SVG115/05

Meeting name	Supplier Volume Allocation Group (SVG)
Date of meeting	31 August 2010
Paper title	Change Proposal Progression
Purpose of paper	For Decision
Synopsis	This Paper provides: • CP1338 for your consideration and agreement on their progression; and • A summary of all open Draft Change Proposals (DCPs) and Change Proposals (CPs).

1 Summary

1.1 Since the SVG114 meeting, we have raised one Change Proposal (CP1339) which we issued for BSC Party and Party Agent Impact Assessment via Change Proposal Circular 686 (CPC00686). Details on this change can be found in Appendix 2.

1.2 This paper presents CP1338 for your consideration and agreement on its progression.

2 Change Proposal for Decision

2.1 CP1338 'Guidance for Complex Sites - Network Flows affecting Settlement Meter Readings'

2.1.1 We raised CP1338 on 2 July 2010 and issued it for impact assessment (via CPC00685) in July 2010.

2.1.2 CP1338 aims to provide extra guidance in Balancing and Settlement Code Procedures BSCP502[1] and BSCP514[2] in the form of two additional examples of complex sites where network flows affect Settlement Meter readings.

2.1.3 We received 15 responses; of these 9 agreed, 1 disagreed and 5 were neutral. A majority of respondents were supportive of the approach of adding extra guidance into BSCP502 and BSCP514. The respondent who disagrees believes that the situations identified under this CP should be taken through the Metering Dispensation route.

2.1.4 A respondent identified an error in the example formulas being added to BSCP502 and BSCP514 which we recommend should be amended.

3 Recommendations

3.1 We recommend, based on the additional clarity that the changes will provide on Complex Sites and a majority industry support, that you:

a) **AGREE** our suggested amendments to the redline text for CP1338; and

b) **APPROVE** CP1338 for implementation in the February 2011 Release.

[1] BSCP502 - Half Hourly Data Collection for SVA Metering Systems Registered in SMRS
[2] BSCP514 - SVA Meter Operations for Metering Systems Registered in SMRS

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Appendix 1 – Detailed analysis of CP1338 'Guidance for Complex Sites - Network Flows affecting Settlement Meter Readings'

1 Why Change?

1.1 Background

1.1.1 We raised CP1338 on 2 July 2010.

1.1.2 The complex site arrangements are defined in BSCP514 and BSCP502 as '...any site that requires a 'Complex Site Supplementary Information Form' to enable the Half Hourly Data Collector (HHDC) to interpret the standing and dynamic Metered Data relating to SVA MS for Settlement purposes...'.

1.1.3 Guidance is provided in these BSCPs by way of examples of situations that would require complex mapping to be applied by the HHDC to ensure that Settlement is correct. This guidance was originally designed for unusual situations within a Customer's network, e.g. where a Customer is connected to the Distribution System via another Customer's network. In these cases the Settlement Meter(s) at the Distribution System Boundary Point(s) would record the combined energy of both Customers and the HHDC would need to deduct the embedded Customer's Meter readings from the reading obtained from the main Boundary Point Meters in order to calculate how much energy the Distribution System connected Customer had used. The guidance provides many examples of these kinds of intra-Customer network situations.

1.2 The Problem

1.2.1 The Technical Assurance process has recently identified a number of sites where non-Settlement flows (i.e. Distribution System flows or flows originating from the Customer's own network) are affecting Settlement Meter readings. Meter Operator Agents have been using the complex arrangements to deal with these Customer and distribution 'network' related flows so that Settlement is not impacted by them.

1.2.2 Figure 1 shows how Distribution System flows can impact Settlement Meters at multi-feeder sites due to the connection arrangements on-site, i.e. the Customer's own switchgear allows these flows to pass into the Customer's site and back into the Distribution System. In this example the Distribution System flow would appear as an additional volume of Import to the site (on Meter M2) and as an equivalent Export volume (on Meter M1).

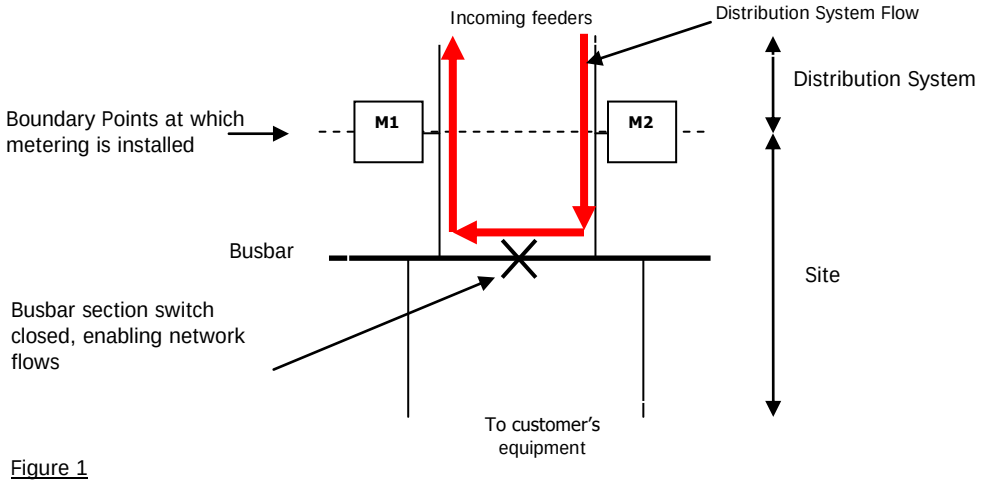

Figure 1

1.2.3 Figure 2 shows how a Customer's own on-site generation can flow out onto the Distribution System (through Meter M2), as an Export volume, and then back into their site, as an Import volume (on Meter M1).

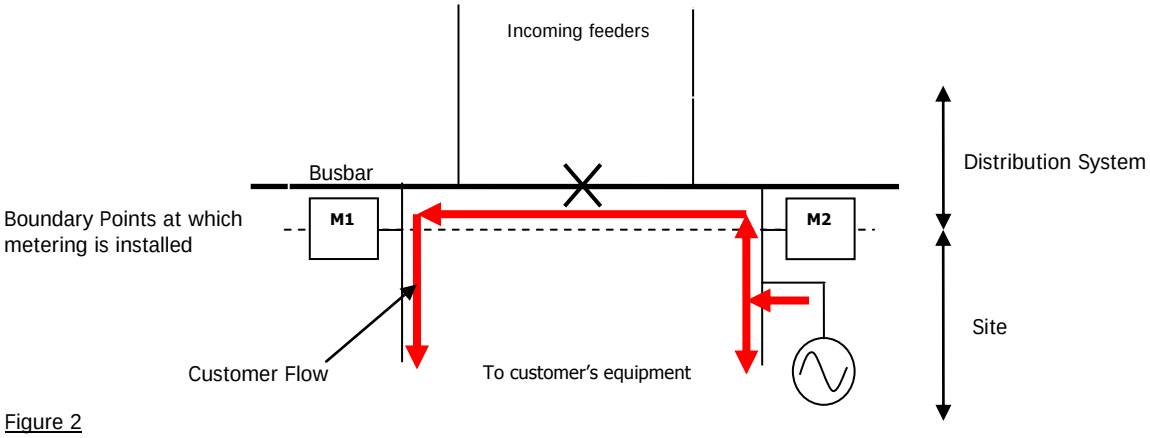

Figure 2

1.2.4 The Technical Assurance Agent (TAA) has been finding the use of the complex arrangements for these site arrangements as non-compliant with BSCP514 and BSCP502 as the guidance provided in these BSCPs does not currently cover situations where network flows affect Settlement Meters.

2 Solution

2.1 There are a number of possible solutions to the scenarios represented above:

1) The Settlement Meters could be moved to a location that would not 'see' any Distribution System flows (in Figure 1) or Customer network flows (in Figure 2). This would involve significant cost and disruption and would also require a Metering Dispensation to be approved;

2) The Customer's/distribution network could be re-arranged so that the feeders are not connected together therefore preventing non-Settlement network flows. This may not be possible for a number of reasons, including maintaining the security of supply to the Customer and the stability of the network; or

3) The Export volumes that appear on any one of the Meters could be subtracted from the Import volumes that appear on the other Meter. This is an administrative process which can be achieved using the complex site arrangements. It should be noted that if the Customer represented in Figure 1 also has generation equipment on-site then the Export volumes could include any 'spill' so the simple algorithm described would require a more complex solution which may be achieved using the complex site arrangements.

2.2 The existing arrangements are in place if Registrants wish to progress options 1 or 2. However, this Change Proposal (CP) proposes that option 3 is progressed giving Registrants an administrative alternative. The attached redlining (Attachments A and B, respectively) is proposed to be included in BSCP514 and BSCP502 to provide additional clarity to participants and enable Option 3.

2.3 Housekeeping Change

2.3.1 The description in paragraph 8 of Appendix 8.4 'Guide to Complex Sites', in BSCP514, and paragraph 8 of Appendix 4.9 'Guide to Complex Sites', in BSCP502, states that the following

appendices 'provides a non-exhaustive list of Examples of Complex Sites'. However, the first two examples in both BSCPs are examples of sites which are not complex. This CP proposes to correct this as shown in the attached redlining by changing the description.

3 Intended Benefits

3.1 Options 1 and 2 are already available to Registrants if required. However, they are both disruptive and costly whereas the option 3, if enabled through the changes to BSCP502 and BSCP514 is administrative and will achieve the same results (i.e. correctly settling Import and Export flows).

4 Industry Views

4.1 We issued CP1338 for impact assessment in July 2010 (via CPC00685). We received 15 responses; of these 9 agreed, 1 disagreed and 5 were neutral.

4.2 Legal text and timescale comment

4.2.1 One supportive respondent identified an error in the proposed redlined example aggregation rule (full details can be seen in Table 3). We recommend this change is made. They also suggested that due to the changes being document only changes that, if approved, the changes should be implemented sooner as part of the November 2010 Release.

4.2.2 We agree that the changes only affect documents (BSCP502 and BSCP514), and there is scope to include the changes in the November 2010 Release, if the SVG believes it is appropriate, thus providing the increased clarity on the treatment of complex sites as soon as possible while still fitting into a formal Release. However the cut-off for changes being included in the November 2010 Release has now passed and implementing CP1338 in the February 2011 Release will fit into the normal Release cut-off timescales.

4.3 Compromising correct recording of import/export data during a half hourly time period

4.3.1 A neutral respondent, who indicated that they agree that the proposed additional guidance does provide a viable solution to the problem, had some concerns that the solution compromises the correct recording of import/export data during a half hourly time period.

4.3.2 The respondent believes that CP1338 will *net the imports and exports thus not recording the true import and export total sites values for each half hourly period. It will only record a single import or export value but not both, therefore actual import and export from both feeders will be netted together within each half hour period, thus reducing import volumes and consequently reducing the renewable obligation payable on import supplies and also reducing the VAT to be charged on both imports and exports.*

4.3.3 We clarified that there is no 'netting'. The CP1338 changes would remove any embedded generation that is used within the site thus giving a fully reflective Import or Export Value. As the true values will be calculated under the CP1338 solution, there will be no incorrect reduction of import values and/or reduction on the VAT to be charged for Imports to and/or Exports from the site.

