

Implications of third party access for the settlement of generation on private networks

The EU Third Package requires the operators of private networks to allow customers on those networks to take their electricity supply from third party Suppliers. This requirement was implemented into UK law by the [Electricity and Gas \(Internal Markets\) Regulations 2011](#), which came into force on 10 November 2011. DECC has issued [draft guidance](#) on how parties can achieve this, which identifies two settlement options for customers on such networks that are achievable without needing to change industry codes:

- Full settlement metering, where all Entry and Exit Points on the network are allocated Metering Point Administration Numbers (MPANs), and the network is treated for BSC purposes as an Associated Distribution System of the Licensed Distribution System Operator (LDSO) providing the registration service; or
- Difference metering, where only the customer(s) requiring third party supply are allocated MPANs, and their meter readings are subtracted from the boundary meter readings to derive consumption values for the remainder of the private network.

The Issue 43 Group noted that the difference metering solution can give rise to a situation where the output from a customer's embedded generation spills on to the system without being metered; and that this is similar in some respects to the Issue 43 scenario. The Group asked ELEXON to consider whether this gives rise to settlement issues.

Difference Metering for Private Networks

The difference metering solution for private networks is described in section 8.4.3 of [BSC Procedure \(BSCP\) 514](#). Its advantage (compared to full settlement metering) is that it does not require all the other customers on the network to have settlement metering. It may therefore be more economic and administratively simpler than full settlement metering if most of the customers on a private network have not requested third party supply. However, it does have some limitations:

- It requires a Metering Dispensation, as customers are being settled using meters at their point of connection to the private network, which is not the BSC Boundary Point;
- It requires the Suppliers involved (including any incoming Suppliers who gain customers on the private network through Change of Supplier) to appoint the same Half Hourly Data Collector (HHDC). This is necessary in order that the HHDC can subtract meter readings from customers with third party supply from the boundary meter readings; and
- It does not currently support Non Half Hourly Metering¹.

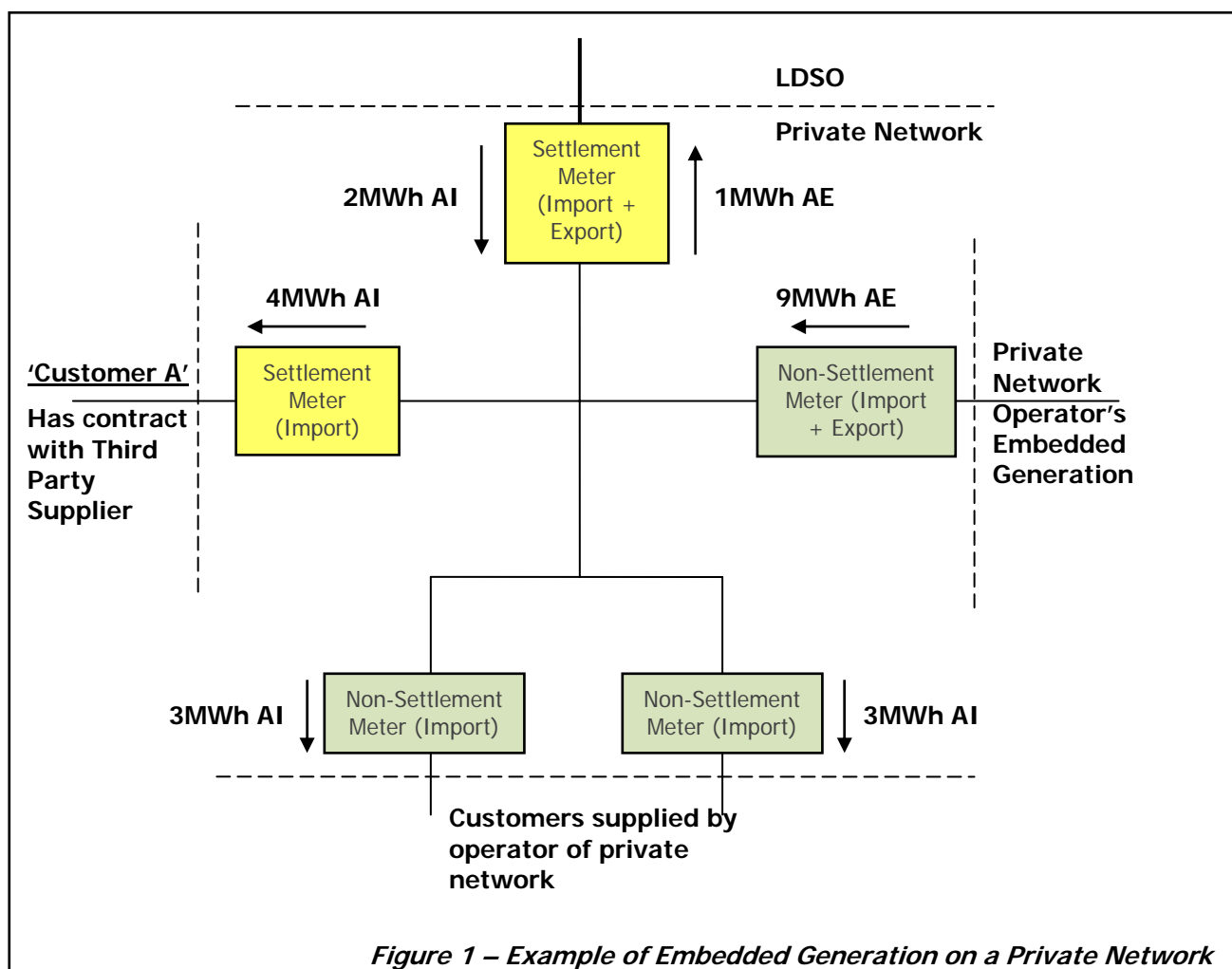
¹ In principle, there is no reason why industry codes should not be amended to include arrangements for NHH difference metering. However, this could require significant changes to NHH Data Collection Systems.

