



Metering demand sites with generating equipment installed

This clarifies the Balancing and Settlement Code (BSC) Metering Equipment requirements for Import and Export Metering Systems that are, or are to be, registered in a Supplier Meter Registration Service (SMRS) for a site at which a Third Party Generating Plant¹ is installed.

We recognise that this is a complex area of the BSC rules. Following discussion at the Supplier Volume Allocation Group (SVG), we have outlined in this guidance some of the key practicalities which participants may/will need to consider. We welcome feedback on your operational experience of putting these rules into practice and in using this guidance, including any operational issues or impacts encountered. Please email any feedback to metering@elexon.co.uk.

Background

Meter Operator Agents (MOAs) install and maintain Meters and other associated Metering Equipment on behalf of Suppliers. Once commissioned by the MOA, the Metering Equipment forms one or more Metering Systems. The relevant Supplier(s) register the details of the Metering System(s) in the Supplier Meter Registration Service (SMRS) operated by the Licensed Distribution Network Operator (LDSO) to whose network the site is connected.

SVA Metering Systems may be either Half Hourly (HH) or Non Half Hourly (NHH), and this Guidance explains the rules about when each type of Metering System is required. The rules also differ for Imports and Exports. A further complication is that Suppliers can choose not to settle exported energy, and therefore need not install BSC-compliant Export metering. Customers may also choose not to have a Supplier for their Export volumes at all, in which case no Export Meter will be installed.

This guidance explains the BSC requirements and helps clarify the complexities and practicalities.

¹ Third Party Generating Plant is Exemptable Generating Plant (where the person generating the electricity is either exempt from holding a Generation Licence, or would be if that was their only Generating Plant) for which another person, who is a BSC Party, has elected to be responsible for its Exports by registering an Export Metering System in SMRS. See definition in [BSC Annex X-1](#).

The basic rules

The BSC requires that all 100kW Metering Systems (as defined in [BSC Annex X-1](#)) are HH Metering Systems. Following the implementation of [P272](#) and [P322](#) all Import Metering Systems in Profile Classes 5 to 8 (PC5-8), fitted with Advanced Meters², shall be HH Metering Systems from 1 April 2017. The BSC also requires that all Exports (which are to be settled) above the Small Scale Third Party Generating Plant Limit³ (SSTPGPL) shall be HH Metering Systems. Import Metering Systems in Profile Classes 1-4 and Export Metering Systems (which are to be settled) below the SSTPGPL may be either HH or NHH Metering Systems.

There are therefore many combinations of options available, since Imports and Exports may be measured by single Meters (with both Import and Export functions) or by separate Meters (with or without Import and Export functions). But in either case, the Import and Export will be regarded as separate Metering Systems for BSC purposes.

This Guidance examines some different examples of the scenarios that could be encountered, although it is not intended to be an exhaustive list of all possible variations.

Note on our diagrams and terminology

For clarity, we have simplified the diagrams in this Guidance. They are guidance only and should not be taken as definitive wiring diagrams for any installation. For the specific detailed requirements, please refer to the relevant metering Codes of Practice (CoPs).

Metering System Identifier (MSID) is a term used throughout the BSC and its subsidiary documents; it has the same meaning as the term Meter Point Administration Number (MPAN) in the Meter Registration Agreement (MRA).

² [Section X Annex X-1](#) of the BSC defines an Advanced Meter as 'Metering Equipment installed in accordance with the obligation set out in condition 12.18 of the Standard Conditions of each Supply Licence'. This Standard Condition applies 'where the licensee installs or arranges for the installation of an Electricity Meter at Non-Domestic Premises where the metering point falls within profile class 5, 6, 7 or 8 as defined in the Balancing and Settlement Code (for this condition only, "relevant premises")'. [Section L2.2.2](#) requires such Advanced Meters to be Half Hourly Metering Equipment from the P272 Implementation Date. P322 modified the P272 Implementation Date to be 1 April 2017.

³ The SSTPGPL is a limit set by the BSC Panel from time to time. It is currently 30kW.

Scenarios

Scenario 1

Separate Import and Export Whole Current Meters (PC1-4 Import, >30kW Export)

