



## INFORMATION SHEET: Metering demand sites with generating equipment installed

This Information Sheet clarifies the [Balancing and Settlement Code](#) (BSC) Metering Equipment requirements for Import and Export Metering Systems (MS) that are, or are to be, registered in a Supplier Meter Registration Service (SMRS) for a site at which Third Party Generating Plant<sup>1</sup> is installed.

### **BSC background information**

Meter Operator Agents (MOA) install and maintain Meters and other associated Metering Equipment on behalf of Suppliers. Once commissioned by the MOA, the Metering Equipment collectively becomes a Metering System and the Supplier registers its details in the relevant Supplier Meter Registration Service (SMRS).

These Metering Systems are either Half Hourly (HH) or Non Half Hourly (NHH), and this Information Sheet explains the rules about which is required when.

The BSC's rules for whether a HH or NHH Meter is required 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 Information Sheet explains the BSC requirements and helps clarify the complexities.

### **The basic rules**

The BSC requires that all 100kW Metering Systems are HH Metering Systems, and that all Exports (which are to be settled) above the Small Scale Third Party Generating Limit<sup>2</sup> (SSTPGL) shall be HH Metering Systems. Metering Systems under these limits 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 Import and Export functions) or by separate Meters (with or without Import and Export functions).

The next sections in this Information Sheet examine some different examples of the scenarios that could be encountered.

*Please note that we have simplified the diagrams in this Information Sheet for clarity, and that 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 ID (MSID) is a term used throughout the BSC and its subsidiary documents and has the same meaning as Meter Point Administration Number (MPAN) as used under the Meter Registration Agreement (MRA).*

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<sup>1</sup> Third Party Generating Plant is Exemptable Generating Plant (where the person generating the electricity is exempt from holding a Generation Licence) for which another person, who is a BSC Party, has elected to be responsible for its Exports by registering an Export Metering System.

<sup>2</sup> The SSTPGL is a limit set by the BSC Panel from time to time. It is currently 30kW.

*There are 14 Licenced Distribution System Operators (LDSO) in Great Britain. These are sometimes referred to as Distributors, Distribution Network Operators or DNOs. For the purposes of this guidance these terms are interchangeable.*

## Settling Imports Non-Half Hourly and Settling Exports Non-Half Hourly or Half Hourly

### Scenario 1

Whole Current Meters with Separate Import & Export (<100kW Import, >30kW Export)

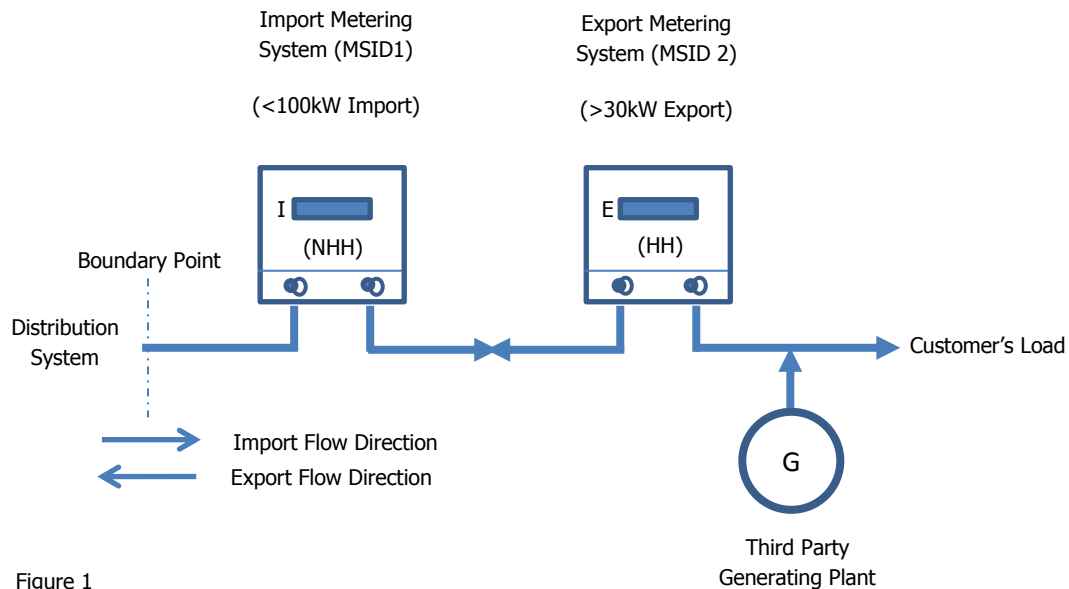


Figure 1

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 Metering System ID (MSID) from the relevant (LDSO). The Export Supplier then arranges for their MOA to install the Metering Equipment to measure the Export volumes.

