Promoting choice and value for all gas and electricity customers

11 January 2013

Distributed Generation (DG) Forum Events 2012

Distributed Network Operator (DNO) responses to questions posed

Ofgem hosted the second series of DG Forum events in Autumn 2012 in London, Cardiff and Glasgow. The Chief Executives from the six DNOs were in attendance, along with a large number of DG developers, customers, consultants and other relevant stakeholders. There were a number of questions posed to the DNOs by attendees, both in advance and during the events and the DNOs committed to responding to these questions.

The questions are all listed under the sections below, along with responses from Ofgem, where relevant, and each of the DNOs. In addition, the DNOs committed to publishing DG workplans, following engagement with customer representatives and industry colleagues, to outline their improvement plans in this area.

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1.1 What are the OFGEM guaranteed standards of practice (GSoP) timescales supposed to be in reality? What we mean by this is that all the DNOs quote the last day as their target?

Ofgem: The GSoP were introduced to set out **minimum timescales** for the delivery of specified connections services. They are designed to protect customers against unacceptable levels of service and to provide individual customers with compensation where clearly unacceptable standards of service are being provided. The standards state that DNOs need to meet the standards set out in 90% of occasions, otherwise this will constitute a license breach. In RIIO-ED1 consultation we are proposing to retain the current arrangements for all connections customers and increase GSOP payments to reflect inflation. In addition, we propose to introduce an Average Time to Connect incentive to improve overall connection timetables.

ENWL	GSOP timescales set a backstop timescales for DNOs to produce a quotation. We always seek to get connections offers out to customers as quickly as we can and we recognise that there may be more we can do to further improve this process. On average, we do issue offers well within the GSoP timescales but acknowledge that this can be different from the absolute elapsed time as the GSoP clock can stop when we are waiting for additional information.
NPG	On enquiry from a customer and after we have the minimum information required to commence design work, Northern Powergrid will notify the customer of the ECDGS standard we have applied to their job, together with the maximum number of working days to provide the quotation. We do not indicate the ECDGS standard expiry date on our letter because if further information is requested over and above the minimum to complete the design, this will result in the clock being paused and restarted and the original target date having to be re-set. DG connections, particularly the larger ones, will often give rise to delays of this nature.
SP	The GSoP timescales represent MAXIMUM TIMESCALES to produce a quotation for the various categories of enquiry. Running alongside the GSoP timescales are the customer service incentives, which have, following direct customer feedback, encouraged us to produce quotations in a shorter time than the GSoP timescales. As part of our overall customer service we are looking at ways we can reduce timescales even further in the future.
SSE	Our aim is to issue quotations to customers as soon as possible. Overall, our current average time to issue a quotation is 48 working days which is well ahead of the full 65 working days as covered in the GSoP.
UKPN	The GSoP describe the minimum standard for the delivery of connection services. UK Power Networks does not quote the last day as their target and in a large number of instances significantly improves upon these minimum standards. It is recognised that in certain market segments, specifically DG where we have seen a 400% increase in the number of enquires, the GSoP timescales have in some circumstances only just been achievable. UK Power Networks has responded to the volume growth by recruiting additional resources and will be implementing a service improvement plan over the coming months.
WPD	It is correct that the GSoPs provide a target date for providing a quotation. This is intended as a minimum timescale. We always carry out such work as quickly as we can, however where we are receiving large volumes of applications, it may be the case that we are achieving very close to the target dates.

1.2 It appears that all of the DNOs are managing the start/stop clock to the last GSoP day. Is this what OFGEM intended when imposing the GSoPs?

Ofgem: No – see above

ENWL	The guidelines for starting and stopping the clock are there to provide some reasonable protection for DNOs that they are not penalised for not providing a service when something is not completely in our control. As outlined above, we do not, as a matter of course, manage the timescale to the last day.

	We do have failures and make the appropriate payments when these occur. If customers have particular problems with our service, we would urge them to contact us directly.
NPG	We aim to complete all quotations as quickly as possible to meet the customer's requirements and do not intend to leave our quote until the last day of the standard; this is clearly not what Ofgem intended. Ofgem's desire to introduce two new measures in RIIO-ED1 'average time to quote' and 'average time to connect' will certainly focus the thoughts of DNOs before and after April 2015 when the measures are likely to be introduced. In the meantime, Northern Powergrid is working hard to reduce the time taken to provide quotes for all customer groups, not just DG.
SP	The GSoP is applied in line with the Electricity (Connection Guaranteed Standards of Performance) Regulations 2010 and the OFGEM Standard Licence Condition 15A Direction for DG connections published in September 2010. As per our answer to question 1, we seek to provide a service within the GSoP timescales and to look at ways of reducing these further.
SSE	We strongly disagree with this. We will only 'Pause' the clock on a quotation if there is a justified reason in doing so. In instances where this does happen, we contact the customer immediately. By monitoring the few paused jobs there are, we can ensure the customer is requested to provide the additional information required to allow us to 'resume' the clock as soon as possible. This is why we know that our average number of days to issue quotations from completed application, discounting all pauses, is 59 working days.
UKPN	UK Power Networks does not manage the start/stop clock to the last day. See answer above
WPD	With regard starting the clock, we will start the clock upon receipt of the minimum information and will, where some information is missing, contact the customer as soon as reasonably practicable and usually within the Ofgem guidelines. The clock may be paused where additional information is required. See also answer to Q1.

1.3 On a number of occasions we have complained to DNOs about various connection related matters and why do <u>they all</u> attempt to downgrade our formal complaint to just an enquiry. Is this to avoid reporting complaints to OFGEM?

Ofgem: DNOs are incentivised to resolve complaints to the satisfaction of customers – any expression of dissatisfaction made to an organisation, related to any one or more of its products, services or the manner in which it has dealt with any such expression of dissatisfaction, should be treated as a complaint. If a DNO is not compliant with the reporting instructions and guidance (RIGS) it is potentially a breach of their licence.

ENWL	The definition of a complaint is defined in our Regulatory Instructions and Guidance and we take compliance with these very seriously. If the originator of the question can provide specific examples we are happy to review how these have been classified.
NPG	It is the policy of Northern Powergrid that all complaints are recorded, investigated and responded to in a timely, courteous and effective manner through clearly defined stages as set out in our published procedure that is available on our website. In full compliance with the Gas and Electricity Regulated Providers (Redress Scheme) Order 2008 ("the Order") and the Gas and Electricity (Consumer Complaints Handling Standards) Regulations 2008 ("the Regulations"). Northern Powergrid offers free, independent assessment of consumer complaints under the ombudsman scheme in situations where its proposed resolution of a consumer complaint does not satisfy the relevant consumer concerned, and to accept and act upon the findings of the independent assessor. Where a complaint is not a consumer complaint and hence does not fall within the scope of the Regulations, it will not be eligible for referral to the ombudsman scheme, but will be handled the same in all other respects of our complaints handling policy.
SP	SP do not have a practice of treating complaints as enquiries. We are committed to providing excellent customer service to every customer. Unfortunately, sometimes customers receive a service that does not meet our standards. In these circumstances, we take every opportunity to rectify and resolve the situation as quickly as possible. Details of our complaints procedure are shown on our website under the 'Serving Our Customers' heading. We would like to reiterate that we treat any

	complaint we receive seriously, and strive to resolve satisfactorily for our customers as soon as possible.
SSE	We have a robust complaints process where a complaint is initially escalated to a first line manager, but if still unresolved, will be escalated further, to a second line manager. If the customer still isn't fully satisfied with the response, the issue is then escalated to the 'Head of Business'. If it is not resolved at this stage, the complaint goes to 'dead-lock' and the customer then has the option to refer the complaint to Ofgem. The complaints procedure is documented on our website and we also send out details of the process with the communication associated with the first response to the complaint. The complaints are also monitored and logged by a dedicated team in our Emergency Service centre.
UKPN	UK Power Networks does not, under any circumstances, seek to downgrade complaints to enquiries. We take our responsibilities of responding to customer complaints very seriously, both in terms of a prompt response to the customer and for taking any corrective action that may be required. With this in mind we have developed tailored complaints procedures for the different activities we undertake and which are readily available to view and download from the "contact us" section of our web site. We believe it is important for the procedures to be followed so that the appropriate internal points of escalation are met, as applicable.
WPD	WPD records complaints from larger customers or developers about specific connection projects in its complaints database. We provide details of our complaints procedure to Ofgem for developers to use, and also to DECC as we have received complaints via local MPs. A complaint about a general policy matter would not be logged in our complaints database.

1.4 Where DNOs have a number of different offices within their own region, why are there different approaches to policy, processing of applications and application of their charging methodologies for S15 / S16 connection requests?

ENWL	All our policies are consistent across our single licence. If customers identify any discrepancies across our area, we are happy to review and resolve.
NPG	Ideally, there should be no difference between the ways an enquiry is treated by individual offices but the geography of the Northern Powergrid region means it is not practical to deal with all enquiries centrally. Our charging methodology should be applied consistently across all quotations and Northern Powergrid regularly audits their quotations to ensure a level of consistency is reached and that customers have been treated the same way regardless of which office does their quotation. However, individual and office workloads will differ on occasion, leading to a variance in the time taken to deal with similar enquires. We would be happy to investigate any instances where a customer feels that they have suffered with this approach.
SP	SP has a number of regional offices, located throughout our Distribution Service Areas, to provide a local response to our customers' needs. However, all connections activities are managed through one management structure and a single IT system to ensure consistency of approach as far as possible. Due to differences in technical characteristics between our two licensed networks, there will be some differences in detail on approaches to individual projects. This apart, we are not aware of any different approaches to policy across our two licence areas and would welcome specific customer comments if anybody feels this is the case. We are currently undertaking a review of our policies and procedures between our Distribution Service Areas, and are actively looking to ensure as far possible a consistent approach for all our customers.
SSE	Our Major Connections Contracts (MCC) team is the central point of contact for all seven depots across the SHEPD patch. As such, the policy and process is exactly the same. Due to a number of 'unchangeable' factors, there are two slightly different processes in SHEPD and SEPD, our two distribution areas. Examples of these unchangeable factors are: 132kV features as distribution in SEPD and transmission in SHEPD; and the high-demand and available access in SEPD and the geography and constraints of SHEPD. However, we intend to move the SEPD contract function to MCC as of January 2013 which will streamline the processes and improve customer service further.
UKPN	UK Power Networks has processes in place to ensure a consistent application of these policies and prompt action would be taken if any inadvertent application of policy were to be identified.

WPD	The process for dealing with applications is now the same across the 4 WPD regions. Since the acquisition of Central Networks, we have aligned our policies and processes and carried out a number of staff training workshops. It hasn't been easy but we believe we have now achieved a consistent approach. Where we have become aware of differences, generally in interpretation of policy, we have aligned practices to be consistent.

1.5 Why is it not an OFGEM standard for all DNOs to formally acknowledge receipt of applications for connection, informing the applicant of the job reference number and the person responsible for handling the application?

Ofgem: The GSoP were developed with industry and consulted on over a period of time – we believed they covered the main connection process. We introduced the Broad Measure of Customer Satisfaction to incentivise the DNOs to provide good customer service and respond to their customers' needs, rather than direct DNOs to perform specific tasks to set timescales. Where appropriate we support industry initiatives to standardise practices/forms and there are incentives in place to encourage this kind of behaviour.

ENWL	Our approach is that on receipt of generation applications we contact the customer, normally by email, to confirm receipt of their application. In cases where the customer has not provided minimum information we use this correspondence to request this information. A reference number is provided and this is included in all correspondence with the customer.
NPG	We acknowledge receipt of a customer application via a letter once we confirm we have all of the minimum information and the standard has been applied. The acknowledgement letter provides the contact details of our Major Customers enquiry team, the system generated enquiry number and details of the ECDGS standard including the applicable maximum number of days to provide the quotation. On receipt of an application where all of the minimum information is not available, we will attempt to obtain the missing information via telephone or email in the first instance. If the information is not made available after 5, 10 or 15 days we contact the customer again. When all of the information is available and the relevant standard applied, the customer will receive an acknowledgement letter as previously described.
SP	SP have put considerable effort into the way we communicate with our customers. Part of this initiative has seen the introduction of improved processes when a customer contacts us. Each customer receives an automatic confirmation that their enquiry has been received. Where practical, we aim to follow this up with a telephone conversation with the customer within 3 days, to discuss the exact requirements of their request. We have experienced positive feedback regarding these improvements, and we are actively seeking to introduce new measures that will improve our service to our customers. We are keen to progress any improvements that our customers feel will be beneficial to our overall standard of service to our customers.
SSE	We agree this should be a standard process across all DNOs. We do exactly as described with every application we receive from a customer. We also call the customer at quote issue stage to introduce ourselves as the Contract Manager and give them contact details.
UKPN	For projects work UK Power Networks acknowledges all customer applications by email or letter normally within 3 working days. The acknowledgement includes either the team name or designer's name responsible for producing the quotation, together with the appropriate contact details going forward.
WPD	This is already WPD's policy. We aim to do this within 2 working days of receipt of the application.