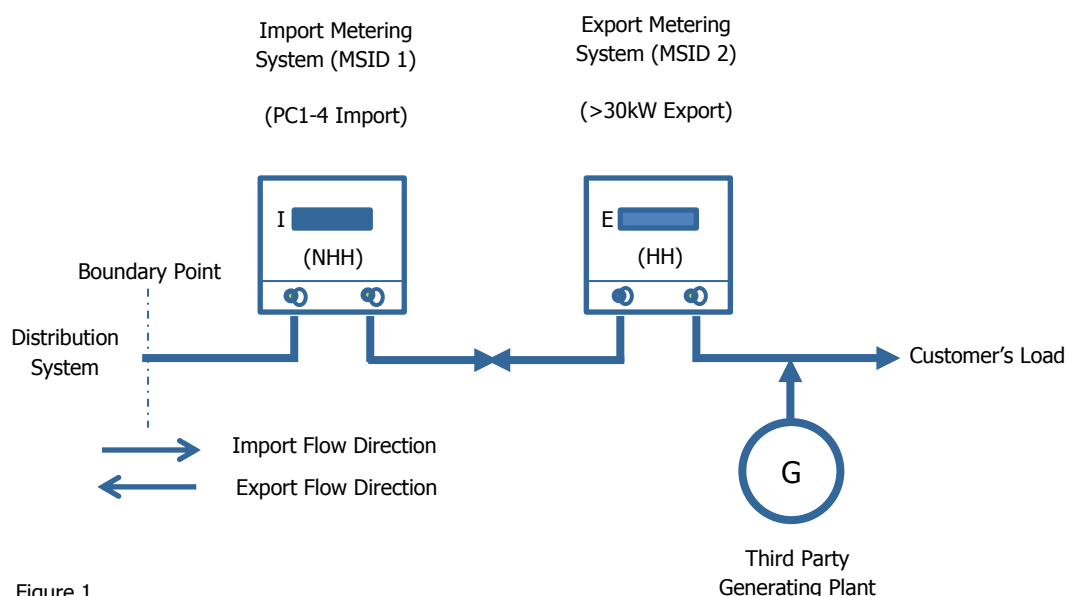


Figure 1

In this scenario, the Import Metering System is NHH and has been installed for some time. The customer has since chosen to install generating equipment (e.g. Photo Voltaic (PV), Wind, Hydro, etc.) and found a Supplier (either the same or different to the Import Supplier) who is willing to be responsible for the Export. The Export Supplier requests an Export MSID from the relevant LDSO.

As the generating equipment rating⁴ is over 30kW, the Export Metering System (and the Export Supplier's agents) must be HH and the Export Metering Equipment must comply with the minimum requirements of CoP10⁵, where the HH Export Metering System is not a 100kW Metering System⁶ (i.e. Measurement Class E, F or G), or CoP5⁷, where the HH Export Metering System is a 100kW Metering System.

The Import and Export Metering Systems do not share any Metering Equipment and are associated with separate Outstations. The Import and Export Suppliers are therefore free to appoint their preferred, appropriately Qualified⁸ agents – a NHH Meter Operator Agent (MOA) and a NHH Data Collector (DC) for the Import Metering System, and a HHMOA and a HHDC for the Export Metering System. The Export Supplier arranges for their HHMOA to install the Export Metering Equipment to measure the Export volumes.

The HHMOA installs the Export Metering Equipment and sends Meter Technical Details (MTDs) via the Data Transfer Network (DTN) flow D0268⁹ to the Export Supplier, LDSO and the Export Supplier's appointed HHDC.

⁴ For the purposes of the BSC's SSTPGPL (as defined in [BSC Annex X-1](#)), this rating is determined by the aggregate maximum generation capacity as measured at the Boundary Point.

⁵ 'Code of Practice for Metering of Energy via Low Voltage Circuits for Settlement Purposes'.

⁶ Prior to the implementation of Modification Proposal [P300](#) on 5 November 2015 the minimum requirement was CoP5.

⁷ 'Code of Practice for the Metering of Energy Transfers with a Maximum Demand of up to (and including) 1MW for Settlement Purposes'.

⁸ In accordance with [BSC Section J](#) and BSC Procedure [BSCP537](#).

⁹ 'Half Hourly Meter Technical Details'.

A variant of this scenario would be where the generating equipment rating is under 30kW. In this case, the Export Supplier would have the option to settle the volumes in either the HH or NHH markets – where the minimum Metering Equipment requirements are CoP10 and CoP9 respectively¹⁰. If the Export Supplier chose to settle the Export in the NHH market, it would appoint a NHHMOA and NHHDC (who need not be the same agents used by the Import Supplier).

Scenario 2

Single Whole Current Meter with integrated Import and Export capabilities (PC1-4 Import, >30kW Export)

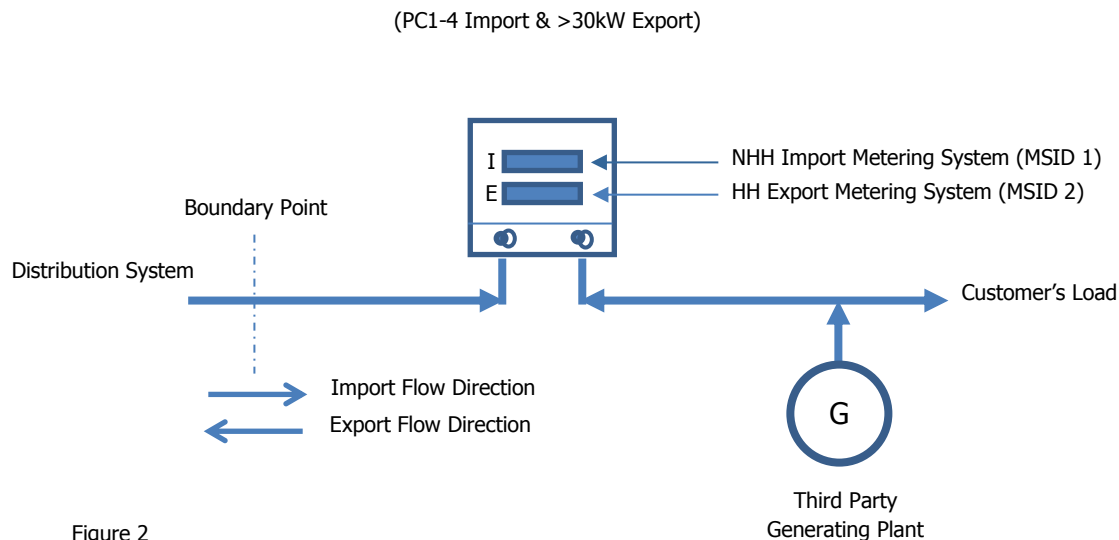


Figure 2

Scenario 2 is similar to Scenario 1, except that there is a single Meter. This is because either the Import Supplier has agreed to also take responsibility for the Export (and wishes to use the inbuilt Export Meter functions of the Meter), or the (different) Export and Import Suppliers have agreed to use the same Metering Equipment for both purposes.