As the generating equipment rating<sup>3</sup> in this scenario is over 30kW, the Export Metering System (and the Supplier's Agents) must be HH and the Metering Equipment must comply with the minimum requirements of CoP5<sup>4</sup>.

The HHMOA installs the Metering Equipment and sends Meter Technical Details (MTDs) via the Data Transfer Network (DTN) flow D0268<sup>5</sup> to the Supplier, LDSO and HH Data Collector (DC).

If the generating equipment rating<sup>3</sup> was under 30kW then 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<sup>6</sup> and CoP9<sup>7</sup> respectively.

<sup>3</sup> For the purposes of the BSC this rating is determined by the aggregate maximum generation capacity as measured at the Boundary Point.

<sup>4</sup> Code of Practice for the Metering of Energy Transfers with a Maximum Demand of up to (and including) 1MW for Settlement Purposes.

<sup>5</sup> 'Half Hourly Meter Technical Details'.

<sup>6</sup> Code of Practice for Metering of Energy via Low Voltage Circuits for Settlement Purposes.

## Scenario 2

Whole Current Meter with integrated Import & Export capabilities (<100kW Import, >30kW Export)

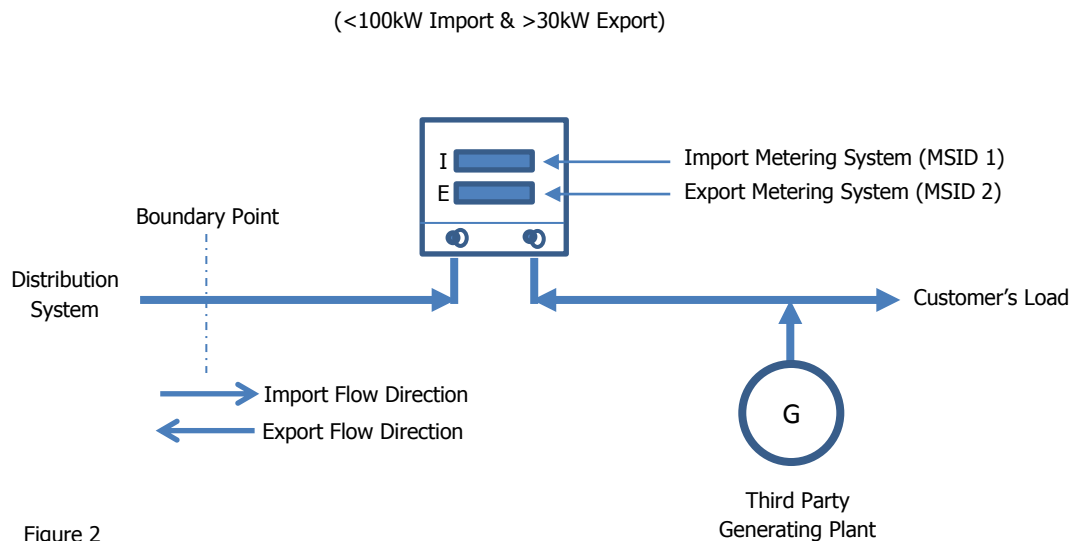


Figure 2

Scenario 2 is similar to Scenario 1, except there is a single Meter. This is because either the Import Supplier has agreed to also take responsibility for the Export, 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. As in Scenario 1, a second MSID has been requested from the SMRS.

In this scenario there needs to be agreement for there to be a single MOA in accordance with Section J4.1 of the BSC.

Because the Import Metering System is NHH and the Export Metering System is HH, the appointed MOA must be Qualified<sup>8</sup> for both HH and NHH.

The Meter should be CoP5 compliant because the Export requires a HH Metering System (since the generating equipment rating at the Boundary Point is >30kW).

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 is CoP9<sup>7</sup>; however as CoP5<sup>4</sup> exceeds these requirements the CoP5<sup>4</sup> Meter is also adequate for NHH use.

<sup>7</sup> 'Code of Practice for the Metering of Import and Export Active Energy via Low Voltage Circuits for Non-Half Hourly Settlement Purposes'.

<sup>8</sup> i.e. have been through the BSC Qualification Process (see Section J of the BSC and [BSC Procedure \(BSCP\) 537](#)).

