance and inspections business, we committed to improve the process of converting a budget estimate into a formal quote.

They told us that when they seek a budget estimate and then decide to proceed to a firm quotation, they were often required to repeat information that had already been supplied. Our team took this feedback on board and looked at how we could improve our processes to make it quicker and easier for customers to proceed from a budget estimate to a firm quotation.

Previously, when customers received an estimate they were happy with, they were then required to fill in another application form for a firm quotation. We identified the potential to change our budget estimate letters in order to make the application process easier for all our connections customers requesting firm quotations and, in December 2016, we finalised an improvement that facilitated this. This action was completed in accordance with our forecast. In delivering this improvement we have made the process quicker and easier, achieving the target outcome.

Upon receiving the budget estimate letter, customers that want to proceed and receive a firm quotation can now simply tear-off a return slip attached to the letter and return it to us in order to request a firm quotation. Our connections team now take care of everything else for the customer, making it quicker for them to receive a follow on firm quotation.

2.7 T/D interface M DG

"As per last year, I would have supported a continued commitment to improve communication of transmission issues and to improve support to customers through relevant process (SoW or its daughter)."

GRAHAM PANNELL, RES, OFGEM'S CONSULTATION ON DNOS' ICE PLANS, AUGUST 2016

Dr Graham Pannell's comments are very representative of the industry and we thought it important to give a commitment in our 2016/17 work plan to support the national working party and help improve the T/D interface to better support customers.

Constraints on the National Grid transmission network can significantly impact the viability of any proposed project and therefore the process to understand and quantify these impacts is important. The national working party, led by National Grid, is reviewing a new 'Statement of Works' (SoW) process to provide DNOs with more upfront information on levels of constraints, however, the work of the group is currently on-going.

The SoW process occurs when a connection may have an effect on the transmission network and National Grid needs to be advised. We therefore committed to introduce the ability to shortcut the SoW process and move straight to the modification application (Mod App) stage where necessary, following the acceptance of a quotation. We have already made appropriate changes to our own post-acceptance process and this allows us to enter into discussions with National Grid earlier, potentially reducing our customers' project timescales by three months, the minimum time it can take for the SoW process. This change may also benefit our customers by reducing the overall cost of their connection.

Where multiple customers within one GSP group (the connection point between us and National Grid) require a SoW, we are now able to initially submit a single SoW request to National Grid covering all of those customers rather than making individual requests, which benefits our customers by speeding up the entire process.

In the summer of 2016, we also introduced a SoW indicator to our generation heat maps, which now gives an indication of the remaining capacity at any substation before a SoW will be required from National Grid.

The level of SoW requests in Northern Powergrid's region has not been significantly high, however, the number is increasing and we are keen to ensure that our customers receive a good quality service. Trials of the newly proposed SoW and Mod App processes have been running for the last 12 months in other DNOs where constraints are more prevalent than they are in our region, and we are expecting to see results from these trials towards the end of 2017.

Although there are no trial areas within our region, we have been involved in the development of the new processes through the national working group and we have also been looking at other ways to improve the customer experience when their connection might involve a SoW request. We have kept our customers updated on all of these developments by sharing the outcomes of the group at our engagement forums.

We will continue to play an active role in the national working group and following the conclusion of the aforementioned trials later this year, we will adopt any best practice guidance or policy changes that are in the best interests of our customers. This action remains a valid action and is therefore carried forward into our 2017/18 work plan.

3 Improving our communications

3.1 Single points of contact

M UM DG

"Just continue with the single point of contact as they were very proactive and fabulous and helped us enormously to get the information needed for the job."

JANE MILLER, MILLER PARTNERSHIP ARCHITECTS LTD, CONSULTATION ON OUR LOOKING BACK WORK PLAN, APRIL 2017

"I been dealing with them for over 20 years and I have a close relationship with them and a lot of those things have been improved over the years already."

ROBIN HERBERT, BROADOAK CONSULTANTS, CONSULTATION ON OUR LOOKING BACK WORK PLAN, APRIL 2017

A number of our connections customers had requested a single point of contact to guide them through the quotations and delivery process when applying for a connection. Customers said that providing context on their request to a different engineer each time they got in touch with us for an update on their application was time intensive, and they wanted to have a dedicated individual who they could liaise with. This was particularly important for our major works customers whose connections can often be more complex than smaller works customers.

We have embarked on a significant transformation programme within our connections business, driven by our aim to put the customer at the centre of everything we do, and the request for a single point of contact has been an integral part of this. The improvement was added as an action to our 2016/17 ICE work plan and we have now introduced single points of contact in quotations and delivery for all our connections customers. This action was completed in accordance with our forecast.

A single point of contact is now assigned when we receive an enquiry for connection quotations. The single point of contact acts as a customer's designated advocate within Northern Powergrid and oversee any interactions with other departments during the quotation process (such as a wayleaves application). They are also on-hand whenever a customer has a question or simply wants to find out what stage their application has reached.

If a customer accepts the quotation we provide, a handover is then made to a project engineer who is accountable for the delivery of their connection and who will support the customer throughout the delivery phase. The customer is always told who is looking after their project and introductions are routinely made to ensure the customer has a direct line into the connections team, should they need to speak with us.

From December 2016 a named design engineer has been identified in all our offers to provide a connection, thereby delivering this commitment by the date forecast in our ICE plan. Since then we have built on this approach, providing an enhanced service through the use of the named key account managers. This change was made to improve the overall connection experience for our customers and, as a result, 100% of Northern Powergrid connections customers are now provided with a named single point of contact.

IAN REYNOLDS OF BOSTON RENEWABLES ATTENDED OUR CONNECTIONS CUSTOMER FORUM IN NOVEMBER 2016 WHERE WE PRESENTED OUR REVISED PROTECTION POLICY

4 Technical and commercial development

4.1 Export limiting schemes DG

"I would like an update on your position regarding the control of renewable energy installations in terms of export capacity. Currently we do not appear to be allowed to install a system larger than the network could manage at maximum output conditions and no self-use. We would like to offer this to our clients as soon as practicable."

IAN REYNOLDS, BOSTON RENEWABLES, ASK AN EXPERT ENQUIRY, DECEMBER 2015

Acting on the comment from Ian Reynolds of Boston Renewables and the work we were involved in nationally, we made a commitment in our work plan to review our policy on the use of export limiting schemes.

An export limiting device is a system that can be installed to manage the output of a generator to ensure it does not exceed an agreed limit. Other customers had also raised this issue and we were already participating in a national working group to develop a GB standard solution for export limiting schemes. Based on customer feedback, after a full review in 2016, we revised our policy in advance of the national working group completing its work and decided to allow the use of export limiting schemes on our network. This action was completed in accordance with our forecast.

From domestic to high voltage, all of our customers now have the ability to propose the use of export limiting devices for DG connections.

The revised policy was published on our website, along with a series of FAQs[19] explaining why and how customers might use export limiting schemes. This outcome was communicated for the first time at our Connections Customer Forum in May 2016 and our team also highlighted it as an example of how we are acting on customer feedback at our ICP Forum in October 2016, our Connections Customer Forum in November 2016, and in our stakeholder newsletter. Connecting export limiting schemes was also covered at our connecting innovative technologies workshop on 1 March, 2017.

