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March 2005

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

Dear Mark

ELEXON Response to Ofgem Consultation on Regulation of Independent Electricity Distribution Network Operators

This is the response from ELEXON on Ofgem's Initial Proposals Document on the Regulation of Independent Electricity Distribution Network Operators.

Introduction

ELEXON welcomes the opportunity to comment on the issues raised in your consultation document. The document seeks views on Ofgem's initial proposals on the development of the regulatory regime for new independent distribution network operators (IDNOs) and existing distribution network operators (DNOs) operating outside their traditional area in respect of charging arrangements, financial ring fencing conditions, and commercial arrangements. ELEXON has identified some impact on the BSC central systems arising from the proposed commercial arrangements.

Impact from Commercial Proposals

Currently, Suppliers pay IDNOs directly for Distribution Use of System (DUoS) charges which include the upstream cost incurred by the IDNO of using the system of the DNO in whose network it is embedded. There is a separate contractual arrangement between the IDNO and the DNO for these costs. Ofgem proposes to introduce a separate contractual arrangement between each supplier and both the IDNO and the DNO for use of system. Ofgem believes the benefits will arise from removing liability for upstream costs from the IDNO and bringing arrangements in line with the gas industry.

The impact on the BSC central systems would be twofold: the Supplier Volume Allocation Agent (SVAA) which sends a report to the distributors on the amount of energy Suppliers have used in the Non Half Hourly (NHH) market (necessary for the calculation of DUoS charges) would have to send reports to each distributor associated with a Metering Point Administration Number (MPAN); and there would be a possible requirement to produce separate sets of Line Loss Factors (LLFs) for the different networks.

It is worthwhile noting that under the current provisions of the BSC there is no Settlement metering between the different LDSO networks in the same GSP group. Should there be a requirement for such meters to be registered in the Central Metering Registration System (CMRS) a modification to Section K of the BSC would be necessary.

A full explanation of the impact on the BSC central systems is attached in Appendix 1.

Impact Assessment

ELEXON intends to seek impact assessments for both the simple and one of the more complex LDSO configurations within a GSP Group (illustrated as A and B in Figure 3 of Appendix 1) from the SVA Agent and/or the SVA Software Support Provider.[1] The results of the impact assessments will be provided to Ofgem as soon as they are available.

ELEXON will continue to monitor the development of the metering requirements.

We hope that you have found this response helpful. If you wish to discuss any of the points raised in this submission, in the first instance please do not hesitate to contact:

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Yours sincerely

Brian Saunders
Chief Executive

List of Enclosures
Appendix 1: Detailed explanation of impact

[1] As ELEXON pays a fixed fee for impact assessments, this can be done with no incremental cost.

DETAIL OF IMPACT ON CENTRAL SYSTEMS FROM OFGEM'S CONSULTATION ON THE REGULATION OF DISTRIBUTION NETWORK OPERATORS

1. Introduction

This appendix sets out in more detail the potential impact that some of the proposals for the regulation of DNOs have on the Settlement (reporting) systems that support Distribution Use of System (DuOS) charging, concentrating on aspects that have direct relevance to ELEXON's obligations.

2. Background

Figure 1 illustrates the simplest type of DNO-IDNO configuration that is relevant to Ofgem's consultation. In this type of graph, each node represents a distinct LDSO. The boundary between a transmission-connected LDSO network and the National Grid is represented by a thick horizontal (red) band. The thin (blue) lines signify the existence of (one or more) connections between two LDSOs or between a transmission-connected LDSO and the National Grid.

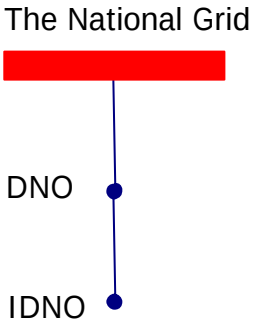

Figure 1 – The simplest DNO-IDNO configuration

(a) The Current Commercial Arrangements:

The downstream IDNO will collect DuOS charges on behalf of all LDSOs whose networks are used to transport electricity to the end consumer and will then pay use of system charges to the upstream LDSOs for use of the upstream distribution network. In other words, the IDNO will be liable for upstream use of system charges.

The current contractual arrangements can be illustrated using Figure 2.