Scenario 3

Current Transformer Operated Import Meter & Separate Export Meter Operated by Separate Current Transformer (<100kW Import, >30kW Export)

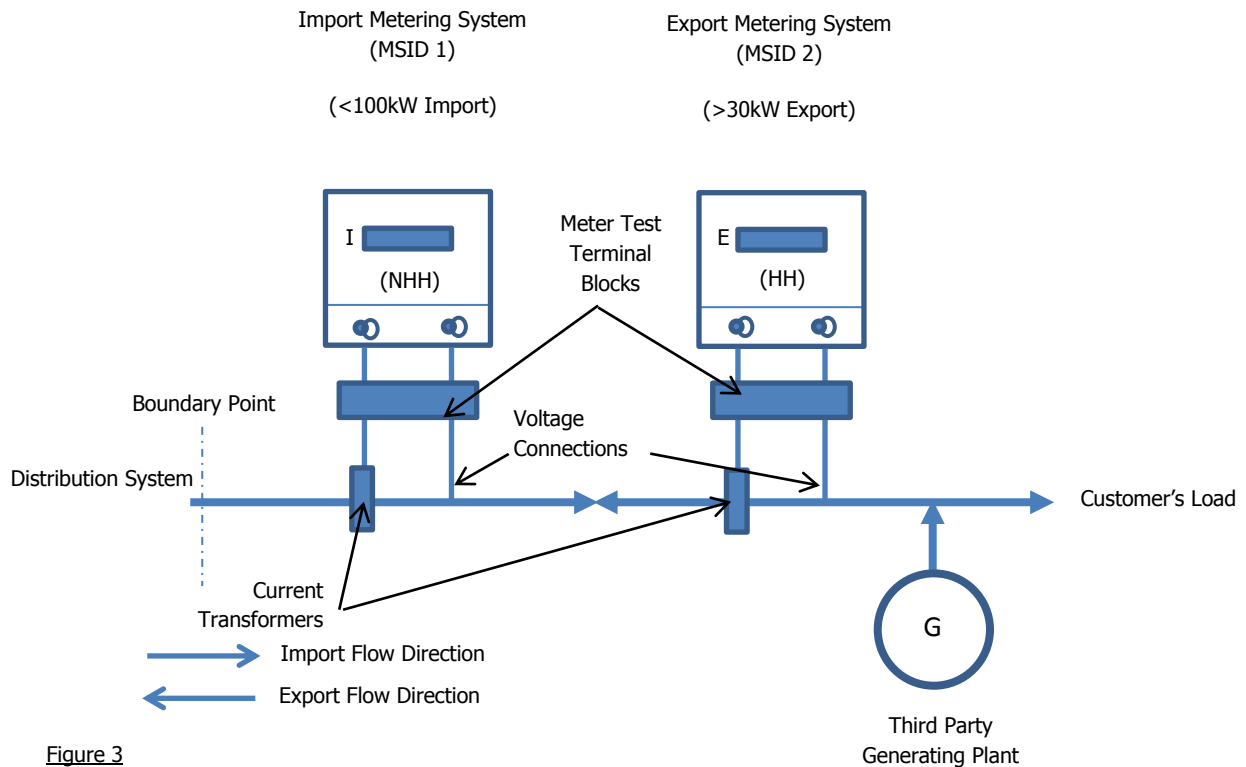


Figure 3

This scenario is similar to Scenario 1, except that the Meters are Current Transformer (CT) operated rather than Whole Current Meters. Since no Metering Equipment is shared between the Import and Export Metering Systems, each Supplier is free to appoint their preferred (appropriately Qualified) agents.

Scenario 4

Import Meter & Separate Export Meter Operated by the same Current Transformer (<100kW Import, >30kW Export)