The original Import Meter has been removed and a new combined Import/Export Meter has been installed in its place. Although there is only a single Meter installed, there are actually two Metering Systems (one for the Import and one for the Export) which have common Metering Equipment and are associated with a single Outstation. As in Scenario 1, the Export Supplier has requested a second MSID from the LDSO for the Export.

Because there is a single Meter and Outstation, [BSC Sections J4.1.5 and J4.1.6](#) require the Import Supplier to provide the Export Supplier with details of the MOA and DC who are appointed to the NHH Import Metering System. The Export Supplier is then required to appoint the same MOA and DC for the HH Export Metering System (see 'Other things to consider' later in this Guidance).

The Meter should be CoP10 or CoP5 compliant¹¹ because, while the Import is NHH, the generating equipment rating is over 30kW and therefore requires a HH Export Metering System.

Currently, all approved HH Metering Equipment is compatible with the NHH CoPs as it exceeds the CoPs' minimum requirements. The minimum requirements for the Import Metering System are in

¹⁰ 'Code of Practice for the Metering of Import and Export Active Energy via Low Voltage Circuits for Non-Half Hourly Settlement Purposes'.

¹¹ CoP10 if the HH Export Metering System is not a 100kW Metering System (i.e. Measurement Class E, F or G). CoP5 if the HH Export Metering System is a 100kW Metering System.

CoP9; however as CoP10 or CoP5 exceed these requirements the CoP10 or CoP5 Meter is also adequate for NHH use.

A variant of this scenario would be where the generating equipment rating is under 30kW and the Export Supplier chooses to settle NHH. In this case, the minimum Metering Equipment requirements would be CoP9 and the Export Supplier would appoint a NHHMOA and NHHDC (who would need to be the same NHHMOA and NHHDC appointed by the Import Supplier).

Scenario 3

Separate Import and Export Meters, each operated by separate current transformers (PC1-4 Import, >30kW Export)

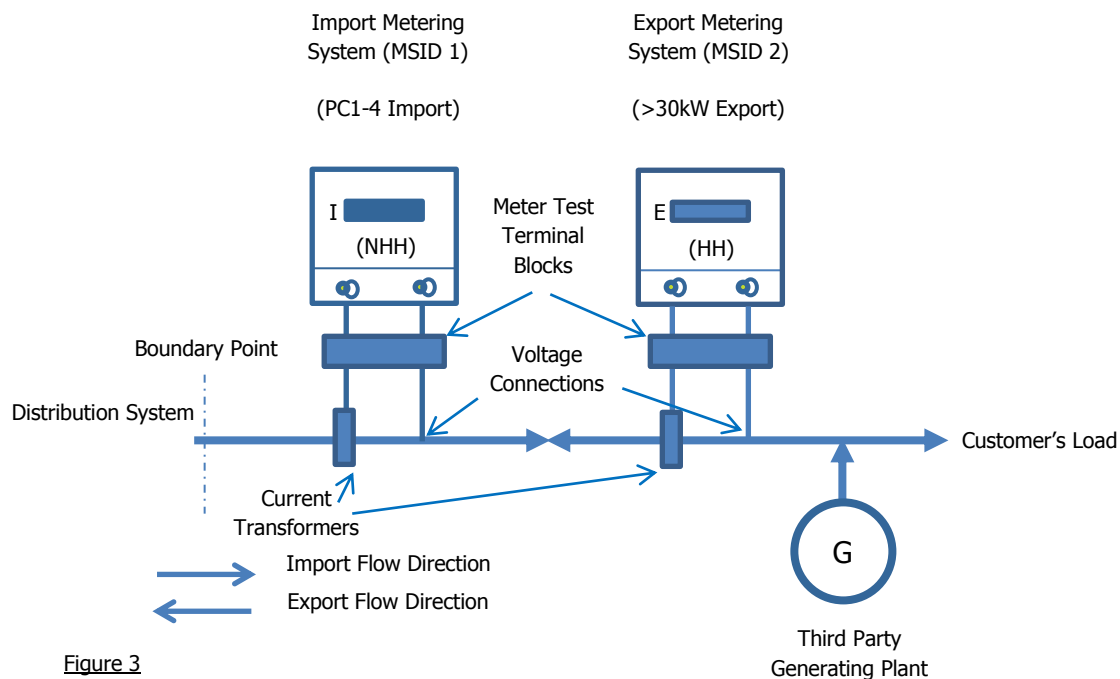


Figure 3

This scenario is similar to Scenario 1, except that the Meters are current transformer (CT) operated rather than Whole Current Meters.

The Import and Export Metering Systems do not use any of the same Metering Equipment and are associated with separate Outstations. The Import and Export Suppliers are therefore free to appoint their preferred, appropriately Qualified, agents (a NHHMOA and a NHHDC for the Import Metering System, and a HHMOA and a HHDC for the Export Metering System).