1.6 The majority of staff in the majority of DNOs are helpful and innovative. However there are a sizeable minority who try to impose solutions or conditions that are neither justified technically nor by publicised industry documentation. What can be done about this?

ENWL	We would not expect this to happen but would expect a customer to raise this as a complaint and we

	will resolve it.
NPG	All designs within Northern Powergrid are produced to offer the least cost technically feasible connection offer, unless the customer requests otherwise – whilst maintaining compliance with Northern Powergrid policies and procedures. If customers have any concerns about the connection offer then they can raise the issue, initially with the Design Team Manager and/or Major Connections Proposals Manager. If they cannot resolve it, then a clear escalation route is in place to the senior management team, namely the Customer Connections Design Manager or Head of Connection Services respectively, who will ensure the issue is addressed.
SP	SP aim to provide a consistently high level of service to all our customers. We have recently undergone an extensive training programme for all our staff to ensure that we continue to improve our communication with our customers and ensure that SP regularly provides the necessary information and support for any new customers that require our advice or help understanding of our expertise. SP have also recently started holding customer surgeries and forums to try and 'demystify' the connections process. Any of our customers are welcome to attend these sessions, where we have experts on hand to answer any queries about current or future projects, or any queries around understanding technical issues or any other concerns our customers may have. The dates for future surgeries are detailed on our website in the Events part of the Connecting to our Network Section (click on "connecting to our network" at spenergynetworks.com).
SSE	A number of standards reflect emerging technologies and as such not all standards are well established. Some may exist in a draft format, subject to refinement as the knowledge base grows around Distributed Generation and integration into a Power Systems network. However, regarding draft standards and other unpublished literature, SSEPD apply these evenly, consistently and to all relevant applications once a defacto policy/standard/recommendation is adopted. Again, in all cases SHEPD will discuss and address any relevant queries arising from the adoption of either published, draft or unpublished standards.
UKPN	It would be useful to see specific examples where this is happening in order to provide a full and informed answer to this question, however, it is UK Power Networks'' intention to address consistency of application within our DG Improvement Plan, this includes, but is not limited to, the publication of policies and standards documents on our website. This will help the understanding of both our customers and staff alike, particularly to ensure similar practices are adhered to across DNO boundary areas.
WPD	A complaint should be made to the DNO about the handling of the individual scheme. The local team will then seek assistance from the appropriate policy team who will determine if we have taken the correct approach or if an alternative solution is possible.

1.7 How much focus on connection offers is on small-scale PV type rather than larger Biomass type (G59). My experience is that this is still poor. E.g. A recent request to increase capacity of existing connection resulted in a quote 5 weeks after standard of service date, despite preliminary discussions to identify solution. Plus an 8-week delay to carry out transformer modification identified at preliminary discussions.

ENWL	We do not discriminate between different types of generation. We recognised that with the influx of very high numbers of small scale PV generation we were seeing a challenge to our ability to issue all quotations well within the GSoP timescales. To address this, we introduced a "connect and manage" policy for small scale PV which allowed us to focus on other applications. This approach was introduced about 18 months ago and we do not believe that the above delays would apply to Electricity North West.
NPG	While Northern Powergrid operate to the GS targets, we aim to provide a response to any enquiry, GS driven or not, as soon as practicable. We have continued to increase the number of designers within Northern Powergrid and also develop their skill sets to deal with DG enquiries. If we have had preliminary discussions with a customer then we would not expect that customer to be dealt with under the same timescales as a customer who had not been through the same process i.e. we would ensure that the designer involved in the discussions carried the scheme through to successful

	communication. When a quotation has been accepted, we always seek to complete our works in accordance with the customer's timescales by making contact with the customer at an early stage to discuss a programme of work. Our aim is to work closely with the customer to meet his timescales for connection taking account of the needs of any existing customers, whose supply we may need to interrupt, access to third party land, plant delivery times and such like that may impact on the plan to deliver the work.
SP	We don't recognise the specific project referred to, but customers should contact us in the first instance if they have concerns over timescales. We treat every application for a new connection seriously and with the highest regard for customer service. We are keen to provide a connection within our Distribution Service Areas to any customer who contacts us, and will work to provide the best solution for every customer. Our design engineers are fully trained and experienced at providing all levels of domestic, industrial and commercial connections, including any distributed generation connections. We operate to the Guaranteed Standards of Performance set by OFGEM and aim to provide all quotations within these guidelines. Our engineers also discuss and agree any delivery constraints with the customer at the earliest opportunity to ensure that, as far as possible, each project is delivered to the customer's satisfaction.
SSE	All projects are measured and issued against the Guaranteed Standards. Very few projects are not issued within the GS timescale, usually as a result of an administrative oversight, however these are very few in number. We do not differentiate in terms of technology type. For example, wind, hydro or PV are all designed, estimated and quoted in a non-discriminatory order as received. All data is recorded within our company Project database, PROMIS, and data is reported to Ofgem quarterly as a RIGS return. Quotations, whether for micro generation or larger DG connections, are provided with a target date for connection, based upon all factors reasonably under the control of SSEPD. These exclude wayleaves, transmission impact, and specialist plant lead times. On occasion, if a transformer requires to be changed, a number of factors may feed into the earliest date this is possible. Some of these factors include plant lead time, specialist plant order, logistics, statutory customer notification period or lead time for labour or workforce to carry out the works. It is not unusual that 8 weeks or more will be required to carry out most transformer changes.
UKPN	All applications received by UK Power Networks are processed fairly and consistently throughout the quotation and delivery process, regardless of generation type. It is always our intention to issue quotations as soon as is practically possible and, in any event, within the prescribed regulatory timescales. The time taken to quote may fluctuate with volumes. The commencement date and duration to complete the delivery of a connection will be dependant upon many factors surrounding the specific requirements of the project, not influenced by the type of generator to be connected.
WPD	It is difficult to comment on an individual connection enquiry but we will endeavour to provide the same high standard of service to all classes of customer and ensure that we at least meet, if not excel, GSoP.

1.8 Have you set up specific DG teams? I.e. that they specialise in these projects?

ENWL	We have a group of engineers who specifically deal with generation applications. This group utilise the support of the wider design team to produce quotations in a timely manner.
NPG	Northern Powergrid does not have specific DG teams. Our connections business is structured in relation to minor and major works, however we feel that we have sufficient experience and knowledge within those teams to ensure that DG customers get appropriate focus.
SP	In order to provide the best possible service to our customers, SP have recently reorganised our New Business section to ensure we have dedicated DG design teams across both Distribution Areas that are fully trained and experienced in designing any distributed generation connections onto our network. We are also reviewing our processes and procedures across each of our Distribution Areas to ensure we activate best practice across both areas in an effort to continually improve our service to our existing and new customers.
SSE	SSEPD have dedicated teams that deal with Distributed Generation. From the initial enquiry and application team, to the Planning Engineer, and Account Manager, the teams the customer deals with

	are dedicated to DG projects.
UKPN	As well as up-skilling some existing employees, UK Power Networks has also recruited new staff to deal with the challenges of DG enquiries. UK Power Networks believes it is best able to deal with peaks and troughs in workload and variations across regions/areas by utilising the existing team structures. It has not therefore set-up a specific DG team but has established a new role of DG Development Manager to oversee service level improvements to the DG community.
WPD	No we have not set up specific DG teams. Our geographically based teams deal with the quotation and the implementation of the smaller generation projects. We find that their local knowledge is invaluable when dealing with such enquiries. For larger projects (generally at 33kV and above), the quotations are handled by our centralised Primary System Design teams and the schemes are then passed to the locally based Major Projects teams to carry out the work.

1.9 We deal regularly with WPD, SSE and UKPN on G59 connections. With the exception of WPD, the applications appear to disappear into a 'black hole'. Are there any directions to others to improve their services?

Ofgem: The suite of incentives under the current and proposed RIIO-ED1 price control include a customer satisfaction survey (broad measure of customer satisfaction), which should incentivise DNOs to respond to their customers' needs. This was only introduced earlier in 2012 and so may not have yet resonated throughout the DNOs' businesses. Furthermore, in RIIO-ED1 we propose to increase the size of this incentive and also introduce an Average Time to Connect incentive to drive behaviour that would seek to minimise the overall time taken.

SSE	Upon receipt of any application, we will go back to the customer within 5 working days to let them know that the application has been received. We also advise what the reference number is and either that the quotation is being processed or what information was missing for us to be able to progress a quotation. If a customer finds that this is not their experience of our application process, we would urge the customer to escalate the issue to a manager for attention. As part of our ongoing improvements, we are also currently working on enhancing our website to make this easier for customers.
UKPN	UK Power Networks has not received a direction to improve its service in relation to G59 connections. UK Power Networks has a "single point of contact" to assess G59 applications, however we recognise that there is an opportunity to improve our communication of this, which forms part of our DG improvement plan.
WPD	

1.10 Why once a grid connection is agreed does work not start immediately? We are likely to see a connection in 2017 for a project that should get consent this year or early next year. Major NSIP project delay creates issues due to EMR

ENWL	We would normally commence a project in line with the customers' requirements. We do not have any project where we cannot provide them a connection earlier than 2017.
NPG	Northern Powergrid would normally commence the delivery of a connection once the connection offer terms are accepted and a contract is in place. However, before installation of assets on site we would expect land rights and consents to be formally agreed with relevant parties. When dealing with applications, we will discuss with the customer their requirements in terms of project timescales, required connection date etc. but also be clear about lead times for plant, wayleaves/easements etc. Once we receive an acceptance, we can start the process and central to this is the planning meetings with the customer to agree key milestones and ensure the works are completed to the customer's satisfaction. We are not aware of any projects with a connection date provided for 2017 however we have agreed some 2016 dates with customers but these were at their

	request.
SP	Our Engineers and dedicated Customer Account Managers actively communicate with each customer throughout the design and quotation process to ensure each customer fully understands our commitment to their connection and also is fully informed and understands the overall delivery process. We will provide regular updates throughout the connection process to ensure that the overall delivery programme is jointly agreed as far as possible between SP and the customer. There may be constraints around plant delivery in some cases and also, on occasion, 3rd party landowner restrictions, but SP are constantly working to communicate with each customer to ensure any such restrictions are accounted for within the overall delivery plan. The aim is always to work to a plan that is understood and agreed between us. On occasion, we have entered into a formal agreement that activity will only commence at the customer's express wish.
SSE	There are a number of reasons why a project may be given a later connection date. One of the common reasons is the access available to the transmission network. Our transmission business, SHE Transmission, is carrying out major reinforcements to large parts of their network to accommodate the volume of generation wishing to connect on to it. In some cases, the network cannot accept any further generation until some of these reinforcements are carried out. However, we are working closely with SHE Transmission to give as much detail of these upgrades to customers as early on in the process as possible.
UKPN	UK Power Networks are not specifically aware that this relates to a project in our licence areas. A project requiring a grid connection is clearly complex and will require a significant amount of coordination. Once we receive confirmation of a grid connection, the commercial arrangements of such a connection will need to be incorporated into its own offer to a customer. Inevitably there will be an interval between receiving confirmation of the grid connection and making this formal offer. Furthermore, only a certain amount of work can be undertaken in advance of payment being received. On receipt of payment, we will commence works as soon as it is able to depending upon, amongst other things, consents being in place, outages being agreed and plant and equipment being available.
WPD	We will commence work as soon as it is practicable to do so but the timescales for connection are dependent on many factors, not least the customer's requirements. Mitigating factors that can delay projects include obtaining third party consents, lead-in times for 'non-stock' plant and equipment, requirement for special surveys, distribution system outage windows, operational constraints and the requirement to carry out upstream reinforcement. Our experience shows that more often than not we are ready to proceed but the customer may not be for reasons such as being unable to obtain planning permission.