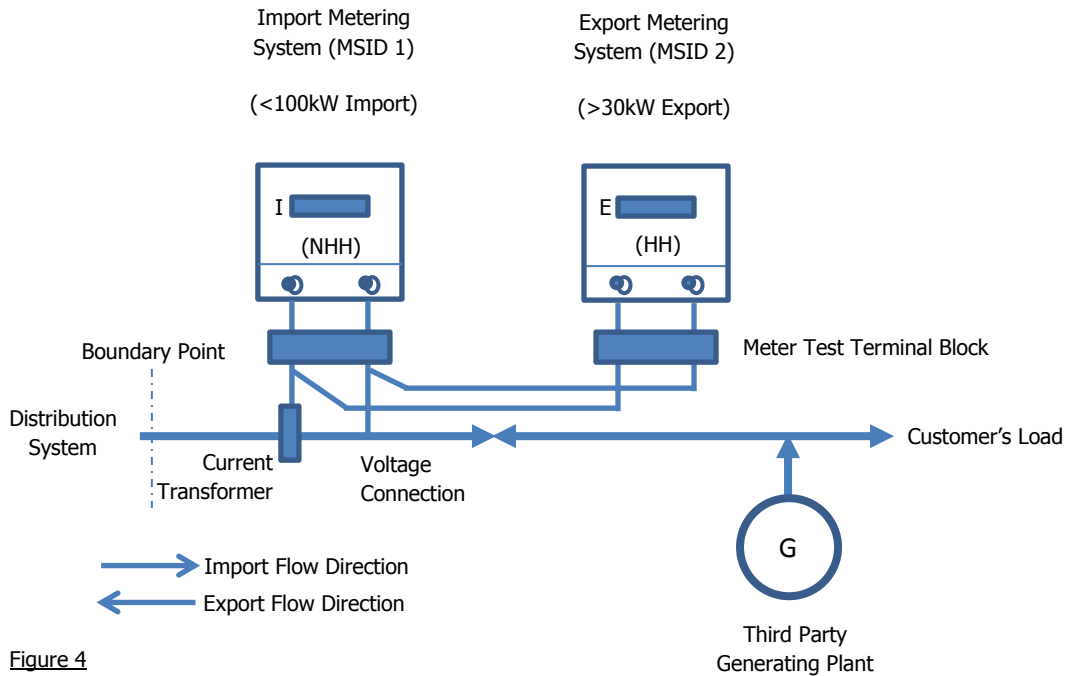


Figure 4

This scenario is similar to Scenario 3; however some of the Metering Equipment is common to both Metering Systems (i.e. the CT). As a result, the Export Supplier is required to appoint the same MOA as the Import Supplier<sup>9</sup> in accordance with Section J4.1 of the BSC.

Since there are two separate Meters, one under each MSID, each Supplier can appoint their own appropriately Qualified DC (i.e. a NHH or HH DC for the Import MSID, and a HHDC for the Export MSID).

<sup>9</sup> This option of sharing the same CTs could be an issue if the MOA appointed to the Import MPAN is only qualified as a NHHMOA.

Scenario 5

Shared Import & Export Meter Operated by the same Current Transformer (<100kW Import, >30kW Export)

(<100kW Import & >30kW Export)

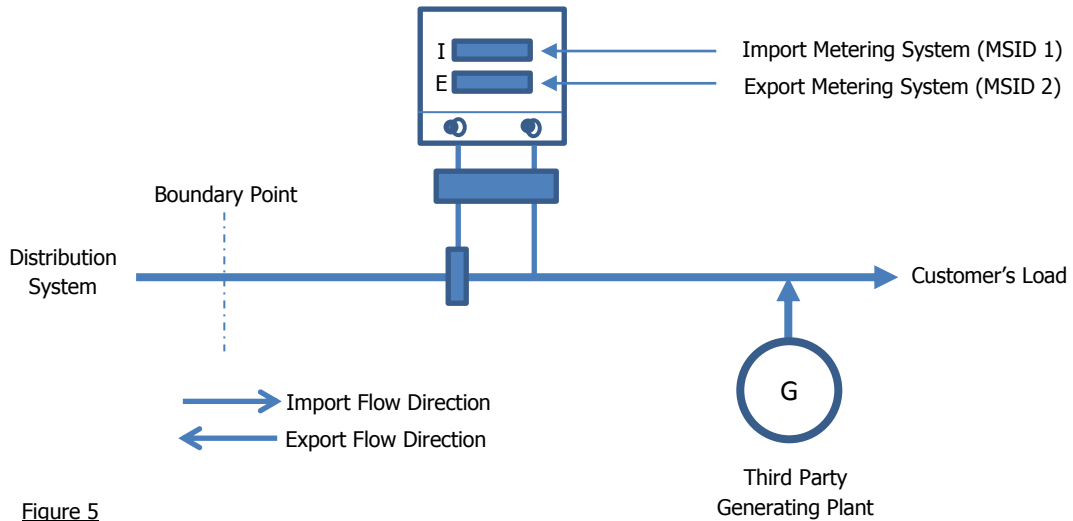


Figure 5

This scenario is similar to Scenario 2; however the Meter and the CTs are common to both the Import and Export Metering Systems. So, in this case, there needs to be agreement for there to be a single MOA and DC in accordance with Section J4.1 of the BSC (i.e. a NHH or HH MOA and DC for the Import MSID, and a HHMOA and HHDC for the Export MSID). In other words, both the MOA and DC may need to be Qualified as HH and NHH depending on how the Import Metering System is settled.