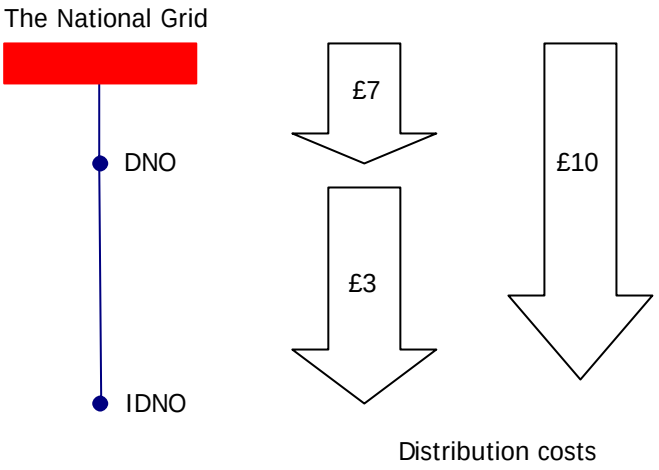

Figure 2 – The Current Contractual Arrangements

In the example given by Ofgem in Section 5 of the consultation document, the total DuOS Charge for distributing electricity to the end customers is £10. Under the current arrangements, this payment will need to be shared between the IDNO whose physical assets reach the customer and the transmission-connected DNO who provides the link between the National Grid and the IDNO. In Ofgem's example, the total charge of £10 is to be shared as follows: £7 to the transmission-connected DNO and £3 to the downstream IDNO. Under the current contractual arrangements, the downstream IDNO will collect £10 from Suppliers and pay £7 to the transmission-connected DNO.

(b) Alternative Arrangements being considered:

Section 7 of the consultation document raises the possibility of changing the contractual arrangements amongst LDSOs and Suppliers so as to align them with the gas sector. In the gas sector, Transco is responsible for both the transmission system and the local transmission-connected distribution networks. According to paragraph 7.7 of the consultation document, Independent Gas Transporters (IGTs) are not liable for upstream use of system charges. Instead, Suppliers have contractual relationships with both Transco and the IGTs. They pay transportation charges to Transco for use of the network to the connection system exit point (CSEP) and pay the IGT for use of the network from the CSEP to the end consumer. Therefore, the IGT is not liable for upstream use of system charges. Paragraph 5.42 further clarifies that in the gas sector any intermediary embedded network does not receive use of system charges for use of its system to transport gas to end customers.

As Transco has a dual role in the gas sector in contrast to the role of the Transmission Company in the electricity sector, there are two potential ways of aligning the contractual arrangements in the two sectors:

1. The Supplier would have contractual relationships with the IDNO that is physically connected to the end-customer, with the transmission-connected DNO, and with the Transmission Company.
2. The Supplier would have contractual relationships only with the IDNO that is physically connected to the end-customer and with the Transmission Company.

It is assumed in this memorandum that Option 1 is the option under consideration by Ofgem, but the alternative reading should also be noted.

3. Settlement-related Issues Raised by Ofgem's Consultation

(a) DuOS Reporting

The Half Hourly Data Collector (HHDC) and Supplier Volume Allocation (SVA) Agent systems are designed to send DuOS Reports concerning a given Metering Point Administration Number (MPANs) to a single Supplier and to a single LDSO, who is the sole LDSO responsible for distributing electricity to the customer with that MPAN. The HHDC and SVA Agent Systems are able to identify the correct LDSO from the MPAN, which encodes a unique Supplier Meter Registration System (SMRS) identifier in the first two digits.

In the HH Market, Suppliers are billed on the basis of the actual consumption of their customers in a given half hour. For each Supplier, the relevant HHDC sends consumption data for the Metering Point Administration Numbers (MPANs) belonging to that Supplier in the D0275 'Validated HH Advances' data flow to the Supplier and the relevant LDSO.

In the NHH market, Suppliers cannot be billed on the basis of actual half hourly consumption by individual MPANs. Instead, each Supplier is charged on the basis of consumption by "Super Customers," each of which corresponds to a row in the Supplier Purchase Matrix (SPM). The SVA Agent uses the D030 'NHH DuOS Report' flow to provide the Supplier and the relevant LDSO with aggregated information about the consumption attributed to each "Super Customer" of that Supplier.