1.11 What is the best way of accessing ENA activities as a DG customer? The ENA website is difficult to navigate and staff are elusive.

ENWL	Suggest it is best to contact us and we will help facilitate what you need.
NPG	It is a shame that some DG customers are finding the ENA website 'difficult to navigate' as there is some excellent information on there to help them that seems more than accessible to users. If DG customers are finding it hard to understand they can talk to us at one of our customer surgeries where we'd be happy to help.
SP	As a member of the ENA we are working to ensure we are involved and assist with any improvements that may be required to the ENA website. SP has made significant improvements to our own website in the last 6 months, aimed at improving our communication with our customers and in an attempt to make SP more customer-friendly and approachable. We are continually looking at further improvements that we can make for the benefit of our customers. Some of the initiatives that we will be implementing shortly include more detailed heat maps of each of our Distribution Areas to highlight any available capacity on our network, and also to provide a service for on-line applications. Both of these initiatives have been positively received by our stakeholder groups, and we are keen to progress with any other initiatives that will be beneficial to our customers.
SSE	We feel this is a question best directed at the ENA. The ENA has a number of published contact email addresses together with individual roles available at: - http://www.energynetworks.org/info/about/staff.html
UKPN	UK Power Networks believes this question should be formally directed to Paul Jewell of ENA who

	presented at the DG Fora. .
WPD	We are unable to comment. But we will pass this feedback to the ENA.

1.12 Is the application process capable of flexibility? Are there circumstances (special) whereby an earlier connection offer (than 90 days/65 working days) could be made? We have been told, offer on the 65th day! It means project jeopardy!

Ofgem: These timescales are maximum deadlines in order to provide a standard level of service for customers. However, there is nothing to prevent DNOs from creating internal efficiencies and providing offers before these maximum targets, which are set out in the licence. As part of RIIO-ED1 strategy consultation we are proposing a 'time to connect' incentive in order to encourage these internal efficiencies and greater commitment to flexibility.

ENWL	We will always seek to accommodate specific customer needs balanced by the need to not unduly disadvantage other customers.
NPG	Whilst the GS targets are the maximum allowed time to provide the offer, we do also give customers an indication of the average time to provide a quotation by work type, as shown on our website. If a customer has had preliminary discussions, we would expect to provide an offer a lot quicker than the 65 working days, especially if the discussions have been in sufficient detail to allow a lot of the design considerations to be done in advance of the formal application being received.
SP	The GSoP timescales are maximum timescales and as outlined above in Q1, we aim to provide connection offers well within these timescales. We welcome the opportunity to work with customers and will always endeavour to meet customer timescales. However, we do have a large volume of speculative enquiries which do not result in a DG connection. This ties up a lot of design resource and impacts on our ability to be flexible with customer requests. The introduction of GSoP means that we typically need to respond to connection applications in the order they come in.
SSE	As per question one above, we aim to get any offer out to the customer as quickly as possible. We are obliged to be non-discriminatory towards all customers, which means we need to issue quotations on a 'first come first served' basis, and this means that all offers need to follow the same process. For these reasons, and due to the high volume of speculative applications we receive, it can be difficult to advance any quotations on the current average timescales.
UKPN	See answer to question 1
WPD	See answer to question1. We don't believe it is an issue of flexibility but currently one of volume of applications. Our obligation is to provide an Offer as soon as is practicable and if that can be achieved before the GSOP/licence timescales then we will endeavour to do so.

1.13 Can Ofgem impose statutory timescales for feasibility studies?

Ofgem: This is not an area where we have set specific licence obligations for timescales however the Broad Measure of Satisfaction incentive (as mentioned in 1.5) and the proposed Average Time to Connect Incentive to improve overall delivery timescales should both encompass this work. We consider that feasibility studies should provide greater certainty where applicants require it. However, we would expect that any feasibility studies should not have a detrimental effect to the application process and the receipt of an offer, that any extensions to these timescales will involve dialogue with the applicant and ongoing updates regarding delivery and timescales.

ENWL	Internally we treat feasibility studies as if they were a customer's application. In order to delight all our customers we therefore have an internal standard to issue these quotations in line with the equivalent regulatory standards
NPG	If the offer requires a feasibility study we will endeavour to progress this as quickly as possible, be upfront & clear with the customer about the potential timescale to obtain this and keep them fully informed as we progress through this.

SP	The provision of a feasibility study is something we would encourage all large DG customers to ask for. We are happy to work with customers to provide the information they need to make their DG scheme cost effective. Although no formal timescales exist for the provision of a feasibility study, we always endeavour to meet the customer's timescales and if for any reason we are unable to do so, we will seek to agree a mutually agreed timescale to suit their needs.
SSE	
UKPN	This question is directed at Ofgem
WPD	

Section Two: Information Provision

2.1 **What progress has been made by the DNOs in providing information to generation customers on connection capacities at all voltages across their areas?**

2.2 **Provision on HV network data online: The provision of geographic and schematic diagrams of HV networks on line to the extent that DNOs have this information electronically, has been a longstanding desire of parties wanting to get an initial feel on the possibility of connecting generation of two or three MW or less.**

2.3 **Can DNOs, ENA, NG provide briefs on technology developments they would like to see or provide detailed info that explain DNO issues and allow the market/technology developers to respond with solutions?**

2.4 **WPD's EHV geographic/site specific charge is not made clear until well down in the process.**

2.1 What progress has been made by the DNOs in providing information to generation customers on connection capacities at all voltages across their areas?

ENWL	The calculation of capacity available for DG connections is not a simple process and depends to a large extent on the operating characteristics of the DG. To illustrate this, commercial scale PV would have a significantly different effect on networks than CHP within a 3 shift process plant. Electricity North West already publishes considerable detailed information on its network ratings and loadings. These are supplemented by thematic maps indicating areas of relative capacity availability known as "heat maps" (http://www.enwl.co.uk/our-services/connection-services/heat-maps). Electricity North West believes a more useful information provision can be made available along the lines of that presented at the recent DG forum and is working to bring that to reality.
NPG	The Northern Powergrid website has already been enhanced to include 'heat maps' for both the High Voltage and Extra High Voltage networks. These indicative maps provide an indication of the networks capability to connect large scale generation to our existing network or dedicated circuits connected to major substations.
SP	As set out in our answer to question 2 below, we are enhancing the information available on our website to provide a greater level of information about available capacity on our network. We aim to communicate at every point of the connection process with each of our customers. We have enhanced our processes over the last 12 months and have embedded a culture of discussion and conversation with the customer at every stage of the quotation process. As soon as the voltage level of connection and approximate point of connection to our network is understood, this is communicated to each customer, and the next step of the process is discussed and agreed before the final design is completed. This process is standardised across both of our Distribution Areas for all voltages, and every customer should expect this level of communication for each project. The full Connection process is explained in the guidance document on the attached link to our website - http://www.spenergynetworks.co.uk/connecting_to_our_network/guidance_leaflets.asp?NavID=21
SSE	SSEPD experience few difficulties in connecting DG customers in SEPD, therefore information has not been extended beyond the published Long Term Development Statement (LTDS). SHEPD have witnessed significantly larger DG connection activity and a number of networks are now facing capacity issues related to transmission constraint (reverse power flow), cct thermal rating, voltage rise or complex issues with a number of issues. In addition to the data published on the EHV network contained within the LTDS, we have recently published Generation thermal headroom figures at Primary s/stn and GSP levels. In addition, to permit greater access to information, we permit developers to secure web- based access to our GIS mapping system thereby circuit/cable lengths and construction types may be readily accessed.

	DG connections require a number of factors to be carefully considered before a feasibility report for connections offer is provided. Voltage rise is frequently the network constraint where the impact may largely depend upon generation capacity applied for, technology type (synch/asynsc/Inverter) and distance from source, so publication of "capacity available" may not provide an accurate guide.
UKPN	UK Power Networks has developed a heat map for its EPN Licence area and this will be placed upon the website shortly. A similar map for SPN will follow. Given the small volumes of generation connections in London, it is unlikely that a map for LPN will be produced. However, we periodically review this.
WPD	We have committed to extend the online Midlands DG capacity map to cover South Wales & South West – for the 11kV networks by September 2013

2.2 Provision on HV network data online: The provision of geographic and schematic diagrams of HV networks on line to the extent that DNOs have this information electronically, has been a longstanding desire of parties wanting to get an initial feel on the possibility of connecting generation of two or three MW or less.

ENWL	See above. Whilst information can be made available, without understanding of detailed network loading profiles, fault levels and existing customer behaviour, it is unlikely that the information would be of use to developers in this format and may indeed result in them incurring abortive costs.
NPG	Northern Powergrid provide on-demand services for the purposes of Safedig Maps: Northern Powergrid (Northeast): The system allows the customer to download mains record maps along with an application to aid the locating, viewing and printing. Northern Powergrid (Yorkshire): The system allows the customer to locate, view and print mains record plans via a website.
SP	We are currently working on a new initiative to provide more detailed heat maps on our website which will show the available capacity for each network area in geographical format. This will enable all customers, both load and generation customers, to have the ability to view online the capacity information that is currently available in a more detailed format in the Long Term Development Strategy. We are introducing this new initiative in an attempt to be more forthcoming with our information and are actively looking to work with our customers to help provide the information they require in an easy to understand format. We are keen to implement more of these initiatives in the future and are constantly striving to build relationships with our customers and stakeholders alike.
SSE	GIS access is provided on request by all interested parties. Our email for this is mapping.services@sse.com The HV network diagrams across SEPD/SHEPD extend to many thousands of pages and are frequently subject to update. The developer may request the appropriate HV circuit diagrams from SSEPD, together with fault data and (limited data) on the contracted generation background, for which a small charge is made consistent with that published on the CCMS.
UKPN	Under the terms of UK Power Networks Ordnance Survey licence (which applies as our data is superimposed onto OS maps), such diagrams may only be shared in very limited circumstances. LPN, SPN and EPN each enjoy the benefits of a licence from the Ordnance Survey to use Ordnance Survey data for the purposes of carrying on their authorised activities under the Electricity Act. This licence limits with whom data can be shared. LPN, SPN and EPN are not permitted even to share data within the UK Power Networks group (save in the circumstances below) as that potentially exposes them to the risk of breaching the Competition Act and the adverse consequences that flow from that. The OS licence does permit data to be shared with a contractor which is carrying on the licensed activity of the DNOs, but only if that contractor has signed a "contractor licence" to use the Ordnance Survey data (and this includes UK Power Networks (Operations) Limited). The only other times that OS data may be shared are: • where UK Power Networks is required to do so to comply with statute (i.e. to comply with requirements to make underground maps available under the Electricity Safety, Quality and Continuity Regulations); • where an ICP requires such data but only for identifying a connection point and not for the

	design of a new route; • with a public body or another Utility which also has an Ordnance Survey licence for the same area and for the same data, or with their contractor who has signed a contractor licence with that public body or Utility. For example, our DNOs would not be permitted to share data with a third party working to its own design and carrying out contestable works, as it is not carrying on licensed activities for one of the DNOs and is not eligible to enter into a contractor's licence. Notwithstanding such licence obligations, clearly there may also be security concerns in having our infrastructure available in the public domain.
WPD	HV and LV geographic network diagrams are available to developers and other parties via a secure internet based application. Details are available on our website under "Location of WPD's equipment".

2.3 Can DNOs, ENA, NG provide briefs on technology developments they would like to see or provide detailed info that explain DNO issues and allow the market/technology developers to respond with solutions?