### Scenario 6

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

*Exports <30kW where there is no requirement for Export Metering Equipment*

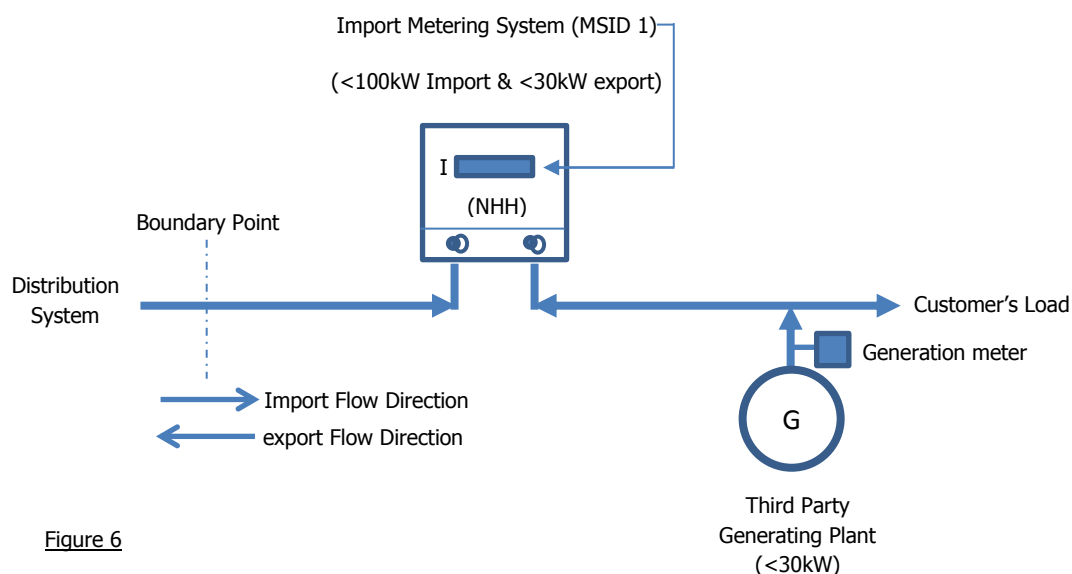


Figure 6

In this scenario, a customer has an Import Meter and is settled NHH as the Metering System is not required to be 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<sup>3</sup> is <30kW. The customer has approached a Supplier (the same or different to the Import Supplier) to purchase the exported energy but the Supplier chooses not to settle these volumes.

Where the LDSO becomes aware that Small Scale Third Party Generating Plant (SSTPGP) either has 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 the Supplier may wish to inform the LDSO of the installation of generating equipment.



Scenario 7

Two Element Whole Current Import Meter & Whole Current Export Meter (<100kW Import, <30kW)

