REQUEST FOR INFORMATION

INFORMATION FOR	Issue 88 'Clarification of BSC Arrangements relating to Complex Sites'
Owner	Craig Murray
Purpose	This industry-wide request for information (RFI) seeks industry views on: • Whether local energy schemes should be allowed to net Exports from Imports across geographically contiguous locations; • Whether industry parties believe that 'SVA Site' should be defined to add clarity to the existing Complex Site arrangements; and • To provide insight into how estimation processes are currently employed in relation to Complex Sites This will inform the Issue 88 workgroup's discussions as to the industry understanding of the current complex site arrangements and whether they should be amended to allow facilitation of new innovative Metering System configurations
Classification	Public

Dear Industry member,

Please can you provide the information requested below to us at bsc.change@elexon.co.uk, using the response form provided with this RFI, by **17:00** on **21 October 2020**.

We are particularly seeking views from Suppliers, Half Hourly Data Collectors (HHDCs), Half Hourly Meter Operators (HHMOAs) and Generators, as these are the parties most likely to be impacted by the outcomes of Issue 88. However, views from all interested market participants are welcomed.

Issue 88 Summary

Issue 88 was raised by Elexon to address a number of issues and perceived ambiguities within the Complex Site processes and potential inconsistencies between some Complex Site arrangements and the BSC, as described in the proposal form.

Issue 88 focuses on four primary areas. These are:

- Issue 1 – Combining multiple Boundary Points into a single Supplier Volume Allocation (SVA) Metering System may not be consistent with the BSC;
- Issue 2 – Clarifying whether Export and Import can be netted as part of a Complex Site arrangement;
- Issue 3 – The concept of 'site' (for the purposes of SVA Complex Site arrangements) is not clearly defined; and
- Issue 4 - Process Improvements.

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This Request for Information consists of two distinct sections:

- Part 1 is related to Issues 1-3 and requests industry views on:
  - Whether local energy schemes should be allowed to net Exports from Imports across geographically contiguous locations; and
  - Whether industry parties believe that 'SVA Site' should be defined to add clarity to the existing Complex Site arrangements.
- Part 2 relates to Issue 4 (Process Improvements) and requests industry views on how estimation processes are currently employed in relation to Complex Sites

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Part 1: Issues 1-3

Totalisation

This Section relates to BSCP514 8.4.1 and 8.4.2 which are examples of totalisation. For clarity, both of these are examples of **non-Complex Sites** and are included as a background to the issue of whether combining multiple Boundary Points into a single Supplier Volume Allocation (SVA) Metering System is consistent with the BSC.

BSC Procedure (BSCP) 502 'Half Hourly Data Collection for SVA Metering Systems Registered in SMRS' and BSCP514 'SVA Meter Operations for Metering Systems Registered in SMRS' include provisions for metering of "Complex Sites". These are defined as 'sites' at which the Metering Technical Details (which provide the HHDC with the information needed to collect data from the Meters and allocate it to Metering Systems for purposes of Settlement) are too complex to be captured in the standard D0268 'Half Hourly Metering Technical Details' data flow.

The majority of the Complex Site arrangements in the BSCPs include various forms of 'totalisation', in which Imports (or Exports) measured at multiple Boundary Points are aggregated and allocated to a single SVA Metering System. This totalisation is subject to the caveat (described in BSCP502 and BSCP514) that the multiple Boundary Points subject to aggregation are treated as the same 'site'.

There is currently no definition of 'SVA Site' in the context of complex sites within the BSC or BSCPs. This potentially creates confusion as to whether multiple boundary points at geographically contiguous locations can be totalised under one MSID; essentially acting as a 'site'. Additionally, BSC provisions regarding SVA Metering System configuration are potentially inconsistent with aspects of the BSCPs and may need further consideration.

Netting Imports from Exports

Sections 8.4.3 -8.4.8 of BSCP514 describe the general rules and scope that can be applied to each Complex Site. This section explicitly states that the HHDC is required to establish gross Import and gross Export values for the site for each Settlement Period (with no netting of the two).

The arrangements described in BSCP514 sections 8.4.1 and 8.4.2 state that Export and Import should not be netted off each other i.e. any Import should be allocated to an Import Metering System, and any Export allocated to an Export Metering System (rather than submitting the net quantity into Settlement).