Note for Issue 43 Group

The discussion of private networks in section 8.4.3 of BSCP514 does not include embedded generation, but the principles in section 8.4.6 (*'Feed-Through Sites with Embedded Generation'*) would apply. Rather than treating Import and Export readings separately, the HHDC must determine the total flow for the site (excluding customers with third party supply), and then report this quantity as either a net Import or a net Export (as appropriate).

Example of Embedded Generation on a Private Network

To illustrate how embedded generation on a private network would be traded and settled, consider a small private network with four customers, one of whom has embedded generation, and one of whom ('Customer A') has contracted with a third party Supplier. The customer with embedded generation is the owner of the private network, and historically has sold excess generation to other customers on the network. In figure 1 below, the network operator is exporting 9 MWh onto his private network, and the customers to whom he is selling power are using 6 MWh:





Note for Issue 43 Group

Differencing Calculation Performed by HHDC

In order to calculate the total demand used by the private network (excluding customers with third party Supply) the HHDC would calculate:

$$\begin{aligned}\text{Total Demand} &= \text{AI at Boundary Meter} - \text{AE at Boundary Meter} - (\text{AI for Customer A} - \text{AE for Customer A}) \\ &= 2\text{MWh} - 1\text{MWh} - 4\text{MWh} = \mathbf{-3\text{MWh}}\end{aligned}$$

In this instance, the total demand is negative, and the settlement meter reading for the boundary meter is therefore 3MWh of Active Export². Note that the boundary meter is treated for settlement purposes as recording 3MWh of Active **Export**, even though the net physical flow at the boundary is 1MWh of Active **Import**. This is because (for settlement purposes) the 1MWh net physical flow is broken down into:

- 4MWh of Active Import supplied to Customer A by a third party Supplier³; and
- 3MWh of Active Export exported onto the LDSO system by the other customers on the network.

Trading Options for the Private Network Operator

Prior to the Third Package, the operator of the private network would have been able to sell his own generation to all the customers on his network. But as customers on the network exercise their right to competitive supply, this reduces the number of customers to whom the network operator can sell power. In figure 1, for example, the network operator can no longer sell his full 9MWh of Export to customers on his own network, and is therefore left with a net Export of 3 MWh onto the LDSO system. His options for dealing with this include:

- Option 1 - Selling his excess generation to a licensed Supplier. The licensed Export Supplier would register the Export MPAN at the Boundary, and would be assigned any excess generation from the private network (e.g. 3 MWh in the above example).
- Option 2 - Reducing the output of his generation to match the demand of customers to whom he is selling power (e.g. in the above example he would seek to reduce his output to 6MWh). This option requires him to have systems in place to match his generation to the forecast or actual demand of his customers.
- Option 3 – If he does neither of the above, excess generation will be spilt onto the system (e.g. in the above example he would spill 3MWh for which he would not be paid).

² This assumes that the private network operator is selling his Export to an Export Supplier, who has registered an Export Metering System. If this is not the case any Export would be treated as spill, and the 3MWh of Export would not therefore enter settlement (i.e. it would be assigned to Measurement Quantity 'UN').

³ Physically, most of the electricity used by Customer A will have been generated on the private network, not supplied from the public network. But contractually the power has been supplied by Customer A's chosen Supplier (just as a customer on the public network is contractually supplied by his chosen Supplier, even if physically the power he uses is generated by the micro-generator next door).



Note for Issue 43 Group

Additional Issues At Times of Islanded Generation

In some cases, the private network operator may be able to use his generation to continue supplying customers on the network even when the LDSO network is unavailable (due to a planned or unplanned outage). The commercial implications of this for the private network operator depend upon which of the three options above he has chosen.

Under option 1, the generator can continue to sell power both to customers on his own network, and to his licensed Export Supplier. Any power he generates that is recorded on the settlement meters of customers with third party Suppliers will be allocated to him as an Export (through the difference metering mechanism described above) and paid for by his Export Supplier in the usual way (despite the fact that the private network is physically islanded from the larger system).

Under option 2, the generator has no mechanism for being paid for power that is physically used by customers with third party Suppliers. Under normal operating circumstances he would therefore generate enough power to meet the needs of those customers who buy power from him (leaving the LDSO network to provide enough power to meet the needs of customers with third party Suppliers). With the LDSO network unavailable, he faces a risk that power will go to the 'wrong' customers on his network, leaving him unable to charge for the power he has generated. If he wishes to avoid this risk, he may need to physically prevent power from being supplied to customers with third party Suppliers at times when the LDSO network is unavailable.

Conclusions and Recommendations

Although there are superficial similarities between the Issue 43 scenario and embedded generation on a private network with difference metering, the above analysis suggests that the settlement issues are different.

While difference metering on private networks is already catered for in BSCP514, we believe it may be relatively little used in practice. It is therefore possible that the introduction of the Third Package will reveal deficiencies in the current process, which need to be resolved. ELEXON will seek to engage in dialogue with interested parties to identify and resolve such issues. However, we believe this should be progressed separately from Issue 43.

One specific improvement that may be worth considering (outside the scope of Issue 43) is to enhance the examples in Appendix 8.4 of BSCP514 to include an explicit example of a private network with both third party access and embedded generation.



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