ENWL	Where DG has fuel or energy storage and can operate or shutdown on request then this is of much greater use to the DNO as it facilitates support of the network and can be curtailed when the network is constrained – Biomass such as landfill is ideal.
NPG	In addition, as part of our customer surgeries, we openly discuss issues with customers whose connection request may cause issues on our network and actively work with them to understand what solutions may be achievable to ensure a successful offer is produced to the customers' satisfaction. Within our 2013 company innovation strategy, we have a stated objective to facilitate easier network access for connections customers through technology innovations. In Q1, 2013 we will be working up our approach to deliver this strategy and look to understand what specific technologies may meet this objective. We also plan to hold supplier review sessions along with our colleagues in Technical Standards and Procurement. In terms of specific technology innovation projects already in progress, we have recently completed a LCNF tier 1 project for a 33kV super fault current limiter which has been installed on our Yorkshire network. In terms of our CLNR tier 2 project, we have engaged with a number of novel technology partners so that we can procure and trial products to both monitor and resolve thermal and voltage issues that arise on our distribution network. These products will be trialled under controlled conditions on four distinct network areas during 2013 and, in the subsequent analysis performed by Durham University, we will be considering where these products could be utilised elsewhere to enable the connection of more low carbon technologies. The outcomes of these trials will be shared with; DNOs, industry stakeholders and interested parties through; our project communications team, project website and the LCNF dissemination events.
SP	We are actively engaged with the Low Carbon Network Fund arrangements administered by Ofgem to facilitate innovation and sharing of technology. We engage with potential partners on a regular basis and work with a range of academic and other organisations to develop new projects that are suitable. Through the ENA, a vendor database has been established which allows any interested parties to register their interest. We are also actively engaged in the Energy Innovation Centre (EIC) which acts as a platform for organisations to propose ideas to a variety of DNOs. The EIC has also established a list of issues, available on the website, for technology developers to consider.
SSE	The DNOs formed an organisation called the Energy Innovation Centre. This group walks a number of industry "challenges" around innovators, universities and entrepreneurs to promote the development of new solutions. The EIC then works with the innovator to develop, where possible, the idea into something that can be applied on the network. This mechanism is open to all.
UKPN	The main DNO constraints associated with connecting DG onto to the distribution networks are voltage, thermal, reverse power flows and fault current. These are industry known problems and DNOs are looking at innovative solutions to address these constraints. An example of that is UK Power

	Networks Flexible Plug and Play project which is trialling active network management techniques and the technology of dynamic rating of overhead lines for addressing thermal and reverse power flow constraints triggered by connection of DG at constrained parts of the network. In addition, the Flexible Plug and Play is considering utilising enhanced substation voltage control or reactive power control of generators to alleviate voltage constraints. UK Power Networks is working with a number of suppliers that provide solutions in these areas but also a number of customers that have innovative ideas of how certain network connection issues could be mitigated from their experience in other parts of the world.
WPD	We will look at including this information as part of ongoing stakeholder engagement with the DG community.

2.4 WPD's EHV geographic/site specific charge is not made clear until well down in the process.

WPD	Calculation of the Connection Charge cannot be achieved until after the system studies are completed and the design finalised. Inevitably, this will be just prior to the Offer being made. However, there are other routes available to the customer. For example, a Budget Estimate can be provided within 20 working days or, where required, a more detailed Feasibility Study carried out. In addition, for those customers wishing to obtain a rough figure for connection, indicative charges are available within Section 7 of WPD's Statement of Methodology and Charges for Connection. We will also be happy to discuss options on an informal basis and provide advice on likely costs.

Section Three: Assessment and Design Fees

3.1 **UKPN state that there is only a 5.5% acceptance of DG connection requests. What are the reasons for this being so low? What are the main issues? (costs/technical/capacity of grid at connection point?)**

3.2 **What is your solution to the A&D fee issue?**

3.3 **We welcome better network information and breakdown of costs. Could an upfront connection fee further facilitate the connection application process? Could this free up capacity by encouraging developers to use upfront information and feasibility studies and reducing the volume of connection applications, thereby freeing up DNO resources?**

3.4 **What are the connection offer acceptance rates in SPEN and SHEPD areas? Could they work through the ENA/Renewable Energy trade associations to set out a fee for applications?**

3.5 **Marc Smeed (Glasgow Forum) suggested reintroduction of charges for connection application. Could this change be used to offset feasibility study costs and/or could discount be offered on the connection application for those who had completed a study?**

3.6 **Application fees for "large" generators in the north of Scotland: This relates to the north of Scotland particularly where generators of 10MW and over are classified as large. The issue concerns the size of the application fees and the lack of clarity about what the transmission related application fees that are paid directly to NGC are for (for a BEGA or a BELLA) as opposed to the fees payable through the DNO (application for a Statement of Works and then a modification). We have been unable to get any statement from either NGC or a DNO as to what work each fee covers and whether in fact they are not each nominally paying for the same investigations to be done.**

3.1 UKPN state that there is only a 5.5% acceptance of DG connection requests. What are the reasons for this being so low? What are the main issues? (costs/technical/capacity of grid at connection point?)

NPG	On a regular basis, multiple requests for the same location for differing DG connection sizes are received from the same customer or from a number of customers as the site location is attractive for development. As this comprehensive service is free, the information provided as part of the quotation can be used by independent parties to minimise their own design costs, whilst achieving a professional and guaranteed level of service.
UKPN	Although the question is marked as being specifically directed at UK Power Networks, we would also look to customers to provide feedback as to the reasoning behind this. Clearly the removal of up front assessment and design charging has resulted in an increased number of connection applications where previously budget estimates or feasibility studies may have been requested. It may also be the case that more quotation options are being requested for any particular project where, even if the project goes ahead, only one quotation option will be accepted. Going forward, we plan to offer a surgery service to offer any informal advice before the application is made, avoiding aborted work for both the customer and the distributor. Further, we welcome the increased activity levels in the competitive connections market and this again will increase the number of connection applications per project where at the end of the bid process only one quotation will ultimately be accepted (Note that Ofgem has recently determined that UK Power Networks has passed the Legal Requirements Test and the Competition Test for the "metered distributed generation HV & EHV" market segment, for each of its three licensed areas. This provides recognition of the significant levels of competitive activity in this market segment).

3.2 What is your solution to the A&D fee issue?

Ofgem: A&D fees are set out as part of Electricity Act section 16A(5) which is within the remit of the Secretary of State to change. This is something we appreciate could help to manage resources and reduce speculative applications. We have encouraged DNOs to work with stakeholders to provide the business case to DECC for the regulations required to enact this legislation.

ENWL	We are working with other DNOs to put a case to DECC for upfront A&D fees. However, it is also important that we provide customers enough information so that they can assess the viability of projects in a more effective way for all parties. See response above.
NPG	Northern Powergrid is leading the production of the business case, supporting the re-introduction of upfront A&D fees. The initial draft was provided to the Connections Commercial Operating Group in December 2012 and will be refined over the coming months with a target to support Ofgem in submission of the case to DECC by the end of Q1 2013. It is important to recognise the direct benefits customers may see by the introduction of upfront assessment and design fees. In the absence of a clear cost signal to positively influence customer behaviour, it is extremely unlikely that the number of abortive requests will reduce. The re-introduction of this cost signal will benefit customers through: reducing the average time to provide a quotation, which in turn will reduce the average application to connection time; and increase the amount of quality customer interaction by providing more capacity for upfront detailed discussions tailoring proposals to ensure customers' business plans/needs are more appropriately addressed. This enhances the experience we want our customers to have with Distributors by allowing more flexibility to meet customers' demands e.g. requests for meetings, scoping discussions, optioneering etc. We recognise also that customers might not be happy with having to pay upfront fees and are looking at other ways, notably web based, where the customer can obtain a budget estimate for themselves and maybe more.
SP	We are currently compiling evidence of demand and generation application activity for onward submission to DECC as part of a DNO-wide initiative. It is not possible to quantify precisely the impact that upfront A&D fees would have, however a high proportion of quotations that we issue (> 80%) are not accepted. This has a number of effects: a) Our design resource is tied up providing formal quotations that will not progress; b) Customers receive quotations as soon as reasonably practicable but not as soon as would be delivered if customers reasonably limited their volume of applications; c) Our business overheads in relation to jobs that do progress are significant, and we are faced with absorbing that overhead or passing it onto customers whose projects progress. With other DNOs, we will collate evidence to provide to DECC to support the need for A&D fees to be implemented and will copy this to Ofgem early in 2013.
SSE	SSE is involved in preparing a joint DNO submitted business case to Ofgem in support of reintroduction of A&D fees. We would support the principle of introduction of upfront fees.
UKPN	UK Power Networks believes the re-introduction of "Upfront Assessment and Design Charges" (as proposed in Chapter 8 of Ofgem's RIIO-ED1 Strategy Consultation document - "Outputs and Incentives") would make a positive contribution in enabling DNO resources to focus efforts on providing a more efficient and effective quotation service. The scale of work involved in producing a quote is extensive and involves a series of activities that will include some or all of: enquiry and application processing; site visits; network assessment; technical design and approval; cost estimation; and production of the formal quotation and associated network drawings. Consequently, the application of an up-front charge would help to deter many customers from requesting speculative quotations and hence avoid unproductive time and unnecessary costs. In the longer term, the development of competition may change the dynamics and cause DNOs to consider different offerings. However, we believe there is a very strong DNO consensus for DECC to enact the revised section 16A of the Electricity Act 1989 (as amended by the Energy Act 2008) and UKPN will seek to demonstrate the necessary evidence to support such a move.
WPD	WPD is very disappointed that the issue of A&D has remained unresolved since 2008 following a complaint from an IDNO which prompted Ofgem's advice that A&D fees could not be charged under current legislation. The industry drafted proposed regulations and held discussions with the then BERR (now DECC). It would have been extremely helpful to have been able to manage speculative

	applications and focus resources effectively. Going forward, we are part of a collaborative DNO initiative by the COG Connections sub-group to build a business case to take to DECC in support of A&D Fees. We hope this will submitted in the near future. It would be helpful for the DG community to lobby DECC in support of the reinstatement of A&D fees.

3.3 We welcome better network information and breakdown of costs. Could an upfront connection fee further facilitate the connection application process? Could this free up capacity by encouraging developers to use upfront information and feasibility studies and reducing the volume of connection applications, thereby freeing up DNO resources?

ENWL	We agree in principle but recognise that we need to provide other routes such as upfront information or feasibility studies.
NPG	We are continuing to update our website with information to support our customers in their decision-making process and to allow as much information to be gathered in advance/to support any formal application. In addition, the connection charging methodology and statement is now common across the industry and contains a significant amount of information with which to inform customers. In Northern Powergrid, further enhancements will be coming on-line throughout 2013 and we are looking to further develop access to information on our HV & LV networks to allow a greater level of customer decision making.
SP	As part of our continued development in providing clearer/simpler forms of quotation, we are also working on ensuring that all quotes include a greater breakdown of costs such that they are more clearly cross-referable to our charging methodology.
SSE	Yes, we would see this being mutually beneficial; with the provision of enhanced upfront information permitting the developer to undertake a first pass assessment as to the financial viability of their scheme. We provide a breakdown of costs with all formal connections applications more than twenty thousand pounds. We have, for a number of years, provided a breakdown of costs on request.
UKPN	See answer to question 2 above.
WPD	This appears to be an Assessment and Design Fee which Ofgem has advised is not currently permissible, See above. However, we are looking at introducing a refundable deposit, although we are not sure that this will be effective.

3.4 What are the connection offer acceptance rates in SPEN and SHEPD areas? Could they work through the ENA/Renewable Energy trade associations to set out a fee for applications?

SP	Please see our answer to Q2 above.
SSE	Definitive connection acceptance rates are difficult to provide with a degree of certainty. Each DG application may receive a number of quotation offers at the same or altered capacities prior to finally lapsing or contracting. We believe a connections acceptance rate (in terms of gross number of quotations issued) is 40%.

3.5 Marc Smeed (Glasgow Forum) suggested reintroduction of charges for connection application. Could this change be used to offset feasibility study costs and/or could discount be offered on the connection application for those who had completed a study?

ENWL	We will need to consider the detail of how upfront A&D fees would work if DECC indicate that they are prepared to develop the relevant regulations.
NPG	We are only allowed to recover reasonable costs and it is likely that any upfront A&D fees would be

	deducted from the connection offer should the project be accepted and proceed. However, one of the proposals in the business case is to seek input from customers so any suggestions which received the appropriate support and that could be implemented whilst being compliant with any appropriate regulatory or licence obligations, may well be introduced.
SP	In the event that upfront A&D Fees were reintroduced, the cost of the A&D Fee paid upfront would be offset against the connection charge should the customer accept their offer. Similarly, if a customer has elected to commission that SP undertake a feasibility study on their behalf which subsequently results in an accepted offer, we would envisage a discount on the associated A&D fee for the production of that offer to reflect work already undertaken for the feasibility study.
SSE	Reintroduction of the upfront A&D fee is simply payment in advance. The cost of providing resources such as planners or administrators to provide connections is presently spread across the smaller level of accepted projects. Introduction of upfront A&D fees restores the balance with each applicant meeting their project's designed fee. This is cash neutral in terms of funding. The feasibility study cost is credited in full against any follow-on formal application which can make use of the study work compiled for the feasibility. We are unable to provide credit for prior feasibility work where a significant period of time has passed or the network study requires to be updated, or, where a new solution is sought, not making use of the earlier study work.
UKPN	See answer to question 2 above
WPD	See above answers on Assessment and Design fees.