Scenario 4

Separate Import and Export Meters, operated by the same current transformer (PC1-4 Import, >30kW Export)

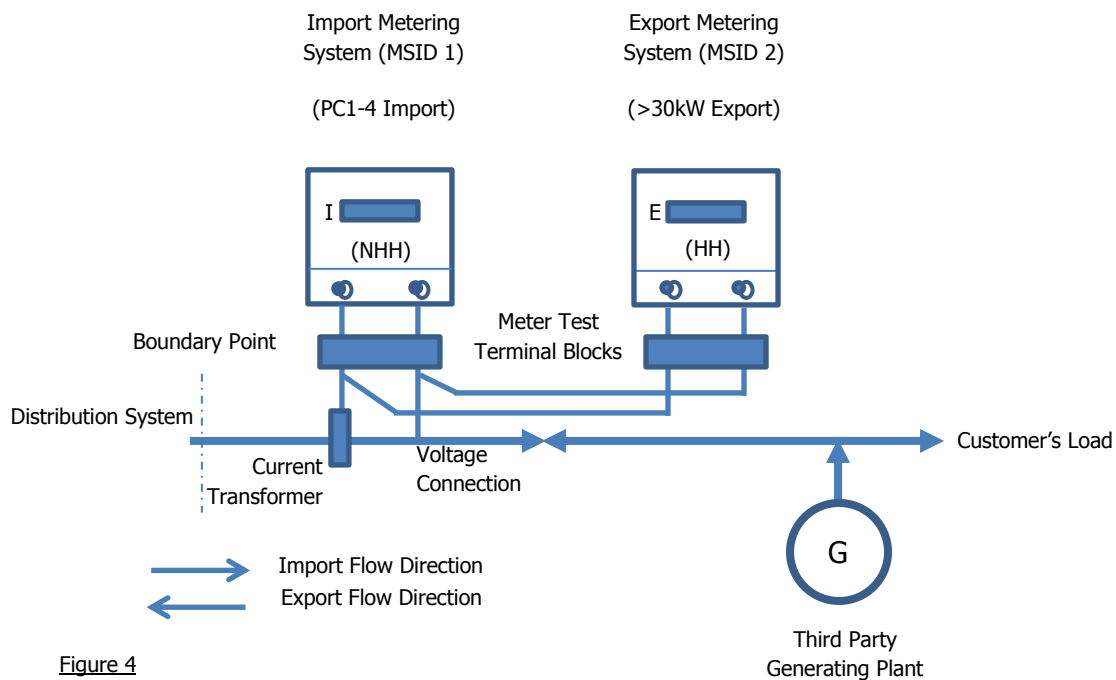


Figure 4

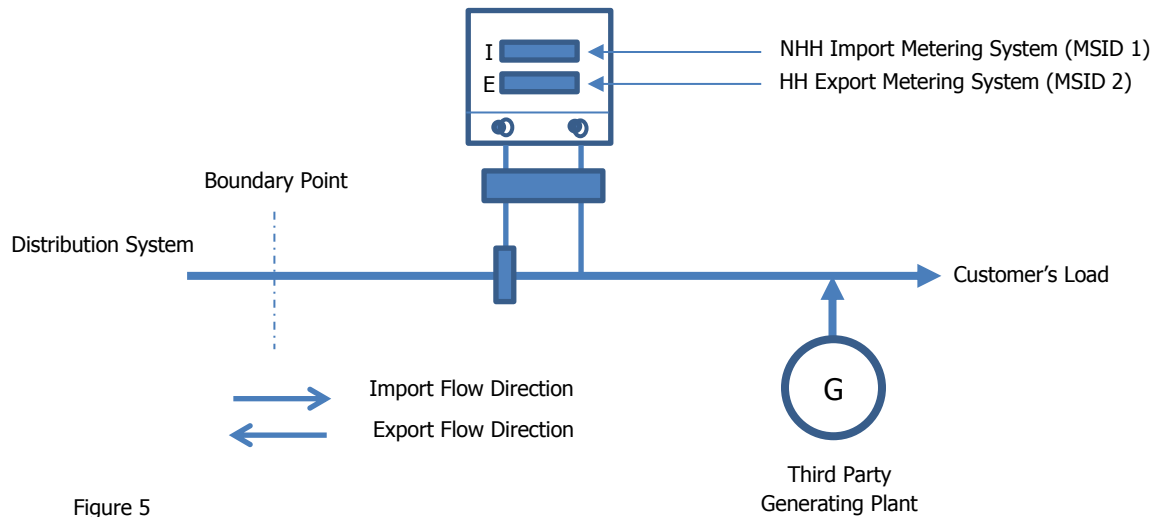
This scenario is similar to Scenario 3; however some of the Metering Equipment (i.e. the CT) is used by both the Import and Export Metering Systems.

Because of the common Metering Equipment, [BSC Section J4.1.5](#) requires the Import Supplier to provide the Export Supplier with details of the MOA who is appointed to the NHH Import Metering System. The Export Supplier is then required to appoint the same MOA for the HH Export Metering System.

The Import and Export Metering Systems are associated with separate Outstations. The two Suppliers are therefore free to appoint their preferred, appropriately Qualified, DCs (a NHHDC for the Import Metering System, and a HHDC for the Export Metering System).

Single Import and Export Meter, operated by the same current transformer (PC1-4 Import, >30kW Export)

(PC1-4 Import & >30kW Export)



This scenario is similar to Scenario 2, except that both the Meter and the CT are common to the Import and Export Metering Systems and there is a single Outstation.

Because of the common Metering Equipment/Outstation, [BSC Sections J4.1.5 and J4.1.6](#) require the Import Supplier to provide the Export Supplier with details of the MOA and DC appointed to the NHH Import Metering System. The Export Supplier is then required to appoint the same MOA and DC for the HH Export Metering System.

