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Consultation on IDNO/DNO boundary equipment and which parties should fund this equipment

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Target audience: Electricity distributors, HSE, Elexon and other interested parties

Overview:
Independent network operators (IDNOs) compete with the incumbent monopoly owners of electricity distribution assets (DNOs) to build and adopt network extensions. Through competition, IDNOs are potentially able to provide faster connection to the network for customers and generators and offer innovative services.

This document reassesses our decision in July 2005 on the equipment required at the boundary of DNO and IDNO networks to measure electrical flows. It sets out DNOs' current practice of requiring universal half hourly (HH) boundary meters and the costs this imposes on IDNOs. The document analyses the benefits universal HH meters can provide compared to their costs and the costs of alternatives and presents some initial conclusions based on this analysis.

These conclusions reverse the position adopted back in 2005 as the evidence since then indicates that the HH boundary meters required by DNOs are not justified in terms of their benefits, particularly as any benefits seem to flow to the DNO and not the IDNO who bares the costs. Furthermore, we are concerned that the level of charges on IDNOs for boundary metering compared to revenues they can earn, are stifling competition and denying customers the benefits which IDNOs can potentially provide. Consequently we outline a position that should this issue ever be submitted to the Authority for formal determination, we are minded to conclude that universal boundary metering is discriminatory and disproportionate. We conclude that more proportionate arrangements, able to facilitate competition, would be achieved if DNOs funded the equipment used to measure flows at the boundary themselves.

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Context

In January 2009 Ofgem launched a Competition Act (1998) investigation into an electricity Distribution Network Operator (DNO) following a complaint from an Independent Distribution Network Operator (IDNO)[1]. IDNOs have cited two main reasons for the slow speed that competition is developing in this area:

- the lack of cost reflective access charges from DNOs for the use by IDNOs of their upstream network; and
- that IDNOs have to bear the costs of half hourly meters at the boundary between their network and the DNOs'. DNOs do not install these boundary meters on their own networks in similar circumstances and represent an additional cost to the IDNOs that a DNO do not themselves face.

The need for more cost reflective charges is currently being addressed by DNOs as part of the Common Distribution Charging Methodology (CDCM). Ofgem recently published a consultation on the CDCM[2] which proposes that all DNOs will set IDNO access (or boundary) tariffs on the basis of their own efficiently incurred upstream costs. Ofgem has stated it is minded to approve the CDCM subject to the DNOs progressing some outstanding issues[3].

This document deals directly with the issue of boundary metering. DNOs and IDNOs are in direct competition to build and adopt new networks. Our 2005 decision document on the regulation of independent networks[4] left it to DNOs and IDNOs to agree what mechanism would be used to measure electrical flows at the boundary but said that where these mechanisms incurred costs, IDNOs should bear them. IDNOs have raised concerns that since our decision they are being asked to pay for high specification half hourly boundary meters and that this practice is disproportionate and discriminatory.

This consultation sets out the issues, the costs associated with boundary metering and the equipment being installed to measure flows at the boundary and the charges levied on IDNOs for this equipment. We are seeking to develop an evidence based view of the appropriate regulatory framework for the measurement of flows between DNO and IDNOs.

1 The DNO currently under investigation is Electricity North West (ENW) and the complainant is Independent Power Networks.

2 DNOs have a licence obligation to submit a common methodology capable of being approved to Ofgem by 1 September to be implemented by 1 April 2010. DNOs have submitted the CDCM and Ofgem recently published its minded to consultation on these proposals: http://www.ofgem.gov.uk/Networks/ElecDist/Policy/DistChrgs/Documents1/Ofgem_CDCM_consultation%20280909_1.pdf

3 These remaining issues include checking the validity of the input data required by the CDCM and progressing a more robust basis for calculating the proportion of HV network used by IDNOs on average. These issues are discussed in more detail at: http://www.ofgem.gov.uk/Networks/ElecDist/Policy/DistChrgs/Documents1/Ofgem_CDCM_consultation%20280909_1.pdf

4 http://www.ofgem.gov.uk/Networks/ElecDist/Policy/IDNOs/Documents1/11186-17605.pdf

Associated Documents

The main background document to which respondents should refer is the Ofgem July 2005 decision document on Regulation of IDNOs and its associated papers. There are also a number of other documents to which you may wish to refer.

July 2005 decision document 176/05 on the regulation of independent electricity operators - http://www.ofgem.gov.uk/Networks/ElecDist/Policy/IDNOs/Documents1/11186-17605.pdf

January 2005 consultation document 18/05 outlining initial proposals on the regulation of independent electricity operators and consultation responses - http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=14&refer=Networks/ElecDist/Policy/IDNOs

July 2004 consultation paper 180/04 outlining options on the regulation of independent electricity operators and consultation responses - http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=13&refer=Networks/ElecDist/Policy/IDNOs

Ofgem consultation document on common distribution charging methodology (CDCM) http://www.ofgem.gov.uk/Networks/ElecDist/Policy/DistChrgs/Documents1/Ofgem_CDCM_consultation%20280909_1.pdf

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Summary

IDNOs can potentially benefit electricity customers and generators as they may be able to provide faster connections, different or innovative services and/or lower prices than the incumbent monopoly network provider. This may become particularly important as we seek to move to a low carbon energy system and the need and scope for innovation in network services increase. Greater competitive pressure on the monopoly network providers increases the incentive to meet customer's needs, to raise the standards of performance and increase the range of network services offered.

IDNOs are in direct competition with incumbent DNOs to adopt new networks. We monitor DNOs to ensure that they do not discriminate unduly against IDNOs and restrict the potential benefits that IDNOs can offer. A key part of this is to closely monitor the commercial charging arrangements between IDNOs and DNOs and to act as the ultimate arbitrator of disputes within the regulatory framework. In this document we set out for consultation the position that we are minded to adopt regarding the appropriate arrangements for measuring electrical flows at the boundary between a DNO and IDNO. We would have to consider any dispute on its own merits, but this consultation seeks views on the principles we should adopt if a dispute is submitted to us for formal determination.

In reaching a minded to position on the principles we should adopt, we have first looked at why flows across the boundary between DNOs and IDNOs may need to be measured when DNOs do not generally measure flows at equivalent points on their own network. The main reason we have identified is to ensure that DNOs can accurately report the losses on its network and do not suffer financial harm under the losses incentive due to any abnormal losses on the IDNO network. The IDNO gets some benefits from precise measurement of flows as this ensures an accurate bill from the DNO for use of their network. In addition to the potential benefits for charging and the losses incentive, measurement of flows between DNOs and IDNOs, may help contribute to the development of more actively managed networks, which could be particularly important to the future development of smart grids, distributed generation and addressing environmental issues more generally.