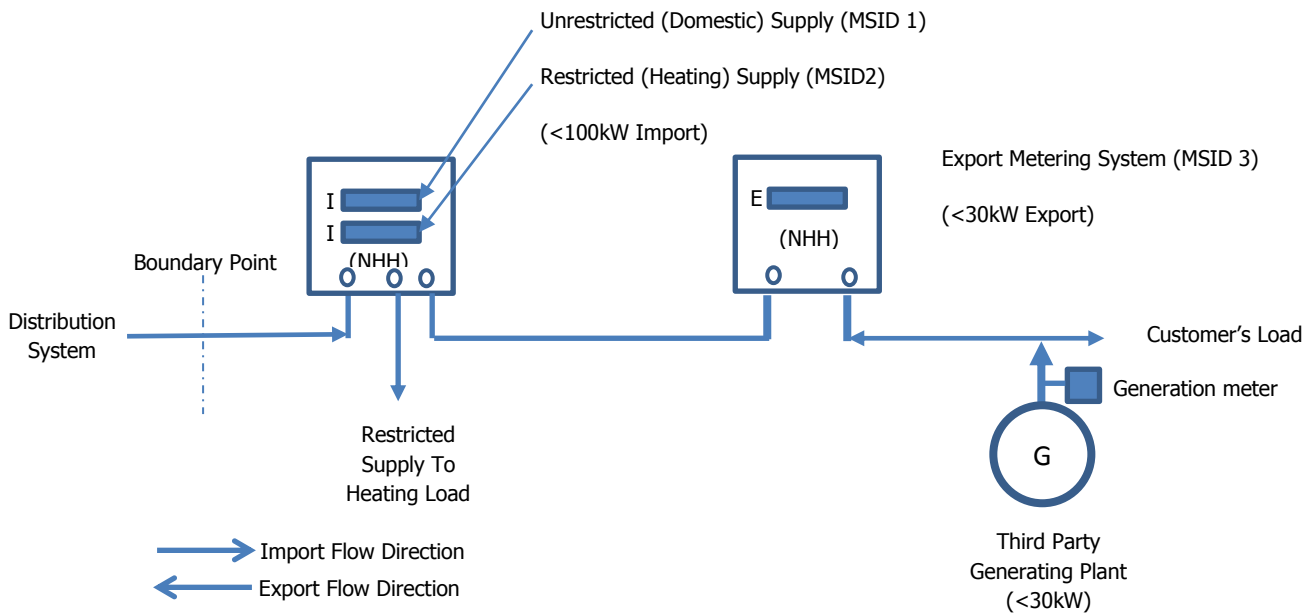


Figure 7

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 which are also related. The customer arranges for generating equipment (Third Party Generating Plant) to be installed whose generating equipment rating<sup>3</sup> is <30kW.

The customer finds an Export Supplier who appoints NHH Agents and the NHH MOA installs a NHH Export Meter. The Export Supplier then registers the details of the Export Meter in SMRS.

### Settling Imports Half Hourly (mandatory) and Settling Exports Non-Half Hourly or Half Hourly

So far we have looked at scenarios where the Imports are NHH (<100kW) and the Exports HH (>30kW). This next section considers the reverse, where Imports are HH and the Exports are NHH.

It is highly unlikely for a 100kW Metering System to use Whole Current Meters; therefore these do not appear in the example scenarios.

#### Scenario 8

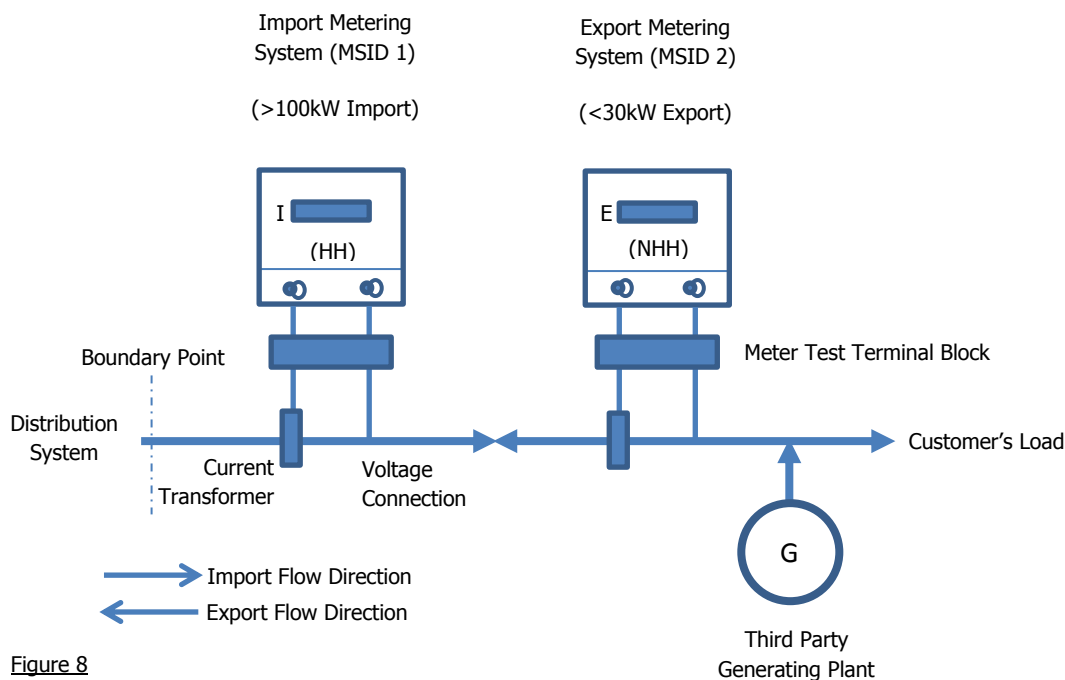


Figure 8

Scenario 3 noted that, since no Metering Equipment was common to both Import and Export Metering Systems, the Suppliers responsible for each MSID could appoint their own appropriately Qualified Party Agents. In the reverse scenario, as in Figure 8 above, the Import Supplier is required to appoint a HHMOA and HHDC, and the Export Supplier is required to appoint a NHHMOA and NHHDC (although the Export Supplier can opt to use HH Metering Equipment where it would be required to appoint HH Party Agents).