The charging of multiple LDSOs for a given MPAN would potentially require the identification of the multiple LDSOs that lie on the (potentially multiple) paths from the National Grid to the end customer. In such a scenario, DuOS Reports relating to a given MPAN would have to be routed to each LDSO that lies on a path from National Grid to that MPAN. This would require changes to the systems and processes that distribute DuOS Reports to the appropriate participants.

The extent of the impact would depend on the complexity of the admissible scenarios that are to be supported. It is useful to consider a few concrete examples to understand the nature of the issue. The following diagrams illustrate some possible configurations according to which LDSOs could be connected within a Grid Supply Point (GSP) Group. In theory, the graphs could become as complex as desired. The relatively simple graphs shown below serve merely to illustrate the types of complication that arise in regard to DUoS reporting.

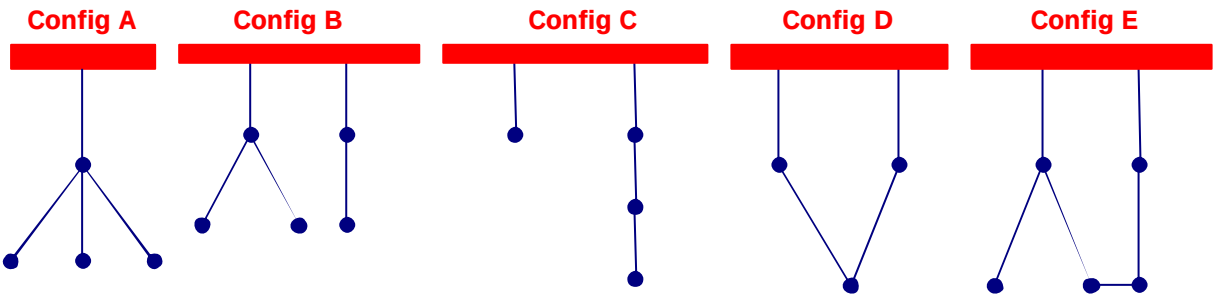

Figure 3 – Examples of LDSO Configurations within a GSP Group

Configuration A: This is a relatively simple configuration with a single transmission-connected LDSO. Every LDSO in the GSP Group must use the distribution network of this transmission-connected LDSO to access the National Grid.

For DuOS billing purposes, the reporting software could be modified so that the transmission-connected LDSO would receive information for every customer in the GSP Group, and all other LDSOs would continue to receive information only for their own MPANs. One way of achieving the correct routing of the reports would be to add to Market Domain Data (MDD) a list showing the unique transmission-connected LDSO in each GSP Group. HHDCs and the SVA Agent Systems could then determine the correct recipients of the relavant DuOS reports using the MPAN and the information in MDD.

Configuration B: This configuration involves two transmission-connected LDSOs with downstream LDSOs attached to each one. In this scenario, the DuOS reporting software must be able to deduce the identity of the unique transmission-connected LDSO responsible for a given MPAN.

One way of achieving the correct routing of the reports would be to use Line Loss Factor (LLF) Classes to encode the identity of the relevant transmission-connected LDSO. This would, however, require cooperation from the LDSOs in setting up the appropriate new LLF Classes.

Configurations C, D and E: These configurations illustrate some of the more complex situations that could potentially occur. Configuration C illustrates that LDSOs could form chains of arbitrary finite length ("nesting"). Configuration D shows that there may be multiple paths between an LDSO and the National Grid. Configuration E incorporates a combination of features from the previous configurations.

Theoretically, all the relevant information about finite graphs could be encoded into LLF classes. In practice, however, the implementation of such complex configurations would be more complicated than the solutions envisaged for Configurations A and B.

(b) Line Loss Factors (LLFs)

Further consideration should be given as to what LLF values would be applied to the electricity passing through different LDSOs' networks. There could be a significant impact on the SVA Agent Systems[1] if it was proposed that different LLF values should be applied to different LDSO networks. The issue is illustrated in Figure 4 below:

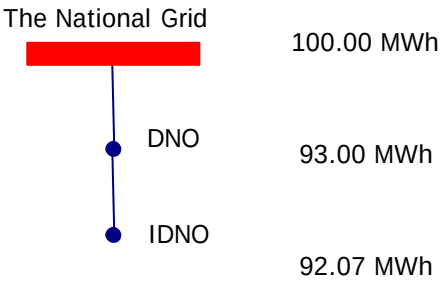

Figure 4 – Possible LLF calculation for different LDSOs

[1] The HHDC systems do not apply LLF values; nevertheless, there may be an impact on the LDSOs' systems on the half hourly side. This is beyond ELEXON's remit.