However, the costs of installing boundary meters and the charges DNOs currently levy are significant relative to the revenues IDNOs can earn. Our analysis indicates that at a typical LV IDNO site of 50 plots up to 50% of IDNO revenues over 40 years can be taken up by boundary metering charges in some DNO areas[5]. This represents an onerous burden on IDNOs, restricting their ability to compete in the market, place competitive pressure upon incumbent DNOs and raise standards. We consider that this is a high price to pay and in order to justify this price, the benefits to consumers of universal boundary metering need to be clear and substantial. Our own analysis suggests that boundary metering at all IDNO sites to the meter specification set out

5 This is based on the revenues IDNOs can earn under the CDCM

by the DNO (generally half hourly metering) would need to reduce losses on IDNO networks by around 7% in order to outweigh the costs. We consider this to be implausibly high and whilst we recognise that boundary metering leads to other benefits including network management and accurate billing, it leads us to draw a number of initial conclusions about appropriate arrangements, as set out below.

The main benefit of boundary metering flows to DNOs through being able to accurately report losses and actively manage their network. However, to a large extent these same benefits would apply on the last mile of DNOs' own network where they choose not to install HH boundary metering. This seems to indicate that the installation of universal boundary metering on IDNO networks is disproportionate and discriminatory. Whilst we appreciate that DNOs require some sight of the losses on IDNO networks to ensure that they do not bare the financial risk for them, universal boundary metering to the specification which DNOs require does not appear to be cost beneficial. We outline a number of alternative mechanisms which could be used instead of universal boundary metering. For instance DNOs could deal with their legitimate concerns by relying on a sample of meters, installed to a lower specification (and cost). Additionally, DNOs could require the IDNO to provide detailed technical information on the network equipment and configuration to assess whether losses are likely to be higher than if the DNO built that part of the network.

In order to provide the incentive on DNOs to opt for these more proportionate alternatives, we consider that in contrast to our decision in July 2005, DNOs should pay the cost of any mechanisms used to measure flows at the boundary. We believe that the evidence we have gathered about the arrangements currently in place means it is appropriate to change our position since 2005. Furthermore, we do not consider that such costs should be covered by price control allowances. The main benefit which metering provides to DNOs is through revenue they earn through the price control losses incentive. Boundary meters do not reduce losses, only record them more accurately, therefore we do not see why consumers should pay for boundary metering in order for DNOs to potentially recover more money from them under the losses incentive for no return in terms of reduced losses. We estimate that the current cost of all boundary meters installed is less than £1 million per year across the whole of GB. Whilst this is a considerable cost for IDNOs given their current stage of development, it is dwarfed by the DNOs' total allowed revenues outlined in DPCR 5 initial proposals of £21.5 billion over 5 years. Potentially the costs of boundary metering are also minimal compared to the DNOs' losses incentive revenue outlined in DPCR5. We believe that DNOs are best placed to assess the investment decisions they wish to make in order to earn this revenue and we consider that this will lead to the most efficient outcomes and ones which are likely to facilitate greater competition and drive up standards for consumers.

We recognise that as distribution networks become more actively managed there may be more meters installed on DNO networks, including smart meters. This may change the efficient decisions about whether and where to install boundary meters. However, it is likely to remain appropriate, and perhaps even increase in importance, for DNOs to make these decisions. We welcome respondents' views on our minded to position and the analysis we provide in this document. We welcome the provision of new evidence and analysis and will take this into account prior to publishing a final policy decision in the New Year.

1. Introduction and background

1.1. Changes to the Electricity Act (1989) by the Utilities Act (2000) introduced distribution of electricity as a separate activity from supply of electricity which required its own authorisation and licence. The Utilities Act (2000) also permitted IDNOs to compete with incumbent DNOs to own and operate new electricity distribution networks. These networks are predominately network extensions connected to the existing distribution network, typically new domestic housing developments. IDNOs can potentially provide benefits to customers in terms of innovation and improved customer service. Where IDNOs own and operate the networks for these new housing developments, they are reliant upon the host DNO to provide them with a connection to the distribution system. The host DNO levies use of system charges on the IDNO to reflect the costs it incurs in transporting electricity from the transmission system to the IDNO boundary.

1.2. In July 2004 Ofgem consulted on the appropriate regulatory framework for independent electricity networks[6]. In January 2005 Ofgem published its initial proposals for this regulatory framework[7] prior to taking a decision in July 2005[8]. The initial proposals and decision document included consideration of boundary metering. We considered the need for boundary metering and its alternatives. Our July 2005 decision concluded that there were a number of options (particularly at low voltage), including alternatives to boundary metering, for measuring the electrical flows between distribution networks and that it was up to industry to work together to agree which option would be appropriate for different scenarios. We also stated that where there was a cost related to the equipment which is put in place at the boundary, then this cost should be borne by the IDNO. This decision was in effect a minded to position on the principles that would be applied if Ofgem received a request to determine a dispute between a DNO and IDNO regarding a connection agreement.

1.3. The cost of leasing and operating boundary metering can be £400-£700 a year (excluding housing costs) which is a significant cost for IDNOs. IDNOs are subject to a relative price control (RPC) by which they are unable to charge suppliers of domestic customers any more for use of system (UoS) than the host DNO. IDNOs also have charging methodologies approved by Ofgem which state that they will replicate host DNO UoS charges for all customer classes. DNOs do not currently place meters on the 'last mile' of their own network. Therefore, the revenue which IDNOs recover through RPC does not include the costs of boundary metering which DNOs levy on IDNOs. Consequently, IDNOs fund these boundary metering costs directly

6 http://www.ofgem.gov.uk/Networks/ElecDist/Policy/IDNOs/Documents1/7817-18004_IDNO.pdf

7 http://www.ofgem.gov.uk/Networks/ElecDist/Policy/IDNOs/Documents1/9500-1805.pdf

8 http://www.ofgem.gov.uk/Networks/ElecDist/Policy/IDNOs/Documents1/11186-17605.pdf

out of the net income they receive under RPC[9]. Equally, end customers on DNO and IDNO networks are currently protected from bearing the metering costs associated from the introduction of competition in distribution.

1.4. In July 2008 Ofgem started facilitating an IDNO/DNO working group to progress the development of specific IDNO UoS charges. As part of this work it was suggested that in practice half hourly boundary meters were being required in most circumstances at the DNO/IDNO boundary. IDNOs have consistently claimed that this does not facilitate competition in distribution and have stated that boundary meters should not be required where the DNO/IDNO boundary is on the LV network because the costs are disproportionate. This consultation deals with boundary metering in general, but with a specific focus on LV networks because of the concerns raised by IDNOs, and given that the majority of IDNO networks connect to DNOs LV networks. However, the general issues are likely to be the same for the other network tiers, although the precise balance of costs and benefits may differ somewhat.

1.5. In August 2009 Ofgem issued an information request to DNOs and IDNOs. This request asked for the following information:

- The type of boundary equipment installed at EHV, HV, large LV and small LV IDNO sites.
- The function that this boundary equipment is able to provide, e.g. half hourly meter, communication features for remote reading, factor in for losses.
- The reasons why this equipment is required and why the functional capability of this equipment is required at each voltage level.
- The typical ongoing annual cost levied on IDNOs for maintaining the boundary equipment at each voltage level.
- The typical up-front procurement cost levied on the IDNO for procuring the boundary equipment at each voltage level.