Settling Imports NHH but not Settling Exports

This example clarifies the BSC requirements in situations where the Supplier does not intend to put the export volumes into Settlement.

Scenario 6

PC1-4 Import and <30kW export where there is no requirement for Settlement Export Metering Equipment

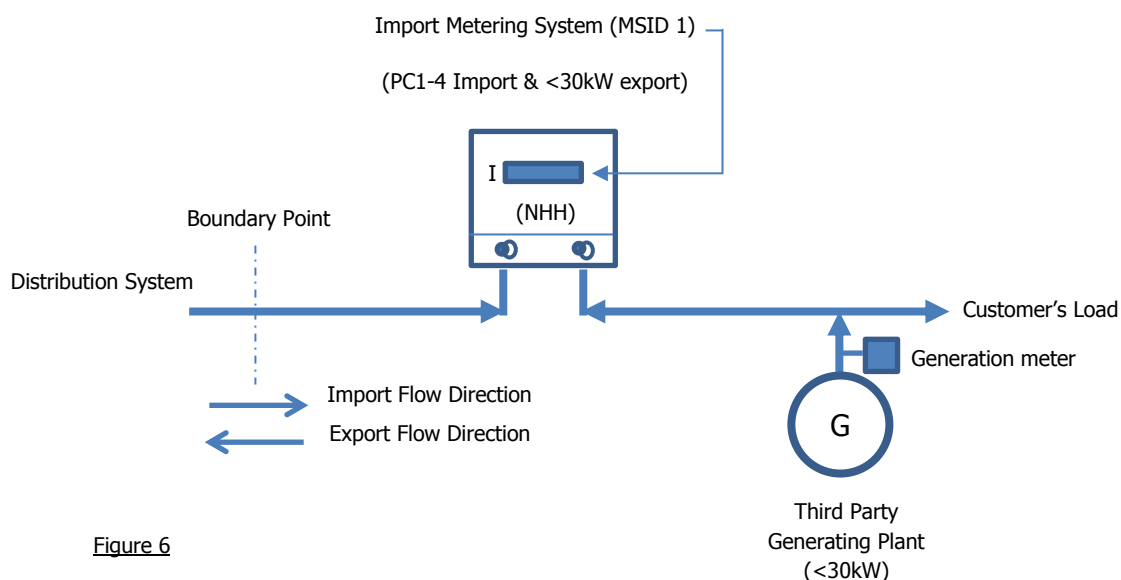


Figure 6

In this scenario, a customer has an Import Meter and is settled NHH as the Metering System is not required to be settled Half Hourly (i.e. was not an Import Metering System registered against PC5-8 with an Advanced Meter fitted (prior to 1 April 2017) and is not a 100kW Metering System). The Import Supplier has in place all the necessary BSC Qualified Party Agents.

The customer then fits generating equipment (Third Party Generating Plant) whose generating equipment rating is under 30kW. The customer has approached a Supplier (the same or different to the Import Supplier) to purchase the exported energy. The Supplier chooses not to settle these export volumes.

Where the LDSO becomes aware that Small Scale Third Party Generating Plant (SSTPGP) has either been or is being fitted, it should inform the Import Supplier so that the Import Supplier can ensure that the Meter (Import Meter) remains fit for purpose. Similarly, if the Import Supplier becomes aware of the installation of SSTPGP it may wish to inform the LDSO.

Settling both Imports and Exports NHH

Scenario 7

Two Element Whole Current Import Meter and Whole Current Export Meter (PC1 and 2 Import, <30kW Export)