4.3.4 Following these clarifications the respondent remains neutral to the change.

4.4 Removal of the full rigour of the Metering Dispensation process.

4.4.1 The disagreeing respondent, raised a number of concerns about CP1338:

4.4.2 The respondent commented that, the non-exhaustive list of examples' of Complex Sites were exactly as the name suggested *examples of the weird and wonderful cases that existed in the industry. They were not given as examples of acceptable metering arrangements. These complex sites would normally have a Dispensation to document why they were exceptions to the normal BSC metering arrangements. By adding the extra guidance on complex sites could legitimise certain metering arrangements/set-ups without the need to go through the full rigor of the Metering Dispensation process.*

4.4.3 The respondent is correct that the list of examples is non-exhaustive. However, the examples being added to BSCP502 and BSCP514 arose as a result of the TA checks. These examples, and the sites that fit these example, have the metering in the correct location and are compliant with the relevant metering CoP. Therefore a Metering Dispensation is not required. This issue is one of practical network connections and how to correctly account for Imports and Exports in Settlement, which the additional guidance to be added to BSCP502 and BSCP514 helps to address.

4.4.4 The respondent elaborated on their rationale for the need for such sites to seek approval of a BSC Dispensation. This was on the basis that *'the full engineering and financial case for the arrangement can be documented and where approved will be available for reference by subsequent Suppliers and Meter Operators. It is also available to the TAA to ensure that there are not any inappropriate non-compliances applied.*

4.4.5 As already indicated the examples of sites identified in the CP do not need a Metering Dispensation as they indicate sites that are fully compliant with the relevant CoP. Additionally, only a small number of the 59 complex sites (out of the 116,000 HH metering sites) has the setup/circumstances identified in the CP. One option could be to have a specific 'dispensation' process for such situations. However, we believe this option is not viable and we are not suggesting it is taken forward as it would be a labour intensive process with a very limited application.

4.4.6 Full details of the respondent's comments can be seen in Table 2, along with our responses. The respondent continues to disagree with the proposed changes.

5 Impacts and Costs

Market Participant	Cost/Impact	Implementation time needed
ELEXON (Implementation)	9.5 Man Days effort	November 2010 or February 2011 Release suitable
Suppliers, HHDCs and HHMOAs	Negligible cost impact Updates to internal processes and LWIs	November 2010 or February 2011 Release suitable

6 Implementation Approach

6.1 We are recommending that CP1338 is implemented as part of the February 2011 Release, however there is scope to include the change in the November 2010 Release if the SVG believes it to be appropriate.

6.2 If implemented in November 2010 it will provide the extra clarity on complex sites as soon as possible, while fitting into a scheduled Release. If implemented in the February 2011 Release it will meet normal release cut off timescales.

7 Conclusion

7.1 There is a majority support for this change. The benefits of the change, as identified by the respondents to CPC00685, may be summarised as:

- It makes sense to use the complex sites facilities to ensure that data entering Settlement is accurate.
- The recommended approach (Option 3) is a pragmatic and practical solution to real metering issues. The other two options (1 and 2), while workable, have practical and economical considerations.
- Option 3 provides a suitable solution to the issue whilst minimising cost and impacts.

8 Recommendations

8.1 We recommend, based on the additional clarity that the changes will provide on Complex Sites and a majority industry support, that you:

a) **AGREE** our suggested amendments to the redline text; and

b) **APPROVE** CP1338 for implementation in the February 2011 Release.

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Table 1: Industry Impact Assessment Summary for CP1338 – Guidance for Complex Sites – Network Flows affecting Settlement Meter Readings

IA History CPC Number	CPC00685	Impacts	BSCP502 and BSCP514		
Organisation	**Capacity in which Organisation operates in**		**Agree?**	**Impacted?**	**Days needed to implement**
Western Power Distribution	LDSO, MOA		Yes	Yes	30
Spark Energy	Supplier		Yes	Yes	90
TMA Data Management Ltd	HHDC, HHDA, NHHDC and NHHDA		Yes	Yes	30
EDF Energy Networks	EDF Energy Networks (EPN) plc, EDF Energy Networks (LPN) plc, EDF Energy Networks (SPN) plc, EDF Energy (IDNO) Ltd (EDFI		Yes	No	-
Scottish and Southern Energy	Supplier/Generator/ Trader / Party Agent / Distributor		Yes	No	-
NPower Limited	Supplier/Supplier Agents		Yes	No	-
Scottish Power			Yes	Yes	60
British Gas	Supplier		Yes	Yes	-
E.ON	Supplier		Yes	No	-
Association of Meter Operators	Represents metering organisations		No	No	-
MRASCo Ltd	MRASCo		Neutral	No	-
GDF SUEZ Energy UK	Supplier		Neutral	Yes	-
Electricity North West	Distributor		Neutral	No	-
E.ON UK Energy Services	NHHMOA NHHDC-DA		Neutral	Yes	180

Table 2: Impact Assessment Responses[3]

Organisation	Agree?	Impacted?	Comments	ELEXON Response
Western Power Distribution	Yes	Yes	**Agree change comment -** see comments to Q7 **For which role is your organisation impacted?** HHMOA **Impact -** Update to LWIs **Would implementation in the proposed Release have an adverse impact on your organisation?** Q7 comment - No. In fact, as it is only a documentation change we believe it should be introduced in the November 2010 release. **Associated costs -** Negligible cost impact	The rationale for targeting it at the February 2011 Release is that the cut off for the inclusion of changes in the November 2011 Release has now passed, for all but exceptional circumstances. Additionally a February 2011 release gives all respondents the lead time they need (if approved) to make necessary changes to their processes. However there is scope to include the changes in the November 2010 Release, as the changes expand the existing list of complex sites examples, which Parties and Party Agents can us as they see fit.
Spark Energy	Yes	Yes	**For which role is your organisation impacted?** Supplier **Impact –** Currently Minimal due to volume of sites currently **Would implementation in the proposed Release have an adverse impact on your organisation?** Minimal **Associated costs –** unknown at this time	-
TMA Data Management Ltd	Yes	Yes	**For which role is your organisation impacted?** HHDC **Impact –** Impacts on procedures. **Would implementation in the proposed Release have an adverse impact on your organisation?** No **Associated costs –** Low cost involved **Any other comments –** This change will validate existing set up that are currently non compliant. It makes sense to use the complex sites facilities to ensure that data entering settlement is accurate.	-
EDF Energy Networks	Yes	No	**Any other comments -** It is practical and pragmatic solution to real metering issues. The alternative options 1 & 2 are not appropriate or economically viable.	-
NPower Limited	Yes	No	**Please explain the lead time –** We do not require any notice to implement this change proposal.	-

[3] Please note that we have only included responses in this table where the respondent provided additional information.

Organisation	Agree?	Impacted?	Comments	ELEXON Response
			Would implementation in the proposed Release have an adverse impact on your organisation? No **Associated costs –** We do not envisage any costs to implement this change proposal.	
Scottish Power	Yes	Yes	**Agree change comment** - ScottishPower fully support the recommendation that Option 3 is progressed. Options 1 and 2 would involve further disruption with additional costs but little additional benefit to the sector over Option 3. Option 3 would result in a suitable solution whilst minimising cost and impact. **For which role is your organisation impacted?** HHDC, MOA **Impact -** There would be changes to our internal processes **Would implementation in the proposed Release have an adverse impact on your organisation?** None **Associated costs -** We can give no definitive costs at this time but we would expect them to be low if our preferred option 3 is implemented. Options 1 and 2 would have further additional costs in terms of managing.	-
British Gas	Yes	Yes	**For which role is your organisation impacted?** Supplier **Impact –** Update internal processes	-
Association of Meter Operators	No	No	**Change comment -** The origin of the complex metering form was that the DTC flow D0268 was not sufficiently flexible to cope with the small number of more obscure 'complex' metering arrangements that existed. As has been indicated in the TAA Annual Audit report there are about 59 sites described as complex. The section in BSCP502 was added to give some guidance on when and how to use the form and to satisfy the audit requirements where additional technical information is communicated outside of the DTN. The non-exhaustive list of examples' were exactly that – these were some examples of the weird and wonderful cases that existed in the industry. They were not given as examples of acceptable metering arrangements. The weird sites would normally have a Dispensation to document why they were exceptions to the normal BSC metering arrangements. Any exceptions bring a cost of management for the MO & DC to have suitable manual processes to ensure the MTD is correctly communicated and acted upon. By their very nature these 'complex' arrangements are more	The proposed solution will expand the 'non-exhaustive example' list of examples of complex sites, for situations where the metering is in the correct location, and therefore does not require a Metering Dispensation under the normal arrangements.

Organisation	Agree?	Impacted?	Comments	ELEXON Response
			likely to have errors. This is why 'complex' sites were selected as the subject of the specific TAA audit last year. There is a concern that this CP could 'legitimise' certain arrangements without the rigor of an approved Dispensation. The two examples described highlight some specific issues: Network Flows Impacting Settlement Meters – Fig 1 The diagram shows the bus-coupler closed and network current running through the customers equipment. This reduces the resilience of the customers network. If there is a network fault the customer looses all supply. The normal arrangement would be for the bus-couple to be open if one the network feeds is lost, then only half of the customers load is lost, and the customer can open the network breaker, close the bus-coupler and restore supplies to all his load. The same arrangement would be used for maintenance of the metering circuit breakers, although the bus coupler would be closed as part of the switching process, this would only be for a few minutes and any network flow would be insignificant in settlement/billing terms. If the infeed and outfeed used 2km of the customers private network – would that be acceptable? Network Flows Impacting Settlement Meters – Fig 2 This diagram shows the distribution network being used to transmit generation from one of the customers feeders onto the distribution network and back into the customers feeder. Using the proposed metering 'netting', the distribution business will not 'see' this energy and it will not be subject to DUoS charging. This loss of DUoS revenue may (or may not) be acceptable to the Distribution business. The diagram infers a few metres of copper bus bar, however where do you draw the line? – a few meters, a few hundred meters of cable or 3km? In the 'old days' summation CTs could have been used to resolve some of these situations, but these were 'outlawed' in the mid 1990s. Using them under a dispensation may still be an appropriate solution in some situations. The concern with this CP is that might have the effect of legitimising some metering arrangements without the full rigor and challenge of the dispensation process. I would repeat that the original purpose of the	

Organisation	Agree?	Impacted?	Comments	ELEXON Response
			complex sites section in the BSCPs was to describe an unusual situation – it was not there to 'allow' these situations, that is what the Dispensation process is there for – if there is an appropriate supporting business case. The text in the CP under proposed solution point 1 – seems incorrect. Moving the metering to the correct position could be costly – true, but where it is a significant cost then a dispensation could be applied for justified by avoiding these costs. By seeking and approving a BSC Dispensation the full engineering and financial case for the arrangement can be documented, and where approved will be available for reference by subsequent Suppliers and MOs. It is also available to the TAA to ensure that there are not any inappropriate non-compliances applied. **Any other comments** - Not commented on the redline changes as the comments above, if accepted, would lead to a rethink. I have spoken to Keith Campion on this subject, who understands the concerns. It is not easy to describe the concerns clearly on paper, so still not sure if the point is clearly made. The following comments were included in a document sent to SVG/ISG & PAB chairs on the 28th June (prior to the issue of this change pack): The site specific TAA audit into complex sites has highlighted some strange scenarios which could and should have been subject to a BSC Dispensation application. The need for dispensations is recognised in the existing BSCP514 guidance. BSCP514 states: "In many cases, a Complex Site shall meet the conditions required to apply for a Metering Dispensation as described in BSCP32 'Metering Dispensations'. Where Complex Sites use MS which are not fully compliant with the relevant CoP, a Metering Dispensation should be applied for via BSCP32. Once a Dispensation has been granted, the information shall be available for all future Suppliers, so that they shall have the ability to understand the metering configuration at the Complex Site. As part of the dispensation application process, the Supplier shall need to submit a simplified schematic diagram of the Complex Site connection arrangements and the proposed metering points, as required in BSCP32."	Only a small number of the 59 complex sites (out of the 116,000 HH metering sites) has the setup/circumstances identified in the CP. If you took the approach of having a specific 'dispensation' process for such situations, you would end up with a labour intensive process with a very limited application. Using the Metering Dispensation process is not appropriate in these situations as the metering is compliant with the relevant Code of Practice (CoP) and is in the correct location. The solution proposed by CP1338, will make sure the Imports (AI) and exports (AE) are correctly calculated, by removing any non-Settlement related flows.