1.6. The remaining sections of this consultation discuss the following issues.

1.7. A summary of responses to our information request can be found in Chapter 2 of this consultation. From these responses we outline the current situation regarding boundary metering, including the costs which the current arrangements are placing

9 By net income we refer to the difference between the 'all the way' income DNOs recover from end users minus the boundary charge it has to pay the DNO for the upstream distribution system.

on IDNOs and contrast these costs to the revenues they will receive under the DNOs' proposed CDCM.

1.8. The third chapter considers why boundary metering may be needed and considers how some of the potential benefits compare to the current costs of boundary metering. We have undertaken some illustrative analysis of the benefits boundary metering needs to provide in terms of DNOs' losses incentives in order for it to outweigh its cost. We also outline the alternative mechanisms which could be used to measure electrical flows at the boundary.

1.9. The final chapter challenges DNOs in particular to provide new evidence to demonstrate that the current practice of widespread installation of boundary metering and charging IDNOs for half hourly boundary metering is not discriminatory and disproportionate. This chapter also sets out the implications for the DCUSA working group which is looking to establish a portfolio billing system, of our minded to position. Lastly this chapter sets out a clear minded to position given the current evidence. We should stress that this is a minded to policy position which even once concluded will only act as the principles for consideration of this issue in cases where IDNOs refer the terms of their connection agreements to Ofgem for determination. All such determinations are considered on their own merits.

2. Current situation

Chapter Summary

This chapter sets out a summary of the costs of the equipment currently in use at the boundary to measure electrical flows. These costs are Ofgem's analysis of responses to an information request issued to IDNOs and DNOs in August 2009. These costs are placed in perspective by comparison to the net income IDNOs can expect to receive under the proposed CDCM.

Question box

Question 1: Have we accurately understood the annual charges for boundary metering levied by DNOs in Table 1.1?
Question 2: Why are there such large variations in the charges levied by DNOs for boundary metering?
Question 3: To what extent do IDNOs provide the boundary meter and data retrieval services themselves and what barriers prevent them from doing so on a wider scale, given the evidence suggests this may reduce their costs?
Question 4: Are we correct in assessing the level of additional costs required to accommodate the necessary technical and isolation equipment required at the ownership boundary between networks?
Question 5: Have we correctly understood the additional costs associated with accommodating boundary metering at sites?

Current equipment used at the boundary

2.1. Information provided by DNOs and IDNOs indicates that boundary metering is in place for all IDNO sites, from EHV down to small LV. Different types of meters are used at different voltage levels, but we understand that broadly all DNOs impose similar technical requirements for the meters to be installed at the different network tier levels. Despite the similarity in the specifications of meters to be installed, there is significant variation in the charges which DNOs levy for metering. Furthermore, some DNOs differentiate charges for meters at different network levels, while others charge the same irrespective of the network level. We have outlined the costs for IDNOs associated with boundary metering in three separate tables.

2.2. Table 1.1 illustrates the annual costs of boundary metering where the DNO provides the meter and data retrieval services. Table 1.2 then illustrates our understanding of the lowest costs at which IDNOs are able to procure the meter and data retrieval services. Table 1.3 then allows a comparison between the two costs by illustrating the IDNO costs over 40 years (the length of network assets) of leasing the meter compared to procuring it themselves. We highlight the proportion of net income IDNOs receive under the CDCM taken up by these metering costs over 40 years. The analysis in Tables 1.2 and 1.3 assumes that the IDNOs' network has an economic life of 40 years, that the half hourly meters have an economic life of 10 years, and there is an annual fee or cost for data retrieval and communications. We have not allowed for the cost of housing the meter on the site. This is because while

we recognise that this is a genuine cost to be incurred, we have not been able, on the basis of the information provided to us so far, to establish a reliable estimate of the incremental cost of housing boundary meters compared to the costs that IDNOs have to incur to house interface and isolation equipment.

2.3. Table 1.1 below highlights the different charges and arrangements in place at different voltage levels. It is based on our understanding of the total sum paid per year for the meter. Most DNOs appear to lease the meter out to the IDNO for an annual fee. The figures below include annual charges for data retrieval, which some DNOs levy on top of the lease cost of the meter. One DNO (EDF) states that the IDNO must provide all equipment themselves and another DNO (CN) provides all metering equipment without charge. We understand that all DNOs permit IDNOs to provide their own meter and data retrieval services if they so wish.

2.4. We welcome views on the extent to which we have accurately assessed these charges in Table 1.1 below. We are unsure as to the reasons for the variation between the charges levied by DNOs for boundary metering and would welcome views on this. There is a range from £0 to £434 for meters at LV small sites, and this is not the largest range. Furthermore, while some DNOs charge more for meters at HV sites than LV sites, other DNOs charge the same price irrespective of the network tier at which the meters are installed.

Table 1.1 - Summary of annual charges for boundary metering including data retrieval

	LV small sites	Large LV sites	HV range
SP	£434	£434	£434-£464
SSE	£218	£680	£680-£962
WPD	£97	£97	£177-£295
ENW	£280	£280	£280
EDF10	n/a	n/a	n/a
CN	£0	£0	£0
CE own data	£400	£400	£400-£580

2.5. Table 1.2 below illustrates our understanding of IDNOs costs of procuring and operating these meters based on information provided by IDNOs. We have been able to partially verify these estimates from other sources, but as Ofgem no longer directly price controls metering services, we do not collect detailed information about the costs of these meters. We have also not been able to obtain information to indicate whether the cost per meter varies significantly depending on the volume of meters that are purchased.

10 EDF do not provide a boundary meter or charge the IDNO for one. They provide a specification for the meter they require for the IDNO to purchase such a meter on the open market. We are aware that other DNOs also give IDNOs this choice but have their own meters which they will install and read for an annual fee.

2.6. We have assumed that IDNOs purchase meters that last for ten years, so over the economic life of a network they would need to purchase four meters for a site. We have not taken account of the costs of housing the meter because we could not obtain a robust estimate of the incremental costs of housing a meter given there are already costs for housing interface and isolation equipment.

Table 1.2 - Summary of illustrative IDNO meter procurement and operating costs

IDNO sample data	Procurement fee excl. Housing	annual communication charge	total 40 year charge[11]	Costs per year per site over 40 years
LV Meter	£1,178	£105	£8,912	£223

2.7. Table 1.3 looks at the total cost of this metering over 40 years and then per site per year in order to make it comparable to Table 1.1 and Table 1.2. The difference in these costs compared to the charges which DNOs are levying raises questions about the cost reflectivity of the DNOs' charges for boundary metering. Our understanding is that EDF insists that IDNOs procure the meter themselves and Table 1.3 contains the lowest costs over 40 years at which IDNOs have outlined they are able to procure the meter and data retrieval services which comply with EDF's required.