Scenario 9

Import Meter & Separate Export Meter Operated by the same Current Transformer (>100kW Import, <30kW Export)

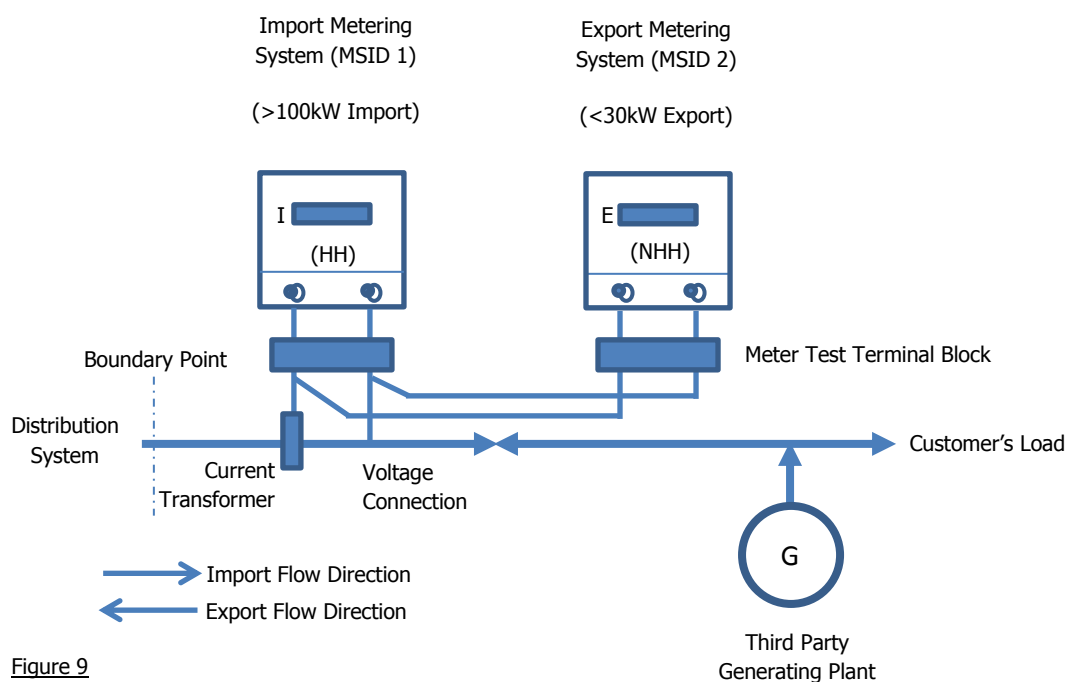


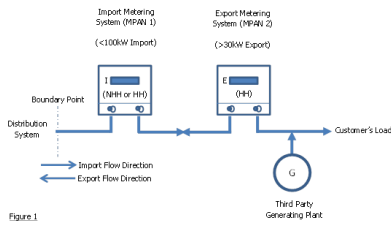
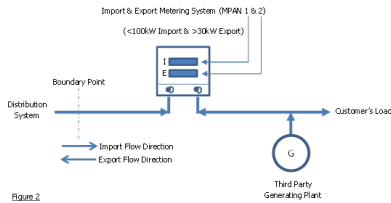
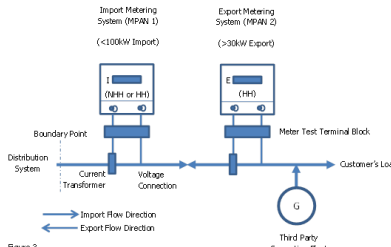
Figure 9

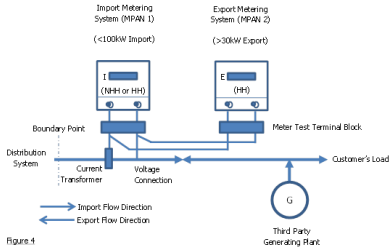
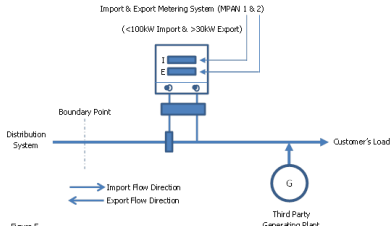
Where there is Metering Equipment common to the both the Import and Export MSIDs (the CT in this case) it is the Export Supplier's responsibility to appoint the same MOA as the Import Supplier. There are two separate Outstations<sup>10</sup> in this scenario; therefore different DCs may be appointed.