Following the publication of Engineering Recommendation G100 – Technical Guidance for Customer Export Limiting Schemes – we now accept schemes that comply with either our original policy or the new national document.

19 https://www.northernpowergrid.com/help-and-information/getconnected/what-is-your-policy-on-export-limitation-schemes/where-can-i-get-a-copy-of-your-code-of-practice-for-export-limitation-schemes

4.2 Protection policy and witness testing DG

"UKPN, SSE + WPD much more flexible about witness test requirements on smaller scale generation projects (<200kW). SSE have 'preferred installer' DB where once they have tested a few and sure of competence don't require WT except on major HV / utility scale projects in MW (as opposed to up to 250kW). Think this is good idea."

RACHEL WOOD, LARK ENERGY COMMERCIAL, CONNECTIONS CUSTOMER FORUM, NOVEMBER 2015

During one of our Customer Connections Forums in November 2015, Rachel Wood from Lark Energy Commercial asked us whether we could be more flexible in our approach to witness testing for small-scale generation projects and permit third parties to act on behalf of the DNO to carry out the witness testing. We therefore committed to a full review of our protection policy and witness testing procedures in order to fully address the customers comment. This action was completed in accordance with our forecast.

Witness testing is the process whereby our engineers meet with our connection customers and observe the protection systems associated with their on-site generators. Commissioning engineers working on behalf of the customer will typically test the system with our engineers in attendance so we can observe and ensure that the generator is operating correctly.

Following a comprehensive review of our policy[20], we reached the conclusion that it would not be possible for us to allow third parties to carry out witness testing on our behalf. Our current policy for witness testing is in line with national guidance as documented in G59/3-2 2015.

Our team presented the findings of this review at our Connections Customer Forum in November 2016 and answered questions from delegates to reaffirm how and why this decision was reached. This presentation was also published on our website to be fully accessible for any of our connections customers that want to look through the findings in further detail.

We will continue to review the policy every three years in line with our internal policies and will also re-evaluate on an ad hoc basis if there are any significant changes in best practice guidance for the industry.

JIM PAINE, TECHNICAL POLICY MANAGER, TALKS TO CUSTOMERS AT OUR CONNECTIONS CUSTOMER FORUM IN NOVEMBER ABOUT OUR PROTECTION POLICY

20 Northern Powergrid protection policy: http://www.northernpowergrid.com/asset/0/document/2741.pdf

4.3 A&D fees M DG

"Waiving A&D fees – Consultation required."

CARLY BRADBURN, POWER ON CONNECTIONS, CONNECTIONS CUSTOMER FORUM, NOVEMBER 2015

The review and reintroduction of A&D fees for quotations is a subject that been dealt with via a national working party for a number of years and Northern Powergrid has taken an active role in its development as we believe this is important if we are to treat all applicants for a connection fairly.

DNOs are legally obliged to provide a connection offer to any owner or occupier of premises who makes a valid application. Connections applications are currently free of upfront charges for customers.

The absence of A&D fees means that the cost of the design work falls to the wrong customers, i.e. those customers whose applications go ahead also fund the cost of designs for those customers whose applications do not, which is unfair.

In addition, the absence of fees does nothing to defer multiple and repeat speculative connection applications, which divert DNO resources away from progressing applications for connections that are more likely to go ahead.

We recognise that A&D fees continue to be an important issue for our customers and we have played a significant role in the on-going national debate on the topic, launched by DECC's call for evidence on 24 March 2016, seeking responses by May 2016[21].

Customers told us that we should continue to contribute to the debate and keep our customers informed of any significant developments and outcomes. The issue was also identified as an important and ongoing issue by Dr Graham Pannell of RES at the DG-DNO Fora in September 2016.

In recognition of this and the national call for evidence, we included a commitment in our 2016/17 ICE work plan to continue to support the consultation; to encourage our stakeholders and customers to contribute and to implement any necessary changes to our policies and practices on conclusion of the debate.

Northern Powergrid has played and continues to play an active role in the national consultation on A&D fees, which is now being led by BEIS. We have continued to engage with and support BEIS on the issue, in the same way we supported DECC previously.

We have kept our stakeholders informed about our engagement with BEIS and the consultation on A&D fees throughout this period with updates at our Connections Customer Forums.

In January 2017, BEIS confirmed it would continue the work on A&D fees started by DECC. BEIS confirmed it would be issuing an industry-wide consultation on the draft regulations with a view to implementing these, subject to the necessary drafting and governmental approvals, by October 2017.

Whilst we have been able to deliver on the first part of our commitment to engage with DECC/BEIS and keep our customers informed, BEIS is yet to conclude its consultation or consult on the draft regulations. As a result, we will not change any of our policies or practices until the BEIS consultation has concluded and the implementation of new regulations has been recommended.

We consider the discussion around A&D fees to be an important industry issue which, when resolved, will more properly allocate costs between applicants and, if the number of speculative applications reduces, would free up valuable resources that could be deployed elsewhere for the benefit of connections customers. Because of this, we have carried this action forward into our 2017/18 ICE work plan and are reaffirming our commitment to support BEIS's work on A&D fees.

At the time of writing and due to the general election called in April 2017, BEIS has delayed some of its work on this topic until after the election. We will continue to keep our stakeholders informed of the progress on this as well as the outcomes of the debate by utilising the range of communications channels at our disposal.

21 A merger between the Department of Energy and Climate Change and the Department for Business, Innovation and Skills on 14 July 2016 created a new government department – The Department for Business, Energy and Industrial Strategy (BEIS). BEIS have taken forward the original DECC request for evidence on A&D fees.

4.4 Quicker More Efficient Connections M DG

"For all DNOs we have looked for proactive work in relation to releasing unused capacity. We strongly welcome NPg's recognition of this issue. We look forward to supporting NPg where we can, and hope NPg can also learn from other DNOs on this issue, for example from WPD's experiences in setting milestone targets within a connection offer."

DR GRAHAM PANNELL, RES, OFGEM CONSULTATION ON DNOS' ICE SUBMISSIONS, SUMMER 2015

Customers told us they supported a previous commitment to proactively identify and unlock underutilised capacity from our connected customers; however, they wanted us to continue pushing for unused capacity held within slow moving contracts to be released and made available to the wider market.

On our network there are instances where some customers are sterilising network capacity by either not progressing their projects to completion, or by reserving more capacity than they actually need. Within the traditional form of contracts, DNOs have no discretionary power to take action to ensure that customers release unused capacity but there is a national drive to secure the withdrawal of network capacity from slow moving projects, which is being led by the DG-DNO steering group as part of Ofgem's QMEC initiative.

Within our 2016/17 ICE work plan we made a commitment to continue to participate in the actions being driven by the DG-DNO steering group in respect of QMEC and we have played and continue to play a very active role in the drive to change the working practices of all DNOs across GB networks.

We also outlined our intention to communicate any outcomes to our customers and implement any necessary process or policy changes resulting from these actions that would facilitate better management of slow moving contracts to release unused capacity. This action was completed in accordance with our forecast. In October 2016 we added further actions to our work plan to address recommendations originating from QMEC and in each case we have delivered upon these commitments;

- contribute to the ENA best practice guide on fair contract milestones;
- implement standard contract milestones into connection offers;
- implement standard contract milestones to recover capacity from projects after a maximum build-out period, and;
- proactively contact all EHV and HV customers utilising less than 75% of their maximum export capability.