Table 1.3 - Boundary metering as percentage of 40 year income

Dom UR	50 plot LV site revenue over 40 years	LV boundary metering charges over 40 years excl. housing	Boundary cost as % of revenue
CN East	£34,674	£0	0%
CN West	£38,062	£0	0%
CE NEDL	£49,944	£16,000	32.04%
CE YEDL	£41,888	£16,000	38.20%
EDF EPN	£23,669	£8,912*	37.65%
EDF LPN	£23,338	£8,912*	38.19%
EDF SPN	£27,057	£8,912*	32.94%
ENW	£44,273	£11,200	25.30%
SPD	£57,815	£17,360	30.03%
SPM	£54,798	£17,360	31.68%
SEPD	£51,407	£29,850	58.07%
SHEDP	£58,950	£29,850	50.64%
WPD West	£54,197	£3,880	7.16%
WPD Wales	£65,390	£3,880	5.93%

11 Assumes that a meter has a life of ten years and that over 40 years, an IDNO has to purchase the meter 4 times

* These are the lowest costs we are aware of that IDNOs in EDF's distribution areas are able procure the required meters at. Again we assume a ten year meter life and thus that four meters are required over the 40 year period.

2.8. Please note that Table 1.3 makes a couple of assumptions. Firstly it deals with 40 year revenue from 50 plot LV domestic unrestricted sites[12] and secondly it is based on Ofgem's understanding of the charges DNOs (except EDF) levy or still recover for metering.

Additional costs

2.9. Data we have received from IDNOs indicates that there may be further costs associated with boundary metering. These costs are associated with accommodating the meter either at the substation or the LV pillar. Under the Electricity Safety Quality and Continuity Regulations[13] (ESQCR) IDNOs and DNOs are required by law to install isolation and interface equipment at the ownership boundary between electrical networks. This equipment has to be housed at the LV substation or the LV pillar.

2.10. We are interested in respondents' views on the incremental costs of accommodating a boundary meter at the LV substation and LV pillar, i.e. those costs over and above the housing costs required for the necessary isolation equipment. Our understanding from IDNOs is that they could be substantial (as outlined below).

- Extra cost of accommodating meter at LV substation - £1000 approx.
- Extra cost of accommodating at LV pillar - £1500 approx.

2.11. We also understand that there are costs associated with obtaining wayleaves for the housing equipment required when the IDNO connects at an LV pillar. IDNOs have quoted that these can cost them up to £1600 at each site in legal fees. Again, we are interested in whether this is the true marginal cost of the housing or whether Wayleaves would be needed for housing the isolation and interface equipment which is legally required under the ESQCR.

Conclusions

2.12. The information received and our analysis suggests that the charges levied by DNOs for boundary meters can be substantial, and are very variable. In addition to variability in the level of charges levied by DNOs, there is also substantial variation in the approach to charging, with some DNOs levying the same charge for meters at

12 IDNOs own data demonstrates that 81% of all bidding opportunities which arise are for sites with 50 plots or less.

13 http://www.opsi.gov.uk/si/si2002/20022665.htm

each network level, while other DNOs have different charges for different network levels. Given the large variation in the charges levied by DNOs it seems unlikely that all DNOs are levying cost reflective charges.

2.13. However, given that IDNOs can in all cases purchase their own meters rather than pay the charges levied by the DNO, and must do this for connections to EDF's network, the more appropriate cost to consider is a reasonable estimate of the purchase and other costs for an IDNO for boundary meters. From the information provided by IDNOs, which we have sought to verify, these costs have the potential to be much lower than the charges levied by DNOs. Nevertheless, when you take account of a likely 10 year economic life for half hourly meters, data retrieval and communications costs the costs of boundary metering for IDNOs will be very significant compared to their available margins (over 50% in some cases).

3. Is boundary metering required?

Chapter Summary

This chapter considers why boundary metering may be required, and then undertakes some illustrative analysis of whether, given the costs discussed in the previous chapter, the current approach of uniform boundary metering is likely to be appropriate given the potential benefits. In assessing these benefits we have focused on the accurate reporting of losses and billing. We welcome responses to this illustrative analysis and would encourage DNOs in particular to bring forward new quantitative analysis to further debate on this issue.

Question box

Question 1: Have we captured all the arguments for and against boundary metering, and the reasons why flows should be measured across the boundary?
Question 2: Have we identified all the reasonable alternatives to uniform half hourly boundary metering which can measure flows of electricity between DNO and IDNO networks?
Question 3: We welcome views on whether our illustrative analysis is an accurate picture of the costs and benefits of boundary metering?
Question 4: Why would IDNO networks incur losses which are 7-8% higher than those on similar DNO networks?
Question 5: We welcome respondents' views on the conclusions which should be drawn from this analysis.

Is boundary metering required?

3.1. Having set out the costs of boundary metering we are aware that stakeholders have suggested that there are a number of benefits which boundary metering may provide. The table below is an expanded copy of the arguments for and against boundary metering which Ofgem published in its July 2005 decision document on the regulation of IDNOs. The table is a list of potential qualitative arguments for and against boundary metering. We analyse further the potential value of any benefits through improved measurement of losses for the DNOs incentive and accurate charging.

Qualified benefits of boundary metering

Table 1.3 - Summary of arguments for and against boundary metering

Arguments for boundary metering	Arguments against boundary metering
The control and identification of losses across both networks to allow accurate reporting of losses and reward or penalty under the losses incentive.	The DNO would not install metering if they operated the network and charges for end customers would be based on settlement. There should not be an additional cost through further metering

	just because there is another distributor supplying the end customer.
The calculation of agreed charges between networks to enable accurate billing of IDNOs by DNOs. This benefits the IDNO as well as DNO in ensuring the correct amount of DUoS revenue is recovered. It also saves other consumers bearing the costs of any error in billing	Boundary meters result in a cost which if borne by the IDNO makes them less competitive with the DNO who would not have to pay for metering if they themselves operated the network
To facilitate the development of embedded generation. Embedded generation has specific network benefits and these benefits are best recorded by precise measurement of electrical flows at the boundary.	The boundary meter takes up valuable room on the development. Developers are less likely to opt for an IDNO if it requires additional equipment on site.
To help IDNOs with the identification of unmetered supplies on their network.	End consumers' bills are based on profile data or estimates which get reconciled over time. Using a boundary meter to bill an IDNO, leaves the IDNO exposed to any errors of incorrect profiling assumptions.
To supply IDNOs with data identifying the potential abstraction of electricity (theft). DNOs should not have to bear the costs of theft on IDNO networks and IDNOs need an incentive to ensure that they are proactive in the identification and resolution of theft on their network.	The cost of a boundary meter may foreclose IDNOs from competing in the market for new developments with a small number of end customers.

3.2. We consider that the most significant potential benefit of boundary metering is their ability to accurately measure units exiting the DNO network. This helps to ensure accurate recording of losses for the DNO's losses incentive. In recording and billing on this basis, it places an incentive on the IDNO to reduce its losses as it will only pay for losses identified through a reconciliation between settlement data for its customers and flows measured at the boundary meter. IDNOs do not necessarily install the same equipment as DNOs for equivalent parts of the network so it may improve the accuracy of losses recording and billing if there is boundary metering to identify IDNO specific losses. We attempt to quantify the potential value such benefits would need to be to outweigh the costs of boundary metering. We also recognise that as DNOs more actively manage their networks there may be benefits from having more meters on their networks to measure electrical flows at various points on the network, and smarter grids will require more information.