Organisation	Agree?	Impacted?	Comments	ELEXON Response
			The indication of the SVG paper is that energy not related to the customer is flowing across the boundary between the Distribution network and the customer's equipment. This energy flow is being incorrectly included in settlement. A fundamental requirement for settlement metering is that it should be located at the boundary between the customer/distribution network. Where there are unusual circumstances, as allowed for under the complex sites, then a dispensation should be considered which would formally record the situation. Getting this correct will also impact on Distribution Use of System revenue. On initial review of the SVG paper diagrams, the bus-bar breaker would normally be 'open' preventing the pass through of distribution consumption. Similarly the second diagram identifies a scenario where the distributor may be missing use of system revenue, if this is only the use of 2m of bus-bar they may be willing to accept a dispensation, but if it is 2km of cable, then probably not. It is not clear from either the SVG paper or the TAA report if any of the 59 audited metering systems has a dispensation. Although if a dispensation did exist then the site may not have received a CAT 1 non-compliance as the metering arrangement would have been formally independently reviewed and agreed within the BSC arrangements.	When you have a situation with very long cables, the responsibility to resolve any issues around losses falls to the Local Distribution System Operator (LDSO) and the Customer. The Meter Operator Agent should compensate the Meters appropriately. This CP will provide a practical solution for sites where network flows pass through Settlement Meters which are situated at the Boundary Points. In the audit cases the TAA will have raised a non-compliance with BSCP502/514, not the CoP. Where Metering Equipment or a Metering System is non-compliant with a CoP then a Metering Dispensation should be sought.
MRASCo Ltd	Neutral	No	**Lead time comment -** Standard notification procedures (Release email) will be fine. **Would implementation in the proposed Release have an adverse impact on your organisation?** No	-
GDF SUEZ Energy UK	Neutral	Yes	**Agree change comment -** It is our view that non settlement flows through Settlement Metering are likely to occur where dual feeder separately metered parallel connected sites have embedded on site generation facilities which are likely to result in low Customer demand levels on site and where for any reason Customers site loads may be low at any time. Whilst we agree that the proposed guidance does offer a viable solution to the problem, we have some concerns that the solution compromises the correct recording of import / export data during a half hourly time interval. Comments on each of the possible solutions to the scenario as follows.	Noted

Organisation	Agree?	Impacted?	Comments	ELEXON Response
			We believe that 'proposed solution 1' would not be a viable option for the vast majority of these sites. Due to the fact that it would be very unlikely to find an appropriate point of common coupling at the site other than the one currently in use. We agree that 'proposed solution 2' would offer a solution to the current problems. However we also recognise that it would only be applicable when the customer did not require parallel metering. The proposed 'possible solution 3' the netting of imports and exports will not record the true import and export total site values for each half hour period. It will only record a single import or export value but not both. Therefore actual import and export from both feeders will be netted together within each half hour period, thus reducing import volumes and consequently reducing the renewable obligation payable on import supplies and also reducing the VAT to be charged on both imports and exports. Historically HMR&C allowed the netting through "virtual" summated metering. However due to increase in the number of these sites and the expected fall in taxable revenue (VAT) their rules now dictate that both import and export usage are billed separately and VAT levied on both supplies unless both supplies are physically summated through the appropriate metering solution. There will also be some situations where one or both of the dual feeders has no export Mpan. We would also like to note that the registered import supplier may not be the same as the registered export supplier for any given feeder, indeed it is possible that up to four separate Electricity Suppliers to be involved with a single dual feeder separately metered supply. **For which role is your organisation impacted?** Supplier **Impact -** In the recent past we have encountered at least one significant problem and customer dispute resulting from a dual feeder separately metered parallel connected site with low load conditions. We believe that this was not a one off occurrence and are concerned that, especially given the current financial climate, these circumstances could be repeated. As such we have a significant interest in any development in the treatment of complex sites. **Associated costs -** No cost to implement	The view on Option 2 is quite correct. The solution proposed by CP1338 will not 'net' the Import and Exports, and result in a misleading value. The solution eliminates any inappropriate (non-Settlement) flows from the imports and exports recorded by the Meters to give the true Import (AI) and Export (AE) values.

Organisation	Agree?	Impacted?	Comments	ELEXON Response
			Any other comments - In view of the likely substantial increase in embedded generation facilities in the near future, We would suggest that DNO's should be required to provide Elexon with a list of all their dual feeder separately metered supplies where authorization to parallel the connection has been given to the Customer or where parallel connection of the dual feeders may be required by the DNO in the future. Where authorization to parallel separately metered the dual feeders have been given, Customers should be given the option to pay for the installation of true 'within half hour' summation metering or revoke the right to parallel their feeders altogether.	
E.ON UK Energy Services	Neutral	Yes	**Impact** HHMOA **Please state what the impact is -** Changes may be required to operational procedures.	-

Table 3: Comments on redline text

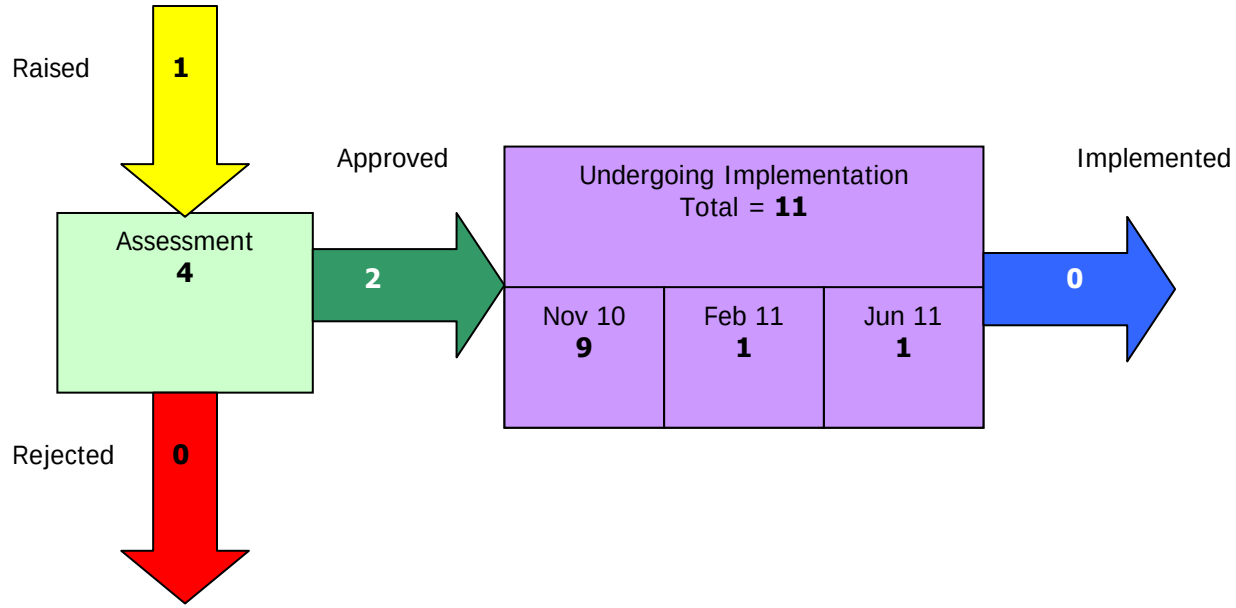
No.	Organisation	Document Name	Location	Severity Code	Comments	ELEXON Recommendations
1	Western Power Distribution	CP1338 Attachment for BSCP502	Page 13 & page 14 section 4.9.8	H	The aggregation rule for the Imports on the 2 new examples appears to be wrong. Shouldn't the rule be: Import MSID = (M1 AI~~AE~~ + M2 AI~~AE~~) – (M1 AE~~AI~~ + M2 AE~~AI~~)	Noted, we recommend that this correction is applied to all instances in BSCP502 redlined changes
2	Western Power Distribution	CP1338 Attachment for BSCP514	Page 9 and page 10 section 8.4.8	H	As above.	Noted, we recommend that this correction is applied to all instances in the BSCP514 redlined changes

Appendix 2 – New Change Proposal

DCP/CP	CVA/ SVA	Title	Description	Raised
CP1339	SVA	Amendments to BSCP533 to enable changes to the hosting and operation of the PARMS system	The hosting and operation of the Performance Assurance Monitoring and Reporting System has been revised to provide a more robust environment for PARMS. CP1339 proposes to amend the references to PAA with PARMS and to remove references to PARMS@elexon.co.uk and other such changes to reflect the changes to PARMS in the relevant BSCPs to enable changes to the hosting and operation of the PARMS system.	06/08/2010

Appendix 3 – Summary of Open Change Proposals

There are currently **15** open CPs, the ISG owns **1** CP, the ISG and SVG co-own **6** CPs, and the SVG own the remaining **8** CPs. **1** new CP has been raised since the last SVG meeting.



Please note:

- The numbers in the boxes indicate current number of CPs in a given phase.
- The numbers in arrows show the variance in the past month.

Appendix 4 – BSC Releases

Change Proposals and Modification Proposals in **BLACK** text represents SVA changes, **RED** text represents CVA changes and **BLUE** text represents changes which impact both the SVA and CVA arrangements.

Key

P = Modification Proposal number

Pro✓/Pro× - Indicates that the Panel's recommendation to the Authority was to Approve/Reject the proposed Modification

Alt✓/Alt× - Indicates that the Panel's recommendation to the Authority was to Approve/Reject the Alternative Modification

	Pending CPs and Modifications	Approved CPs and Modifications	Updates
Nov 2010 Scope (Imp. Date 4 Nov 10)	**1337, 1339**	**1267, 1315, 1325*, 1327, 1328, 1329, 1330, 1331, 1333** P243 Alt✓, P244 Alt✓	The scope of the November 10 Release contains two Modifications and nine Change Proposals. P243 'Publication of Generator Forward Availability by Fuel Type' and P244 'Provision of BritNed Data to BMRS' were both approved on 21 January 2010 for inclusion in the Release. Both the Application Management and Development (AMD) and Business Process Operator (BPO) service providers have commenced work on the Release and are progressing to plan. One CP, which impacts PARMS software, will be implemented on 1 November 2010. Changes to Code Subsidiary Documents also impacted by this CP will become effective on this date. All other changes will be implemented on 4 November 2010.
Feb 2011 Scope (Imp. Date 24 Feb 11)	**1336, 1338**	**1335**	The scope of the Feb 11 Release includes one approved CP (CP1335). No Modifications have been approved for the Release yet.
Jun 2011 Scope (Imp. Date 30 Jun 11)		**1334****	The scope of the June 11 Release includes one approved CP (CP1334). No Modifications have been approved for the Release yet.
Standalone Releases	**P229 Pro×/Alt×**	**P255 Pro✓ P261 Pro✓**	The Authority approved P255 Proposed Modification with an Implementation Date of 22 July 2010. The Authority approved P261 Proposed Modification with an Implementation Date of the 9 August 2010.

* CP1325 has been approved to be implemented on the 1 November 2010, but is included in the November 10 Release.

** CP1334 has been approved to be implemented on the 1 July 2011, but is included in the June 11 Release.

Sections 1 through to 7.4 are not impacted by CP1338

Appendices 8 through to 8.3.5 are not impacted by CP1338

8.4 Guide to Complex Sites

'Complex Site' means; any site that requires a 'Complex Site Supplementary Information Form' to enable the HHDC to interpret the standing and dynamic Metered Data relating to SVA MS for Settlement purposes to be provided to the HHDC in addition to the D0268 'Half Hourly Meter Technical Details'.