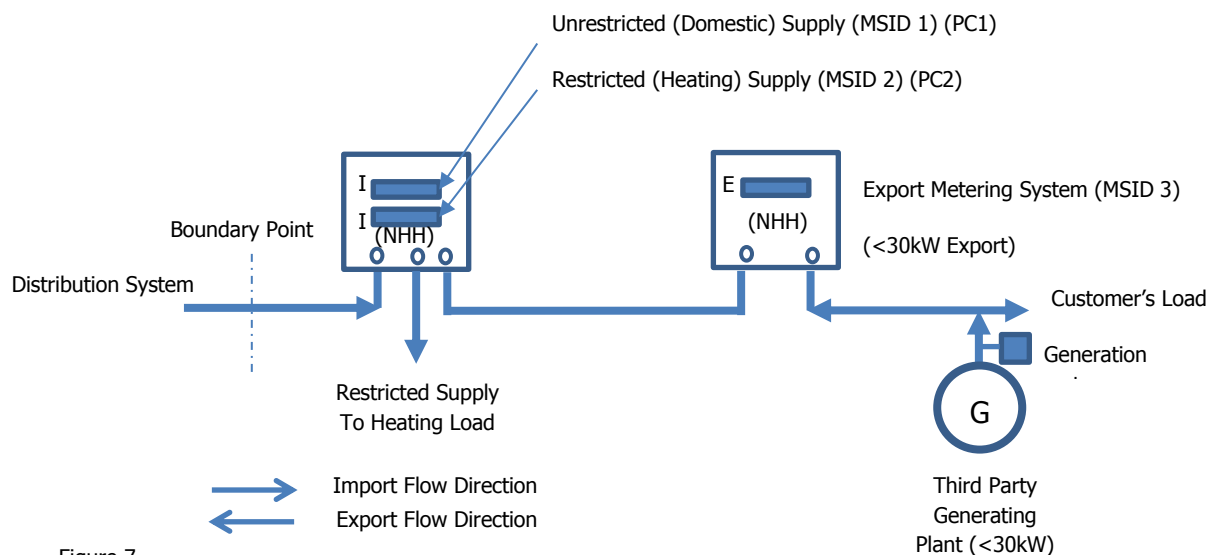


Figure 7

In this scenario, a Meter with two measuring elements and registers is fitted for the Import supplies. One of these supplies is restricted by the Metering Equipment (typically by a time switch or radio teleswitch/telemeter) which is provided for a heating load. The other supply is unrestricted and is the normal domestic supply. Each Import supply has its own MSID; however, these are Related Metering Points (as defined in the MRA) which means that they should always be supplied by the same Import Supplier. There is therefore one Import Meter and one Import Supplier, but two actual Import Metering Systems with common Metering Equipment.

The customer arranges for generating equipment (Third Party Generating Plant) to be installed, whose generating equipment rating is under 30kW. The customer finds an Export Supplier (who is either the same as, or different to, the Import Supplier).

The Export Metering System does not use any of the same Metering Equipment as the Import Metering Systems. The Export Supplier therefore does not need to appoint the same NHHMOA and NHHDC as the Import Supplier and is free to appoint its preferred (appropriately Qualified) NHHMOA and NHHDC.

The Export Supplier arranges for their NHHMOA to install the Export Metering Equipment to measure the Export volumes, and the Export Supplier registers the details of the Export Meter in SMRS.

Settling Imports HH and Settling Exports NHH or HH

So far we have looked at scenarios where the Imports are NHH (PC1-4). This next section considers scenarios where the Imports are HH (i.e. either electively settled HH under PC1-4 or mandated to be settled HH because they are ex-‘PC5-8’ (with an Advanced Meter fitted) or a 100kW Metering System).

Scenario 8

Separate Import and Export Whole Current Meters (HH Import, <30kW Export)

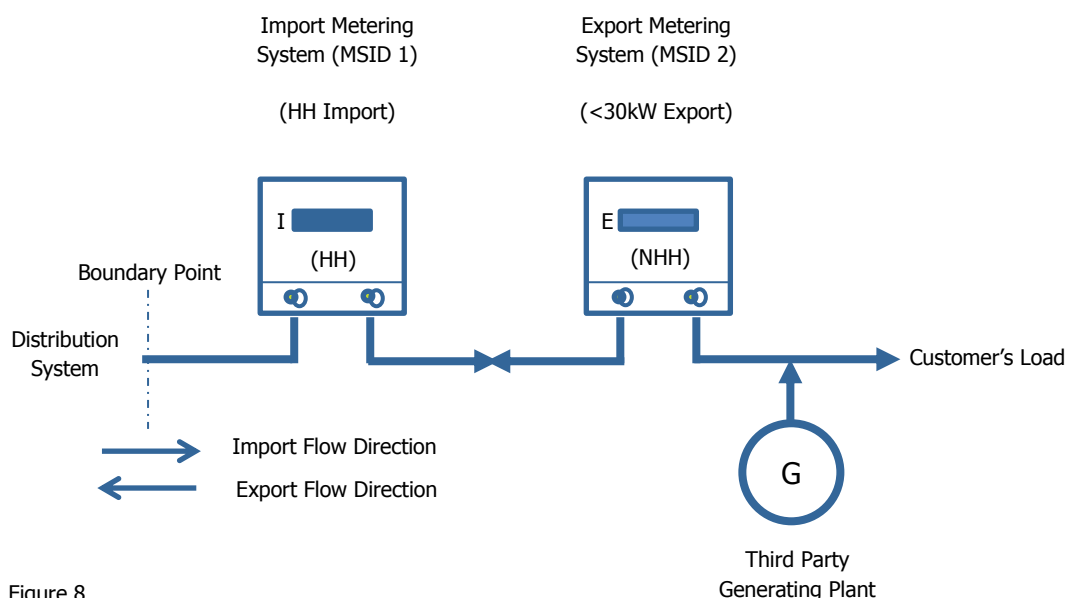


Figure 8

This scenario is the reverse of Scenario 1. Note: It is highly unlikely for a 100kW Metering System to use Whole Current Meters. The Import Metering System is HH and has been installed for some time. The customer has since chosen to install generating equipment (e.g. Photo Voltaic (PV), Wind, Hydro, etc.) and found a Supplier (either the same or different to the Import Supplier) who is willing to be responsible for the Export. The Export Supplier requests an Export MSID from the relevant LDSO.

As the generating equipment rating is under 30kW, the Export Metering System (and the Export Supplier's agents) can be NHH (or HH) and the Export Metering Equipment must comply with the minimum requirements of CoP9 (or CoP10).

The Import and Export Metering Systems do not share any Metering Equipment and are associated with separate Outstations. The Import and Export Suppliers are therefore free to appoint their preferred, appropriately Qualified, agents – a HHMOA and a HH Data Collector (DC) for the Import Metering System, and a NHHMOA and a NHHDC for the Export Metering System. The Export Supplier arranges for their NHHMOA to install the Export Metering Equipment to measure the Export volumes.

The NHHMOA installs the Export Metering Equipment and sends Meter Technical Details (MTDs) via the Data Transfer Network (DTN) flow D0150¹² to the Export Supplier, LDSO and the Export Supplier's appointed NHHDC.