3.3. While we can see some potential reasons for boundary metering, it is not clear that the reasons identified automatically require uniform half hourly boundary metering to the specifications currently set by the DNOs. We explore in the next section some alternatives to uniform boundary metering, as illustrative examples of alternative approaches.

3.4. Furthermore, given that the primary reasons for, and potential benefits of boundary metering accrue to the DNO, there is a strong argument that the DNO should pay for the boundary meters, and have the choice of when and where to install the meters. While the IDNO may gain some benefit from the installation of boundary metering, through a more accurate bill from the DNO and only paying for the losses it causes, in practice as regards the losses incentive and more active networks, these benefits fall to the DNO.

Alternatives to uniform half hourly boundary metering

3.5. There are a number of alternatives to uniform half hourly boundary metering, some of which were discussed in Ofgem's January 2005 Initial Proposals on IDNO regulation. Some of these proposals have also been developed by IDNOs and proposed to industry[14]. These options illustrate that there are practical alternatives to uniform half hourly boundary metering that may deliver many of the potential benefits, often at much lower cost.

Lower cost kWh meters

3.6. The boundary meter does not necessarily have to be a half hourly meter with telecommunications and recording devices. It could be a low technology kWh meter which was read on a regular basis. The costs of these meters are likely to be lower and they also take up less space on the IDNO development. We would welcome views on whether such meters would be a suitable alternative to half hourly meters, and their potential costs.

Use of aggregated settlement data

3.7. This approach uses aggregated end customer settlement data on IDNO networks and adjusts for expected losses on the IDNO network in order to assess the electrical flow at the DNO/IDNO boundary. IDNOs have stated that this would allow them to be treated in the same manner as end customers would have been had the DNO owned and operated the network extension. The costs involved in this option are likely to be limited to facilitating data flows and ensuring billing systems are compatible with these data flows. We note that the data flows and governance required are already being developed by DNOs as part of the CDCM and are being taken forward by a DCUSA working group.

Remote metering

14 In March 2009, Independent Power Networks Limited (IPNL) tabled a change request to the BSC to facilitate the use of end user settlement data for billing purposes. This change request was voted down by DNOs on the grounds that it would require all BSC parties (including generators and suppliers) to pay for this billing process. Further, DNOs did not agree with IPNL that the cost benefit of the solution was the removal of boundary metering.

3.8. This option involves installing metering upstream from the boundary (for example at the HV/LV transformer). The readings on these remote meters can then be adjusted for losses. The benefit of remote metering is that it removes the need for a meter at the boundary to take up valuable space on a development site and require expensive housing. As indicated in Chapter 2, our understanding is that this housing can be relatively expensive.

De minimis level for boundary metering

3.9. Our January 2005 Initial Proposals document stated that it may be appropriate to set a de minimis level of connections, up to which boundary metering will not be required because the costs outweigh the benefits. We asked for quantitative data looking into this option and would welcome further data as part of this consultation.

Boundary metering at a sample of sites

3.10. While IDNOs may have different losses than DNOs because of the nature of the equipment installed at their sites, it is probably unlikely that there is wide variation between the losses at IDNO sites, other than where the underlying equipment is different. Therefore, ensuring reasonable accuracy of losses measurement and billing may be achieved by having boundary metering at a sample of IDNO sites that encompass the range of equipment types that are installed.

3.11. This approach would also be consistent with the input based approach that DNOs have argued for in the losses incentive for DPCR5. In particular, the use of a sample of boundary meters would be equivalent to the audit type approach to verifying loss reductions on their own networks that formed part of the DNO's proposal for an input based losses incentive.

Provision of information by IDNOs about the technical specification of their networks

3.12. DNOs could ask IDNOs for information about the equipment installed on their networks to understand whether it is the same as the equipment they use on their network. To the extent it is the same then the DNO may be able to make an assumption that losses will be the same on the IDNO's network on the equivalent part of its network.

3.13. Ofgem does not have a strong view in favour of any of these particular options. We have set them out to illustrate that there may be alternatives to uniform boundary metering, which in some cases are likely to have much lower costs, and may not significantly reduce the accuracy of losses measurement and billing. If our final view after this consultation is that DNO's should decide when and where boundary meters are installed, and should pay the costs for any that are, then it will be for DNOs to decide the most cost effective approach, which may include one or more of the options set out above.

3.14. We would welcome views on whether the range of options we have set out includes all available options, and whether there are any barriers or difficulties to implementing any of these options.

Quantified benefits of boundary metering

3.15. Chapter 2 set out the costs of uniform boundary metering and the alternative mechanisms which can be used. This section provides some illustrative analysis to see what level of losses reduction may be needed for a policy of uniform boundary metering to be cost effective, and then considers whether such a level of benefit is plausible. We are aware that DNOs have access to more data than we do and are thus in a position to undertake similar or additional analysis and challenge the conclusions we draw. We welcome this and would encourage DNOs to undertake studies on their own networks to provide further quantitative evidence to inform this debate.

3.16. Under their price control, DNOs have a losses incentive which penalises or rewards them depending on whether the losses on their network are higher or lower than a target percentage of units exiting their network[15]. Under the current price control (DPCR4), DNOs are rewarded or penalised by £48 (in 2002/3 prices) for each MWh they are either side of their target losses percentage. DPCR5 Initial Proposals considers increasing this incentive to £60 per MWh[16]. Although in practice the difference between the DPCR4 and 5 values is quite small once you bring the DPCR4 value into current prices.

3.17. For the purposes of this losses incentive DNOs report losses annually to Ofgem. These losses are calculated as the total units entering the DNO's network minus the total number of units exiting the network. DNOs use settlement data (both SF[17] and RF[18]) to calculate the units exiting. Where the DNO is connected to an IDNO, the DNO does not have access to the settlement data of end customers to report losses. Equally, DNOs argue that even if they have access to the IDNOs' settlement data they will have no sight of the level of losses on the IDNO network including lost electricity where end customers are not registered with a Supplier and their consumption is not recorded in settlement (known as theft). Consequently, DNOs argue that this puts them at risk under the losses incentive for poor losses management on the IDNO network, including where the IDNO does not ensure that end users are registered with a supplier.

15 This percentage is set out in DPCR 4 and varies for each DNO depending upon the nature of their network.

16 http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/DPCR5/Documents1/Initial%20Proposals_1_Core%20document.pdf

17 Initial run of settlement data using Estimated Average consumption of end customers

18 Final run of settlement data which is 14 months following the initial run. This uses data read at the meters of end customers.

3.18. DNOs have consistently argued that in order to protect themselves from exposure to poor losses management by IDNOs they need to have accurate information on the flows of electricity from their network to IDNOs.

3.19. From the DNOs perspective the main benefit of uniform boundary metering is that it can accurately record losses at IDNO sites and therefore protect itself under from lost revenue under the losses incentive mechanism. Without boundary metering DNOs might incur lost revenue because losses at IDNO sites may be higher than they would have been (and than is implicitly assumed in the DNO baseline under the losses incentive) if the sites were adopted by the DNO. Uniform boundary metering would permit the DNO to accurately recorded losses at IDNO sites taking into account any additional losses in the reporting of losses on their network under the incentive mechanism. We have undertaken analysis (presented in Appendix 2) to illustrate the potential proportionality of boundary metering charges to IDNOs in the context of the value of losses. The analysis estimates the scale of additional losses at IDNO sites without boundary meters that would be required to justify alone the costs of uniform half hourly boundary metering (as outlined in chapter 2).