The primary electronic data flow between the HHMOA and HHDC for Half Hourly Meter Technical Details is the D0268. In the case of Complex Sites, this data flow alone is insufficient to accurately describe to the HHDC how to allocate the various channels of data that should be utilised in Settlements, therefore the D0268 is supplemented with the 'Complex Site Supplementary Information Form'.

The HHMOA should identify a Complex Site by providing a 'Complex Site Supplementary Information Form' in addition to the D0268 data flow to the HHDC and Supplier and indicating in the D0268 data flow that the site is complex. The 'Complex Site Supplementary Information Form' shall be sent no later than the sending of the D0268 or preferably in advance of the D0268 data flow. This action shall alert the HHDC to expect a 'Complex Site Supplementary Information Form' from the HHMOA containing details of how to configure the data collection requirements and passing of information to the HHDA and Supplier. The 'Complex Site Supplementary Information Form' should be sent electronically or by any other method agreed.

It is the responsibility of Suppliers to manage and co-ordinate their Agents to achieve compliance and to intervene should any issues arise.

The Supplier should identify to the HHMOA which MSIDs relate to the Import energy and which MSIDs relate to the Export energy.

Where the Complex Site is subject to Shared Meter Arrangements, one D0268 data flow and therefore one 'Complex Site Supplementary Information Form' is required. The D0268 'Complex Site Supplementary Information Form' shall be sent by the HHMOA to the HHDC and the Primary Supplier. The Primary Supplier shall decide whether this information shall be copied to the Secondary Supplier(s) and provide this information if required.

In many cases, a Complex Site shall meet the conditions required to apply for a Metering Dispensation as described in BSCP32 'Metering Dispensations'. Where Complex Sites use MS which are not fully compliant with the relevant CoP, a Metering Dispensation should be applied for via BSCP32. Once a Dispensation has been granted, the information shall be available for all future Suppliers, so that they shall have the ability to understand the metering configuration at the Complex Site. As part of the dispensation application process, the Supplier shall need to submit a simplified schematic diagram of the Complex Site connection arrangements and the proposed metering points, as required in BSCP32.

This Appendix 8.4.1 to 8.4.8~~7~~ provides a non-exhaustive list of Examples of Complex Sites and non-Complex Sites. These examples illustrate the need to create rules that accurately describe the aggregation necessary to derive the total energy for a customer. The aggregation

rule contains terms that define each metered quantity at each Meter Point and form part of the total energy. The HHMOA is required to define the terms in the aggregation rule relative to the data.

~~The following aggregation rule can be applied to all Complex Sites.~~

~~(Feeder A Active Export – Feeder A Active Import)+(Feeder B Active Export – Feeder B Active Import) + (Feeder n…~~

~~Simplified to (AAE – AAI) + (BAE – BAI)~~

~~Feeder A Feeder B to feeder n……~~

~~Where AE = Active Energy Export~~

~~AI = Active Energy Import~~

The HHDC is required to establish gross energy for the site for each Settlement Period. This is achieved by applying the aggregation rule to the metered data values. If the resultant value applied to the rule is positive, the site is Exporting, and the Import value is zero. Conversely, if the result is negative, then the site is Importing, and the Export value is zero. Where the resultant is zero, the site is neither importing nor exporting and both values shall be zero. ~~The number of mathematical terms in the aggregation rule is dependent on the number of feeders.~~

When the HHMOA indicates Complex Site on the D0268 data flow, the HHMOA is required to provide all the information necessary, via the 'Complex Site Supplementary Information Form', for the HHDC to aggregate correctly. As part of the supplementary information, the HHMOA is required to provide a schematic diagram of the MS.

Form BSCP514/8.4.8 'Complex Site Supplementary Information Form' provides a means for the HHMOA to convey the information necessary for correct aggregation. BSCP514/8.4.8a gives an overview of the data source and BSCP514/8.4.8b shows the information needed to collect that data.

Where meter channel data is missing, incomplete or incorrect, the HHDC should attempt to use the associated check data indicated on BSCP514/8.4.8a.

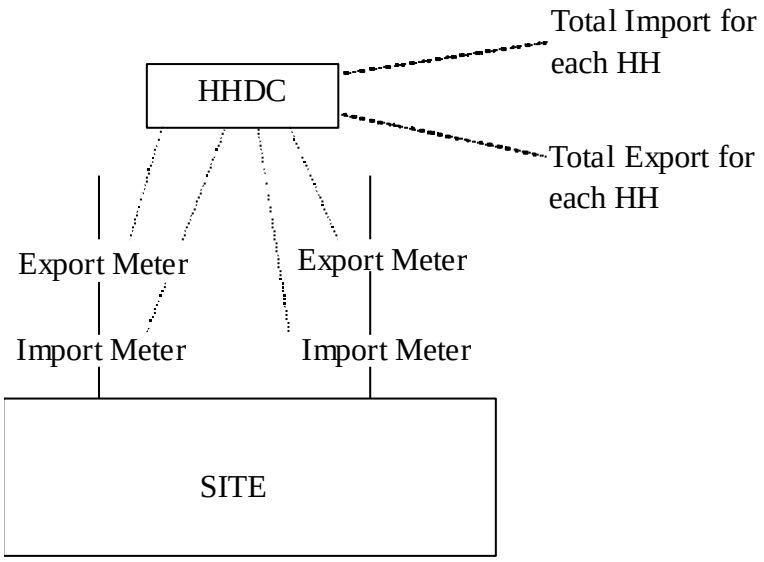
Where duplicated Outstations are provided, two sets of BSCP514/8.4.8a shall be provided each clearly indicating primary and secondary Outstations.

8.4.1 Off-site Totalisation

This example is an example of a non-Complex Site where multiple feeders exist.~~enter a Complex Site,~~ E~~-e~~ach feeder is normally equipped with Code of Practice compliant Meter(s). The HH data is collected and summated off-site by the HHDC and then submitted for Settlement as a single set of HH data.

Where both Import and Export Meters are present, the Export Meter shall be totalled in the same way as Import metering so that both calculations are gross.

For this reason, the netting of Export energy from Import energy should not be carried out. The BSC also states that there must be only one HHMOA for a MS that measures both Export and Import active energy.



No. of Import MSIDs = 1

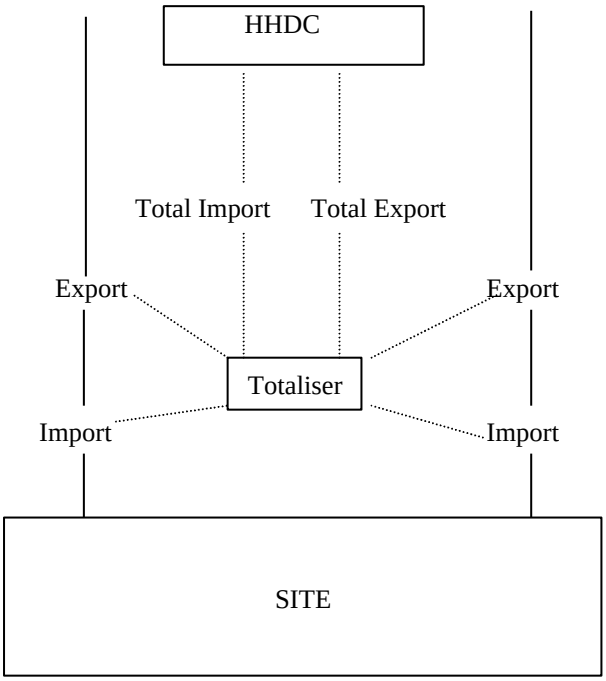
No. of Export MSIDs = 1

An alternative would be for each Import or Export Meter to have its own MSID. In this case, totalisation would be carried out by the HHDA as opposed to the HHDC, and the example above would have 2 Import MSIDs and 2 Export MSIDs. This arrangement would be more desirable since it is not a Complex Site and so would not require a Metering Dispensation.

8.4.2 On-site Totalisation

This is an example of a non-Complex Site, where totalisation is possible by intelligent Outstations, this is permitted provided Import and Export data are provided separately to the HHDC and then on to the HHDA for Settlement. In this example, two streams of data are sent from the on-site totaliser to the HHDC, one set of HH data for total Import and one set of HH data for total Export.

Netting of Exports and Imports shall not be permitted at site.



No. of Import MSIDs = 1

No. of Export MSIDs = 1

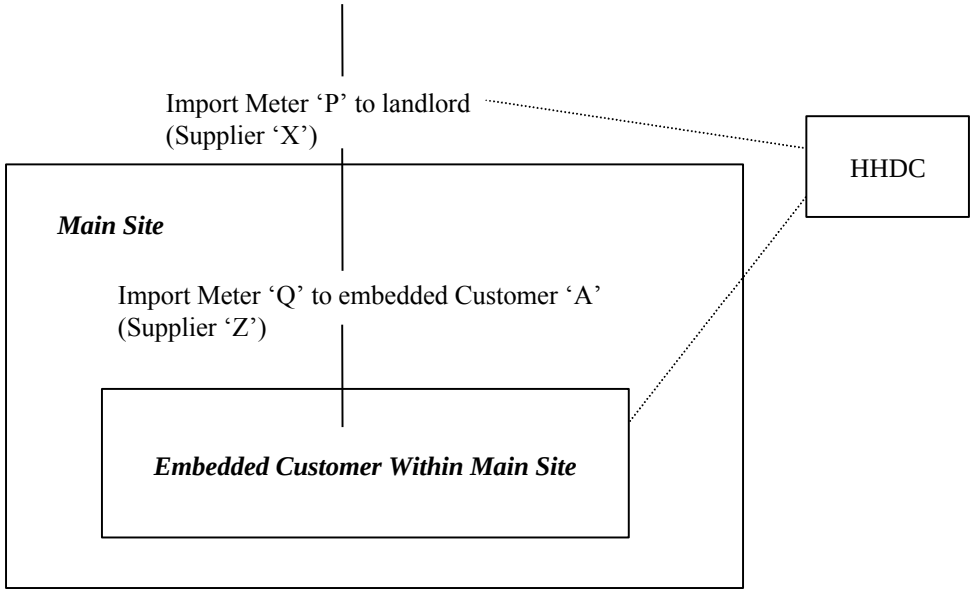
8.4.3 Embedded Customers within a Private Network

An example is where Customer 'A' within an industrial site takes energy directly from the landlord's internal network, but has a separate Supply contract with a licensed Supplier. The energy consumption of the landlord's network supply is determined by the netting of the Meters at the point of connection to the Distribution System and the individual Customer 'A' Meter.

This arrangement results in two distinct MSIDs. When traded in SMRS, to ensure the proper allocation of energy traded within the Settlement processes, **both the landlord's supply and the Customer 'A' supply shall have the same HHDC and HHMOA,** the same HHMOA being necessary for the processing of related D0268's. Different Suppliers and HHDAs would be acceptable.

A Metering Dispensation for each arrangement should be obtained before further MSIDs are created in SMRS for this type of customer.

The applied Line Loss Factors (LLFs) shall not take account of losses within the private network and should be left to the landlord and Customer 'A' to come to a mutual agreement. However, each traded MSID should have Voltage General or site Specific LLFs applied in the normal way for Settlement purposes.