4.5 Protection policy and small-scale connections DG

"We would like NPg to review its protection policy with regards to all DG connections to ensure the obligations on new connectees remain proportionate and facilitate lowest-cost connection solutions, in light of the increasing need to actively manage the output of new generation."

DR GRAHAM PANNELL, RES, OFGEM CONSULTATION ON DNOS' ICE SUBMISSIONS, SUMMER 2015

A critical part of our commitment to on-going connections service improvements is Ofgem's stakeholder consultation, whereby a range of customers are asked to provide feedback on ICE submissions from all DNOs. It was during this consultation that Dr Graham Pannell commented on the complexity of our protection schemes in relation to small-scale connections, raising a concern that the cost of compliance could make some schemes commercially unviable.

This feedback highlighted an opportunity for us to review our protection policy to see if we could ensure that our compliance fees remained proportionate with the size and cost of the proposed connection. We therefore made a commitment in our 2016/17 ICE work plan to review our protection policies, including our protection scheme requirements, against the size and cost of the connection solution and to advise our customers of any subsequent policy revisions.

When an application to connect generation to our network is received, it is our responsibility to ensure that the local network can accept the electricity generated and continue to operate safely and securely within specified legal parameters. Following a detailed end-to-end review of the overarching protection policy that govern all of our connections applications, we published our revised policy on our website that is now less complex for our customers and also provides the vast majority of them with more cost-effective connection solutions. This action was completed earlier than forecast.

Our senior protection and technical services manager also presented the revised policy changes at our Connections Customer Forum in November 2016 and answered questions from the delegates who attended.

4.6 Sharing our innovation and smart grid strategy M DG

"I would like a better understanding/ links to NPg's innovation strategy. Growth will come from deployment of new technologies like storage and DSR. Would be interested in collaborating with NPg on this."

PATRICK SMART, RES, STAKEHOLDER PANEL, JANUARY 2016

PATRICK SMART FROM RES ATTENDED OUR CONNECTIONS CUSTOMER FORUM IN MAY TO LEARN MORE ABOUT OUR INNOVATION STRATEGY

At the meeting of our Stakeholder Engagement Panel in January 2016 we discussed our 2016/17 work plan proposal and asked the members for feedback and further ideas. During this session, Patrick Smart of RES told us he would like to know more about our innovation strategy, particularly regarding energy storage and demand-side response.

Acting on this feedback, we committed to running a focused stakeholder session on our innovation strategy, incorporating storage, demand side response and ANM. This action was completed earlier than forecast.

A session was held at our Connections Customer Forum in May 2016. In total, 43 customers from 27 companies attended and our Head of Trading and Innovation, Jim Cardwell, presented our innovation strategy, discussing the drivers for innovation, our smart grid development plans and how it was relevant for our stakeholders. Following the event, we sent an email follow-up to all delegates with a link to the slides presented and posted the information on our website.

Building on our commitment we have continued to engage with stakeholders and communicate our innovation strategy throughout the course of year and in October 2016, we presented our innovation portfolio of projects at the Low Carbon Network (LCN) Conference in Manchester.

We delivered two events, together with the ENA, Regen SW, Community Energy England and other DNOs, looking at how network operators can work better with community energy groups to deliver innovative projects; the outputs of which was a new energy guide for stakeholders. At our Autumn Connections Customer Forum in November 2016, we ran a session on innovation and in March 2017, we ran a workshop on connecting innovative technologies where Mark Nicholson, Head of Smart Grid Impementation, set out our smart grid evolution and deployment plans.

We have added a new theme and actions to this year's ICE plan that recognise the importance we and our customers place on innovation.

4.7 Sharing our plans for ANM DG

"Need actions relating to the roll out of ANM (only got as far as making offers in 2015-16)."

GUNTHER WOLTRON, BIO4GAS, CONNECTIONS CUSTOMER FORUM, NOVEMBER 2015

At our Connections Customer Forum in November 2015, a customer from Bio4Gas asked us to provide more information on our plans to roll out of ANM solutions across our network. We acted on this feedback and committed to run a focused stakeholder session on ANM. This action was completed earlier than forecast.

In May 2016 we held a focussed session on ANM at our Connection Customer Forum. In total, more than 43 customers from 27 different companies attended the forum, including the customer that made the original request for more information on the roll out of ANM.

ANM is a relatively new and fast moving aspect of network management, which allows us to control the output from an installation at times of peak generation and low network demand, or when the network is operating abnormally and the amount of generation needs to be reduced. In our 2015/16 ICE plan, we committed to help more customers connect to our network by developing ANM connections service offers.

Since our ANM solution was deployed in Driffield, we have kept customers informed, with updates given at workshops, via webinars, during our engagement events and at our Stakeholder Panel meetings. FAQs[22] are also available on the Northern Powergrid website so that customers have a clear understanding of what constitutes an ANM connection and how to apply. The processes and systems deployed for our first Driffield ANM solution can be scaled up and replicated across our network as necessary.

ANM was on the agenda at our Connections Customer Forums and in response to our customers' requests; we ran a targeted workshop on connecting innovative technologies in March 2017, which also focused on ANM.

22 ANM FAQs: https://www.northernpowergrid.com/help-and-information/getconnected/what-is-an-active-network-management-connection

4.8 Best practice guide on milestones M DG

As part of Ofgem's QMEC initiative, the DNO steering group was asked to develop a best practice approach on queue management connection milestones for DNOs. The intention of this was to develop an agreed way of working in collaboration with the industry – something that would help define reasonable timescales for customers to develop their connections projects and help ensure efficient allocation and use of network capacity by customers.

We committed to participating in the development of the guide and following several months of collaborative work, the guide entitled 'Fair and Effective Management of DNO Connection Queues: Progression Milestones Best Practice Guide'[23] was published on the ENA website in November 2016. This action was completed earlier than forecast. The milestones contained within the guide were developed with the support of the ENA and the DG-DNO steering group and were subject to wider consultation with stakeholders.

We have since implemented these construction milestones within our connections offers as part of another action within our work plan.

4.9 Contract milestones M DG

Following on from the development of the best practice guide, we made a commitment to implement the standard contract milestones relating to projects that fail to proceed. We set ourselves a target to have project termination milestones implemented in 100% of Northern Powergrid connections contracts by March 2017. This action was completed in accordance with our forecast.

This target was in line with best practice recommendations from the ENA for all DNOs and extensive consultation with stakeholders both at a national and local level. In order to activate this change, we amended our terms and conditions and briefed our staff on the changes. We also briefed our customers at our Connections Customer Forums and at our technical workshop.

Since the end of March 2017 all Northern Powergrid contracts have included these new terms and conditions and our staff are fully aware of the changes. We will continue to engage with our customers on the matter in order to maintain a strong understanding of their experiences as well as any related issues arising, and we will take further action if and when and it is required.

4.10 Capacity clawback M DG

We also made a commitment to implement contract milestones to allow capacity to be recovered on projects where we believed there may be unused capacity following the energisation of a connection.

There are instances where some customers do not use all of their contracted capacity and on energisation of the connection do not see fit to release it back to the network for other customers to use. By introducing appropriate milestones within our contracts reflecting how long after energisation the customer has to install all of the plant and equipment and take up all of their contracted capacity, gives us the ability to free up underutilised network capacity for use by other Northern Powergrid customers.