3.6 Application fees for "large" generators in the north of Scotland: This relates to the north of Scotland particularly where generators of 10MW and over are classified as large. The issue concerns the size of the application fees and the lack of clarity about what the transmission related application fees that are paid directly to NGC are for (for a BEGA or a BELLA) as opposed to the fees payable through the DNO (application for a Statement of Works and then a modification). We have been unable to get any statement from either NGC or a DNO as to what work each fee covers and whether in fact they are not each nominally paying for the same investigations to be done.

SP	Much work has been undertaken by SPT, SHETL and NGET to reduce the level of fees associated with the SoW process in Scotland. Our offers clearly set out the two stages in the process and the associated fees that are required to be paid to NGET. The first stage (Fee of £500+VAT) is an initial assessment by NGET and the affected TO. Once concluded, a response is given to the DNO advising whether or not there is an impact on the Transmission System as a result of the connecting generation. The second stage (£1000+VAT) in the SoW process is the project progression stage and requires the DNO to submit a modification application to NGET. The outcome of this stage is a construction offer to the DNO setting out any associated constructions works, programme and costs. With regards to BEGA and BELLA applications, SP has no direct contractual relationship with NGET for these types of agreements. These are bi-lateral agreements between the customer and NGET and we therefore cannot comment on the application process or associated fees.
SSE	The Statement of Works fee payable to National Grid via SHEPD (currently £1,500) covers the admin and technical analysis costs of both Scottish Hydro Electric Transmission plc and National Grid Electricity plc in providing a contract for connection of the proposed development. A BELLA / BEGA is a direct contractual relationship between the Developer and National Grid Electricity plc. SHEPD are unable to comment on the scale of this particular charge as it plays no part in this process. With regards to a large embedded application, the fee covers the technical analysis, detailed costing and contractual administration of both Scottish Hydro Electric plc and National Grid Electricity Transmission plc. A Developer can apply on a fixed or indicative basis. Applications requested on an indicative basis are reconciled at completion and any surplus is refunded to the Developer.

Section Four: Charging

4.1 **Why do there appear to be different approaches to charging for generation outlines compared to that of normal outlines for load connections?**

4.2 **Although, we thought that the new guarantees obligated the DNOs to provide much more of a detailed breakdown of their charging structure for the connection work in reality we are as yet to see this detail provide by the DNOs. Is there a reason for this?**

4.3 **Do the DNOs pass too much of the reinforcement costs to the customers? Why should DG operator pay to enhance the DNO's asset base?**

4.4 **Why is there the difference between EHV (33kV) and HV (11kV)? E.g. 5MW could be £18k-£25k per annum versus zero cost at 11kV?**

4.5 **Why should DNO bear entire cost of facilitating the connection, i.e. reinforcement? Connect and be constrained or manage output using ES and connect quicker (e.g. Ireland)**

4.1 Why do there appear to be different approaches to charging for generation outlines compared to that of normal outlines for load connections?

ENWL	We presume the question relates to "offers" rather than "outlines". We would treat them in the same manner. If the originator has some specific examples, we will be happy to discuss further.
NPG	Charging for all connections should be consistent and in line with the published Charging Methodology that Northern Powergrid and all other licence holders publish in a common format.
SP	We are not quite sure of the specific query here but if the customer would like to contact us we would be happy to discuss the particular issues of concern.
SSE	Generation connections face some unique challenges when connecting to an existing network. In addition to thermal constraints (line rating), voltage rise and fault level contribution may also require an enhanced solution over what may be an equivalent demand connection. If and when system reinforcements are required, the cost associated with reinforcement remains the same regardless of whether a demand or Generation connection is the originator. However, under cost apportionment rules (published within CCMS) the demand connection is cost apportion in full, whereas the DG connection faces a High Cost cap. This is deemed to be £200 per kW of connected generation capacity. Up to the cap, apportionment is conducted as normal, where above the cap, the developer pays the full value of excess reinforcement together with an additional 20.9% uplift to reflect the enhanced Operations and Maintenance costs over the asset's lifetime, protecting the general customer base from receiving an uplift on UoS charges.
UKPN	
WPD	We are not sure we understand this question but we apply the same charging methodology regardless of whether it is a generation and demand customers other than for reinforcement costs in excess of the £200/kW threshold.

4.2 Although, we thought that the new guarantees obligated the DNOs to provide much more of a detailed breakdown of their charging structure for the connection work in reality we are as yet to see this detail provide by the DNOs. Is there a reason for this?

Ofgem: We don't specify what information DNOs need to provide in their charges – this may vary from DNO to DNO and may rightly need to be tailored for different types of customers/jobs. However, we approve their individual charging methodologies and have made it clear to the DNOs that providing customers with detailed

but easy to understand information in the charges is key both to delivering good customer service and also enabling competitors to compete for work. Installation of new connection assets is not a natural monopoly and we believe that competition in the connections market will lead to improved service delivery. We set out arrangements to facilitate the development of competition for connection services and have introduced a Competition Test for DNOs to pass before December 2013. The market was split into segments and DG is considered to be a market segment where competition can exist. In order to pass this test, DNOs need to demonstrate that competition exists, which should involve providing customers with details and clear information in the charges.

ENWL	We have had feedback from customers that the level of detail we provide is amongst the best of the DNOs. We would appreciate feedback from customers if that is not their view.
NPG	The Common Connections Charging Methodology (CCCM) stipulates the level of breakdown to be provided as follows: For Connection Offers that include Contestable Work with a Connection Charge in excess of £20,000, we will provide a breakdown of costs, which will include as a minimum:- • a description of the works involved, including whether it is an Enhanced Scheme • the length of underground cable/overhead line required • the number of substations required • information on any Reinforcement works required • legal and professional charges associated with the securing of Land Rights.
SP	We provide a breakdown of our charges within our quotation letters, including splitting contestable and non-contestable activities and also a breakdown of major elements of work. We continually strive to improve the information we provide to customers so they can make an informed decision on their connection offer. We have plans in place to provide more detailed cost information. If any customer feels they need more information than that provided in the quote, they should contact us in the first instance.
SSE	Within our standard contract offer we provide a full narrative description of the works to be undertaken, split into contestable and non-contestable works which may then be related to our published units costs within our CCMS. Within our cost breakdown we will provide: - A&D Fee Wayleave and legal fees Sole user costs (per voltage level) Reinforcement costs including full details on the apportionment formulae used (Gen Capacity / New Network Capacity) together with full details on any High Costs applied (per voltage level).
UKPN	
WPD	WPD now provides a more detailed breakdown of contestable and non-contestable works within its connection offers.

4.3 Do the DNOs pass too much of the reinforcement costs to the customers? Why should DG operator pay to enhance the DNO's asset base?

Ofgem: In areas where there is limited capacity, the network may need to be reinforced to accommodate a customers' requirement. Reinforcement can be triggered by an individual customer or undertaken in advance by the DNO in anticipation of future network reliability issues. If undertaken by a DNO in advance, these costs are recovered from all users through Use of System charges (assuming approval from Ofgem). The connection charge includes a share of network reinforcement costs and connecting DG customers pay for use of the distribution system reflecting the cost impact they cause. Customers contribute towards reinforcement up to one voltage level above the voltage at which they connect to the existing network and for lower voltage DG

customers this results in 'credits' where they defer the need for investment. We consider this to be a fair system and a way to encourage the most efficient use of the network.

ENWL	Reinforcement costs are cost apportioned based on cost apportionment factors that are detailed in the Common Connections Charging Methodology. These are based on the "shallowish" connection charge principle introduced by Ofgem.
NPG	The connections boundary is set by Ofgem and determines how reinforcement is apportioned. The question is how much of the general mass of customer DUOS should be contributed towards DG connections?
SP	Reinforcement costs are apportioned and charged in accordance with our approved Connections Charging Methodology. It is a licence requirement that we can only charge in line with this methodology. SP's connection charging statement can be found at this link (http://www.scottishpower.com/uploads/SPENConnectionMethodology2012.pdf)
SSE	All connections assets add to the DNO's Regulated Asset Base, as a liability, but they do not add to the Regulated Asset Value so do not increase any revenue. Connections methodologies adopt the same basic principle whether Generation or Demand originated and are fully in line with our approved CCMS.
UKPN	Ultimately, all the costs of connection are met by customers whether within the initial connection charge or within use of system charges met by all customers. The current 'shallowish' charge methodology results in only a proportion of the reinforcement costs being included within the connection charge. We must recognise that any spare capacity created by the reinforcement works may or may not ultimately be used by any other party, and may or may not be subject to inclusion of the original costs within connection charges. Also the current apportionment factor based on the increase in customer capacity requirement divided by the total new network capacity often results in the connection customer paying only a small proportion of the reinforcement costs.
WPD	The apportionment rules are set in accordance with the current charging methodology and may not be changed without agreement by Ofgem. They are devised to provide some form of locational cost signal to the customer but the customer will only be required to pay a proportion of the overall costs dependent on their capacity requirements and cost apportionment factor. In some cases the customer may pay very little toward the reinforcement costs, the rest of which is funded by the DNO's wider customer base.

4.4 Why is there the difference between EHV (33kV) and HV (11kV)? E.g. 5MW could be £18k-£25k per annum versus zero cost at 11kV?

ENWL	Demand and generation charges are derived under a common methodology by all Distributors. An export connection at 33kV is classified as Extra High Voltage (EHV) and the EHV charging methodology used to derive export charges is based on a socialised cost with a locational element which is applied as a credit. If the generator is located in a demand-dominated area, it will pick up a credit that will outweigh the cost and receive an overall credit. If the generator is located in a generation-dominated area, it will not receive a credit and receive an overall charge. Consequently, at EHV, generators will receive a credit or a charge depending on where they are connected. It should be noted that Ofgem recently decided that credits for EHV generation will only apply to non-intermittent generation and not to intermittent generation. All generators connected at HV will receive a credit, as their charges are not location specific. However, a change proposal is under consideration which will remove credits for those HV generators connected to a generation dominated primary substation and this will align HV charges closer to the EHV charges.
NPG	This is because there are different charging methodologies in place at the different voltage levels. A significant amount of work has been undertaken in recent years to move distribution network operators (DNOs) away from their legacy use of system (UoS) charging mechanisms to new common industry charging methodologies. In April 2010, the common distribution charging methodology (CDCM) for low-voltage (LV) and high-voltage (HV) customers was introduced, and this introduced potential credits for these generators based on the units that they exported. At this point in time, the

	extra-high voltage (EHV) generation customers were either exempt from UoS charges (if they were connected pre-April 2005) or they paid UoS charges that broadly reflected the generation incentive mechanism. In April 2012, the extra-high voltage distribution charging methodology for demand customers was introduced but Ofgem rejected the generation proposals so the previous EHV generation methodology remained in place. On 5th December 2012, Ofgem approved the new EDCM for generation customers and this will be implemented in April 2013. This new methodology introduces the potential for non-intermittent generators to get credits for the units that they generate. Generators connected prior to April 2005 are entitled to a 25 year exemption from UoS charges.
SP	There are different approved distribution use of system charging methodologies applicable to EHV generation compared with generation at lower voltages. We are not quite sure what the specific query is here, but if the customer would like to contact us we would be happy to discuss.
SSE	Our obligation is to provide the customer with the least-cost engineering connection solution. The connection voltage (which dictates the GDUoS charges) does not currently come into consideration when designing the connection.
UKPN	This question requires further clarity to enable an answer to be provided
WPD	The fundamental reason is that EHV and HV charges are calculated using different methodologies. From April 2013, EHV demand and generation sites will be charged under the EDCM (EHV Distribution Charging Methodology) on a site by site basis whilst HV sites are charged under the CDCM (Common Distribution Charging Methodology). Both methodologies are common to all DNOs and subject to governance under the DCUSA. (Distribution Connection and Use of System Agreement). Currently EHV generation sites are charged under the WPD LRIC methodology, that is also a site specific charging methodology.

