



SP Transmission & Distribution

Mark Cox
Distribution Policy
Networks
Office of Gas and Electricity
Markets
9 Millbank
London
SW1P 3GE

Your ref

Our ref

Date

18 March 2005

Contact/Extension

Jeremy Blackford /
01698 413467

Dear Mark

Regulation of Independent Electricity Distribution Network Operators- Initial Proposals Document.

I am writing on behalf of SP Transmission & Distribution in response to the 'Regulation of Independent Electricity Distribution Network Operators- Initial Proposals Document' (January 2005). We are pleased to have the opportunity to comment on these proposals.

We broadly agree with a number of Ofgem's initial views outlined within the document. For example, we support the use of a Relative Price Control model based on the incumbent DNO's charges (option 1), although this needs to be kept under review in order to avoid perverse incentives on the growth of IDNOs. We also support Ofgem's initial view that there are a number of benefits associated with the installation boundary metering equipment at IDNO boundaries. We believe however that concerns regarding the cost and practicality of installing meters at all boundary connections are unfounded and provide additional information to support this view.

We do have some concerns regarding other areas, which are discussed in greater detail in the attached document. Two of these are set out below.

- Changes to current contractual arrangements

SP Transmission & Distribution see no justification for amending the current contractual arrangements in place for the recovery of DuoS charges. The electricity industry has developed a robust settlement model supported by a framework of interdependent contracts and participant systems which are acknowledged by an Ofgem sponsored industry forum, facilitated by MRASCo, as the most efficient and low cost solution for the industry as a whole.

Members of the ScottishPower group

New Alderston House Dove Wynd Strathclyde Business Park Bellshill ML4 3FF
Telephone (01698) 413000 Fax (01698) 413053

We believe that the model currently adopted in the gas sector for the regulation of Independent Gas Transporter (IGT) networks is significantly flawed, in that it overlooks the fundamental differences between the two sectors and the and would not provide an adequate solution for the regulation of IDNO networks. As such we believe that the current arrangements in the gas sector should not be repeated in electricity.

- *Boundary Equipment*

We note Ofgem's current position in relation to equipment at the DNO/IDNO interface. SP Transmission & Distribution do not support this position, believing instead that other than in specific circumstances, IDNOs must be required to provide protection and isolation facilities adjacent to the point of connection. We believe there are no grounds for a change to the current well tried and test approach to network interfaces which has been the subject of previous reviews and discussions and supported by Ofgem on previous occasions.

I hope that you find these comments helpful. Should you wish to discuss any aspect of our response I can be contacted on the above number.

Yours sincerely



Jeremy Blackford
Regulation Manager

1. Charging Arrangements (Section 5)

SP Transmission & Distribution support Ofgem's initial view, as stated in paragraphs 5.36 and 5.37 of the Initial Proposals, that a Relative Price Control model based on the incumbent DNO's charges, option 1, is the most appropriate model to apply to IDNOs. While we believe that this approach is the most appropriate model of the five offered to adopt, in order to mitigate the risk to end consumers of incurring high UoS charges, the model outlined in option 1, nevertheless, is flawed in its apparent inability to respond to features of the complex electricity market.

One example of this relates to its failure to recognise the difference between DNO and IDNO revenue drivers. The model relates IDNO charges, and hence revenues, directly to the equivalent DNO charges. However, DNO charges are driven by approved UoS methodologies to recover allowed revenue, which, in turn, are affected by a number of incentives, including those for IIP and losses, and the growth term, as well as year on year adjustments for over and under recovery. Therefore, an IDNO's charges will be driven inappropriately by DNO performance in such areas rather than the IDNO's own performance in these areas.

A further weakness with the model relates to the scope for perverse incentives where IDNOs are able to exploit differences from DNOs in the proportion of assets financed through connection charges. For example, an IDNO with an LV network that has followed Ofgem's guidelines on the connections boundary is likely to have financed this largely if not entirely through connection charges. This in turn implies that if its charges are capped against a DNO whose LV networks are financed, at least in part, through DUoS charges, there is then scope for an artificial stimulus to the growth of IDNO networks. We therefore believe that arrangements for charge restrictions should be kept under review in order to avoid perverse incentives as a result of such anomalies.