We set ourselves a target to have a build-out time limit implemented in 100% of future Northern Powergrid connections contracts by March 2017. This action was completed in accordance with our forecast. The limits included in our contracts are in line with the best practice recommendations emerging from the ENA for all DNOs. The threshold for this was set at 18 months across all customers from the point that a connection is first energised.

Our terms and conditions were updated to reflect the changes and we briefed stakeholders at our Connections Customer Forums and at our technical workshop on what this could mean. Since the end of March 2017, all Northern Powergrid contracts have included new standard contract milestone terms and conditions.

23 Best practice guide http://www.energynetworks.org/assets/files/news/publications/Reports/ENA%20Milestones%20best%20Practice%20Guide.pdf

4.11 Customers utilising less that 75% of capacity M DG

Ofgem had requested the development of initiatives by DNOs that could withdraw capacity from projects where it was not being fully utilised as part of its QMEC consultation.

Northern Powergrid has taken a proactive approach to addressing this issue and we included relevant commitments in our previous ICE plans. In October 2016, we added a commitment to proactively contact customers utilising less than 75% of their maximum export capacity to discuss the possibility of them releasing any unused capacity.

"It was reassuring to see a commitment to freeing up capacity that was being held by projects that have no prospect of proceeding. By being firm and consistent on this the connections community will benefit from greater certainty. Thanks for an interesting event!"

SIMON HOLT, REG POWER MANAGEMENT, CONNECTIONS CUSTOMER FORUM, NOVEMBER 2016

We identified a total of 170 demand and generation customers – which represents 100% of our HV and EHV customers utilising less than 75% of the export capacity – and approached them about releasing capacity. This action was completed in accordance with our forecast. We have worked hard to make this possible through new processes and internal systems that we have introduced, which ensure that we can closely monitor the situation for our customers with fresh data being analysed each month.

Of the 170 approaches we made, in 79 instances, through discussions with our customers we were able to release capacity or understand and resolve why the capacity was being underutilised. This process continues as a business as usual practice for us and we will report our success rates back via the DG-DNO steering group and Ofgem to help shape future best practice guidance on the issue.

4.12 Consulting with customers on constrained networks M DG

In the update we made to our work plan in October 2016, we said we would work with our customers to better understand any issues they have experienced with constrained networks in the Northern Powergrid region. In line with Ofgem's expectation that DNOs should make every effort to engage with customers and develop solutions to help overcome any challenges they face, we said that we would consult with our customers to better understand their experiences of connecting to the Northern Powergrid network and where necessary develop innovative solutions that would address these issues.

We have previously identified four areas of constraint on our network and have implemented innovative flexible solutions that mean generators can connect without having to pay for upstream reinforcement costs. We currently have about 700MW of actively managed solutions connected to our network.

Ofgem's consultation on constrained networks in March 2016, generated very little feedback from stakeholders relating specifically to Northern Powergrid, and so in our October 2016 ICE mid-year review we made a commitment to conduct our own consultation with our customers to better understand any issues they face when connecting to our network. We issued the consultation on 1 February, 2017, it was targeted at 224 HV and EHV generation and energy storage customers who we thought would be most interested in this issue.

The response was good with 44% of those contacted reading the email and our consultation document was viewed more than 30 times. We also contacted all the members of the DG-DNO Steering Group to ask them for their views. We invited all of them to take part in a roundtable discussion with the opportunity to explore the issues raised in more detail.

In total we received seven responses, which we published as part of our consultation outcome document, and in line with the commitment we made in our ICE submission. Respondents also took part in roundtable discussions at an event on 1 March 2017. Our Northern Powergrid consultation outcome document, which included a series of proposals and actions for our 2017/18 ICE plan designed to address our customers' feedback, was published on our website[24]. This action was completed in accordance with our forecast.

We also contributed to Ofgem's 'Unlocking the capacity of electricity networks[25]' consultation and when the document was published, reviewed it to understand our regulator's recommendations and any additional actions arising.

The results from our consultation have given us confidence that our customers are satisfied with the way we are managing network constraints and reinforce our view that they are not experiencing any significant barriers connecting to our network. We will continue to maintain a watching brief on the issue and monitor and learn from other DNOs tackling the issue of constrained networks. We are also committed to engaging with our customers on the topic at regular intervals and listening to their feedback, and we will act on that feedback when there is a clear customer benefit.

24 Outcome of Northern Powergrid's consultation on addressing network constraints: http://www.northernpowergrid.com/asset/0/document/3255.pdf

25 Unlocking the capacity of electricity networks https://www.ofgem.gov.uk/publications-and-updates/unlocking-capacity-electricity-networks-overview

4.13 Connecting innovative technologies workshop M DG

With the technological landscape developing and evolving all the time, we acknowledge the importance of being able to adapt our services, processes and policies to help our customers connect new and emerging technologies to our network.

Applications to connect innovative technologies to our network increased by 80% in 2016/17, with this is mind, we committed to run a technical workshop for our stakeholders exploring all aspects of connecting innovative technologies including energy storage, ANM, export limiting devices and other technologies to our network.

We appreciate the importance of having on-going and open dialogue with our customers about emerging technologies and our adoption policies; and with this in mind, we invited stakeholders to a technical workshop in March 2017. This event was an open discussion designed to help our customers better understand the technical principles involved in connecting new technologies to our network whilst providing us with more information on the emerging technologies they thought would be beneficial to them. More than 200 of our most active generation and storage customers were invited and in total, 22 delegates from 18 companies attended on the day. This action was completed in accordance with our forecast.

Topics covered included energy storage, flexible connections, constraints on the Northern Powergrid network and the tools available to customers to help them identify available network capacity.

"Very useful to understand constraints and innovative solutions being offered. Clear that NPg are looking to utilise their existing network as efficiently as possible and maximise installed capacity."

ANDREW HARDCASTLE, GHD, CONNECTING INNOVATIVE TECHNOLOGIES WORKSHOP, MARCH 2017

"A very informative event which has given food for thought for our approach to clients in the NPg area. All the NPg staff at our table were very willing to listen and entered into wide ranging discussions."

REUBEN PARRY, AMERESCO, CONNECTING INNOVATIVE TECHNOLOGIES WORKSHOP, MARCH 2017

The workshop was led by our Senior Asset Management Engineer, David van Kesteren with support from Mark Nicholson, Head of Smart Grid Implementation.

During the event we discussed export limiting schemes and the technical challenges of connecting storage. There were also updates on our first replicable ANM scheme in Driffield and a ground-breaking trial involving Northern Powergrid, Moixa and Energise Barnsley designed to demonstrate how clusters of home batteries can increase capacity on the electricity network and enable more homes to install solar panels.

Delegates' comments and feedback were fed into our on-going stakeholder engagement process for ICE. 100% of delegates said they were very satisfied or satisfied by their experience on the day and that the information presented on the day was very useful or useful.

"The workshop was a great opportunity for us to talk with our customers and keep them up-to-date on how we are driving forward innovative technologies to develop a smarter network for our region. We also spent this time asking delegates what they thought the new emerging technologies might be and the challenges they might face, which initiated some fantastic discussions."