3.20. Our analysis suggests that if the losses incentive rate increases to £60 per MWh as proposed in DPCR5, IDNO losses would need to be 7.68% higher in order to justify boundary metering costs. Or alternatively we can say in the absence of uniform half hourly boundary metering the losses on IDNO networks would need to increase by this amount to make uniform half hourly boundary meters cost effective. Even taking the lowest costs which we are aware IDNOs can purchase boundary meters for (£223 per year calculated in table 1.2), this still equates to a required reduction in losses of 3.42% based on a losses incentive of £60 per MWh.

3.21. We welcome respondents' comments on our analysis and any new evidence on the costs and benefits of boundary metering in terms of losses reporting that respondents can provide. We particularly welcome respondents' views and evidence on why losses on IDNO networks would be likely to increase by 7.68% or even 3.34% if there were no boundary meters. If there are no reasons why IDNO losses would be this much higher then, from an economic perspective, it is possible to conclude that there is unlikely to be proportionate benefit in uniform half hourly boundary metering from a losses point of view, and therefore a billing accuracy perspective.

Conclusions

3.22. Ofgem accepts that there is a need to measure the flows between DNOs and IDNOs, particularly to ensure that losses on the IDNO networks are measured reasonably accurately, and to generally promote billing accuracy. IDNOs may not install the same equipment as DNOs, and therefore losses on IDNO networks may differ from those on the DNO networks, which if not accurately measured could lead to DNOs gaining or losing inappropriately under their losses incentive, and/ or IDNOs not paying for an appropriate level of losses.

3.23. From the quantitative analysis presented in this chapter it does not presently appear proportionate or cost effective for uniform half hourly boundary metering to be used to measure such flows, and furthermore, there are a range of potential alternative options to measure flows, some of which may be much lower cost, and deliver most of the benefits that uniform half hourly boundary metering could deliver.

3.24. It also appears that the majority of benefits that arise from boundary metering fall to the DNO through its losses incentive and accurate billing, although IDNOs will also benefit from accurate billing. Furthermore, where boundary meters help DNOs to more actively manage their networks they will also gain these benefits. Given that DNOs obtain the greatest benefits from boundary meters it is likely that the most appropriate and efficient decisions about when and where to install boundary meters will be made by DNOs who bear the costs of their decisions. DNOs can consider the best approach to measuring flows with IDNOs, taking account of their losses incentive. If they choose an approach such as maintaining a sample of boundary meters it will be important for the IDNOs to provide DNOs with sufficient information about the equipment that has been installed to allow them to ensure that their sample is broadly representative.

4. Initial conclusions

Chapter Summary
This chapter builds upon the evidence and analysis presented in Chapters 2 and 3 and presents some initial conclusions from this evidence about how to ensure the most economical and effective boundary metering arrangements in the future. In light of this way forward we also provide some options for the DCUSA working group who are currently looking at portfolio billing.

Question box
Question 1: Do you agree with our minded to view that DNOs are best placed to decide the most appropriate arrangements for measuring electrical flows between DNOs and IDNOs, and that by bearing the costs of the arrangements they choose, more economical arrangements will be chosen?
Question 2: Are there any practical difficulties that respondents can identify with implementing our minded to position?
Question 3: We welcome views on the proposed ways forward for the development, procurement and governance of a portfolio billing system.

4.1. IDNOs can potentially benefit electricity customers and generators as they may be able to provide faster connections, different or innovative services and/or lower prices than the incumbent monopoly network provider. This may become particularly important as we seek to move to a low carbon energy system and the need and scope for innovation in network services increase. Greater competitive pressure on the monopoly network providers increases the incentive to meet customer's needs, to raise the standards of performance and increase the range of network services offered.

4.2. IDNOs are in direct competition with incumbent DNOs to adopt new networks. We monitor DNOs to ensure that they do not discriminate unduly against IDNOs and restrict the potential benefits that IDNOs can offer.

4.3. This consultation proposes a significant change to our policy developed in 2005 regarding the treatment of boundary equipment. However, subject to consultation responses we consider that the evidence we have gathered about the current arrangements and further consideration of the issues justifies a change in our policy.

4.4. This consultation has sought to outline the costs of the current uniform half hourly boundary metering alongside their perceived purpose and subsequent benefits. Where possible we have tried to outline some illustrative quantitative evidence of these benefits and compared it to the costs.

4.5. This analysis starts to lead into a number of conclusions. We are aware this is a minded to position and subject to the responses we receive to this consultation. Furthermore, this policy position is enforceable through determination requests on the terms of the connection agreement between DNOs and IDNOs. Each

determination request would be considered at the time on its own merits, so the minded to position would represent the principles we would expect to apply.

Purpose of boundary meters

4.6. We agree with DNOs that boundary meters are useful in monitoring the losses which occur on IDNO networks and ensuring that DNOs do not bare the risk of excessive IDNO losses through their losses incentive. DNOs have an incentive through the price control to reduce their losses. IDNOs have an incentive to ensure that they are not billed for more losses than they cause to be incurred. DNOs also have the potential to benefit from wider metering if they are more actively managing their network, which is likely to become more important in the future.

4.7. This suggests that DNOs need to have some mechanism in order to check that an IDNO network is not importing electricity on to its network for which it is not paying the DNO for transportation, which the DNO is being penalised for under the losses incentive and which has been produced at a financial and carbon cost which is not being paid for.

Proportionate boundary arrangements

4.8. Our analysis so far appears to demonstrate that universal half hourly boundary metering is not a proportionate way in which to achieve the purposes outlined above. The current level of boundary metering charges appears to far outweigh any plausible quantified benefits, although we welcome further views. IDNOs also have an incentive to ensure that they are not charged for losses that they do not cause to be incurred, and generally to reduce losses for which they have to pay the wholesale price to purchase. Our analysis indicates that at a typical IDNO site of 50 plots up to 50% of IDNO revenues over 40 years can be taken up by boundary metering charges in some DNO areas[19]. We consider this to be implausibly high. We estimate that the current cost of all boundary meters installed is less than £1 million per annum across the whole of GB. Whilst this is a considerable cost for IDNOs given their current stage of development, it is dwarfed by the DNO total allowed revenues outlined in DPCR 5 initial proposals of £21.5 billion across 5 years. Furthermore, our analysis suggests that boundary metering at all IDNO sites to the meter specification set out by the DNO (generally half hourly metering) would need to reduce losses on IDNO networks by around 7% in order to outweigh the costs.

4.9. We consider that the best way to ensure proportionate boundary equipment is installed is to state that where equipment to measure flows at the DNO/ IDNO boundary incurs a cost the DNO should bear this cost. The DNO is best placed to assess their risk under the losses incentive and the benefits which meters can

19 This is based on the revenues IDNOs can earn under the CDCM

provide for active network management. Consequently the DNO appears best placed to decide what type of meter, or other way of measuring flows should be used. The same approach would be applied for existing meters. We welcome respondents' views on this.