In this diagram, 100.00 MWh of electricity is delivered by the National Grid into the DNO's distribution system. 7% percent of the electricity is lost in the DNO's network so that 93.00 MWh of energy is delivered into the IDNO's network. A further 1% is lost in the IDNO's network so that the end customers use only 92.07 MWh of the original 100.00 MWh. The total losses amount to 7.93% of the total energy and the corresponding LLF is approximately[2] 1.0861.

Option 1: The overall LLF value would be applied to both networks. This is the simplest option and would not require changes to the LLF modules of the SVA Agent software.

Option 2: If required, it would be possible to calculate LLF values specifically for each distribution network by factoring the overall LLF value into its components.

- For the DNO's network only, the losses are 7% and the corresponding LLF value is approximately 1.0753. For the IDNO's network only, the losses are 1% and the corresponding LLF value is approximately 1.0101.
- The overall losses are not altered. The product of the two LDSO-specific LLF values equals the overall LLF value, modulo small rounding errors.

If Option 2 was adopted, the IDNO-specific LLF would be applied to the IDNO network and both the IDNO-specific and the DNO-specific LLFs would be applied to the DNO network[3]. The implementation of this solution in SVA Agent Systems would require changes to the LLF modules of the software to ensure that the correct value was applied to each network.

From ELEXON's perspective, Option 1 appears superior to Option 2. In principle, the application of distinct LLF values to each network suggests that each LDSO would be charging DuOS only for the energy that actually passed through its network. However, in practice, LLF values are broad estimates only; trying to apply different LLF values to different networks would probably be an exercise in spurious precision. Furthermore, the cost and complexity of supporting different LLF calculations in the SVA Agent software could be substantial, especially if complex configurations such as the ones illustrated in Figure 3 are to be supported.

It should also be noted that different LDSOs could, if required, apply different LLFs (or similar parameters) to the metered energy associated with their networks for the purposes of DuOS billing. In effect, it would be possible to implement Option 2 without a corresponding change in the SVA Agent systems. This possibility is outside ELEXON's remit.

In sum, based on the assumption that Option 1 is adopted, ELEXON believes that there is no requirement at the present time to undertake a detailed assessment of any potential changes to the LLF modules in SVA Agent systems. Should that assumption prove incorrect, a detailed assessment will be undertaken.

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[2] The exact LLF value is (100 / 92.07), which is the numerical multiplier required to scale the amount of metered energy exiting the whole system upto the amount of energy delivered into the whole system.

[3] In effect, the LLF for the entire system should be applied to the DNO in this example. In more complicated configurations, such as those in Figure 3, each path through the networks would have a distinct LLF so that there would be no way of assigning a unique LLF to a given DNO.

(c) Metering between LDSO Networks

At the present time, there is no Settlement metering between different LDSO networks in the same GSP Group and there is no agreed way for the different LDSOs' charges to be calculated from existing Settlement data. Under the current version of the BSC, any meters installed between the different LDSO networks (as proposed by Ofgem) would not be able to register in the Central Metering Registration System[4] (CMRS).

ELEXON believes that questions concerning the placement of meters between different LDSO networks are currently outside ELEXON's remit, and it is not believed that they have a direct impact on Settlement systems and processes. However, ELEXON should continue to monitor developments in this area.

Summary

In summary the proposals have an impact on the routing of DuOS Reports and the possible requirement for different LLF values for different networks. ELEXON will continue to monitor the situation in respect of any potential metering impact.

As regards DuOS Reporting, the key findings are:

- Because DUoS charging is based on reports provided to LDSOs by the SVA Agent and HHDCs, any proposed change could impact the reporting functionality of the SVA Agent and HHDC systems.
- The cost and complexity of the required system changes would depend on the complexity of the configurations that the system was required to support.

[4] The possibility of registering such meters in CMRS was considered by Modification Proposal P70 'CMRS metering for inter-DNO boundaries within a GSP'. Modification Proposal P70 was rejected by Ofgem on 27 September 2002. A new Modification Proposal would be required if Ofgem now decided that such meters should be allowed to register in the CMRS.