4.5 Why should DNO bear entire cost of facilitating the connection, i.e. reinforcement? Connect and be constrained or manage output using ES and connect quicker (e.g. Ireland)

ENWL	The decision on the apportionment of costs between customer groups is a regulatory issue. There are various methods such as FIT rates that have a material affect outside of pure DNO charges and hence the balance between the various incentives and subsidies is one for Ofgem to provide guidance on.
NPG	It is clear that when it comes to who pays for reinforcement the rules with respect to the connection of DG are not as clear as those for demand connections where the apportionment rules make life easier for all concerned. The increase in DG connection requests make the case for new rules to be developed that can be applied across the industry which will make it clear who pays for the reinforcement aspects of any DG connection, the customer or the DNO (by socialising the costs). In some instances in Northern Powergrid, the DG customer has been happy to accept a non-firm 'constrained connection' and to manage his output to match system loadings as opposed to paying more for a firm connection that would be capable of taking his full output 24/7.
SP	"Connect and manage" arrangements, such as apply in relation to electricity transmission in GB, enable customers to obtain a connection prior to completion of wider system reinforcement. However, this is at the cost of constraints on other customers during the period prior to completion of wider reinforcement.
SSE	Where there is the option to connect and manage, SSEPD will consider and offer this.
UKPN	See answer to question 3 above
WPD	This is a matter for Ofgem but the customer will pay for the sole use assets and generally a proportion of any reinforcement costs. We are investigating innovative methods of managing the distribution system.

Section Five: Technical

5.1 **Insistence on generators operating at fixed power factors: This is an issue that is treated differently by different DNOs (and sometimes differently by different people within the same DNO). It has been suggested by a helpful DNO that it would be useful to discuss this (with non DNO participation) in the context of the revision to the Distributed Generation Connection Guide. I am awaiting whether this is going to be taken up by the ENA.**

5.2 **What impact do you believe the current EU work through ACER/ENTSO on 'Requirements for grid connections' will have? We are concerned that it will negatively affect the small-scale CHP developers.**

5.3 **SSE has stated to us that if they fail to comply with the recommendations of G59 they would be in breach of their licence conditions. Is this true?**

5.4 **How can local installers minimise the business impact introduced by the G83 connection process, 'postcode lottery' whereby an installer that has an installation within postcode xyz requires pre-approval whereas an installer that hasn't previously installed in that area can post-notify (on installation <3.68 kW)**

5.5 **What could be done to facilitate more convenient timing and speedier planned outage works so that DG do not lose out on as much potential revenue as they do now? Bilateral negotiations only go part way, can Ofgem help?**

5.1 Insistence on generators operating at fixed power factors: This is an issue that is treated differently by different DNOs (and sometimes differently by different people within the same DNO). It has been suggested by a helpful DNO that it would be useful to discuss this (with non DNO participation) in the context of the revision to the Distributed Generation Connection Guide. I am awaiting whether this is going to be taken up by the ENA.

ENWL	ENWL does not necessarily require DG to operate at a fixed power factor and have in fact many DG sites that operate within a prescribed range.
NPG	We would normally ask generators to operate at a power factor to match the local network – normally for import this would be 0.95 lagging to unity, for export 0.9 leading to 0.95 lagging. In some circumstances and by agreement with the customer, we may ask for these values to be adjusted. As Northern Powergrid contributed to the writing of the DG connections guide produced by ENA, we would be happy to participate in any suggested changes to this guidance.
SP	The need for a generator to operate at a fixed power factor, or within a limited power factor range, is due to the characteristic of the network the generator will be connected into and the capacity of their connection. We try to work with the customer to ensure as far as possible that their requirements are met within the constraints applicable to our network.
SSE	SSE adopts a policy that all Power Stations more than 200kW must operate in Voltage Control mode of operation. There are a number of benefits to both the DG applicant and the DNO in adopting this requirement. This is of particular benefit where a weak network may permit a generator to connect with no or little requirement for reinforcement and certainly less than that required if a Power Station is operated at a fixed Power Factor. Certain types and ratings of generation equipment may only be operable at a fixed power factor and not in voltage control mode. Typically, inverter connected micro-generation equipment shall operate at or near Unity.

UKPN	There are a number of utility wide forums that representatives of UK Power Networks participate in - this issue will be raised at the next meeting of the industry technical code group (ITCG) planned for mid December 2012.
WPD	At present, WPD request that the generator operates at a specified power factor, generally unity, with a small bandwidth of operation either side. We do offer leading power factor connections where technical studies show this is required. As Low Carbon Network Fund trials and smart grids develop, we will be considering active voltage control/power factor arrangements. We would be happy to participate in any ENA industry review.

5.2 What impact do you believe the current EU work through ACER/ENTSO on 'Requirements for grid connections' will have? We are concerned that it will negatively affect the small-scale CHP developers.

ENWL	It seems clear that the introduction of EU network codes will have some implications for all generation equipment, and particularly so for equipment over 1MW. The changes are important and the concern for grid stability in the longer term is justified. However, we are also concerned that the requirements in the RfG are not proportionate and we have been working hard with GB stakeholders to try to moderate the ENTSO-e drafting. Ultimately the requirements will be fairly standard across Europe, so manufacturers of generation equipment should be able to gear up to the new requirements in a standard manner, thus minimising any increased costs.
NPG	We believe the current EU work through ACER/ENTSO is likely to increase design and commissioning workload and an alternative to RoCoF may have to be found. Generators will also have to be capable of producing reactive power for a variety of operating conditions. Having a central repository of performance data for generator sets may assist developers.
SP	The RfG NC will undoubtedly have some impact as in its current format this applies to all generators 800W or greater. Whilst the smallest generators (Type A 0.8kW-1MW) are only subject to minimum technical requirements, these may exceed those which the equipment is currently designed to. The compliance of these units going forward will hopefully have been undertaken by means of type test compliance and certification and therefore 'relatively' straightforward. However, for those generators Type B and above (Type B is 1MW and above) additional technical requirements will be placed upon them including fault ride through requirements. One additional aspect which shouldn't be overlooked is that while it is only the generation part of CHP which will have to comply with the RfG, the demand part will have to comply with the requirements set out in the DCC (if applicable). Whilst we appreciate that these changes will have an impact, without knowing the individual design of generating units and the changes they will have to make to ensure compliance with the RfG it is difficult to give a more precise answer.
SSE	We require to wait for the outcome of this before we can assess any impact.
UKPN	
WPD	We are unable to comment on this question.

5.3 SSE has stated to us that if they fail to comply with the recommendations of G59 they would be in breach of their licence conditions. Is this true?

Ofgem: If a DNO fails to comply with the recommendations of G59, they are in breach of their licence conditions. G59 is referenced in the Distribution Code, which Electricity Distributors are required to comply with by their licenses. Further details to be found in Guidance note 2/4.

5.4 How can local installers minimise the business impact introduced by the G83 connection process, 'postcode lottery' whereby an installer that has

an installation within postcode xyz requires pre-approval whereas an installer that hasn't previously installed in that area can post-notify (on installation <3.68 kW)

ENWL	Prior to the recent changes in G83 connections process, Electricity North West commenced trials on a "connect and manage" approach for the connection of all G83 compliant generation. We therefore do not see the changes having any impact on installers working in our area.
NPG	Northern Powergrid does not feel that the 'Multiple Premises Connection Procedure' within G83/2 introduces a postcode lottery to connections. We would encourage all installers to discuss their planned installations with us at the earliest opportunity where they are within close geographic regions so that quotation periods can be minimised as areas with low level penetration of existing generation will, in theory, require less in terms of detailed connection study assessments. Northern Powergrid does not feel that this process discriminates against any existing installer but it is a reasonable and fair method to allow the impact of multiple connections to be assessed and managed prior to issues arising following commissioning works. Northern Powergrid also feel that any new installer in a region will be planning more than one individual installation within a short period and therefore would anticipate that any perceived 'postcode lottery' would only allow one single, one off installation in any region in very few instances before an installer would be required to be applying prior to connection.
SP	Multiple premise connections require the installer to discuss his project with the DNO prior to connection (Connection is only allowed once their application is approved). Single premises do not normally need prior notification, however, if the installer has installed (in previous 28 days) or plans to install (within the next 28 days) a connection within a Close Geographic Region, then the process for Multiple premise Installation must be followed. Companies cannot waive this notification procedure. Failure to follow this process may lead to the disconnection of the customer's installation under ESQCR (26). We would like to note that unfortunately there are customers/installers of G83/1-1 (now, 83/2) connections who aren't informing the DNO of the connection of their equipment, despite being in receipt of their FIT tariff. This places the customer in breach of ESQC Regulations. It also makes design and analysis more difficult especially, as we will only tend to find out once there is an impact on the network.
SSE	Where multiple generators connect at a single location, they will have a cumulative effect on the electricity network which may ultimately result in a requirement to reinforce. Currently, if a single business is installing these generators, these costs are not socialised. However, going forward, there are proposals with Ofgem to socialise all costs for this type of situation. We support this move which will, as suggested, remove any "postcode lottery" by socialising all costs resulting in the retrospective fitting of low carbon technology at existing domestic connections.
UKPN	Connection of SSEG under G83/1 can be carried out on a fit and inform basis – that is provided that it fulfils the requirements of G83/1 installers may fit the installation and inform the DNO within 30 days.
WPD	If an installer is concerned that their G83 compliant installation may be within a "Close Geographic Region" (as defined in G83, as amended) of another generator they have installed, they should either seek further clarification by contacting the DNO or alternatively they could send in an application form and agree the requirements with the DNO before installing the generation.

5.5 What could be done to facilitate more convenient timing and speedier planned outage works so that DG do not lose out on as much potential revenue as they do now? Bilateral negotiations only go part way, can Ofgem help?

ENWL	We seek to take account of the impact on customers when we are planning an outage. However there are often conflicting preference which make it difficult to find a mutually accepted time.
NPG	Northern Powergrid is constantly reviewing its policy and practices with regard to planned outage works and we are looking to reduce the time that customers are off supply or unable to generate as a result. Where this is not possible, they want the 'downtime' to be kept to a minimum and be provided with adequate notice and an accurate forecast of the outage period.

SP	Outages and the planning of them are designed to limit the impact on the network as much as possible, while still attempting to achieve all the necessary work. There may be numerous customers involved, so it is not always possible to provide an outage which is convenient for every customer. We attempt to take outages at convenient times, but generators will typically be reluctant for a planned outage. It is important to recognise that planned outages enable necessary maintenance to be done and attend to issues that may lead to more unplanned outages if not addressed. As part of the connections process, customers can request extra security for their connection to alleviate the impact of outages, and they should contact us in the first instance if this is required.
SSE	Unfortunately there are occasions when we need to carry out planned supply interruptions on the distribution network for operational or maintenance reasons. SSEPD will always provide as much advance notice as possible to all affected supplies and this notice is usually well in excess for the minimum notice period in GSoP. SSEPD will always try to keep the outage period as short as possible and are currently training additional staff in the use of Live Line procedures which in many cases removes the need for an outage at all.
UKPN	UK Power Networks welcomes the opportunity to work with customers and developers at as early a stage as possible to deliver projects more speedily. Projects requiring outages for connection are typically projects requiring connection at higher voltage levels or in areas when there is less capacity to accommodate a new connection. Depending on voltage level, outages are often planned many months in advance and there is frequently a need to work with many stakeholders to deliver a project. The earliest possible engagement will enhance the likelihood of meeting project timescales.
WPD	This question was directed at Ofgem.

Section Six: Network Management

6.1 **Entitlement to non-firm connections: This is something that could usefully be clarified in the DG connection guide. Currently most DNOs are quite happy for 'managed' connections but some are less willing to consider a non firm connection if requested. The idea of a generator reducing its output or being tripped following a fault or for a particular planned outage is one of the most basic forms of active network management and fundamental to the notion of smart networks.**

6.2 **G59/2 is absolutely clear that it is not mandatory for generators to have a separate circuit breaker from the DNO breaker at the ownership interface. Why do some Engineers in some DNOs continue to regard it as mandatory? Would you agree that if you are going to have two circuit breakers in close proximity in series best Engineering practice would overlap the protection zones i.e. have the one on the generator side providing the primary protection for the DNO network and the one on the DNO side providing the primary protection for the generator's network?**

6.3 **I'm concerned about risk to viability of small projects from new (G83-2) requirements for systems to switch off at only 253v (even momentarily). Reason: DNO won't reduce voltage unless 253v exceeded at their connection point (and for more than momentarily).**

6.4 **How will energy storage contribute to network in the future?**

6.5 **If energy storage has a role, will it be low KW or multiple MW level?**

6.6 **Demand Side Management v. Energy storage?**

6.1 Entitlement to non-firm connections: This is something that could usefully be clarified in the DG connection guide. Currently most DNOs are quite happy for 'managed' connections but some are less willing to consider a non firm connection if requested. The idea of a generator reducing its output or being tripped following a fault or for a particular planned outage is one of the most basic forms of active network management and fundamental to the notion of smart networks.