4.10. While we are not advocating any particular approach, it appears to us that the installation and maintenance of a sample of boundary meters by the DNO that covers a cross-section of IDNO sites may provide adequate information to ensure reasonably accurate losses measurement and billing at much lower cost than uniform half hourly boundary metering. To complement such an approach IDNOs may need to provide DNOs with information about the nature of the equipment installed on different networks to give the DNO confidence to develop a broadly representative sample of sites under this approach.

4.11. Our minded to position sets out the principles that we would expect to apply when considering any determination that was referred to us.

Reconciliation to metering

4.12. We understand that under a portfolio billing system IDNO data will be aggregated, but we see no reason why IDNOs can't provide settlement data to the DNO for validation purposes. DNOs can decide how large a sample of metered sites and level of audit they are prepared to fund given the benefits which flow from them.

4.13. We welcome respondents' views on this method of reconciliation and in particular why this is not a proportionate and reasonable way forward.

Future Networks

4.14. Under current government policy there is a clear move towards the installation of smart meters across the network. These meters will allow both DNOs and IDNOs to have far greater access to information about electrical flows on their networks and allow them to more accurately measure the losses on their networks, potentially in real time. DNOs may want to consider future Government policy when deciding the types of meters and how many to install at the boundary to IDNO sites.

Portfolio billing

4.15. As part of the CDCM, DNOs have proposed to move towards a new method of billing IDNOs - portfolio billing. This method produces a specific bill for each IDNO end customer and allows the tariff to take account of the specific load profile of each IDNO end customer. In order to bill on this basis, IDNO settlement data must be aggregated per customer class. This billing method requires the creation of new data flows between IDNOs and DNOs.

4.16. DNOs produced a consultation document[20] which outlined their preferred billing system and this proposal has since been taken forward by a DCUSA working group who are looking at how such a system could be procured and governed. The DNOs preferred system includes more complicated data flows to allow reconciliation to boundary metering. IDNOs are not keen on this reconciliation and consequently, DNOs and IDNOs are unable to agree a way forward for the new billing system.

4.17. We are aware that the DCUSA working group is looking for this consultation to provide them with an indication as to whether the billing system needs to reconcile to boundary metering. We would stress that the conclusions above are subject to respondents' views and the provision of further evidence. However, the current direction of our thinking suggests that if DNOs wish to have a billing system which includes automated reconciliation for losses and universal boundary metering, then it seems reasonable and proportionate that they procure and fund this system themselves under their own governance terms.

20 http://2009.energynetworks.org/storage/LDNO%20billing%20Consultation.pdf

Appendices

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Appendix 1 - Consultation Response and Questions

1.1. Ofgem would like to hear the views of interested parties in relation to any of the issues set out in this document.

1.2. We would especially welcome responses to the specific questions which we have set out at the beginning of each chapter heading and which are replicated below.

1.3. Responses should be received by 11 November and should be sent to:

Mark Askew
Distribution Policy
Ofgem
9 Milbank
London
SW19 3GE

mark.askew@ofgem.gov.uk

1.4. Unless marked confidential, all responses will be published by placing them in Ofgem's library and on its website www.ofgem.gov.uk. Respondents may request that their response is kept confidential, although we would urge all respondents to consider whether they really need to make their response confidential. Ofgem shall respect this request, subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

1.5. Respondents who wish to have their responses remain confidential should clearly mark the document/s to that effect and include the reasons for confidentiality. It would be helpful if responses could be submitted both electronically and in writing. Respondents are asked to put any confidential material in the appendices to their responses.

1.6. Having considered the responses to this consultation, Ofgem intends to consider responses and in particular any new evidence contained in responses. We will then look to take a definitive decision on whether DNOs are justified in levying charges on IDNOs for boundary metering. Any questions on this document should, in the first instance, be directed Mark Askew at the details above.

CHAPTER: Two

Question 1: Have we accurately understood the annual charges for boundary metering levied by DNOs in Table 1.1?
Question 2: Why are there such large variations in the charges levied by DNOs for boundary metering?
Question 3: To what extent do IDNOs provide the boundary meter and data retrieval services themselves and what barriers prevent them from doing so on a wider scale, given the evidence we have that this may reduce their costs?
Question 4: Are we correct in assessing the level of additional costs required to accommodate the necessary technical and isolation equipment required at the ownership boundary between networks?
Question 5: Have we correctly understood the additional costs associated with accommodating boundary metering at sites?

CHAPTER: Three

Question 1: Have we captured all the arguments for and against boundary metering, and the reasons why flows should be measured across the boundary?
Question 2: Have we identified all the reasonable alternatives to uniform half hourly boundary metering which can measure flows of electricity between DNO and IDNO networks?
Question 3: We welcome views on whether our illustrative analysis is an accurate picture of the costs and benefits of boundary metering?
Question 4: Why would IDNO networks incur losses which are 7-10% higher than those on similar DNO networks?
Question 5: We welcome respondents views on the conclusions which should be drawn from this analysis.

CHAPTER: Four

Question 1: Do you agree with our minded to view that DNOs are best placed to decide the most appropriate arrangements for measuring electrical flows between DNOs and IDNOs, and that by bearing the costs of the arrangements they choose, more economical arrangements will be chosen?
Question 2: Are there any practical difficulties that respondents can identify with implementing our minded to position?
Question 3: We welcome views on the proposed ways forward for the development, procurement and governance of a portfolio billing system.

Appendix 2 – Methodology behind analysis

Losses Analysis

1.1 Ofgem is aware that DNOs have large quantities of data which they can analyse and have the ability to undertake trials on their network to generate specific data. We do not have access to this information but have seen limited information via charging methodology modifications which are submitted to Ofgem. We have used a this information to attempt to quantify the losses which would be required on IDNOs'

1.4 We took information available to us in a DNO charging model[21] which contained information on the number of IDNO sites and their average consumption. This data showed that there were currently 64 IDNO sites which each had an average consumption of 108,467kWh.

1.5 We looked at the DNO charges for boundary metering and assumed that (at their highest) they would be in the region of £500 per site per year. Using the data in the charging model we calculated that based on the current number of sites (64) this would equate to £32,000 a year. We divided this by the proposed value placed on losses in DPCR5 initial proposals (£60). This provides us with the number of MWh under the losses incentive which are equal to the cost of boundary metering (533.33MWh). We calculated this MWh figure as a proportion of total IDNO consumption (64*108,467) to produce the 7.68% quoted in Chapter 3.

1.6 We repeated the analysis for the growth of IDNO sites at both medium and longer term. Because we maintained the standard assumption that each site was still charges £500 per year and that its consumption would 108,467kWh you achieve the same results as with the current number of IDNO sites and consumption.

1.7 We repeated the analysis using the lower IDNO purchase costs of meters - calculated over a 40 year period to be £223 per year. This was multiplied by the total number of IDNO sites - 64 (to provide a cost of £14,272) and divided by the losses incentive (£60) to calculate the number of MWh this cost equates to (238 MWh). The proportion that this figure represented of total IDNO consumption (based on 64 sites with average consumption of 108,467kWh) was calculated at 3.42%.