With regards to the start date of the set control period, we would support the review period commencing in April 2006. This option has the advantages of removing the requirement for retrospective adjustments to charges while providing sufficient time for the framework to be fully developed and implementation to be satisfactorily undertaken.

2. Financial Ring Fencing (Section 6)

SP Transmission & Distribution notes Ofgem's intention stated in section 6.4 to retain the financial ring fencing conditions in section BA of IDNO licences, and specifically its intention to maintain the introduction of alternative arrangements to the requirement for an investment grade credit rating, under BA5. We note that these arrangements would take a two-tiered format based upon on the number of supply points connected to the IDNO's network.

Similarly, we note Ofgem's comment that following the final proposals of DPCR4 which contained proposed collective licence modifications to the financial ring fencing conditions, specifically standard licence condition 47, in the distribution licence there

may be a requirement to undertake analogous modifications to the IDNO licence.

While we continue to express the view that the regulatory framework implemented for IDNOs should be as far as is reasonable aligned with, and at least no less onerous than, the existing regulatory framework for incumbent DNOs' we recognise that financial ring fencing requirements are a matter of discussion and agreement between the IDNO licence applicant and Ofgem and have no regulatory or commercial impact on the arrangements within which we currently operate. As such, we feel it to be inappropriate for us to provide a view as to whether the licence modifications proposed as part of DPCR4 should be applied to the financial ring fencing conditions of IDNOs, or what the trigger event for the cash lock up should be as requested in section 6.28.

2.1 Credit Cover Arrangements

Of more significant concern to incumbent DNOs are the credit cover arrangements and bad debt provisions that will apply to existing and new IDNOs. Under the current arrangements the IDNO, similarly to a supply company, is required to enter into an Use of System (UoS) agreement with the incumbent DNO prior to their network connection being energised. The UoS agreements contain credit cover requirements and bad debt provisions which themselves have been the subject of a lengthy consultation process and while they were developed specifically to address the commercial relationships between the DNO and supply companies we would expect them to apply equally to existing and new IDNOs.

Accordingly, SP Transmission & Distribution intend to apply the revised credit cover management and bad debt provisions, as outlined in Ofgem's 'Recommendations for best practice guidelines for gas and electricity network operator credit cover' (February 2005), to new and existing IDNOs in the same manner as to supply companies.

3. Commercial / Contractual Arrangements (Section 7)

3.1 Contractual Arrangements

We note Ofgem's comments regarding the current contractual arrangements within the electricity sector in paragraphs 7.3- 7.13, and that it is seeking to quantify the costs and benefits of changing them in order to minimise IDNOs' liability for upstream DUoS charges.

SP Transmission & Distribution, however, see no justification for amending the current contractual arrangements in place for the recovery of DUoS. The electricity industry has developed a robust settlement model supported by a framework of interdependent contracts and participant systems which was acknowledged by an Ofgem sponsored industry forum, facilitated by MRASCo, as the most efficient and low cost solution for the industry as a whole. The current arrangements are viewed to have the following benefits:

- The arrangements are transparent, simple, effective and low cost;
- The arrangements allow DNOs to meet their license obligations effectively;
- The arrangements minimise the impact on Suppliers' and Electricity Settlement systems;
- The arrangements minimise the impact on customers;
- The arrangements facilitate a clear link between IDNO performance of their BSC and MRA contractual obligations and their revenues; and
- Protects DNOs allowed revenues from poor connection settlement practices in relation to the IDNOs networks, over which they have no control. This has been demonstrated to be a problem in the gas market.

One argument proposed, at the recent Ofgem IDNO regulation workshop, to justify changes to the current contractual arrangements was that the bulk of UoS charges collected by IDNOs was passed onto the incumbent DNO which is claimed to impose an unreasonable financial burden on the IDNO.

Our analysis, however, does not support this view, having established that on average the IDNO passes 50% of its total UoS revenue to the upstream DNO. In some instances, depending on the level of connection and classification of customer, this charge represents only a third of an IDNO's UoS revenue.

We, therefore, see no economic reason for amending the existing contractual arrangements.

As regards the alignment of electricity and gas arrangements, we note Ofgem's comments in paragraphs 7.6-7.8 regarding the potential benefit from adopting commercial arrangements within the electricity sector which would be similar to those currently implemented in the gas sector, such that 'the supplier has direct contractual relationships with each of the other parties.'