However, some of the other complex site arrangements do include aggregation rules in which Import is subtracted from Export, or vice versa. Primarily these are:

- Feed through sites (8.4.4 – 8.4.6); and
- Network flows impacting Settlement Meters (8.4.8)

In both of these scenarios a form of 'netting' is necessary to calculate the gross Import or Export value per MSID, as the metered values will include energy flows that in practice have only traversed the local system, being "exported" on one feeder and "imported" on another, within the same "site". In this scenario, 'netting' is undertaken to calculate the gross value per MSID. Again, with the absence of a clear definition of 'SVA site' in the context of Complex Sites under the BSC or BSCPs, Parties have faced confusion on where netting is allowed to calculate the gross Imports and Exports for the same location under the same MSID, which arguably contravenes the obligation to submit gross Import and Export values into Settlement and could be seen as submitting a net output of an MSID into Settlement.

Over the last few years Elexon has seen an increase in queries regarding whether Complex Site arrangements could be permissible to allow new innovative solutions. The foremost example of this is the emergence of local energy schemes, as in the following example, which is taken from a blog post discussing a local energy scheme:

First, the local renewable generation site has to have a Power Purchase Agreement [1]and be sending half-hourly meter readings so the generation can be measured.

Second, all the Club members must have smart meters that are set up to send half-hour readings, too.

This only works at a very local level (like a mile or two radius of a village) because everyone in the Club has to be **on the same substation (a substation usually covers a small town, or in a larger city, a few streets).**

Readings are then combined in a way that means the aggregate total import and export from/to the grid in each half-hour can be calculated - and that delta is what the collective buys from or sells to the grid.

Let's say 10 homes consume 2kWh each from 7.00am to 8.00am and the hydro produces 8kWh during that time. Each home gets 1/10 of the renewable energy so 0.8kWh and therefore their other 1.2kWh is grid-supplied. In aggregate we see a grid demand of 12kWh (1.2 x 10) not a grid demand of 20kWh and a grid supply of 8kWh.

If we adjust the figures and say the generator produces 80kWh then each home gets its full 2kWh and the excess generation of 60kWh is what the collective export is to the grid.

With the half-hourly data from the generator and set of homes, each homeowner can be billed for their renewable supply and grid supply. There's more algorithms involved too – if a member consumes only 0.1kWh in their home in that hour then clearly they can't have their full allotment of 0.8kWh so the remaining 0.7kWh gets shared back out to the other 9 homes, and so on.

Adapted from https://octopus.energy/blog/energy-local/

The above represents a possible model for a local energy scheme, and on this description such a scheme requires:

- A number of separate properties and local renewable generation to be treated as a 'single site'; and
- The netting of Exports from Imports across a Boundary Point(s) to a different property.

As discussed above, totalisation is allowed under the BSC Procedures where multiple feeders exist at the same site. However as previously discussed there is no clear definition of 'Site' in the context of SVA Complex Sites under the BSC or BSCPs. Section K1.6.2 of the BSC does define 'Site', but this is largely in the context of Metering System configurations for CVA 'Sites'. The above proposal seems to suggest that multiple premises at contiguous geographical locations that are connected to the same substation would need to be treated as one 'Site' to facilitate local energy schemes. In the absence of a clear definition of SVA site in the context of Complex Sites it is difficult for Parties to understand whether this is permitted under the BSC and BSCPs (including under BSC provisions regarding permissible configurations of SVA Metering Systems).

For the above proposal to work from a technical standpoint, the differencing of Exports from Imports to give a 'net' position would also need to be allowed.

[1] A commercial agreement to buy energy generated from a Power Station between the Generator and the buyer.

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RFI - Questions
Should the BSC allow multiple premises at geographically contiguous locations (and connected to the same substation at the same voltage) to be totalised under one MSID?
Should the BSC allow multiple premises at geographically contiguous locations and connected to the same substation (but at different voltages) to be totalised under one MSID?
Should the BSC allow netting of Exports from Imports (in certain clearly defined circumstances) to facilitate local energy schemes, such as the one described in the example provided? What would be the benefits of doing this?
Do you think it is necessary to define 'site' in the context of SVA to add clarity to the existing Complex Site arrangements as described in BSC Procedures?
Are you aware of any other scenarios (outside of those described in this RFI, or in the Issue 88 proposal form) that may be relevant to Complex Site arrangements (in relation to the content of this RFI) and should be considered by the Issue 88 Workgroup?
The Issue Group invites you to give your views using the response form in Attachment A

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Part 2: Issue 4 (Estimation of Complex Sites)

BSCP502 details the requirements a HHDC must undertake when estimating energy for a HH Import Metering System (4.2.1) and an Export Metering System (4.2.2). They range from method "a" to method "g" as detailed below.