21 The DNO concerned has the highest penetration of IDNOs and was from mid 2008.

Appendix 3 – The Authority's Powers and Duties

1.1. Ofgem is the Office of Gas and Electricity Markets which supports the Gas and Electricity Markets Authority ("the Authority"), the regulator of the gas and electricity industries in Great Britain. This Appendix summarises the primary powers and duties of the Authority. It is not comprehensive and is not a substitute to reference to the relevant legal instruments (including, but not limited to, those referred to below).

1.2. The Authority's powers and duties are largely provided for in statute, principally the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Act 2004, as well as arising from directly effective European Community legislation. References to the Gas Act and the Electricity Act in this Appendix are to Part 1 of each of those Acts.[22]

1.3. Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This Appendix must be read accordingly[23].

1.4. The Authority's principal objective when carrying out certain of its functions under each of the Gas Act and the Electricity Act is to protect the interests of existing and future consumers, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the shipping, transportation or supply of gas conveyed through pipes, and the generation, transmission, distribution or supply of electricity or the provision or use of electricity interconnectors.

1.5. The Authority must when carrying out those functions have regard to:

- the need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
- the need to secure that all reasonable demands for electricity are met;
- the need to secure that licence holders are able to finance the activities which are the subject of obligations on them[24];
- the need to contribute to the achievement of sustainable development; and
- the interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.[25]

[22] entitled "Gas Supply" and "Electricity Supply" respectively.
[23] However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.
[24] under the Gas Act and the Utilities Act, in the case of Gas Act functions, or the Electricity Act, the Utilities Act and certain parts of the Energy Act in the case of Electricity Act functions.

1.6. Subject to the above, the Authority is required to carry out the functions referred to in the manner which it considers is best calculated to:

- promote efficiency and economy on the part of those licensed[26] under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;
- protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity; and
- secure a diverse and viable long-term energy supply.

1.7. In carrying out the functions referred to, the Authority must also have regard, to:

- the effect on the environment of activities connected with the conveyance of gas through pipes or with the generation, transmission, distribution or supply of electricity;
- the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed and any other principles that appear to it to represent the best regulatory practice; and
- certain statutory guidance on social and environmental matters issued by the Secretary of State.

1.8. The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation[27] and therefore part of the European Competition Network. The Authority also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

[25] The Authority may have regard to other descriptions of consumers.
[26] or persons authorised by exemptions to carry on any activity.
[27] Council Regulation (EC) 1/2003

Appendix 4 - Glossary

A

Authority

The Authority is the governing body for Ofgem, consisting of non-executive and executive members.

C

Common Distribution Charging Methodology (CDCM)

The common methodology for HV/LV charging as developed and submitted by the DNOs on 25 August 2009 for approval by the Authority under standard licence condition 50.

Common Methodology Group (CMG)

The CMG was established by the DNOs in late Autumn 2008 under the auspices of the Energy Networks Association. The CMG has undertaken the development of a common methodology and governance arrangements for HV/LV charging.

D

Distribution Connection and Use of System Agreement (DCUSA)

The DCUSA is an industry code which governs connection and use of system arrangements between DNOs, suppliers and some generators on the distribution networks.

Distributed Generation (DG)

Generation which is connected directly into the local distribution network as opposed to the transmission network, as well as combined heat and power schemes of any scale. The electricity generated by such schemes is typically used in the local system rather than being transmitted for use across Great Britain.

Distribution Network Operators (DNOs)

A licensed distributor which operates electricity distribution networks in distribution service areas but can also compete to operate networks anywhere within Great Britain.

Distribution Price Control Review 5 (DPCR5)

DNOs operate under a price control regime, which are intended to ensure DNOs can, through efficient operation, earn a fair return after capital and operating costs while limiting costs passed onto customers. Each price control typically lasts five years at a

time. The existing price control (DPCR4) will expire 31 March 2010. DPCR5 is planned to commence on 1 April 2010.

Distribution Reinforcement Model (DRM)

A methodology for the formulation of use of system charges for the distribution network. The approach uses a representative model of the network for establishing use of system tariffs.

Distribution Service Area (DSA)

As defined in SLC 1 of the electricity distribution licence.

E

Electricity Act 1989

Electricity Act 1989 c.29 as amended. Also referred to as 'The Act'.

Engineering Recommendation P2/6

A guide for electricity distribution network system planning and security of supply.

Extra High Voltage (EHV)

Term used to describe the parts of distribution networks that are extra high voltage typically consisting of a voltage level of 22kV or more.

F

Forecast Business Plan Questionnaire (FBPQ)

Forecast Business Plan Questionnaires are submitted by DNOs as part of the DCPR5 process. FBPQs contain the details of companies forecast expenditure over the period covered by the DCPR5 settlement. The FBPQs also contain details of historic expenditure over the DCPR4 price control period.

G

Grid Supply Point (GSP)

A Grid Supply Point is any point at which electricity is delivered from the National Electricity Transmission System to the DNO's Distribution System.

H

Half hourly (HH) metered customers

Customers with a metering system which provides measurements on a half hourly basis for settlement purposes.

HV/LV – High/Low Voltage

Term used to describe the parts of the distribution networks typically at a voltage level of less than 22kV.

I

Independent Distribution Network Operators (IDNOs)

A licensed distributor which does not have a distribution services area and competes to operate electricity distribution networks anywhere within Great Britain.

L

Licensed Distribution Network Operators (LDNOs)

A term that captures both IDNOs and DNOs operating networks outside their distribution services areas.

M

Modern Equivalent Asset Value (MEAV)

The cost of the network using current ('modern equivalent') assets and their associated current costs.

N

Non half hourly (NHH) metered customers

Customer with a metering system that does not provide measurements on a half hourly basis but rather total consumption to date at time of reading. Settlement is based on profiling data.

S

Standard Licence Condition (SLC)

These are conditions that licensees must comply with as part of their licences. SLCs are modified in accordance with Section 11A of the Electricity Act. Failure to comply with SLCs can result in financial penalties and/or enforcement orders to ensure compliance.

T

Transmission exit charges

Transmission exit charges are charges paid by DNOs to National Grid (in its role as GB System Operator) for the financing and operating costs of the assets that connect the distribution network to the transmission network (the transmission exit point).

U

Use of System (UoS) Charges

Use of System Charges: Charges paid by generators and suppliers for the use of the distribution network.

Appendix 5 - Feedback Questionnaire

1.1. Ofgem considers that consultation is at the heart of good policy development. We are keen to consider any comments or complaints about the manner in which this consultation has been conducted. In any case we would be keen to get your answers to the following questions:

1. Do you have any comments about the overall process, which was adopted for this consultation?
2. Do you have any comments about the overall tone and content of the report?
3. Was the report easy to read and understand, could it have been better written?
4. To what extent did the report's conclusions provide a balanced view?
5. To what extent did the report make reasoned recommendations for improvement?
6. Please add any further comments?

1.2. Please send your comments to:

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Consultation Co-ordinator
Ofgem
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London
SW1P 3GE
andrew.macfaul@ofgem.gov.uk