A variant of this scenario would be where the generating equipment rating is above 30kW. In this case, the Export Supplier would have to settle the volumes in the HH market where the minimum Metering Equipment requirements are CoP10 or CoP5¹¹. If the Export Supplier chooses to settle the Export in the HH market, it would appoint a HHMOA and HHDC (who need not be the same agents used by the Import Supplier).

¹² 'Non Half Hourly Meter Technical Details'

Scenario 9

Separate Import and Export Meters, each operated by separate current transformers (HH Import, <30kW Export)

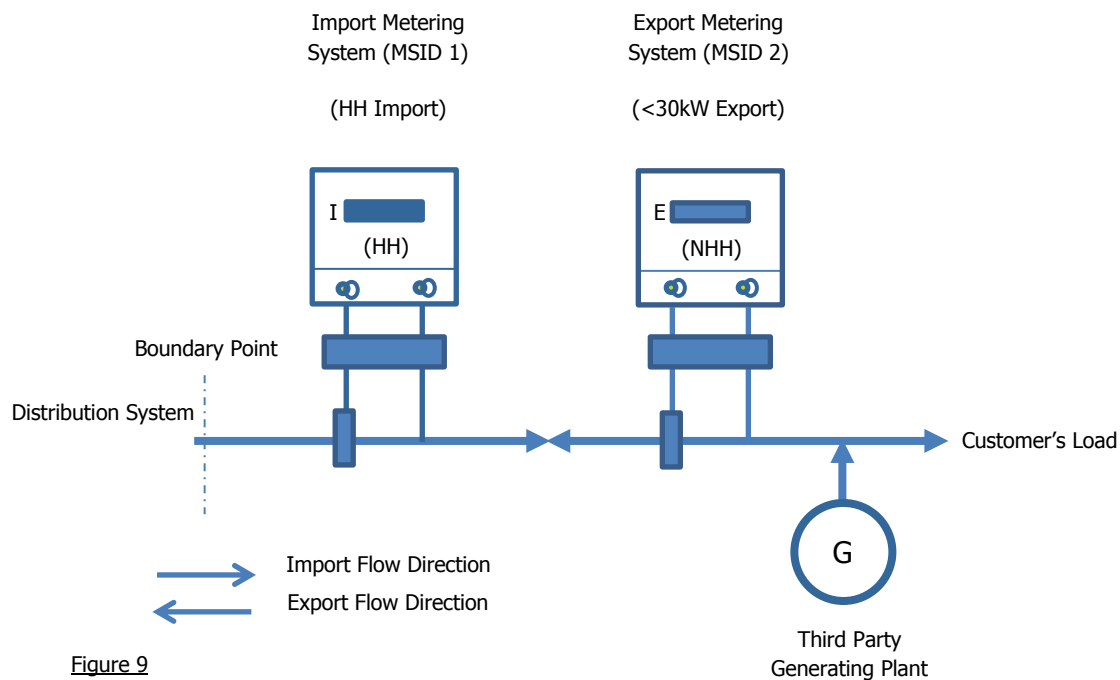


Figure 9

This is similar to Scenario 3, except that the Import is HH and the Export is NHH rather than the reverse.

Since the Import and Export Metering Systems do not have any common Metering Equipment and are associated with different Outstations, the Import and Export Suppliers do not need to appoint the same MOA or DC for each Metering System. They are therefore free to appoint their preferred, appropriately Qualified, agents (a HHMOA and a HHDC for the Import Metering System, and a NHHMOA and a NHHDC for the Export Metering System).

A variant of this scenario could be that the Export Supplier opts voluntarily to use HH Metering Equipment, meaning that it would need to appoint a HHMOA and HHDC for the Export Metering System (who would not need to be the same HHMOA or HHDC appointed to the Import Metering System by the Import Supplier).

Scenario 10

Separate Import and Export Meters, operated by the same current transformer (HH Import, <30kW Export)