ENWL	Electricity North West fully endorse this view and believe such techniques have very significant potential to unlock network capacity from existing assets. This is the core of our Tier 2 LCNF project "Capacity to Customers".
NPG	Northern Powergrid agrees that an important aspect of 'optioneering' on new connection arrangements is the ability, in liaison with the applicant, to produce connection offers and agreements specifying technical restrictions (non-firm arrangements) in order to enable the connection of new loads to our network at locations that would otherwise be unavailable due to unacceptable impacts on existing customers. In many cases this allows customers to obtain connections at a much reduced cost in line with their financial constraints.
SP	The concept of a managed connection, and the technology and commercial arrangements to support such an approach are still developing. We are actively engaged in rolling out such approaches in a measured way so that we fully understand the impact. We do not recognise that there is an 'entitlement' to a non-firm connection. Where a generator is connected to a circuit which faults, their connection will always be de-energised. This is not active network management in the sense being proposed.
SSE	In SSEPD we are actively working on the conversion of our Orkney ANM to business as usual. This will be deployed in zones, with a programme of "ANM enabled zones" being rolled out. In terms of expectations in many locations, ANM on its own will not provide enough availability to make generation schemes "bankable", however, in many cases it will work well. We have started the

	studies to establish viable ANM enabled zones in our SHEPD network.
UKPN	The ENA held a meeting at their offices on 8 November on the DG Connection Guides and it is likely that they will be re-written. The issues of non-firm connections may be included as part of the re-write. UK Power Networks will support this activity. Our future Plug and play initiative is looking at the option of non-firm connections.
WPD	Within WPD we do allow, and often suggest "managed" connections.

6.2 G59/2 is absolutely clear that it is not mandatory for generators to have a separate circuit breaker from the DNO breaker at the ownership interface. Why do some Engineers in some DNOs continue to regard it as mandatory? Would you agree that if you are going to have two circuit breakers in close proximity in series best Engineering practice would overlap the protection zones i.e. have the one on the generator side providing the primary protection for the DNO network and the one on the DNO side providing the primary protection for the generator's network?

ENWL	Electricity North West does not insist on the generation customer providing a circuit breaker at the interface. However we would routinely design the interface for such a circuit breaker as it is the easiest way for the generator to discharge their own ESQCR duties. We will always connect a generator's installation without the generator protecting his network with his own circuit breaker, but in those circumstances we would expect the generator to demonstrate that his installation is safe and ESQCR compliant when protected from the Electricity North West metering circuit breaker.
NPG	It is not mandatory and should only very rarely be needed. However, a customer's protection may need to trip a DNO metering breaker in order to protect the customer's assets.
SP	The need for the customer circuit breaker does not come from G59/2 but from the Electricity, Safety, Quality and Continuity Regulations 2002. These specify in Part II, Item 6 "A generator or distributor shall be responsible for the application of such protective devices to his network as will, so far as is reasonably practicable, prevent any current, including any leakage to earth, from flowing in any part of his network for such a period that that part of his network can no longer carry that current without danger." In other words, each party has a responsibility to protect their own network. Therefore the generator is required to install protective devises to cover the generator's network.
SSE	We do not have a policy of requiring serial protection where a short HV or EHV customer sub-circuit is proposed (typically 200m). If the customer installation extends to a distance greater than this then a separate customer CB protecting their installation is appropriate. In terms of operations and isolation of the customer's network, we do require that the developer provides a method of isolation (as minimum) between our CB and customer's network. This is typically achieved by installation of an off-load isolator.
UKPN	It is important to comply with G59/2 and if as part of the discussion two circuit breakers are installed in close proximity then we agree that the protection zones are adequately identified.
WPD	We allow a single circuit breaker to be used where the extent and complexity of the Customer's network which protected and controlled by WPD's circuit breaker is limited. Where the Customer's network is complex and/or extensive then we insist on them having their own circuit breaker and protection. This approach is consistent with the requirements for "a means of cutting off the supply and for isolation" defined in the Electricity at Work Regulations and the associated HSE guidance on these regulations. The question of overlap protection will depend on site specific issues.

6.3 I'm concerned about risk to viability of small projects from new (G83-2) requirements for systems to switch off at only 253v (even momentarily). Reason: DNO won't reduce voltage unless 253v exceeded at their connection point (and for more than momentarily).

ENWL	All parties are bound by the ESQCR voltage limits and hence these drive the voltage criteria applied by

	DNOs to ensure statutory compliance. Note the limit in G83.2 is actually 262V and not clear where the 253V figure comes from.
NPG	This is more a statement not a question. However we are considering our voltage policy, including our response to NGET voltage reduction schemes, protection, losses, voltages at high demand and voltages at high generation, as our customer base evolves.
SP	The DNO has the right (and obligation) to operate their network within the statutory voltage bandwidth. However, it is extremely unlikely that a connection will be operated at a steady state voltage of 253V because this value is at the upper end of the voltage bandwidth. The circumstance may be caused by a connection close to output terminals of a transformer, where the associated network has a number of other dispersed customer connections.
SSE	There is an option which only applies at or above the second stage over-voltage setting for a manufacturer to switch of to preserve the electronics and if the overvoltage last less than 0.5 seconds they can restart straight away. If the over-voltage lasts longer than 0.5 seconds they must trip and then when the voltage returns to within stage one settings they start a reconnection timer, which under G83/2 is set for 20 seconds. (G59/2 calls for 60 seconds and G83/1-1 called for 180 seconds). If the Installer stated that they purchase equipment designed for installation in Europe and not the UK, but install it in the UK and find that it keeps tripping on the European over voltage setting of 253V, this would be understandable. We aware that this happened frequently in the pre-December 2011 rush, but we have not been made aware of this issue since. This issue was discussed extensively in the G83 revision group and we are satisfied that we have a robust over voltage setting system which will not cause problems if implemented properly by the manufacturers.
UKPN	The current statutory voltage limits are at LV 230 plus 10 % and minus 6% which as a result gives a top voltage of 253 volts, currently looking at the impact of DG on the network and as a result voltage settings are being reviewed. Some trial solutions are being considered such as GEN AVC (Automatic voltage control on distribution transformers) We are learning too!
WPD	G83/2 will require a stage 1 over-voltage protection setting of 262.2V not 253V. This about 9V of voltage rise within the customer's installation before the protection will operate (depending on the protection tolerances).

6.4 How will energy storage contribute to network in the future?

ENWL	Energy storage will have a role to play in balancing both DG and DNO networks. It is unlikely that storage will be deployed at scale until the energy storage cycle efficacy improves. However, it remains a key focus area for our smart grid research work
NPG	Electrical energy storage can address voltage and thermal constraints by injecting real and reactive power: • Injecting reactive power can tune the power factor of the system and customers downstream, reducing thermal load by a few per cent; • Injecting reactive power can tune out upstream reactance/capacitance, improving voltage conditions. We already have three mechanically switched capacitor banks on the HV network that perform this function, demonstrating its value; and • Injecting/absorbing real power can smooth out power flows, trimming the extremes of both voltage swing and thermal loading Most customers' power flows are peaky, so storage has the potential to defer reinforcement on almost every customer/network scenario. However, storage is currently very expensive. Not only is the cost/benefit marginal in itself, but storage will struggle to compete with conventional reinforcement.
SP	Network storage offers a number of opportunities for avoiding reinforcement on the network through creating a new source of demand at times of excess generation (through charging the storage) and supporting the network at times of a shortfall of generation (discharging the storage). At present, large scale network storage is still an extremely expensive solution and is being demonstrated in a number of LCNF projects to better understand the technology and commercial model. Further, DECC

	are currently running a competitive exercise to fund storage demonstrations. We do not expect storage to become economically viable for a number of years, and until the confidence in the technology has increased.
SSE	Energy storage could have a clear role and technically is already proven in our Slough project, the real question is at what point does it become economic. At this point in time, Demand side management, Enhanced demand side management, and in the case of demand constraints, energy efficiency are by far the cheaper and greener options.
UKPN	UK Power Networks has won £13.2m funding from Ofgem's *Low Carbon Network Fund* (LCNF) for the Smarter Network Storage project. The project will undertake a range of commercial and technical innovation to explore and improve the economics of electrical energy storage, allowing storage to benefit the full electricity system and provide a more sustainable way to reinforce the network. The Smarter Network Storage project will install a 6MW / 10MWh electrical storage device, whilst exploring the commercial arrangements and revenue streams from supporting overall system balancing and stability, as well as the wholesale electricity markets and the viability in offering multiple services simultaneously. The energy storage device will be used as an alternative to the traditional reinforcement methods, accommodate low carbon technologies and mitigate electrical capacity constraints at the site, which currently limit the available capacity in very high peak demand times. A team from Future Networks will be leading the four year project working with eight key project partners to deliver the solution. The project partners are *KiwiPower*, *Durham University*, *Swanbarton*, *Pöyry*, *National Grid*, *Imperial College London*, *Smartest Energy* and *AMT SYBEX*. These companies have been chosen for their experience and expertise to explore the technical and commercial opportunities of the project. This will be the first time that an electrical storage device of this size has been used in this way by a UK DNO. The knowledge and learning from these trials will allow UK Power Networks to assess the full potential value of electrical storage for the benefit of consumers, generators and DNO's based upon real demonstrations.
WPD	If energy storage is (or becomes) viable this would enable excess electrical energy to be stored at the point of use generation. This could have a significant impact on the power flow across distribution and transmission networks and the operation and design of these systems.

6.5 If energy storage has a role, will it be low KW or multiple MW level?

ENWL	Energy storage will have a role to play in balancing both DG and DNO networks. It is unlikely that storage will be deployed at scale until the energy storage cycle efficacy improves, however, it remains a key focus area for our smart grid research work.
NPG	Electrical energy storage is most effective when located close to the customer(s) that cause the issue. As customers' demand varies from less than one kilowatt to hundreds of megawatts, a range of sizes will be appropriate. This is demonstrated not only in CLNR, but also in UKPN trials of very large batteries and WPD trials of very small ones. The CLNR project is currently trialling three different sizes of electrical energy storage devices; 50kW and 100 kW and 2.5MW, connected at low voltage and high voltage at various locations on three project trial networks. These devices will be installed in Q1, 2013 and the subsequent trials, trials analysis and computer simulation run throughout 2013 will inform us as to the optimum size, network location and cost benefit analysis of the use of electrical energy storage on distribution networks. The key to getting the best out of storage (and many other active network devices) is to have the right control system. The holistic CLNR active network management scheme allows many small units to be run as a virtual power plant to give the effect of one large unit. This creates benefits not only on the local network but also more widely.
SP	We expect it could be at either level. A distributed model could be used where each premise has an energy store locally, the storage could be embedded within the network at a substation, or the storage could be at the generation site to help smooth the output characteristics.
SSE	Remembering that storage of heat for all practical purposes is energy storage, it could be either; economics will dictate so factors like the mass production of electric vehicle battery modules will

	change this balance.
UKPN	See answer 4 above
WPD	Any size could have a role to play.