Simplified[2] the estimation methods for an Import Metering System should be applied in the following hierarchy:

- Where data is missing from the Main Meter but data is available from the Check Meter (where there has been no failure in the main/check validation) the HHDC will substitute the data from the Check Meter into Settlement;
- Where actual data is unavailable from either the Main or Check Meters, the HHDC will estimate the data for the missing Settlement Periods to trend of previous actual data;
- Where no historical data is available to estimate to trend, the HHDC will use the Estimated Annualised Consumption (EAC) and Profile Class ID provided by the Supplier together with the Default Period Profile Class Coefficients (DPPCCs) provided in Market Domain Data (MDD); and
- Where the Supplier has not provided an EAC then the HHDC will use the DPPCCs for Profile Class 6 'Non Domestic Maximum Demand Load Factor Band 20 – 30 %', and with the Measurement Class specific HH Default EAC provided in MDD.

Whilst the estimation methods for an Export Metering System broadly mirror those of an Import Metering System they include the following requirement:

The methods described in b. to g. below may only be used where the MS has a specific channel for gross Export and no netting of Import and Export occurs at the site.

Those methods described in 'b. to g.' describe the estimation methods outlined in the bullet points above.

In most Complex Site scenarios netting of Import and Export occurs at a site. Furthermore, Complex Site rules often include the totalisation, netting; or totalisation and netting of multiple MSIDs (often a mix of Import and Export).

BSCP502 is silent on the methods that should be employed for an Import Metering System in the instance that it is part of a Complex Site (and involves netting of Imports and Exports across a 'site').

Method 'a.' under estimation methods for Export Metering Systems (Export Measurement Quantity with missing values where netting occurs at site) states:

The HH metered values for the period of missing data shall initially be set to zero, until such time that evidence of Export energy transfer is provided.

Logically this seems to suggest that Export Metering Systems that are part of a Complex Site should be estimated to zero where metered values are unavailable, whilst Import Metering Systems involved in a Complex Site should estimate based on the criteria outlined above.

The estimation methods detailed in BSCP502 could cause confusion and ambiguity as to how a Complex Site should be treated in regards to estimation where metered data is missing for a particular Settlement Period.

[2] Please note this is a simplification of the estimation rules in BSCP502 and should not be used for applying estimation for Settlement periods. The full requirements can be found in the relevant sections mentioned above.

It can also be argued that the current rules could potentially result in large inaccuracies in Settlement. The table below attempts to illustrate this using a simplified Complex Site scenario. In the figure below, a generator feeds a demand site across a private network with the surplus generation being sold to the grid. Where the generation does not meet the demand the 'customer' is supplied through a connection to the distribution network.

Generator Site Position	Demand Site Position	Export MSID (no estimation)	Import MSID (no estimation)	Export MSID (estimation)	Import MSID (estimation)
80MW	5MW	75MW	0MW	0MW	***

In the example above one of the Meters involved in the Complex Site develops a fault and so the calculation cannot be carried, out necessitating estimation techniques to be applied. The Export MSID is estimated to zero as set out in BSCP502. The Import MSID is estimated either to trend using historical data (where possible) or using an EAC.

As can be seen above this is not indicative of the actual site position.

The following questions are intended for HHDCs, Suppliers and Generators as the primary impacted parties of estimation processes:

RFI - Questions
Do you believe the current estimation techniques are clear and robust enough to allow appropriate estimation to be applied in the case of Complex Sites? How do you currently apply estimation techniques in the case of Complex Sites? *Note that we are interested in estimation techniques in normal circumstances – we are not looking for Covid-19 related estimation techniques*
Do you believe it is appropriate to estimate Export Metering Systems to zero, as is currently required under BSCP502?
Do you experience any other issues, not described in the paper, with the management of complex sites and if so, please describe
The Issue Group invites you to give your views using the response form in Attachment A

Further Information

If you have any further questions about Issue 88 or any aspects of this RFI, please email **BSC Change** (bsc.change@elexon.co.uk). Alternatively, call **Craig Murray** (craig.murray@elexon.co.uk) on **0207 380 4201**.