We believe that the model currently adopted in the gas sector for the regulation of Independent Gas Transporter (IGT) networks is significantly flawed and would not provide an adequate solution for the regulation of IDNO electricity networks. Indeed, to suggest this solution overlooks the fundamental differences between the gas and electricity settlement arrangements and the greater degree of complexity in the electricity market arrangements.

The application of the commercial arrangements currently implemented in the gas sector has resulted in several suppliers passing on associated increased administration costs, in the region of an additional £40 per annum, to customers who are supplied via an IGT network. Given the nature of the connections market, customers connected to an IGT's network are highly likely also to be connected to an IDNO's network, raising the possibility of these increased charges being duplicated.

A further disadvantage of the gas model is that it relies on each IGT providing Transco with regular updates on who is responsible for supplying/shipping gas to each home on the IGT network. This information then allows Transco to bill the Supplier/Shipper directly by using a pre-determined annual quantity value for the element of transportation charge applicable for use of their system to the connected system exit point (CSEP). It has been highlighted through the Gas Forum IGT workgroup that Transco has not always received these updates. As a direct consequence of this procedure not being followed, shippers and suppliers find that they are unable to effectively validate invoices, as Transco are then unable to bill accurately for transportation costs for use of their network. This in turn leads to the additional issue that any unallocated costs for use of Transco's transportation network are smeared over RbD shippers by Transco, resulting in higher costs for domestic shipper / suppliers. IGTs have continually argued that they should not be required to undertake this task and that this information should be passed directly from the shipper/supplier.

The issues highlighted above and the failings with the current arrangements in gas should not be repeated in electricity. The most cost effective model for the regulation of IDNO networks is the one currently in place, where each IDNO is responsible for collecting all UoS revenue, both upstream and downstream, and each supplier receives one invoice for customers supplied via independent networks.

In paragraphs 7.14 and 7.15 Ofgem invites further views as the practical issues relating to changing the contractual arrangements in electricity.

In further considering changing the existing arrangements in the electricity sector Ofgem should fully recognise the greater complexity of the electricity settlement and UoS charging arrangements and consequentially the significant costs that would be incurred.

We believe that to develop for the electricity market an effective model to facilitate separate UoS charging from IDNOs and DNOs, as per the gas model, would necessitate significant expenditure and require substantial time to develop and implement

satisfactorily. Issues to address would include the following:

- Industry-wide projects to identify the necessary changes to the settlement processes - facilitated via Elexon and MRASCO;
- Extensive changes to the Balancing and Settlement Code, Master Registration Agreement and UoS Agreements;
- Significant expansion and industry co-ordination of Line Loss Factors (LLFs) – this would have significant set up and operating costs, which at present are difficult to quantify, however, these could prudently be expected to be hundreds of thousands of pounds per annum across the industry.
- Elexon system changes to cope with expanded LLFs and additional routing of IDNO settlement data to DNOs based on GSP group. In total, the introduction of the P62 changes took 30 months and Elexon facilitation costs were approximately £3m. Within this, it took 18 months to implement from the agreement of defined changes. Any proposed amendments to the current arrangements would be of a similar scope. These changes would be funded by Suppliers and Generators, and would ultimately be recovered through charges to customers.
- IDNOs would have to incorporate system changes to cope with expanded LLFs and provision of MPAS updates to DNOs – these costs would be significant.
- DNO system changes to cope with expanded LLFs, receipt, storage and update of IDNO MPAS information, changes to UoS billing systems - Estimated set up costs in the region of £1m per DNO and a minimum of 12 to 18 months **from agreement of defined industry changes**, plus significant operating costs.
- Suppliers would have to make significant system changes to receive and validate multiple UoS bills for customers. This would affect all Suppliers who would incur many millions of pounds of expenditure across the industry.

Whilst Suppliers and Generators would pass their costs directly on to customers, DNOs would require an increase in their allowed revenues to recover the significant outlay these changes would incur.

The information detailed above does not incorporate a solution for the treatment of nested networks. This would add an additional level of complexity and significant costs to industry participants. Further consideration should also be given to this issue.

SP Transmission & Distribution believe that any change from the existing arrangements will result in significant cost to the industry and hence customers. In considering the most appropriate way forward Ofgem must consider the extremely limited benefits that these changes might achieve, and the resulting negative impact on end customers.