MARK DRYE, DIRECTOR OF ASSET MANAGEMENT

DELEGATES AT OUR CONNECTING INNOVATIVE TECHNOLOGIES WORKSHOP WITH OUR CONNECTIONS DESIGN AND COMMERCIAL ENGINEERS

5 Enabling competition

5.1 Part-funded reinforcement

M DG

"RWE Innogy welcomes all measures to improve the competitiveness of the connections market. We endorse the proposals and are very interested in the part-funded connection trial outcomes. This seems like an excellent initiative to deliver the benefits of competition on cost to customers."

FRUZSINA KEMENES, INNOGY, OFGEM CONSULTATION ON DNO ICE SUBMISSIONS, SUMMER 2015

In January 2011, Ofgem informed DNOs that it planned to consult on the possibility of extending the scope of competition in the electricity connections market to include part-funded connections.

A national working group was established on this topic and Northern Powergrid has played an active role within the group, assisting Ofgem in issuing the consultation on 'Competition for Part-Funded Connections Work' in June 2011. Following stakeholder feedback, Ofgem subsequently issued a 'guidance and summary of responses' and the working group was tasked with developing detailed proposals for a mechanism by which price control revenue could be made available to ICPs constructing part-funded connection assets. Again, Northern Powergrid played an important role in shaping this.

As a result of the progress made in the working group, in our 2015/16 ICE work plan we said we would develop and run a trial of part-funded reinforcement with an ICP. If successfully piloted and implemented as a business as usual practice, this would allow ICPs to quote for and carry out the reinforcement work on our network required to deliver a new connection and enable them to offer a wider turnkey package to their customers. As this work took longer than first anticipated, we carried the action over into our 2016/17 work plan.

We originally engaged all ICPs operating in our licensed areas, a total of 32 separate companies, inviting interested parties to a briefing session to explain the features of the part-funded reinforcement trial. We have since worked with a small number of ICPs to identify suitable schemes to try and conduct the trial and develop all the technical and commercial principles and processes required to make this a business as usual practice. Unfortunately, during the last year, we have been unable, together with ICPs, to carry out the trial.

Although we have not been able to test part-funded reinforcement works, we have completed the development of all of the technical and commercial principles and processes required to make this a business as usual practice.

We remain ready and open for business to conduct the trial if any ICPs express an interest in a specific connections project. As all the arrangements are in place we do not propose to carry this action forward for a third year into our 2017/18 ICE work plan, however, we will continue to engage and monitor the appetite of ICPs to carry out this work and act when appropriate. This action was completed in accordance with our forecast.

5.2 and 5.3 ICP metered disconnections trial M DG

We are always keen to assist ICPs to be able to compete more effectively in the connections market. The scope of market activities is important to an ICP if it is to increase its market share. Metered disconnections are currently a non-contestable activity and therefore not open to competition.

We were asked if we would be willing to allow ICPs to undertake metered disconnections, which led us to agree to include two actions in our 2016/17 work plan; to run a pilot with an ICP to carry out metered disconnections and then to consider implementing an enduring business process to allow ICPs to carry out this work when required.

We worked with an ICP, Power On Connections, in early 2017, to develop all the necessary business processes; identify appropriate projects and to carry out pilot disconnections works.

The pilot was a success with Power On Connections, undertaking a three phase metered service disconnection and as a result we have been able to prove that suitably accredited ICPs are capable of carrying out this work and therefore we see no reason why this activity should not be opened up to competition.

Following on from the initial pilot we now have the business as usual processes in place that allow us to process any enquiries to allow any suitably accredited ICP to undertake a single or three phase whole current metered disconnection. However, interest from ICPs since the pilot remains limited at this time.

Having gained valuable experience from the pilot and accordingly, should ICPs want to extend their activities into metered disconnections then we are now able to service their future needs. These actions were completed in accordance with our forecast.

> *"We welcomed the opportunity to work with Northern Powergrid on the metered disconnection pilot through which we successfully delivered a scheme and now look forward to this activity becoming business as usual should the need arise."*
>
> NEIL FITZSIMONS, POWER ON CONNECTIONS, CLOSING THE LOOP ACKNOWLEDGEMENT

5.4 ICP point of connection workshops M UM DG

> *"POC self-determination. Could an info or demo day be put in place to go through processes etc? Other DNOs have done so."*
>
> TOMAS MCGLEENAN, APTUS UTILITIES LTD, CONNECTIONS CUSTOMER FORUM, MAY 2016

At our Connections Customer Forum in May 2016, Tomas McGleenan from APTUS Utilities Ltd said they would find it useful if Northern Powergrid could provide more guidance on the rules and processes that surround ICPs carrying out self-determination of points of connection (POC).

It is important that ICPs fully understand the processes that are in place to enable them to compete for contestable works, in line with feedback from Aptus Utilities we received; we committed in to hold a workshop to further explain the rules and processes that surround ICPs carrying out self-determination of points of connection. This action was completed in accordance with our forecast.

To add further value for ICPs, we ran an additional workshop in March 2016 to fully demonstrate how to access our mains records; 17 delegates from 11 ICPs attended the workshop and feedback on the event was extremely positive.

Northern Powergrid's Design Team Manager, Michael Catling and Competition in Connections Manager, Drew Johnstone led two workshops on 23 and 24 March 2017. The first was aimed at small works (domestic connections) customers focused on standard matrix POC designs, whilst the second day was focused on more complex technical POCs to support our full LV and HV customers.

20 delegates from 10 ICPs attended on day one and 19 delegates from 10 ICPs on day two. The response was extremely positive from both events with 100% of those surveyed over the two days saying they were very satisfied or satisfied by the experience. Of those surveyed 100% also stated that the information presented was very useful or useful.

> *"This was a very informative session and the use of examples and screenshots was particularly good at backing up the topics of conversation. The flexibility of the session was also useful as it allowed for interactions from the group throughout the session."*
>
> JAMES BARKER, ELECTRICAL TESTING LTD, POC WORKSHOP FEEDBACK FORM

> *"Excellent presentations today!"*
>
> FASAL WALAYAT, FUTURE UTILITY SOLUTIONS LTD, POC WORKSHOP FEEDBACK FORM

> *"Excellent information, well presented."*
>
> JIM GRAYSON, DISTRIBUTION CABLE JOINTING, POC WORKSHOP FEEDBACK FORM

> *"I found this course very informative and it covered a lot of topics. I can take this on to help me with my role."*
>
> ELLIE MATTHEWS, IUS, POC WORKSHOP FEEDBACK FORM


SKY

Conclusion

We set a comprehensive improvement plan for 2016/17 as a result of our engagement with a broad and inclusive range of stakeholders leading to actions that improved our connections service in a number of areas: improving the information we provide; our application processes; our communications with customers; developing technical and commercial solutions; and further enabling competition.

We have delivered on the commitments that we gave and we have closed out our 2016/17 work plan period with improved processes that our customers tell us better meet their needs.

And there is more to come. In continuing with our extensive stakeholder engagement strategy we have developed a comprehensive work plan for 2017/18. In the engagement that we have carried out and the work that we have completed we believe that we have met the criteria set by Ofgem for both the Looking Forward and Looking Back parts of this submission.

The success of our customer service improvement depends upon effective engagement with our customers. We continue to deploy and follow our company stakeholder strategy to engage, listen and learn effectively from our customers about the issues that face their businesses and what we can do better to improve the service we provide.