<sup>10</sup> An Outstation stores Meter data and can be integral to a Meter (as in this case).

Other things to consider when choosing an Import/Export Metering System

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

Description of I/E MS Solution	Things to consider
<p><b>Whole Current with Separate Import &amp; Export Meters</b></p>  <p>Figure 1</p>	<p><i>Seals</i> – There is the potential for two separate MOAs to be in place 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 and vice versa.</p> <p><i>Meters</i> – Suppliers' Licence requirements to fit Advanced Meters for NHH Profile Classes (PC) 5 to 8 by 2014 will mean that the Import Meter will be HH capable and, more than likely, Export capable too. Export Suppliers may wish to use the same Meter for the Export MSID. With the rollout of Smart Meters for NHH PCs 1 to 4 by 2020, such dual Meter scenarios are likely to end up with a single Meter solution. There are costs associated with installing separate Meters and also customer supply interruptions to consider.</p>
<p><b>Whole Current Meter with integrated Import &amp; Export capability</b></p>  <p>Figure 2</p>	<p><i>Change of Agent</i> – Suppliers need to consider the requirement to maintain the same Agents before initiating the Change of Agent process.</p> <p><i>NHH only</i> – The Import Supplier will have Agents in place that may only be NHH Qualified. Therefore the Export Supplier cannot use the same Agents as the Import Supplier, as required, unless the Import Supplier changes its Agents for ones that are both HH and NHH Qualified.</p>
<p><b>CT Operated Import Meter &amp; Separate Export Meter Operated by Separate CT</b></p>  <p>Figure 3</p>	<p><i>Meters</i> - With the rollout of Smart Meters for NHH PCs 1 to 4 by 2020 and Advanced Meters for NHH PCs 5 to 8 by 2014, such dual Meter scenarios are likely to become impractical. There are additional costs associated with installing separate Meters.</p> <p><i>CTs</i> - Under the BSC (Section L2.5) the appointed Registrant of the Meter (the Supplier) is also responsible for maintaining copies of test certificates and commissioning records for the life of the CTs. LDSOs may not be able to provide CTs to timescales desired by the customer/Supplier. Having enough physical space to fit additional CTs may be an issue. There are costs associated with installing separate CTs.</p>

Description of I/E MS Solution	Things to consider
<p data-bbox="188 259 576 327"><b>Import Meter &amp; Separate Export Meter Operated by the same CT</b></p>  <p data-bbox="209 595 240 607">Figure 4</p>	<p data-bbox="622 259 1378 387"><i>Seals</i> – 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 and vice versa.</p> <p data-bbox="622 421 1369 517"><i>Change of Agent</i> – Suppliers need to consider the requirement to maintain the same Agents before initiating the Change of Agent process.</p> <p data-bbox="622 551 1390 835"><i>Meters</i> – Suppliers’ Licence requirements to fit Advanced Meters for NHH PCs 5 to 8 by 2014 will mean that the Import Meter will be HH capable and, more than likely, Export capable too. Export Suppliers may wish to use the same Meter for the Export MSID. With the rollout of Smart Meters for NHH PCs 1 to 4 by 2020, such dual Meter scenarios are likely to end up with a single Meter solution. There are costs associated with installing separate Meters and also customer supply interruptions to consider.</p> <p data-bbox="622 869 1390 1032"><i>NHH only</i> – The Import Supplier will have Agents in place that may only be NHH Qualified. Therefore the Export Supplier cannot use the same Agents as the Import Supplier, as required, unless the Import Supplier changes its Agents for ones that are both HH and NHH Qualified.</p>
<p data-bbox="188 1066 555 1167"><b>Shared Import &amp; Export Meter Operated by the same Current Transformer</b></p>  <p data-bbox="209 1413 240 1424">Figure 5</p>	<p data-bbox="622 1066 1369 1162"><i>Change of Agent</i> – Suppliers need to consider the requirement to maintain the same Agents before initiating the Change of Agent process.</p> <p data-bbox="622 1196 1390 1359"><i>NHH only</i> – The Import Supplier will have Agents in place that may only be NHH Qualified. Therefore the Export Supplier cannot use the same Agents as the Import Supplier, as required, unless the Import Supplier changes its Agents for ones that are both HH and NHH Qualified.</p>

**Important Note:**

Obligations under the Electricity Act 1989 require Suppliers to ensure that their Meters remain fit for purpose. This includes, but is not limited to, the possibility of older 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<sup>11</sup> (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.

<sup>11</sup> ‘Licensed Distribution’.