Landlord energy for Supplier 'X' = Meter 'P' – Meter 'Q' HH data: 1 Import MSID

Customer 'A' energy for Supplier 'Z' = Meter 'Q' HH data: 1 Import MSID

No. of Import MSIDs = 2 (1 MSID for embedded customer and 1 for the landlord or Main site)

No. of Export MSIDs = 0

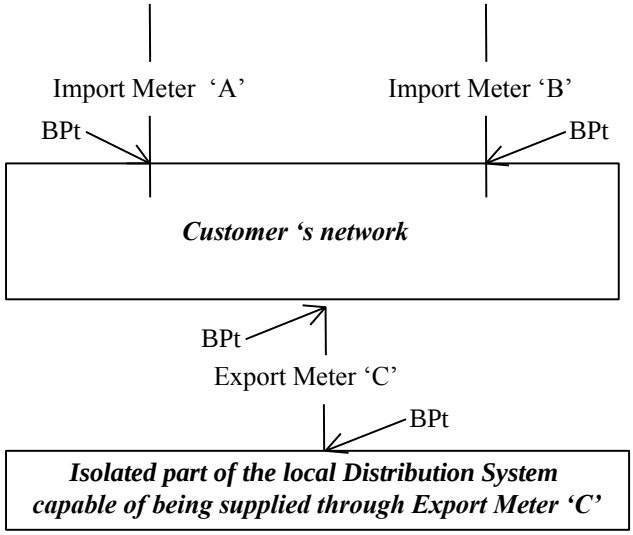
8.4.4 Feed Through Sites at the Same Voltage with no Embedded Generation

This is where a customer's network takes supply from the local Distribution System and feeds out from the customer's network at the same voltage to another part of the local Distribution System. In this example there is no embedded generation on the customer's network, and the isolated part of the local Distribution System is either incapable of being fed from any other source than via the customer's network, or would only be supplied from a different source (such as a restricted capacity feed from the main Distribution System) under abnormal conditions.

In this case, line losses within the customer network do not have to be considered since the feed into, and then out of, the customer network are assumed to have insignificant losses.

In this example, since there is no embedded generation, there is considered to be no Export. Import is derived as HH data:

Import Meter A + Import Meter B - Export Meter C.



BPt = Boundary Point

Import to the Customer's network = Import Meter 'A' + Import Meter 'B' – Export Meter 'C'

This is acceptable in SMRS since there is no on-site generation and an Export type Meter, Export Meter 'C', is measuring feed-through energy as opposed to embedded generation Export.

No. of Import MSIDs = 1

No. of Export MSIDs = 0

Export Meter 'C' may have its own MSID allocated if it is also acting as a demand Meter to another customer, although this would be dealt with separately for Settlements.

8.4.5 Feed Through Sites at Different Voltages

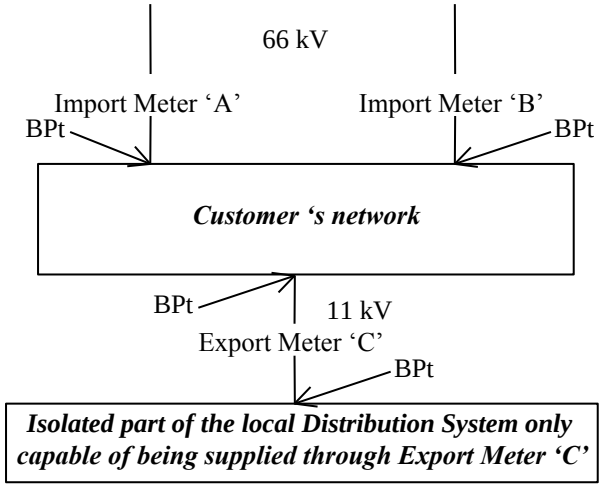
An example is where a factory takes supply at 66kV from the local Distribution System, and an 11kV feeder leaves the Complex Site to supply adjoining premises as part of the local Distribution System. In this example there is no embedded generation within the customer's network.

Voltage specific line losses can be applied to the HH data from Import Meter 'A', Import Meter 'B' and Export Meter 'C' to compensate for the losses incurred in the customer's network for passed through energy.

Totalisation would have to be carried out off-site by the HHDC, and after adjustment for line losses, Import is derived as HH data:

Import Meter A + Import Meter B - Export Meter C.

Since there is no embedded generation, there is considered to be no Export.



BPt = Boundary Point

Import to the Customer's network = Import Meter 'A' + Import Meter 'B' – Export Meter 'C'

This is acceptable in SMRS since there is no on-site generation and an Export type Meter, Export Meter 'C', is measuring feed through energy as opposed to embedded generation Export.

No. of Import MSIDs = 1

No. of Export MSIDs = 0

Export Meter 'C' may have its own MSID allocated if it is also acting as a demand Meter to another customer, although this would be dealt with separately for Settlements.

8.4.6 Feed-Through Sites with Embedded Generation

Where a customer's network has a feed through arrangement and has embedded generation within the Complex Site, the Complex Site demand and the true Export has to be determined.

It is assumed that the network supplied through Export Meter 'C' is connected to the local Distribution System through Import Meter 'A' so that customers connected to the isolated part of the local Distribution System preserve system time, i.e. both parts of the Distribution System are in synchronisation (Export generation protection shall prevent 'island generating').

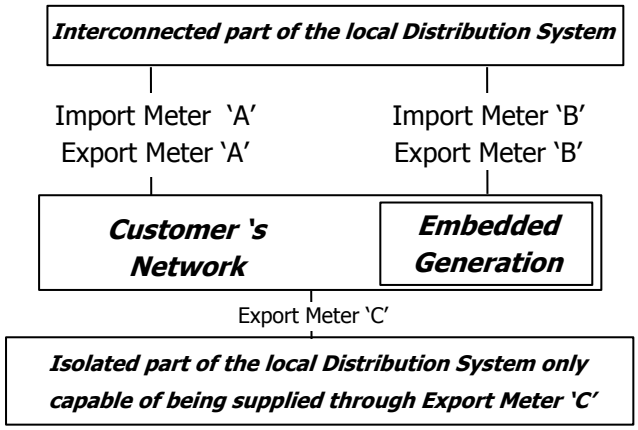
For any time period, for Settlement purposes, Customer's total demand or total generation is derived from the Algorithm:

TCUST = (Export 'A' – Import 'A') + (Export 'B' – Import 'B') + (Export 'C')

If TCUST is positive then the Complex Site is a net Exporter.

If TCUST is negative then the Complex Site is a net Importer.

Both Total Import and Total Export may be non-zero for any HH Settlement Period.



Import to the Customer's network = Import Meter 'A' + Import Meter 'B' – Export Meter 'C'.

There is embedded generation. Export Meter 'C' can be getting its energy from either Import through 'A' / 'B' or from generation. By definition there may be at least 1 Export MSID.

No. of Import MSIDs = 1 or n

No. of Export MSIDs = 0 or n.

Export Meter 'C' may have its own MSID allocated if it is also acting as an Import Meter to another customer, although this would be dealt with Separately for Settlements.

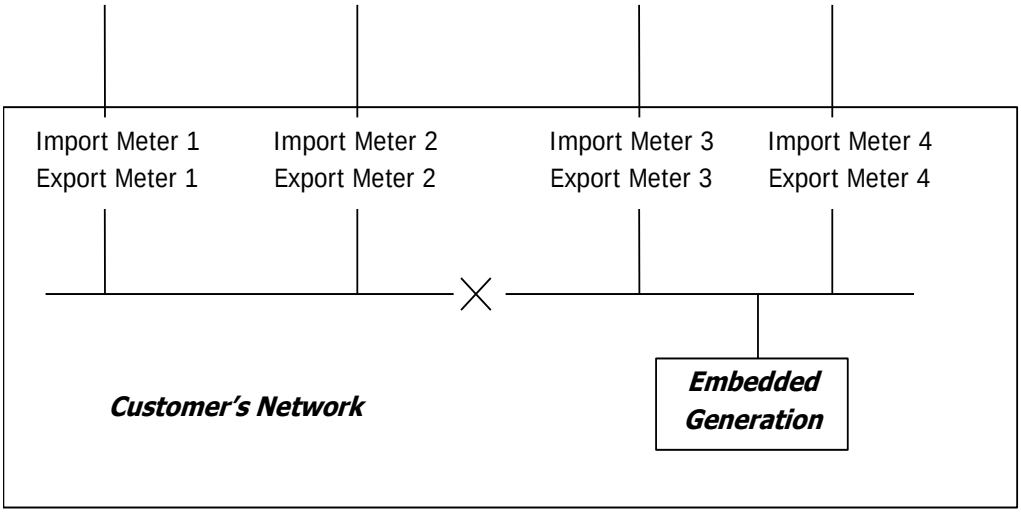
8.4.7 Separate Meter Points for Export and Import

In this example a customer is connected to a Distribution System via an intake busbar, with each feeder into the factory being separately metered, and with a section of busbar on two feeders having embedded generation connected.

In this case, each Import and Export Meter must either provide separate sets of HH data into Settlement, or if totalisation is achieved either on-site or by the HHDC, Import and Export HH data must be totalled separately and separate.

Import and Export sets of HH data provided to Settlement. Export HH data must not be netted off Import HH data, or vice versa.

Since this is an extension of the single feed Import / Export arrangement, this does not have to be considered as a 'Complex Site'.



Where totalisation is used:

No. Import MSIDs = 1

No. Export MSIDs = 1

Where totalisation is not used:

No. Import MSIDs = 4

No. Export MSIDs = 4

8.4.8 Network Flows Impacting Settlement Meters

In some cases it is possible for electrical flows (either on the distribution system or the customer's own network) to be recorded by the Settlement Meters unintentionally. These will usually appear as additional Imports and Exports and usually on different feeders. The diagrams below illustrate this principle. It should be noted that these flows may occur under exceptional circumstances only. It would not be reasonable to regard all multi feeder sites as Complex Sites in anticipation that such flows may exist at some point in the future.

Figure 1 shows an example where a distribution network flow passes through Settlement Meters M2 (as Import) and M1 (as Export). This is in addition to any flow from the distribution system to the customer. Therefore if this site was not considered a Complex Site then the resulting addition of Import Meter readings would not be correct because of the presence of distribution flows through Settlement Meters.

The aggregation rule for such a site might be:

Import = (M1 AE + M2 AE) – (M1 AI + M2 AI)

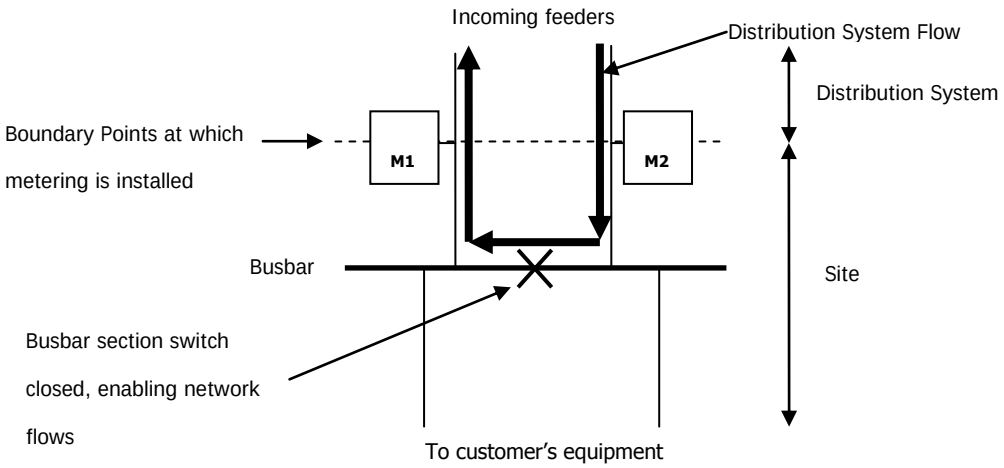


Figure 1. Distribution Network Flows

Similarly Figure 2 shows an example where the customer is generating a flow which passes through Meter M2 as Export and back into its system via Meter M1 as Import. Exports as well as Imports are accounted for in Settlements therefore it is necessary to apply aggregations to both the Import MSID as well as the Export MSID.