Our approach to stakeholder engagement is holistic. Not only do we engage with customers to decide what improvement actions we should include in our forward work plans, but we also continue to engage with customers throughout their delivery. Wherever possible we have closed the loop with customers to ensure that the outcome we deliver meets their requirements.

We are delighted to be able to report that those customers with whom we have been able to discuss the outcomes agreed that what we did fully met their expectations. And, just as important as meeting the requirements of the stakeholder that called for a particular action, we know from our engagement with the wider group of stakeholders that these outcomes also commanded support among other stakeholders.

We recognise the value of the time that our customers give us in attending engagement events and providing us with their feedback. This helps us a great deal. But customers tell us that the engagements and events that we run provide them with an opportunity to voice their opinions about the services we provide and give them the chance to learn about our business and how they can get the most from us. We will continue to do this and, in doing so, we hope to contribute to the success of our customers' businesses.

Appendices 1. Glossary

This glossary has been created in collaboration with SP Energy Networks, Electricity North West and Scottish and Southern Electricity Networks for our respective ICE work plans.

Accreditation
The appropriate qualifications to allow alternative connection providers to operate on our electrical network.

After Diversity Maximum Demand (ADMD)
The combined maximum demand for one or multiple customers when a diversity factor has been applied.

Alternative Provider Register
Scottish and Southern Electricity Networks & Northern Powergrid list of alternative providers that are active in our license areas for new connections work.

ANM
Active Network Management; using technology to enable generators to connect in constrained areas on a commercially un-firm basis.

Appendix G
The Appendix in the CUSC offer that summarises the contracted generation connected to a GSP. This information forms the basis of the new SoW process whereby DNOs can work within materiality limits set by National Grid reducing the timescale for a decision on transmission impacts for DG offers.

ARC Accelerating Renewables Connections
SPEN 'Low Carbon Networks' funded project to consider innovative methods for connecting DG quicker and cheaper.

AVR
Automatic Voltage Regulator; this is a device which can be deployed on our overhead line network and controls the voltage to ensure the network remains within statutory limits.

BEIS
Department of Business, Energy and Industry Strategy – The Government department brings together responsibilities for business, industrial strategy, science, innovation, energy, and climate change.

Budget Quote
A budget quote is provided to aid customers with up front planning of projects and is a simple review of the network within the vicinity of the proposed development and does not include detailed modelling of the system. A budge quote cannot be contracted.

BMCS
Broader Measures of Customer Service.

CCCM
Common Connection Charging Methodology.

CARES
Community and Renewable Energy Scheme.

CIC
Competition in Connection; ability for a customer to seek connection to the network using a Lloyds accredited ICP of your choice.

CIC Code of Practise (CoP)
This is a proposed industry standard which is being developed jointly by DNOs and OFGEM. The code is aimed at making it easier for alternative connection providers to get their customers connected and better inform customer of their choices.

Collaborative Connections
These are connections where multiple customers are brought together to benefit from shared connection costs and shared assets to maximise the amount of generation connected in any part of our network.

Connections Customer Steering Panel(CCSP)
A dedicated forum to give you more influence over our connection service. Scottish and Southern Electricity Networks.

Constraint Managed Zones (CMZ) Effectively
manage peaks in demand or distributed generation without needing to reinforce the network.

Contestable
When we talk about contestable work, these are the 'off the system' works, which can be completed by either ourselves or a Lloyds accredited ICP of your choice.

Contracted Capacity Register
This lists generators that are contracted but not physically connected to our network.

CRAM
Connection Registration and Management. This was a legacy IT system utilised to manage CIC enquiries where a Lloyds accredited ICP of your choice was being employed to complete the contestable works.

CRM
Under the Scottish Power brand name of Athos, CRM is Scottish Power Energy Networks Customer Relationship Management system which will help us better serve our customers.

Customer
A customer is defined as someone who is or has applied for a connection to our network.

Customer Connections Managers (CCMs)
This role covers every part of our license areas SHEPD and SEPD to offer a more personalised service to our demand customers.

Customer Surgeries
These are held monthly for any customers who wished to discuss a project with us at any time in the process.

DG
Distributed Generation; this is the connection of generation to any point of the distribution system, from 230V up to 33,000V in Scotland or 132,000V in England & Wales.

DNO
Distribution Network Operators, responsible for owning operating, and maintaining the electrical network in their licensed geographical area.

DOCO
Distribution Owner Connection Offer, Scottish and Southern Energy Power Distribution offer to connect a embedded generator to the distribution network.

DSO
Distributed Systems Operator responsible for facilitating effective and well-functioning distribution markets, which give options to customers to choose the best connection provider and allow connection providers to offer options and services best tailored to connection customer needs.

Dual Offers
These are formal offers which facilitate the acceptance of either the full works or just the non-contestable works, with the contestable works completed by a Lloyds accredited ICP of your choice.

DUoS
Distribution Use of System Charges.

ENA
Energy Networks Association is the voice of the networks, representing the 'wires and pipes' transmission and distribution network operators for gas and electricity in the UK and Ireland.

Export Management/ Limited Device
These are devices which seek to manage the local demand alongside any generator, essentially restricting export to our network.

Feasibility Study
A feasibility study is a chargeable service to run a number of network models and advise what capacity is available where on parts of our network. This does not facilitate a connection offer, and does not carry any contractual link to a formal connection offer.

Flexible connection
A transitional solution may be available for your connection, we will engage with you to discuss flexible contractual terms. Depending on the circumstance, may allow connection ahead of the required reinforcement works.

Formal Connection Offer
A formal Connection offer facilitates a contract between us and the applicant to accept our offer and progress the construction works with the connection.

Full Metering Settlement
Option enables clients to share a point of connection without a boundary meter. The point of supply is separated on the customer side of the connection providing 2 or more customer meters with full settlement(e.g. shared connection for community and commercial pv site / shopping centre with multiple outlets).

G59
G59 is the industry standard for generators greater than 16 amp per phase.

G83
G83 is the industry standard for small scale embedded generators for connections up to 16 amp per phase, 3.68kw single phase connection or when multiple generators are to be connected.

GRP Enclosures
'Glass Reinforced Plastic' enclosures. Our traditional solution for a substation which requires a battery set is a brick building, GRP solutions utilise glass reinforced plastic technologies (GRP) to provide substation enclosures that can provide similar environments to brick-built substations.

GSPs
A Grid Supply Point is the point at which electricity enters the distribution network, leaving the transmission network.

Heat-maps
These are maps of our HV network, colour coded based on the available capacity on any given circuit.

ICP
Independent Connection provider.

IDNO
Independent Distribution Network Operators develop, own, operate and maintain local electricity distribution networks.

IFI
Innovation Funding Incentive (IFI) was introduced by OFGEM to encourage Electricity Distribution, Electricity Transmission Network Operators to apply technical innovation in the pursuit of investment in and operation of their networks. It will be replaced by the Network Innovation Allowance (NIA) in 2015.

Intertrip
An intertrip will automatically disconnect a generator or demand from the network when a specific event occurs.

JOA/SRS
Joint Operational Agreement/ Site Responsibility Schedule these are required for users connected at HV/EHV.

Jointing
Jointing is a method of connecting two sections of cable together.