3.2 *Boundary Equipment*

Paragraphs 7.23 to 7.27 outline Ofgem's current position in relation to equipment at the DNO/ IDNO interface. SP Transmission and Distribution do not support Ofgem's position as we believe firmly that, other than in specific circumstances, in order to meet the requirements of the ESQC Regulations, IDNO's must provide protection and isolation facilities adjacent to the point of connection.

The physical interface between two networks is just one of the key factors which can impact the safe ongoing operation of such networks, particularly where each network is owned and operated by different parties in accordance with their own safety and operational procedures.

Ofgem rightly highlight Regulation 6 of the ESQC regulations as being important to this debate but other factors such as safe isolation procedures, legal liabilities related to Electricity at Work regulations, quality of service to customers and commercial liability must also be considered.

The Electricity Supply, Quality and Continuity Regulations 2002 ('ESQCR')

ESQCR Regulation 6 states:

*"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."* (SP T&D's emphasis).

This regulation places an absolute responsibility on each distributor to protect 'his network' from currents that may cause danger. At the interface between two networks, where there are two distributors, it follows that each distributor has a responsibility for providing protective devices, so far as is reasonably practicable.

SP Transmission & Distribution acknowledge that it is not practicable, or reasonable, for each network operator to install protective devices immediately adjacent to each other in all circumstances, particularly where one of the networks is relatively small. To address this issue we have, following a consideration of the various risks, developed a generic policy with regard to the connection and protection of IDNO networks and/or customer installations at higher voltages.

SP Transmission & Distribution policy allows third parties networks/installations to be protected by its exit point circuit breaker when:

- The network or installation is connected by a short section of feeder bus-bar at the substation (to which the third party connects via a protective device); or

- The network or installation is connected by a short (<~100metres) section of cable installed in a controlled environment i.e. the customer's/IDNO's installation is immediately adjacent to our 'connection point' substation and the cable remains within the controlled environment of either SP Transmission & Distribution's or the customer's substation boundary.

At lower voltages, where isolation and protection of the exit point from the DNO network is provided by removable fuses, we see little benefit in IDNO's installing in-line fuses immediately adjacent to the exit point due to the difficulties of achieving appropriate protection grading. However, in order that the IDNO has full control over its network, we do see a need for IDNO's to have isolation facilities immediately adjacent to the point of connection. We recognise that it is possible that removable fuses may provide the most cost effective means of achieving this objective.

Working Practices and Procedures

The safe overall operation of networks and the provision of a safe working environment for staff and contractors do not simply rely upon physical protective devices as considered in the ESQC regulations. Rather there is a need for network operators to develop coherent and consistent working processes where a wide range of factors such as safety rules, authorisation procedures, staff training, approved equipment lists etc are all carefully designed to dovetail together to provide a safe environment.

Each network operator will need to develop their own working processes to meet their own specific needs and circumstances and such working practices will to some extent be different to those of an adjacent network operator. Understanding and dealing with these differences is essential when work is undertaken on equipment that forms the boundary between networks. A failure to adequately address such differences provides the potential for dangerous situations and a key factor in managing such risks is the minimisation of exposure. This can most effectively be achieved by reducing to, a practical minimum, the equipment that is effectively under joint control of both network operators.

Quality of Service

DNO's have for many years sought to co-ordinate work on their networks in such a way as to make best use of network outages and thus minimise the risk and disruption to customers' supplies. The introduction of financial incentive mechanisms in recent years has only underlined the importance of such co-ordination. In order not to undermine the performance improvements that have been achieved by DNOs, or the incentives for them to improve performance in the future, it is important that the operation of IDNO networks (over which DNOs have no control of design, installation or equipment quality) are prevented from adversely impacting the performance of the DNO network. This can only be achieved by the provision of protection and isolation facilities at every point of connection between networks which are owned and operated by different distributors, no matter how large or small each network

Case Histories

Ofgem have considered connection issues on two previous occasions and we summarise their conclusions below. We have also summarised advice ratified by the DTI in relation to the connection of distributed generation, which an IDNO network potentially may contain. It is important, therefore, that connections provided to IDNOs recognise this potential development and are designed accordingly.

1. Precedent from Ofgem Determination with regard to SPDL connection of Crystal Rig Wind Farm (S23/R/155)

One of the issues involved in this dispute was SP Distribution's insistence that Crystal Rig Wind Farm should install a circuit breaker adjacent to the statutory breaker to protect the 9.5km of 33kV underground cable that Crystal Rig intended to install from the point of connection.