The aggregation rules for such a site might be:

Import MSID = (M1 AE + M2 AE) – (M1 AI + M2 AI) and
Export MSID = (M1 AE + M2 AE) – (M1 AI + M2 AI)

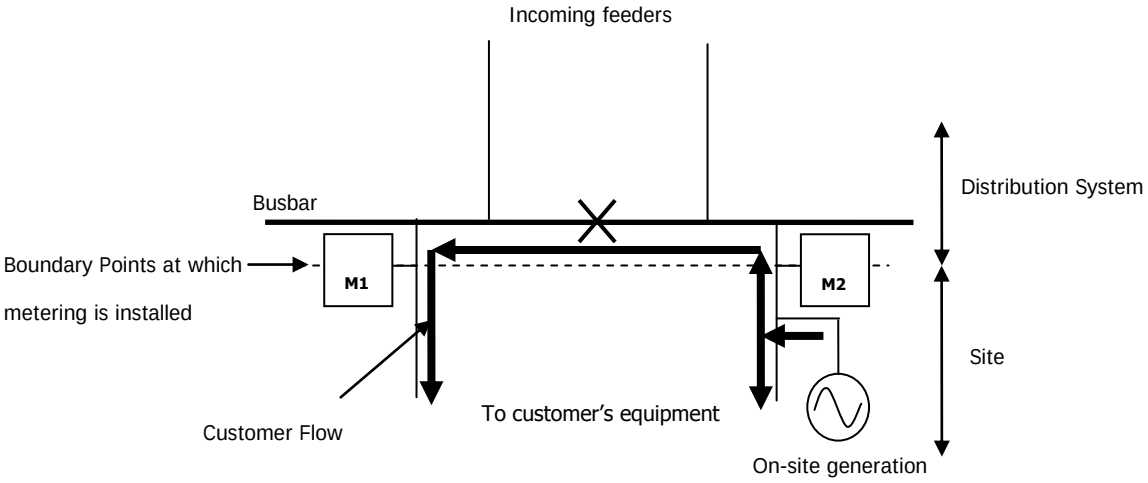


Figure 2. Customer Network Flows

8.4.8 Complex Site Supplementary Information Form

BSCP514/8.4.8a **Complex Site Supplementary Information Form** **Page 1 of 2**

From HHMOA To HHDC Metering System ID Site Name	Metering System Arrangement Description
Aggregation Rule ~~(b - a) + (d - c) + (f - e)~~	

	Import	Export	Import	Export	Import	Export
Main	Ref: ~~a~~ Page Description *Feeder 1 kWh*	Ref: ~~b~~ Page Description *Feeder 1 kWh*	Ref: ~~c~~ Page Description *Feeder 2 kWh*	Ref: ~~d~~ Page Description *Feeder 2 kWh*	Ref: ~~e~~ Page Description *Feeder 3 kWh*	Ref: ~~f~~ Page Description *Feeder 3 kWh*
Check	Ref: ~~1~~ Page Description *Feeder 1 kWh*	Ref: ~~2~~ Page Description *Feeder 1 kWh*	Ref: ~~3~~ Page Description *Feeder 2 kWh*	Ref: ~~4~~ Page Description *Feeder 2 kWh*	Ref: ~~5~~ Page Description *Feeder 3 kWh*	Ref: ~~6~~ Page Description *Feeder 3 kWh*
	Form BSCP514/8.4.8b		Form BSCP514/8.4.8b		Form BSCP514/8.4.8b	

Signature_____ Date_____

Name_____

BSCP514/8.4.8b Complex Site Supplementary Information Page 2 of 2

From HHMOA	Metering System Arrangement Description
To HHDC	
Metering System ID	
Site Name	
Feeder Name	

	Import	Export
Main	Ref: **kWh** MSID Outstation ID Channel Number Comms Address Meter ID Pulse Multiplier Meter Register Constant CT Ratio VT Ratio	Ref: **kWh** MSID Outstation ID Channel Number Comms Address Meter ID Pulse Multiplier Meter Register Constant CT Ratio VT Ratio
Check	Ref: **kWh** MSID Outstation ID Channel Number Comms Address Meter ID Pulse Multiplier Meter Register Constant CT Ratio VT Ratio	Ref: **kWh** MSID Outstation ID Channel Number Comms Address Meter ID Pulse Multiplier Meter Register Constant CT Ratio VT Ratio

Signature_____ Date_____

Name

Appendices 9 through to 10.2 are not impacted by CP1338

Sections 1 through to 3.1.1.6 are not impacted by CP1338

3.2 Registration Activities.

3.2.1 New connection or Registration Transfers from CMRS to SMRS [1] - metered supply.

REF	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.2.1.1	On appointment of new HHDC.	Send appointment details for MS, including start date and IDs of HHDA and MOA.	Supplier.	HHDC.	D0148 Notification of Change to Other Parties. D0155 Notification of New Meter Operator or Data Collector Appointment and Terms. D0289 Notification of MC/EAC/PC [2]. D0302 Notification of Customer Details.	Electronic or other method, as agreed.
3.2.1.2	Upon receipt of SVA MS details.	Record SVA MS details. Validate SVA MS details received from the Supplier against MDD received from the SVAA.	HHDC.		Sufficient details of HHDC's appointment in respect of a SVA MS to enable the HHDC to perform its HHDC functions. These details shall include the relevant SVA MSID and the Identifiers for the MOA and, as the case may be, the HHDA, the LDSO and the applicable GSP Group. The details shall also include the Settlement Days for which the HHDC and HHDA are appointed.	Internal Process.
3.2.1.3	Within 5 WD of the installation and commissioning of MS.	Send initial Meter register readings Send MTD and Energisation Status.	MOA[3].	Supplier / HHDC / LDSO HHDC~~[8]~~	D0010 Meter Readings. D0268 Half Hourly Meter Technical Details [Housekeeping – Footnote should have been deleted by CP1200][4]. If site is complex, send Complex Site Supplementary Information Form. Refer to Appendix 4.9 Guide to Complex Sites.	Electronic or other method, as agreed.

[1] If a Registration Transfer from CMRS, proceed in accordance with BSCP68, Section 3.2

[2] Refer to Appendix 4.2 for rules on when the EAC should be used by the HHDC for data estimation purposes.

[3] The MOA shall provide the energisation status at MS or feeder level. If the energisation status is provided at feeder level, the HHDC shall assume that the MS is de-energised if all feeders are de-energised, and energised if one or more feeders is energised

REF	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.2.1.4	On agreement of reading schedule with Supplier.	Send Meter reading schedule.	HHDC.	Supplier, LDSO	D0012 Confirmation of the Inclusion of the Metering Point in the Reading Schedules.	Electronic or other method, as agreed.
3.2.1.5	From HHDC appointment start date.	Collect HH Metered Data.	HHDC.		Refer to Section 3.4.1.	Internal Process.
3.2.1.6	In accordance with timescales in Appendix 4.6.	Prove MS.	MOA.	HHDC.	Refer to Appendix 4.6.	Electronic or other method, as agreed.

Section 3.2.2 through to 4.1.9 is not impacted by CP1338

[4] ~~Refer to Appendix 4.6 for the process to be undertaken when a D0268 is received by the HHDC and no proving test is initiated by the MOA.~~

4.2 Data Estimation.

Data will be estimated for Import and Export Metering using one of the following data estimation methods in the order of precedence specified below and will apply equally to above and below 100kW MSs. Data will be flagged appropriately as indicated below. Alternatively, the Revenue Protection Service may advise on required adjustments. Missing Reactive Power data will also be estimated in accordance with 4.2.3 below.

When the HHDC receives information from the MOA, Revenue Protection Service, site reports or other sources concerning metered data which has been or will be collected and processed, the Meter Period Value data shall be estimated in accordance with this BSCP where the HHDC believes the data to be in error. The HHDC shall inform the Supplier where an error might affect a different Supplier or data affects the Final Reconciliation Volume Allocation Run.

The HHDC shall retain any original value collected, whether such value is processed before or after receipt of any details of invalid data from the MOA, Revenue Protection Service, site reports or other source, and any alarms set up at the Meter.

Details of all data estimations and the [Housekeeping: typographical]rationale behind using the chosen method must be recorded for Audit purposes.

The HHDC will notify the relevant Supplier and (where appropriate) the LDSO of the data estimation method in accordance with 4.2.4 below.

Data estimation shall, wherever possible, be constructed using previous actual[5] Metered Data and not previously estimated data.

HHDCs should take particular care when carrying out data estimation using, or during, public holiday periods, e.g. Christmas and New Year, where abnormal consumption patterns may be experienced. Profiles from similar periods in previous years may be used where applicable and available.

HHDCs should consider local information, where available, when carrying out estimations and use appropriate **actual** historical data if this is considered to give a more accurate data estimation, e.g. when estimating consumption of energy for a building known to be a school during the month of August, the average load shape could be based on actual data for the same day of week and Settlement Periods from the previous year.

Having estimated data using one of the methods below, a report is to be produced in accordance with 4.2.4 below.

If a data estimation has been completed and submitted to the HHDA and actual 'A' flag data **OR** information leading to more accurate estimated data

[5] 'Actual' data means collected Metered Data – 'A' flagged – which has successfully passed a main / check data comparison (in accordance with Appendix 4.1.7) and Maximum validation (in accordance with Appendix 4.1.6).

becomes available, this revised data shall be notified to the Supplier and LDSO and submitted to the HHDA for use in the next Volume Allocation Run.

Where a MAR has failed, in accordance with Appendix 4.8, due to a data estimation being included in the period of reconciliation, that period of data estimation shall be re-estimated.

4.2.1 through to 4.8.3 are not impacted by CP1338

4.9 Guide to Complex Sites.

A 'Complex Site' means; any site that requires a 'Complex Site Supplementary Information Form' to enable the HHDC to interpret the standing and dynamic Metered Data relating to SVA MSs for Settlement purposes to be provided to the HHDC in addition to the D0268 Half Hourly Meter Technical Details.

The primary electronic data flow between the HHMOA and HHDC for Half Hourly MTD is the D0268 data flow. In the case of Complex Sites, this data flow alone is insufficient to accurately describe to the HHDC how to allocate the various channels of data that should be utilised in Settlements, therefore the D0268 data flow is supplemented with the 'Complex Site Supplementary Information Form'.

The HHMOA should identify a Complex Site by providing a 'Complex Site Supplementary Information Form' in addition to the D0268 data flow to the HHDC and Supplier and indicating in the D0268 data flow that the site is complex. This action shall alert the HHDC to expect a 'Complex Site Supplementary Information Form' from the HHMOA containing details of how to configure the data collection requirements and passing of information to the HHDA and Supplier. The 'Complex Site Supplementary Information Form' should be sent electronically or by any other method agreed.

It is the responsibility of Suppliers to manage and co-ordinate their Agents to achieve compliance and to intervene should any issues arise.

The Supplier should identify to the HHMOA which MSIDs relate to the Import energy and which MSIDs relate to the Export energy.

Where the Complex Site is subject to Shared Meter Arrangements, one D0268 data flow and therefore one 'Complex Site Supplementary Information Form' is required. The D0268 'Complex Site Supplementary Information Form' shall be sent by the HHMOA to the HHDC and the Primary Supplier. The Primary Supplier shall decide whether this information shall be copied to the secondary Supplier(s) and provide this information if required.

In many cases, a Complex Site shall meet the conditions required to apply for a Metering Dispensation as described in BSCP32 'Metering Dispensations'.