KPI
Key Performance Indicator.

LCNF
Low Carbon Networks (LCN) Fund was established by OFGEM as part of the electricity distribution price control that runs until 31 March 2015. The fund offers capital to support projects sponsored by the Distribution Network Operators (DNOs) to try out new technology, operating and commercial arrangements.

LiDAR
Light Detection And Ranging, a surveying technology that measures distance by illuminating a target with a laser light.

Link boxes
A link box provides a point of isolation at the interface of an IDNO (Independent Network Operators) and DNO network.

Meter Point Administration Number (MPAN)
A 21-digit reference used in Great Britain to uniquely identify electricity supply points.

Market Segment
This is the regulatory terminology which defines DGLV and DGHV.

Metering
This is the mechanism for settlement to ensure your generation receives the correct rates for your tariff and is a key part of the balancing and settling arrangements, which are laid down in the Balancing and Settlement Code (BSC), and is administered by ELEXON.

NERS
National Electricity Registration Scheme, perform technical assessment of the service providers who elect to be assessed for accreditation for contestable works associated with the installation of electrical connections.

NGET
National Grid Electric Transmission - Deal with all aspects of the contracts for the connection to and use of the electricity transmission system throughout the UK.

Non-Contestable
Where we talk about on-site works, these are typically within either the customers land boundaries or the CDM boundary within which a Principle Contractor operates.

On-Site
On-site works are typically within either the customers land boundaries or the CDM boundary within which a Principle Contractor operates.

PPA
Power purchase agreement, is a contract between two parties, one which generates electricity (the seller) and one which is looking to purchase electricity (the buyer).

Pseudo MPANs
Enables clients to sub-meter behind a single point of supply making individual bills available (e.g. shared connection for community and commercial pv site / shopping centre with multiple outlets). This option requires a common meter operator and a boundary meter.

POCs
Point of Connection for the electrical network.

Quote+
Quote+ provides options for our customers quickly whilst maintaining queue position.

RAdAR
Register of Adopted Asset Requests; this is our current IT system utilised to manage CIC enquiries where a Lloyds accredited ICP of your choice is being employed to complete the contestable works.

RIIO ED1
(Revenue = Incentives + Innovation + Outputs) price control set the outputs that the 14 electricity Distribution Network Operators (DNOs) need to deliver for their consumers and the associated revenues they are allowed to collect for the eight-year period from 1 April 2015 to 31 March 2023.

SoW
The Statement of Works process should be followed when it is identified that a generator seeking a connection to a DNO's network may have an impact on the transmission network.

Substation
A part of our network where DG is connected and we transfer power across boundaries, either by voltage level or a customer's point of common coupling.

TSO
Transmission Systems Operator – responsible for facilitating effective and well-functioning transmission markets, which give options to customers to choose the best connection provider and allow connection providers to offer options and services best tailored to connection customer needs.

Wayleaves
This is the process which secures the legal right for apparatus to be installed on any given location and secures the connection to your site for a defined period of times.

Webinar
Web conferencing.

Witness test
Witness testing' is where we, the distribution network operator, attend the site of your generator to witness your commissioning engineer test the protection systems associated with your generator and ensure they operate correctly.

Appendices 2. Performance metrics

Table 1 – Section 16 performance Year ended 31 March 2017					
Time to Quote (excluding days paused)[1]					
Market segment	**Work category**	**Standard days**	**Min**	**Max**	**Average**
LV Demand	M	25	0	46	16
HV Demand	M	45	0	44	24
EHV Demand	M	65	11	65	52
132kV + Demand	M	65	-	-	-
LV Generation	DG	45	0	45	29
HV and EHV Generation	DG	65	0	65	47
Unmetered LA	UM	25	0	25	18
Unmetered PFI	UM	25	-	-	-
Unmtered Other	UM	25	0	57	18
Time to Quote (including days paused)[2]					
LV Demand	M	25	0	451	35
HV Demand	M	45	0	461	50
EHV Demand	M	65	43	156	79
132kV + Demand	M	65	-	-	-
LV Generation	DG	45	0	258	44
HV and EHV Generation	DG	65	1	441	79
Unmetered LA	UM	25	0	145	31
Unmetered PFI	UM	25	-	-	-
Unmtered Other	UM	25	0	278	38
Time to connect (acceptance to connection)[3]					
LV Demand	M	25	5	867	85
HV Demand	M	45	3	669	129
EHV Demand	M	65	93	93	93
132kV + Demand	M	65	-	-	-
LV Generation	DG	45	20	289	105
HV and EHV Generation	DG	65	30	443	166
Unmetered LA	UM	25	0	378	41
Unmetered PFI	UM	25	-	-	-
Unmtered Other	UM	25	0	457	50

Volumes of Quotations 2016-2017					
			Enquiries	**Quotes**	**Acceptances**
LV Demand	M	25	3617	3166	1507
HV Demand	M	45	1649	1451	639
EHV Demand	M	65	45	16	3
132kV + Demand	M	65	-	-	-
LV Generation	DG	45	438	400	104
HV and EHV Generation	DG	65	1046	472	101
Unmetered LA	UM	25	4161	3613	3604
Unmetered PFI	UM	25		-	-
Unmtered Other	UM	25		509	342

Table 2 – SLC15 Performance Year ended 31 March 2017					
Time to Quote (excluding days paused)[1]					
Market segment	**Work category**	**Standard days**	**Min**	**Max**	**Average**
LV Demand	M	15	0	31	10
HV Demand	M	20	0	35	13
EHV Demand	M	50	21	50	44
132kV + Demand	M	-	-	-	-
LV Generation	DG	30	2	30	19
HV and EHV Generation	DG	65	4	65	40
Unmetered Connections	UM	-	-	-	-
Time to Quote (including days paused)[2]					
LV Demand	M	15	1	485	40
HV Demand	M	20	0	361	51
EHV Demand	M	50	40	245	84
132kV + Demand	M	-	-	-	-
LV Generation	DG	30	24	166	62
HV and EHV Generation	DG	65	9	218	71
Unmetered Connections	UM	-	-	-	-
Time to connect (acceptance to connection)[3]					
LV Demand	M	10	1	24	8
HV Demand	M	20	1	29	16
EHV Demand	M	-	-	-	-
132kV + Demand	M	-	-	-	-
LV Generation	DG	10	-	-	-
HV and EHV Generation	DG	20	5	20	15
Unmetered Connections	UM	-	-	-	-

Volumes 2016-2017					
			Enquiries	**Quotes**	**Acceptances**
LV Demand	M	15	1084	910	151
HV Demand	M	20	1314	1110	145
EHV Demand	M	50	21	4	-
132kV + Demand	M	-	-	-	-
LV Generation	DG	30	11	8	1
HV and EHV Generation	DG	65	58	31	11
Unmetered Connections	UM	-	-	-	-

1 From receipt of an acceptable application to the date of the quotation excluding days on pause whilst we await further information

2 From receipt of an acceptable application to the date of the quotation including days on pause whilst we await further information

3 From receipt of a customer acceptance to the date the connection is jointed onto our network (though perhaps not energised)