Ofgem found in favour of SP Distribution, i.e. that it was reasonable for SP Distribution to require Crystal Rig to install a circuit breaker to protect its 33kV cable AND that it was also reasonable for SP Distribution to install a circuit breaker at the exit/entry (point of connection) to disconnect the customer's installation without affecting other customers.

The relevant paragraphs from the determination are below:

6.8 *The Authority has assessed the design of the connection arrangement to the 33kV busbar at Dunbar substation. In relation to the requirement for the Customer to install a 33kV circuit breaker it notes that:*

- *It is different to that which would be required if the Company were to install (or Adopt) the 9.5km underground cable circuit to the windfarm;*
- *The Customer has chosen to install and operate the 33kV cable circuit as it wishes to have its connection point at the grid supply point;*
- *The Electricity Supply Regulations 19881 set out that protective measures should be applied by the owner of electric lines and apparatus;*
- *The Company is not obliged to provide protection for plant or equipment owned by a Customer (or other third parties).*

The Authority considers that it is reasonable for the Company to require the Customer to install a 33kV circuit breaker to protect its 33kV underground cable circuit.

6.9 *In relation to the requirement for the Company to install a 33kV circuit breaker at the Dunbar substation, the Authority notes that:*

- *The Company stated that it needs to be able to automatically disconnect the Customer's connection;*
- *There are other Customers connected to the 33kV busbar at the Dunbar*

substation.

The Authority is satisfied that the Company should be able to disconnect the Customer's connection without affecting the other customers connected to that 33kV substation busbar.

Whilst this determination was in relation to the connection of a windfarm, the logical arguments apply equally to 'demand' type networks. We would also note that IDNO networks may well become 'active' networks at some future date, at which time the considerations in relation to Crystal Rig would become directly applicable.

In the case of the Crystal Rig windfarm, the customer circuit breaker adjacent to the point of connection was required to enable the customer to protect his 9.5km of 33kv cable from the source of 'fault' energy that would originate from the SP Distribution network.

Ofgem's determination thus confirms that, with networks in excess of a certain length, there is a requirement for the operator of that network to provide their own protection device to protect their network source of 'fault' energy that originates from the DNO's network.

2. Recent discussions between Ofgem and distributors (DNOs) regarding licensed independent distribution network operators (IDNOs).

At a meeting of DNOs and Ofgem on 17 August 2004 to discuss issues arising in relation to IDNOs, one of the issues identified was "Isolation and protection at the interface" between the DNO / IDNO.

In a written response subsequent to this meeting, Ofgem made the following statement:

Isolation arrangements at IDNO / DNO interface – Ofgem position: Under ESQC Reg. 6 each distributor is responsible for application of protective devices to his own network. Consequently he will have to install protection at entry points. Isolation will normally be associated with these fusing etc. arrangements.

This statement by Ofgem clearly indicates they see a need for IDNO's to install protective devices at 'entry points' and this statement is made in full knowledge that DNO's without exception provide protective devices at 'exit points' from their system. It would therefore appear that Ofgem have accepted the need for two protective devices at the interface between networks and we are therefore unclear as to why Ofgem are now proposing alternative arrangements for IDNO connections.

3. Technical guide to the connection of Generation to the Distribution Network produced by the Distributed Generation Co-ordinating Group – Technical Steering Group and available from DTI web site.

Whilst section D.3.1 of this document recognises that in many situations DNOs will accept the connection of generators via a single circuit breaker at the source, section D.3.2 indicates that it is the responsibility of the DNO to undertake a risk assessment with regard to the duty on the circuit breaker or protection system. Where the DNO concludes that the duty is likely to be unusually onerous it may require the generator to install a second circuit breaker tripped by the generator's protection. Section D.3.2 also highlights that this arrangement allows the developer to provide their own isolation and earthing facilities for maintenance of the installation.

SP Transmission & Distribution have undertaken the required risk assessment and, as a result, developed the general policy outlined earlier. None of the 'least cost' arguments outlined in Ofgem's 'Initial Proposals' document provide any grounds for us to re-visit our risk assessment.