Where Complex Sites use a MS which is not fully compliant with the relevant Codes of Practice, a Metering Dispensation should be applied for via BSCP32. Once a Dispensation has been granted, the information shall be available for all future Suppliers, so that they shall have the ability to understand the metering configuration at the Complex Site. As part of the dispensation application process, the Supplier shall need to submit a simplified schematic diagram of the Complex Site connection arrangements and the proposed metering points; as required in BSCP32.

This Appendix 4.9.1 to 4.9.8~~7~~ provides a non-exhaustive list of Examples of Complex Sites and non-Complex Sites. These examples illustrate the need to create rules that accurately describe the aggregation necessary to derive the total energy for a customer. The aggregation rule contains terms that define each metered quantity at each Meter Point and form part of the total energy. The HHMOA is required to define the terms in the aggregation rule relative to the data.

~~The following aggregation rule can be applied to all Complex Sites.~~

~~(Feeder A Active Export – Feeder A Active Import)+(Feeder B Active Export – Feeder B Active Import) + (Feeder n….~~

~~Simplified to $(A_{AE} - A_{AI}) + (B_{AE} - B_{AI})$~~

~~Feeder A Feeder B to feeder n……~~

~~Where AE = Active Energy Export~~
~~AI = Active Energy Import~~

The HHDC is required to establish gross energy for the site for each Settlement Period. This is achieved by applying the aggregation rule to the metered data values. If the resultant value applied to the rule is positive, the site is Exporting, and the Import value is zero. Conversely, if the result is negative, then the site is Importing, and the Export value is zero. Where the resultant is zero, the site is neither importing nor exporting and both values shall be zero. ~~The number of mathematical terms in the aggregation rule is dependent on the number of feeders.~~

When the HHMOA indicates Complex Site on the D0268 data flow, the HHMOA is required to provide all the information necessary, via the 'Complex Site Supplementary Information Form', for the HHDC to aggregate correctly. As part of the supplementary information, the HHMOA is required to provide a schematic diagram of the MS.

Form BSCP514/8.4.8 'Complex Site Supplementary Information Form' provides a means for the HHMOA to convey the information necessary for correct aggregation. BSCP514/8.4.8a gives an overview of the data source and BSCP514/8.4.8b shows the information needed to collect that data.

Where Meter channel data is missing, incomplete or incorrect, the HHDC should attempt to use the associated check data indicated on BSCP514/8.4.8a.

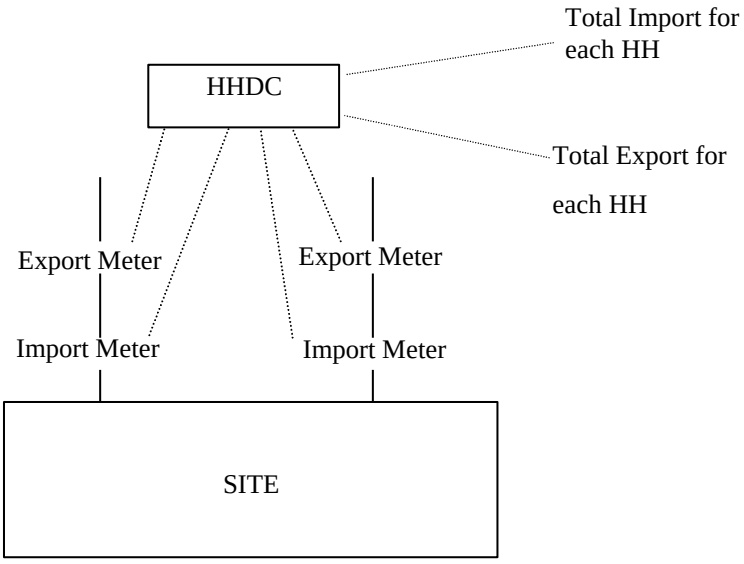
Where duplicated Outstations are provided, two sets of BSCP514/8.4.8a shall be provided each clearly indicating primary and secondary Outstations.

4.9.1 Off-Site Totalisation.

This is an example of a non-complex site, where multiple feeders exist. ~~enter a Complex Site, e~~Each feeder is normally equipped with Code of Practice compliant Meter(s). The HH data is collected and summated off-site by the HHDC and then submitted for Settlement as a single set of HH data.

Where both import and export meters are present, the export meter shall be totalled in the same way as import metering so that both calculations are gross.

For this reason, the netting of Export energy from Import energy should not be carried out. The BSC also states that there must be only one HHMOA for a MS that measures both Export and Import active energy.



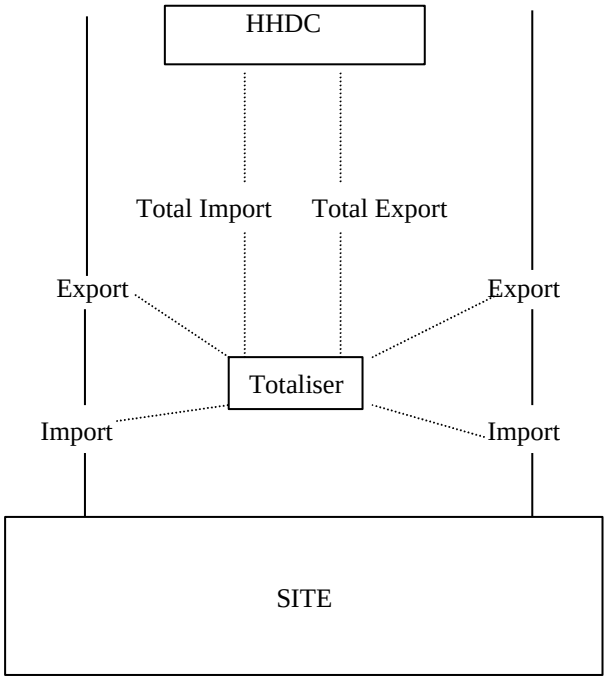
No. of Import MSIDs = 1
No. of Export MSIDs = 1

An alternative would be for each Import or Export Meter to have its own MSID. In this case, totalisation would be carried out by the HHDA as opposed to the HHDC, and the example above would have 2 Import MSIDs and 2 Export MSIDs. This arrangement would be more desirable since it is not a Complex Site and so would not require a Metering Dispensation.

4.9.2 On-Site Totalisation.

This is an example of a non-complex site, where totalisation is possible by intelligent Outstations, this is permitted provided Import and Export data are provided separately to the HHDC and then on to the HHDA for Settlement. In this example, two streams of data are sent from the on-site totaliser to the HHDC, one set of HH data for total Import and one set of HH data for total Export.

Netting of Exports and Imports shall not be permitted at site.



No. of Import MSIDs = 1

No. of Export MSIDs = 1

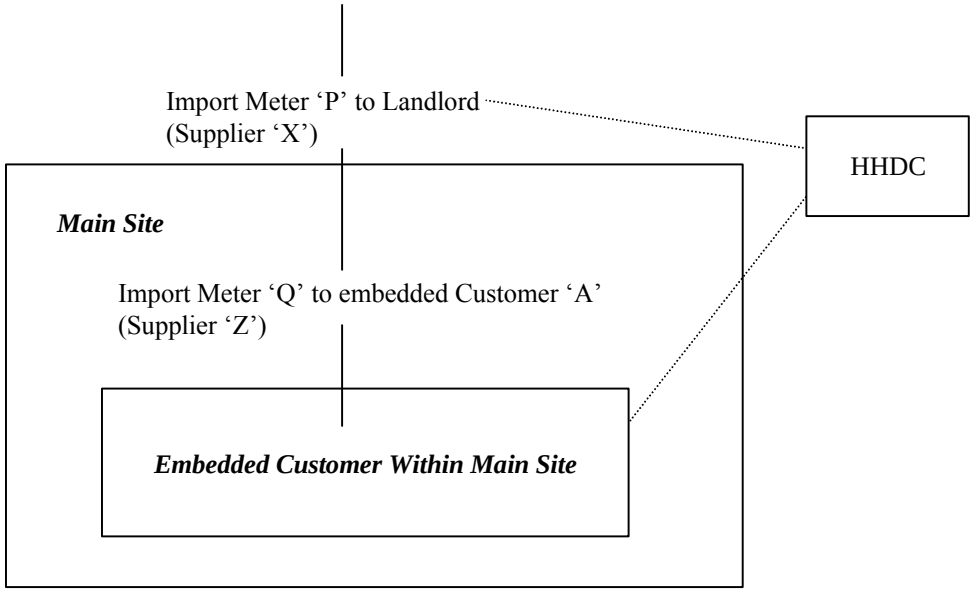
4.9.3 Embedded Customers within a Private Network.

An example is where Customer 'A' within an industrial site takes energy directly from the landlord's internal network, but has a separate Supply contract with a licensed Supplier. The energy consumption of the landlord's network supply is determined by the netting of the Meters at the point of connection to the Distribution System and the individual Customer 'A' Meter.

This arrangement results in two distinct MSIDs. When traded in SMRS, to ensure the proper allocation of energy traded within the Settlement processes, **both the landlord's supply and the Customer 'A' supply shall have the same HHDC and HHMOA,** the same HHMOA being necessary for the processing of related D0268s. Different Suppliers and HHDAs would be acceptable.

A Metering Dispensation for each arrangement should be obtained before further MSIDs are created in SMRS for this type of customer.

The applied Line Loss Factors (LLFs) shall not take account of losses within the private network and should be left to the landlord and Customer 'A' to come to a mutual agreement. However, each traded MSID should have Voltage General or site Specific LLFs applied in the normal way for Settlement purposes.



Landlord energy for Supplier 'X' = Meter 'P' – Meter 'Q' HH data: 1 Import MSID

Customer 'A' energy for Supplier 'Z' = Meter 'Q' HH data: 1 Import MSID

No. of Import MSIDs = 2 (1 MSID for embedded customer and 1 for the landlord or Main site)

No. of Export MSIDs = 0

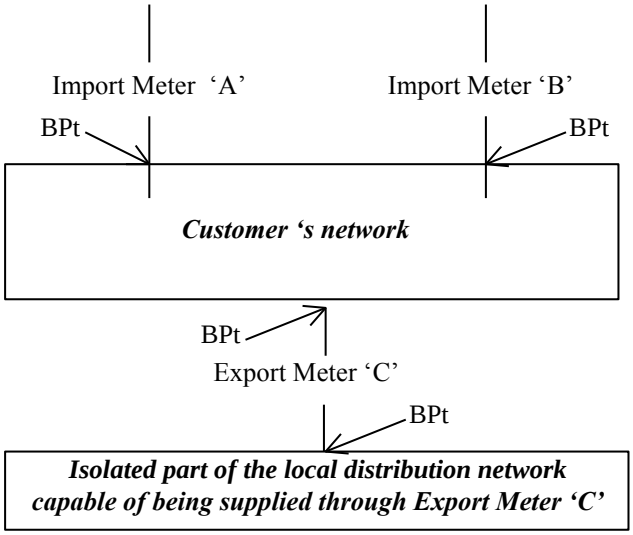
4.9.4 Feed-Through Sites at the Same Voltage with no Embedded Generation.

This is where a customer's network takes supply from the local Distribution System and feeds out from the customer's network at the same voltage to another part of the local Distribution System. In this example there is no embedded generation on the customer's network, and the isolated part of the local Distribution System is either incapable of being fed from any other source than via the customer's network, or would only be supplied from a different source (such as a restricted capacity feed from the main Distribution System) under abnormal conditions.

In this case, line losses within the customer network do not have to be considered since the feed into, and then out of, the customer network are assumed to have insignificant losses.

In this example, since there is no embedded generation, there is considered to be no Export. Import is derived as HH data:

Import Meter A + Import Meter B - Export Meter C.



BPt = Boundary Point

Import to the Customer's network = Import Meter 'A' + Import Meter 'B' – Export Meter 'C'

This is acceptable in SMRS since there is no on-site generation and an Export type Meter, Export Meter 'C', is measuring feed-through energy as opposed to embedded generation Export.