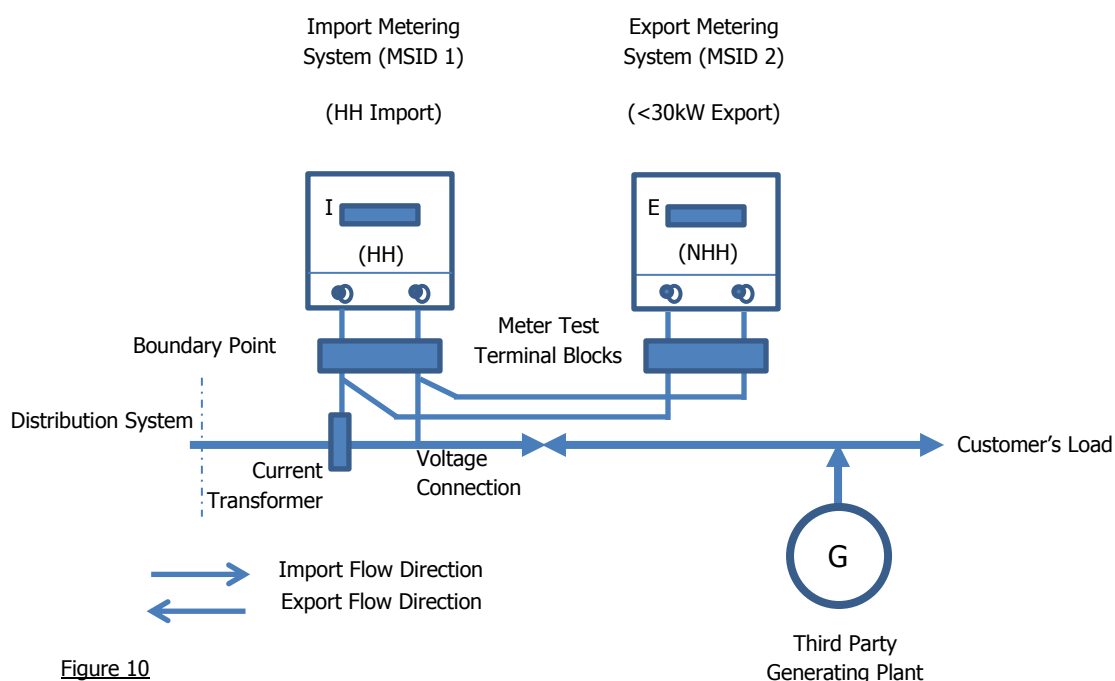


Figure 10

This is similar to Scenario 4, except that the Import is HH and the Export is NHH rather than the reverse.

Because of the common Metering Equipment, [BSC Section J4.1.5](#) requires the Import Supplier to provide the Export Supplier with details of the MOA appointed to the HH Import Metering System. The Export Supplier is then required to appoint the same MOA for the NHH Export Metering System.

The two Suppliers are free to appoint their preferred, appropriately Qualified, DCs (a HHDC for the Import Metering System, and a NHHDC for the Export Metering System).

Other things to consider

In addition to the BSC requirements described above, the following are examples of some of the practicalities that participants may/will need to consider when deciding which solution is the most appropriate for a particular customer's installation.

Seals

Scenarios 1, 3, 7, 8 and 9

There is the potential for two separate MOAs to be appointed at these sites at the same time. Where this is the case, it may be necessary for one of the MOAs to break the seal of the other MOA's Meter in order to install, change or maintain their own Meter. However, the BSC precludes a MOA from undertaking work on a Metering System to which it is not appointed.

To comply with the BSC it therefore becomes necessary either for both MOAs to be present when work is to be carried out, or for both Suppliers to appoint the same MOA (see 'Agents' below).

Agents

Scenarios 2, 5 and 10

In these scenarios, the BSC requires the Export Supplier to appoint the same DC and/or MOA as the Import Supplier (and requires the Import Supplier to provide the Export Supplier with the relevant agent details).

Where the Import is NHH and the Export is HH (or vice versa), 'same' in this context means the same company acting in both NHH and HH roles. The BSC does not prescribe whether, in practice, this company uses the same or different Market Participant IDs (MPIDs) for these roles.

One practicality of the BSC obligations is that, where the requirement to use the 'same' agent applies, the Import Supplier should inform the Export Supplier if it intends to change its appointed agent.

Another practicality is that some companies may only be Qualified to operate in one side of the market. The Export Supplier may therefore be unable to appoint the same agent as the Import Supplier, unless the Import Supplier changes its agent to a company which is both NHH and HH Qualified. The BSC is silent on this situation and therefore does not mandate that the Import Supplier changes its appointed agent. If the Import and Export Suppliers cannot agree, then the Export Supplier will need to adopt a solution for the Export Metering System which uses separate Metering Equipment and/or a separate Outstation (as applicable) to that used by the Import Metering System and which therefore does not require the use of the same agent(s).

There may be additional risks involved where a company is appointed as both a NHH agent and HH agent for the same Meter and uses separate MPIDs for these roles (i.e. where the two roles are distinct parts of its business, with separate systems and staff). Good practice in this situation would therefore be for the Suppliers and agents to ensure that they have adequate communication mechanisms in place.

Future rollout of Advanced Meters and Smart Meters

Scenarios 1, 3, 4, 7, 8, 9 and 10

Suppliers' Licence requirements to fit Advanced Meters for NHH Profile Classes (PC) 05-08 by 2014 and under P272 and P322 to be settled HH (i.e. PC00) from 1 April 2017 will mean that the Import Meter will be HH capable and, more than likely, Export capable too. This, plus the rollout of Smart Meters for NHH PCs 01-04 by 2020, may make dual Meter solutions impractical.

Installing separate Meters may incur additional costs and result in supply interruptions to the customer.

Current transformers

Scenarios 3 and 9

Registrants of Metering Systems are required under [BSC Section L2.5](#) to maintain Metering Equipment records, including current transformer accuracy certificates and commissioning records.

This information is to be made available, on request, for the life of the Metering Equipment. However, it may not always be possible for the equipment owners to make this information available within the required timescales.

Installing separate CTs is an option but may incur additional costs. Another concern may be having enough physical space to fit additional CTs.

Supplier and LDSO responsibilities

All scenarios

Suppliers are required by the Electricity Act 1989 to ensure that their Meters remain fit for purpose. This includes, but is not limited to, the possibility of Meters running backwards as a result of generating equipment being installed at customer premises.

Where an LDSO is aware that SSTPGP has been/will be installed, [BSCP515](#)¹³ (Section 3.12) requires the LDSO to inform the Import Supplier. This is so that the Import Supplier can ensure a suitable Import Meter is in place. In the separate Meter scenarios, this may involve an Import Meter change. In the combined Import/Export Meter scenarios, the Meter should be configured appropriately.

Need more information?

For more information please contact the **BSC Service Desk** at bscservicedesk@cqi.com or call **0370 010 6950**.

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