In summary, we have outlined the safety, legal, performance and commercial factors that are impacted by the physical isolation and protection arrangement that exist between networks. We have outlined the approach that has been taken in relation to the connection between transmission and distribution networks and between transmission or distribution networks and customers for many years. We have demonstrated that this approach has been reviewed, and approved, by Ofgem on at least one previous occasion and has been recommended by the DTI in relation to the connection of distributed generators.

In conclusion, we believe there are no grounds for a change to the current well tried and tested approach to network interfaces and we believe that IDNOs must in most cases be required to provide protection and isolation facilities adjacent to the point of connection. The only exceptions to this should be where the IDNO's networks are:

- Connected by a short section of feeder bus-bar at the substation; or
- Connected by a short (<~100metres) section of cable installed in a controlled environment i.e. the customer's/IDNO's installation is immediately adjacent to the DNO substation and the cable remains within the controlled environment of either the DNO's or the customer's/IDNO's substation boundary.

3.3 Boundary Metering

SP Transmission & Distribution supports Ofgem's stated position as we believe that there are a number of benefits associated with boundary metering. We believe that boundary metering should be able to be installed at all IDNO boundaries at low cost and with minimal impact on the equipment required at a new development.

It is our believe that the major benefits from the provision of DNO/IDNO boundary metering are as outlined below:

- Facilitates a simple and low cost UoS recovery mechanism for both industry and customers;
- Provides clarity to DNOs of allowed revenue drivers – as DNOs are incentivised on growth in units distributed and losses and are required to accurately record these;
- Provides clarity to IDNOs of costs and network losses;
- Incentivises IDNOs to operate lower loss networks to the benefit of customers and the environment;
- Facilitates compliance with DNOs' licence obligations to report accurately system losses; and
- Protects DNOs' allowed revenues from poor connection and settlement practices in relation to the IDNOs networks, over which DNOs have no control. This has been demonstrated to be a problem in the gas market.

From 1 April 2005, DNO allowed revenues will be adjusted by a loss incentive rate of 4.8p per kWh. Should the settlement processes fail to record an IDNO's customers' consumption due to a failure to follow market processes by the connection company, Supplier, IDNO or Meter Operator, the units thereby unaccounted for would be added to the DNO losses.

- The effect on the DNO's allowed revenue of a single IDNO domestic customer being excluded from settlements is approximately £163.20 per annum.
- The effect on the DNO's allowed revenue of a single IDNO commercial customer being excluded from settlements could easily exceed £100,000 per annum.

Consequently, boundary metering is essential in all circumstances to manage the substantial risk that this represents to DNOs' allowed revenues. If Ofgem determined that boundary metering should not be installed then SP Transmission and Distribution believe this would present an unacceptable commercial risk to DNOs.

We strongly believe that the long established means of charging/measuring energy transfer using a low cost, low maintenance and highly accurate electricity meter should only be deemed unnecessary if the cost outweighs the substantial benefits. We note Ofgem's view in paragraph 7.34, that in relation to LV connections a de-minimis level of connected consumers below which a boundary meter may not be required on the basis of cost effectiveness or practicality. We do not support this view on the basis of the costs for boundary metering outlined below:

- £20 for a single phase meter boundary meter for a small number of domestic connections;
- £100 for a 3 phase 100 amp meter which would be sufficient for approximately 35 domestic connections; and

- Loads in excess of 72kVA requiring CT metering, approximately £500 or £10/house for a 50-house development.

Accommodation

We note Ofgem's concerns regarding the practicalities of accommodating metering assets at all boundary connections.

As other important boundary equipment, such as DNO cut-out fuses and the IDNO's own protective devices or a means of isolation, require an enclosure in any case, a modern solid state meter should be very easily accommodated within the enclosure.