No. of Import MSIDs = 1

No. of Export MSIDs = 0

Export Meter 'C' may have its own MSID allocated if it is also acting as a demand Meter to another customer, although this would be dealt with separately for Settlements.

4.9.5 Feed Through Sites at Different Voltages.

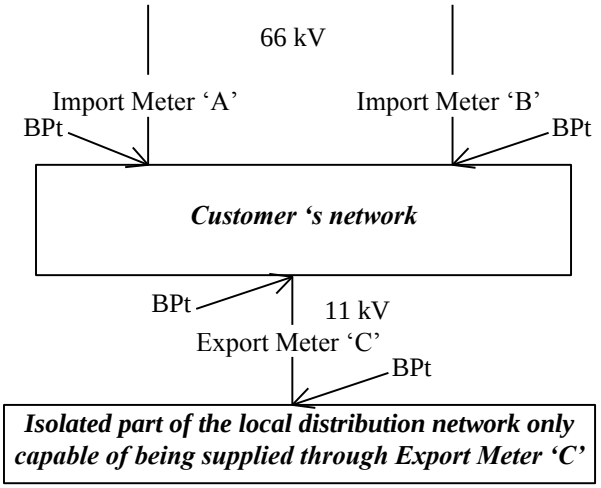
An example is where a factory takes supply at 66kV from the local Distribution System, and an 11kV feeder leaves the Complex Site to supply adjoining premises as part of the local Distribution System. In this example there is no embedded generation within the customer's network.

Voltage specific line losses can be applied to the HH data from Import Meter 'A', Import Meter 'B' and Export Meter 'C' to compensate for the losses incurred in the customer's network for passed through energy.

Totalisation would have to be carried out off-site by the HHDC, and after adjustment for line losses, Import is derived as HH data:

Import Meter A + Import Meter B - Export Meter C.

Since there is no embedded generation, there is considered to be no Export.



BPt = Boundary Point

Import to the Customer's network = Import Meter 'A' + Import Meter 'B' – Export Meter 'C'

This is acceptable in SMRS since there is no on-site generation and an Export type Meter, Export Meter 'C', is measuring feed through energy as opposed to embedded generation Export.

No. of Import MSIDs = 1

No. of Export MSIDs = 0

Export Meter 'C' may have its own MSID allocated if it is also acting as a demand Meter to another customer, although this would be dealt with separately for Settlements.

4.9.6 Feed-Through Sites with Embedded Generation.

Where a customer's network has a feed through arrangement and has embedded generation within the Complex Site, the Complex Site demand and the true Export has to be determined.

It is assumed that the network supplied through Export Meter 'C' is connected to the local Distribution System through Import Meter 'A' so that customers connected to the isolated part of the local Distribution System preserve system time, i.e. both parts of the Distribution System are in synchronisation (Export generation protection shall prevent 'island generating').

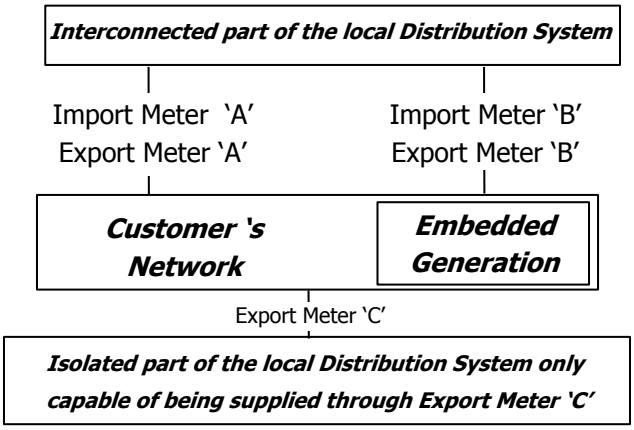
For any time period, for Settlement purposes, Customer's total demand or total generation is derived from the Algorithm:

T_{CUST} = (Export 'A' – Import 'A') + (Export 'B' – Import 'B') + (Export 'C')

If T_{CUST} is positive then the Complex Site is a net Exporter.

If T_{CUST} is negative then the Complex Site is a net Importer.

Both Total Import and Total Export may be non-zero for any HH Settlement Period.



Import to the Customer's network = Import Meter 'A' + Import Meter 'B' – Export Meter 'C'

There is Embedded Generation. Export Meter 'C' can be getting its energy from either Import through 'A'/'B' or from generation. By definition there may be at least 1 Export MSID.

No. of Import MSIDs = 1 or n

No. of Export MSIDs = 0 or n

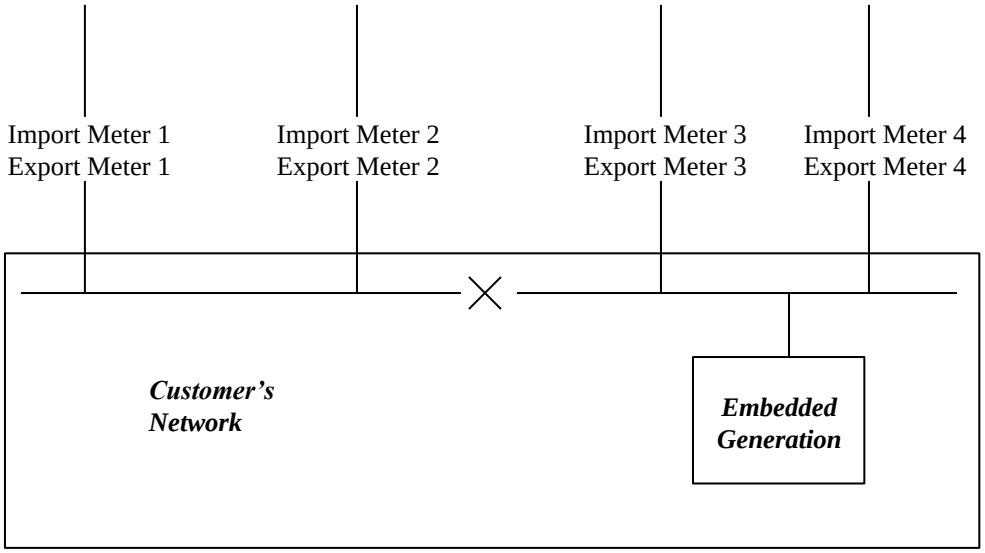
Export Meter 'C' may have its own MSID allocated if it is also acting as an Import Meter to another customer, although this would be dealt with separately for Settlements.

4.9.7 Separate Meter Points for Export and Import.

In this example a customer is connected to a Distribution System via an intake busbar, with each feeder into the factory being separately metered, and with a section of busbar on two feeders having embedded generation connected.

In this case, each Import and Export Meter must be either provide separate sets of HH data into Settlement, or if totalisation is achieved either on-site or by the HHDC, Import and Export HH data must be totalled separately and separate Import and Export sets of HH data provided to Settlement. **Export HH data must not be netted off Import HH data, or vice versa.**

Since this is an extension of the single feed Import / Export arrangement, this does not have to be considered as a 'Complex Site'.



Where totalisation is used:

No. Import MSIDs = 1

No. Export MSIDs = 1

Where totalisation is not used:

No. Import MSIDs = 4

No. Export MSIDs = 4

4.9.8 Network Flows Impacting Settlement Meters

In some cases it is possible for electrical flows (either on the distribution system or the customer's own network) to be recorded by the Settlement Meters unintentionally. These will usually appear as additional Imports and Exports and usually on different feeders. The diagrams below illustrate this principle. It should be noted that these flows may occur under exceptional circumstances only. It would not be reasonable to regard all multi feeder sites as Complex Sites in anticipation that such flows may exist at some point in the future.

Figure 1 shows an example where a distribution network flow passes through Settlement Meters M2 (as Import) and M1 (as Export). This is in addition to any flow from the distribution system to the customer. Therefore if this site was not considered a Complex Site then the resulting addition of Import Meter readings would not be correct because of the presence of distribution flows through Settlement Meters.

The aggregation rule for such a site might be:

Import = (M1 AE + M2 AE) – (M1 AI + M2 AI)

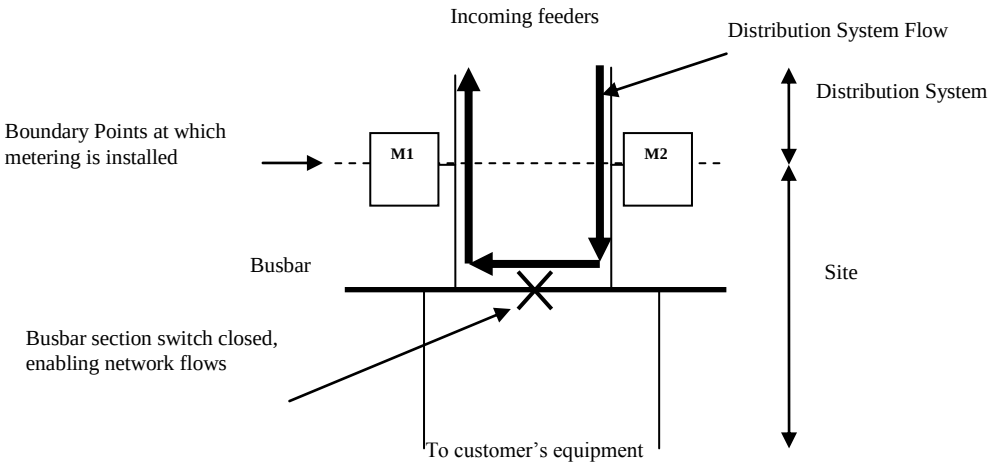


Figure 1. Distribution Network Flows

Similarly Figure 2 shows an example where the customer is generating a flow which passes through Meter M2 as Export and back into its system via Meter M1 as Import. Exports as well as Imports are accounted for in Settlements therefore it is necessary to apply aggregations to both the Import MSID as well as the Export MSID.

The aggregation rules for such a site might be:

Import MSID = (M1 AE + M2 AE) – (M1 AI + M2 AI) and
Export MSID = (M1 AE + M2 AE) – (M1 AI + M2 AI)

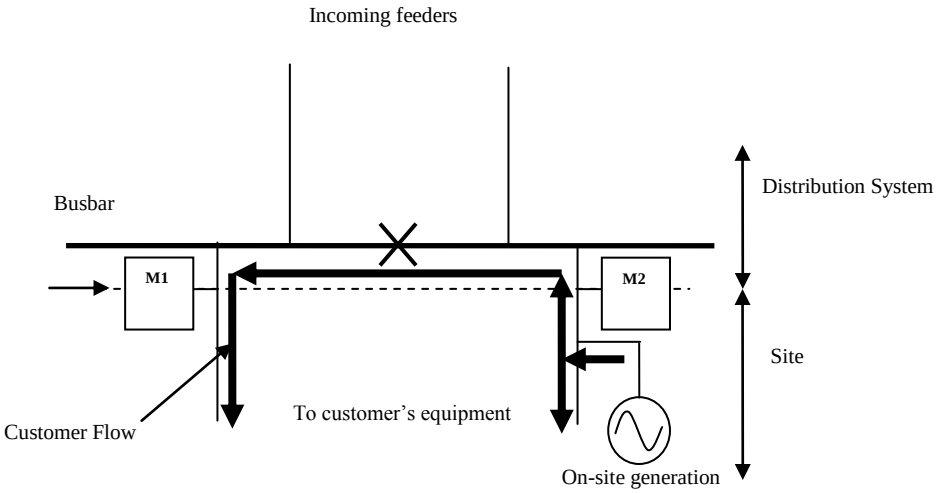


Figure 2. Customer Network Flows

Appendix 4.10 to the end of the document is not impacted by CP1338