Acceptance – First Customer Contact within 5 days success rate													
Northeast & Yorkshire Combined	**Apr-15**	**May-15**	**Jun-15**	**Jul-15**	**Aug-15**	**Sep-15**	**Oct-15**	**Nov-15**	**Dec-15**	**Jan-16**	**Feb-16**	**Mar-16**	**Regulatory Year to date**
First Customer Contact within 5 days success rate	92%	90%	87%	81%	93%	91%	89%	88%	89%	88%	92%	93%	89%
Northeast	**Apr-15**	**May-15**	**Jun-15**	**Jul-15**	**Aug-15**	**Sep-15**	**Oct-15**	**Nov-15**	**Dec-15**	**Jan-16**	**Feb-16**	**Mar-16**	**Regulatory Year to date**
First Customer Contact within 5 days success rate	93%	90%	90%	86%	95%	94%	92%	91%	93%	95%	95%	95%	93%
Yorkshire	**Apr-15**	**May-15**	**Jun-15**	**Jul-15**	**Aug-15**	**Sep-15**	**Oct-15**	**Nov-15**	**Dec-15**	**Jan-16**	**Feb-16**	**Mar-16**	**Regulatory Year to date**
First Customer Contact within 5 days success rate	90%	90%	82%	76%	90%	87%	85%	86%	85%	83%	88%	88%	85%

Appendices 3. Explain Market Research Report

explain
market research

Northern Powergrid
ICE
May 2017

Introduction

As part of their Incentive on Connections Engagement (ICE) programme, Northern Powergrid commissioned Explain for a second year to conduct a market research exercise. 300 major connections customers were contacted from the three market segments covered by the ICE initiative – metered demand, unmetered and distributed generation connections. Independent Connection Providers were also contacted for the first time. Within the research, there was a 'Looking Back' element in order for feedback to be gathered on actions and outcomes achieved as part of the 2016/17 ICE plan. The 'Looking Forward' element of the research aimed to establish whether Northern Powergrid's proposed 2017/18 work plan was supported by customers, and if any other actions could be added.

'Looking Back' survey

Support for the 2016/17 ICE plan was high amongst the 214 respondents who had been dealing with Northern Powergrid in relation to connections for 12 months or more. When thinking about all the improvements that Northern Powergrid have made in the last 12 months, the majority (56%) stated that their connections service has 'got better'. 25% of respondents said that the service has stayed the same, whilst 17% said it has got 'much better'. The following agreed that changes made within each section of the plan have improved the connections service Northern Powergrid provides:

- 73% of metered customers, 79% of DG customers, 80% of unmetered customers, and 100% of ICPs agreed that changes to the provision of information had improved the connections service Northern Powergrid provides
- 89% of metered customers, 70% of DG customers, 71% of unmetered customers, and 100% of ICPs agreed that changes to the application process had improved the connections service Northern Powergrid provides
- 96% of metered customers, 83% of DG customers, 88% of unmetered customers, and 100% of ICPs agreed that changes to communication had improved the connections service Northern Powergrid provides
- 82% of metered customers, 79% of DG customers, 71% of unmetered customers, and 100% of ICPs agreed that changes to technical and commercial developments had improved the connections service Northern Powergrid provides
- 79% of metered customers, 70% of DG customers, 58% of unmetered customers, and 100% of ICPs agreed that changes made to enabling fair and open competition had improved the connections service Northern Powergrid provides

‘Looking Forward’ survey

Support was also strong for the 2017/18 proposed plan. The proportion of customers who said they would support the proposed changes to the plan are shown in the table below, all demonstrating a clear majority;

		Proposed actions	Telephone survey				
			M	DG	UM	ICPs	**Overall**
Provision of information	Action 1.1	Trial recording of connection events/workshops and publishing online	93%	99%	95%	67%	**94%**
	Action 1.2	‘Ask the Expert’ question and answer sessions on social media about emerging connections topics	87%	89%	86%	100%	**88%**
	Action 1.3	Produce simple guide to the implementation of new contract millstones	94%	97%	78%	100%	**94%**
	Action 1.4	Hold workshops for all connection customers to explain how to access mains records systems	94%	100%	96%	100%	**95%**
	Action 1.5	Regarding the provision of protection setting data, undertake a formal business review to provide information within an agreed timescale	97%	100%	100%	100%	**98%**
Application and delivery process	Action 2.1	Modify the online application form to include an option to connect energy storage	93%	100%	100%	100%	**95%**
	Action 2.2	Create online DG connection quick cost calculator	96%	97%	100%	100%	**97%**
	Action 2.3	Create web page to promote the Quote+ service and explain the process	99%	98%	96%	100%	**98%**
	Action 2.4	Benchmark the ‘find my MPAN’ service against other DNOs and make improvements where necessary	97%	92%	100%	100%	**96%**

Communication and engagement	Action 3.1	Run four targeted workshops during the year on topics suggested by customers	92%	98%	86%	100%	**93%**
Technical and commercial developments	Action 4.1	Continue to engage in the industry-wide consultation on A&D fees and to keep customers informed of the outcomes. Make any necessary changes to polices or practices	97%	100%	100%	100%	**98%**
	Action 4.2	Continue commitment to support customers through the transmission and distribution process, to engage with the national working parties and where necessary implement best practice recommendations	100%	99%	100%	100%	**99%**
	Action 4.3	Engage with Ofgem on the treatment of costs for undergrounding rural networks in areas of national beauty, and establish whether this cost can be incorporated into the provision of connections	92%	83%	94%	100%	**90%**
Enabling competition	Action 5.1	Publish data on average time taken to issue ICP point of connection and design approvals on the website	95%	97%	100%	100%	**96%**
	Action 5.2	Publish an end-to-end process map that covers all aspects of its input services and explains how ICPs can effectively interface with them	98%	97%	100%	100%	**98%**
	Action 5.3	Publish a schedule of rates for the input services available to ICPs so that they can “pick and mix” the services they offer	96%	95%	100%	100%	**96%**

	Action 5.4	Update the standard matrix design rules to include unmetered connections and to simplify the technical specification to make it easier for ICPs to self-determine a point of connection	98%	98%	100%	100%	**99%**
Innovation	Action 6.1	Share vision for transition from DNO to DSO and to seek stakeholders' views to help shape the outputs of this work	95%	98%	100%	100%	**96%**
	Action 6.2	Continue to contribute to the development of TSO/DSO roles via the national working party. Keep customers informed and where necessary make changes to policies and practices	96%	98%	100%	100%	**97%**
	Action 6.3	Develop case studies that share future use cases and applications for energy storage	96%	100%	94%	100%	**97%**
	Action 6.4	Engage with storage developers to develop a standard suite of energy storage service offers	96%	97%	100%	100%	**97%**
	Action 6.5	Update customers on the progress of its first Active Network Management (ANM) scheme in Driffield, South Yorkshire	93%	98%	100%	100%	**95%**
	Action 6.6	Develop a 'Low Carbon Connections Gateway' on the website to help customers make applications to connect low carbon technologies quickly and easily	98%	100%	100%	100%	**99%**

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Contact: ICE@northernpowergrid.com

Useful links:

Connections webpage – www.northernpowergrid.com/get-connected

Incentive on Connections Engagement webpage – www.northernpowergrid.com/incentive-connections-engagement

Stakeholder webpage – www.northernpowergrid.com/your-powergrid

Business plan website – www.yourpowergridplan.com

Online community – https://northern-powergrid.explainonline.co.uk