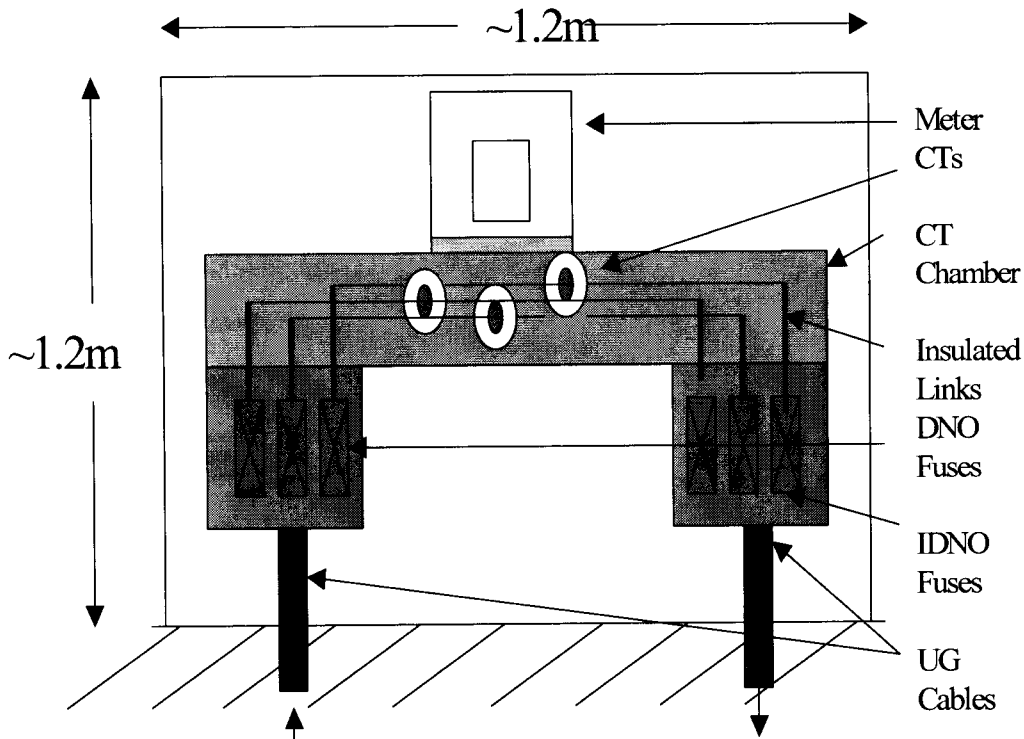
A 3 phase, 100-amp electricity meter should be no more than 250mm(h) x 200mm(w) x 100mm (d). The size of enclosure or pillar for LV boundary equipment is likely to be no larger than most street furniture required by BT, Public Lighting or DNOs ~1.2m(h)

At the other end of the scale, for an HV connection to an independent network with say 1,000 consumers, the metering panel measuring 750mm x 750mm with around 750mm space in front of the panel, can be easily accommodated within the substation.

For developments of more than 30 houses but less than 150 houses, where a DNO should be able to provide a connection from the LV network without establishing a network substation, the space for the termination equipment and the meter is more of an issue. However, we believe that an enclosure no taller than current electrical street furniture, of 1.2m x 1.2m would accommodate the equipment.

The arrangement of the fuses, metering panel and independent network isolation would be as shown below:

Typical proposed arrangement for LV CT metering.



In conclusion, SP Transmission & Distribution consider that the benefits of implementing boundary metering at the IDNO /DNO interface far outweighs the low cost, and that as a consequence such metering should be installed in all circumstances.

3.4 Quality of Service

We support the proposals outlined by Ofgem in sections 7.40 to 7.43 but would suggest that Ofgem should consider requiring IDNOs to identify separately those CI and CMLs arising on their networks due to a loss of infeed from the DNO from those associated with any other connected networks. In practice, this additional requirement on IDNOs will not increase the reporting burden on them, since, in most cases, the DNO's network will be the only other connected network. However, it will ensure that there is no ambiguity in the statistics provided by IDNOs.

We believe that these reporting arrangements will provide clear visibility of the relative impact of DNO and IDNO networks on the customers connected to the IDNO's network and will thus, over time, highlight any performance concerns that need to be addressed. We would, however, highlight our expectation of considerable year to year volatility in the statistics provided by IDNOs in relation to the impact of the DNO network. This is likely to result from the relatively small networks that will be operated by IDNO's in the near future and the fact that faults on the DNO's network are likely to impact all

customers on the IDNO network.

IIP Template

It is our view that, with the level of reporting proposed for IDNO's, complex reporting arrangements which require DNOs to count customers connected to downstream networks for the purpose of reporting under the RIGs are not justified. We propose that Ofgem keep this aspect of the interface under review and, should the performance data provided by IDNOs in relation to the impact of incidents on the DNO's network demonstrate an issue in this regard, consider the introduction of specific reporting requirements for DNOs if it becomes necessary.