6.6 Demand Side Management v. Energy storage?

ENWL	Energy storage will have a role to play in balancing both DG and DNO networks. It is unlikely that storage will be deployed at scale until the energy storage cycle efficacy improves, however, it remains a key focus area for our smart grid research work
NPG	These solutions do not compete: they combine. Customer participation and electrical energy storage can provide the same service as each other in terms of dealing with peak power flows. Wherever there is an imbalance between generation and demand, we can ask one set of customers to do less and the other to do more in order to balance the network; or we can use storage to buffer the excess flow. Some customers can even provide reactive power services as well as real power. Electrical energy storage has a high capital investment implication, but provides an immediate and consistent response, whereas customer participation has a lower cost, but could be subject to variability and time lag. Customer participation can be used as an initial short-term remedy to be followed up by network technology solutions if the high load conditions prove to be an enduring issue. We can also combine the two in enduring solutions, for example to ask customers to modify their behaviour only for relatively short periods in the middle of the peak period, and use more controllable storage to manage the shoulders either side. The CLNR project will test customer participation with industrial, commercial and residential customers and will both combine this with the use of electrical energy storage and also compare the cost and benefits of the two against each other. Again, getting the best out of these solutions (particularly when used in tandem) requires an holistic active network management scheme, as will be trialled in CLNR. Developing the market for customer participation requires innovative solutions to be developed, like those that we proposed in our LCNF tier2 2012 bid titled GBFM. This bid was not funded in the 2012 round of projects.
SP	DSM offers a lower cost solution to storage and has wider benefits such as potentially saving energy for the consumer. However, energy storage has a higher level of predictability as it is directly under the control of the network operator. We would expect that both of these solutions will be feasible in the future but it will depend on the application, economics and technical feasibility.
SSE	Neither. We see DSM, batteries and Energy vectors as all part of a balanced portfolio, they will be selected first on the time constant and capacity of energy storage we required followed by the specific economics and practicality of the particular site.
UKPN	UK Power Networks believes there will be opportunities for both demand side management and energy storage going forward.
WPD	See answer to question 4.

Section Seven: Planning

7.1 **Access across third party land does seem to be a problem. Would you support a change to primary legislation to allow similar power of access as is available to water and sewage companies for water mains and sewers?**

7.2 **DNOs have stakeholders interested in getting planning consent. They also have stakeholders who prefer that developments do not go ahead. How do DNOs manage this inevitable conflict without taking sides?**

7.1 Access across third party land does seem to be a problem. Would you support a change to primary legislation to allow similar power of access as is available to water and sewage companies for water mains and sewers?

ENWL	We agree that this needs further consideration.
NPG	There may be some sympathy in some quarters with the concerns expressed by some interested parties that provisions for DNO developments should be more robust and DNOs can perhaps look on with envy at the powers available to water authorities. The history of water authority powers is rooted in public health and at a time when electricity networks were not available. There may be an argument that in modern times water authorities, indeed all public utilities and utility providers, cannot function without electricity and that electricity should now be given primacy. There may of course be other stakeholders who believe that water authority powers are excessive and disproportionate. When the Office of the Deputy Prime Minister reviewed compulsory purchase in 2002, it received views from interested parties that suggested the law be changed such that privatised statutory undertakers should not have compulsory acquisition powers. Our experience of new connections work is that we are successful in about 70% of cases in securing voluntary agreement from land owners and occupiers. Of the remaining 30%, the objections are usually underpinned more by either the objector's adverse opinion of the developer or their project requiring the connection or by opportunistic pursuit of effectively a ransom payment. It may be desirable to introduce some certainty into a DNO's ability to provide a new connection but this background does not seem to support an immediate need to require radical change in the law. The "power of access" enjoyed by water and sewerage authorities is in effect a form of compulsory acquisition that supplements other powers of compulsory purchase in that industry. Under section 159 of the Water Industry Act 1991[1] a water company has the power to lay and keep a pipe in private land on giving three months' notice and subject to other restrictions. The power is also subject to the payment to the land owner of statutory compensation. It is a power unique to the water industry and is derived from historical public health issues. Parliament has always taken the view that land should only be taken compulsorily where there is clear evidence that the public benefit will outweigh the private loss[2]. DNOs also have access to compulsory powers in the Electricity Act 1989 (Schedules 3 and 4)[3]. One of DECC's recent consultations that closed on 28 November 2012 was about the Necessary Wayleave regime (i.e. the process and rules currently dealing with compulsory wayleaves under Schedule 4). The changes under review may not be as radical as to give network operators powers equivalent to water authorities but they are aimed at not only making the process more proportionate but also introducing/imposing responsibility and accountability on the parties to avoid abuse of the process and spurious objections. DECC has made it clear in this consultation exercise that it is not considering changes to primary legislation. The challenge in seeking change in primary legislation is more complex than the basic proposition in the question. It would be to show that such powers would deliver a public benefit, as opposed to individual commercial benefit, that would be more important than the imposition of network assets

[1] Water Industry Act 1991, 1991 c59
[2] ODPM Circular 06/2004, COMPULSORY PURCHASE and THE CRICHEL DOWN RULES
[3] Electricity Act 1989, 1989 c.29

	on an individual's private land.
SP	Section 16 of The Electricity Act sets out the DNO's duty to connect a customer on request. The Act already provides for the powers of licence holders at section 10 and Schedules 3 and 4 (compulsory powers that are intended for acquiring property rights if they can't be secured voluntarily). Use of these powers may take years to complete in some cases. One of DECC's recent consultations was about the Necessary Wayleave regime (i.e. the process and rules currently dealing with compulsory wayleaves under Schedule 4). The changes under review may not be as radical as to give DNOs powers equivalent to water authorities but they are aimed at not only making the process more proportionate but also introducing/imposing responsibility and accountability on the parties.
SSE	
UKPN	The rights enjoyed by the water industry have their roots in much older legislation and derive from the need to improve public health - without drinkable water and effective sewage disposal, one is thirsty and living in insanitary conditions with all that that entails - without electricity one is without a form of heat and power. Negotiating land rights as a pre-condition to installation would have been an impediment to the need to improve the lot of the vast majority of the population. These rights survived privatisation of the water industry and, other than some minor erosion here and there, are still very extensive. The current law is set out in the Water Industry Act of 1991. The most significant provision in this context is section 159, which gives power to lay and maintain "relevant pipes" (i.e. water mains, sewers and similar). Land owner consent is not required to carry out such works, no easements or wayleaves need to be negotiated and s159 is supported by corresponding statutory rights to insist on access, which can be enforced by a Magistrates' warrant. The formal requirements include serving notice on owners and occupiers and complying with an Ofwat approved Code of Practice which details how such powers should be exercised. This is largely aimed at ensuring good communication with the relevant owners and occupiers, giving them all relevant information, advising on compensation rights etc. In cases of emergency, the undertakers don't even have to go through this formal process. As far as compensation is concerned, this does not have to be resolved before land entry is made. If that were the case, undertakers' hands would be tied and fulfilling their statutory duties would be that much more difficult. Full compensation is of course available, including all losses incurred (eg loss of crops, damage caused during works etc) and any diminution in land value caused by the works. If agreement cannot be reached on quantum, the Upper Tribunal has jurisdiction to resolve disputes (this used to be exercised by the former Lands Tribunal). However, the land owner has no ability at law to delay entry just because compensation has not been resolved. At first blush, a change is attractive. Before supporting a change to primary legislation to provide the same or similar powers, a detailed understanding of the consequences would be necessary - things to consider include: 1. Interface with the Human Rights Act - one is after all interfering with a subject's enjoyment of his property; 2. Most fresh water mains and sewerage pipes run beneath highway maintainable at public expense, highway that although not maintainable at public expense is dedicated to public use, and an un-made track because it is along these linear features that development is found. Is it that there is a significant difference: electric lines are much more widely dispersed and on the surface because in crude terms power is delivered most effectively and economically over ground and straight line A-B, often over long distances, thus more frequently crossing third party land than a water/sewerage main? 3. We get the consent and I believe any consideration over and above the nominal that is demanded by the third party as a pre-condition of consent is passed to the person seeking the consent to deal with, so that whilst a precedent of high payment for the right may be set, it is not UKPN that pays it. The money is fixed before the right is granted: no risk. In the water model where powers are exercised, payment is fixed later. This results in (relative) uncertainty and the risk that all or part of it may not be paid by the customer. The valuation before the Upper Tribunal will be by reference to statutory criteria. Nevertheless, it would be necessary to do early land value/land use due diligence to be certain before exercising the statutory power so that one did not end up with an un-necessarily (and thus inefficiently incurred) expenditure for which the specific customer or generality of customers would have to pay.

	4. The due diligence point above is relevant to a present process in that the consent effort is not sufficiently front end loaded - scheme uncertainty/unwillingness to commit to possible abortive expenses, unwillingness to use statutory powers etc. As we are now recognising, front end loading consents effort against the latest date for exercise of statutory powers is more likely to give a better outcome as technical +legal feasibility are taken forward together. My instinct is that Ofgem and DECC will want to be satisfied that the existing regime is unsatisfactory - that will be harder to justify if we cannot demonstrate that we are planning properly/using what we have. 5. A further issue to be resolved will be what is the status of existing easements/wayleaves? Do they remain as is or do they somehow convert into a statutory right as per water? You will appreciate that where a consent is required from a landowner on whose property we have lines on a wayleave (current or expired) and we a different route and we were to serve a Water Industry Act type notice, what would be the effect on the existing wayleave held equipment. The concern is that the landowner retaliates by terminating the pre-Water Industry Act type legislation wayleaves and the DNO is left with diversions/retention applications. To avoid all that nausea, the DNO may, as at present be very reluctant to make use of the statutory power - thus no advantage for the DG developer or other customer in those circs. Ideally, such pre-new legislation wayleaves could at the election of the DNO be made permanent with disputed compensation going the Upper Tribunal. Given that one could not anticipate the rate of termination of such wayleaves simply because they are made permanent, one would want the safety valve of a price re-opener in the price control.
WPD	In November 2012, DECC consulted on options to modify the requirements and rules surrounding use of Electricity Act Schedule 4 powers (Necessary Wayleaves) affecting land rights. It is clear that whilst DECC are looking at options to improve the procedures (and their effectiveness) and ensure it is fair for both landowners and DNOs, there is no sign of a wider review by DECC of the powers that already exist and this is likely to be because they balance the needs of the industry against the rights and requirements of the landowner. WPD supports this position.

7.2 DNOs have stakeholders interested in getting planning consent. They also have stakeholders who prefer that developments do not go ahead. How do DNOs manage this inevitable conflict without taking sides?

ENWL	Taking account of differing stakeholder views arises in many aspects of our business and forms a key part of what we have to do in presenting our business plans to Ofgem next year. Ultimately, we must comply with our statutory obligations but would always seek to take account of stakeholders' views and accommodate where we can.
NPG	Northern Powergrid always strives to maintain impartiality in its activities. We recognise that tensions can exist between various parties with regard to development proposals and we have no part to play in either supporting or objecting to such developments. We are governed by the law, principally the Electricity Act 1989 which sets out the duties applicable to a DNO and which are reflected in obligations contained in the DNO licence. In exercising our duties we sometimes face potential conflicts, such as maybe the need to provide a short and cheap connection that is frustrated by environmental obligations or land owner objections, and we endeavour to strike a practical balance in the context of our proposals and taking each case on its merits.
SP	SP have a licence obligation to provide a minimum cost quotation for every connection request received. We will work with any customer that requires a formal quotation and also other customers who are simply interested in receiving indicative costs for a possible project or a full feasibility study of a section of network to make a more detailed decision on how to progress with a particular project. We have put significant effort into improving our service to our customers and our approachability for customers that are unsure of their actual requirements and would like to have a number of options on how to proceed with their specific requirements. We are also developing closer relationships with the Local Authorities and other Governing Bodies in our Distribution Areas so that we can work together to provide a more strategic long-term plan of development and therefore future network requirements within our Distribution Areas. There are circumstances where individual customer requirements are in conflict with other stakeholders, and whilst we are keen to manage all our stakeholder needs consistently, we cannot and will not encroach upon our licence obligation to provide every customer with a quotation for their

	connection.
SSE	
UKPN	UK Power Networks manages the application for planning consent to the local authority on a case by case basis over which it has no more influence than any other individual stakeholder group. Within the planning application, there is a formal process that allows all stakeholders to express their support or objections on which UK Power Networks has no overarching influence. UK Power Networks will always ensure it abides by the final decision of the local authority.
WPD	WPD will deal with every case fairly without discrimination or taking sides. Where we are requested to obtain new routes for lines or cables or new substation sites for a connection, we will do this on basis of our licence obligations and as agreed with the customer. In other words, we will pursue consents required for a scheme by negotiation and representation as necessary to landowners and local authorities. Where an objection or refusal is the result, we will discuss options with the customer to progress (which may include alternative routes or in some cases planning appeals/inquiries and/or, where appropriate and necessary, an application to DECC/PINS to use our statutory powers to enable the connection to proceed.)