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# Advanced Metering Operational Framework: Profile Classes 5 to 8

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**Overview or Purpose of Document:**

The purpose of this document is to provide an agreed statement of the changes required in order to:

- Enable Suppliers to demonstrate compliance with the proposed Electricity Supply Licence condition to install Advanced Metering for Profile Class 5 to 8 Metering Systems; and
- Facilitate effective market operation and interoperability for Profile Classes 5 to 8.

**Target Audience:**

BSC Parties, Party Agents, Ofgem and other interested parties.


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| **Contact Name and Details:** | Helen Boothman / Jon Spence |
| **Tel:** | 020 7380 4130 / 020 7380 4313 |
| **Email:** | helen.boothman@elexon.co.uk / jon.spence@elexon.co.uk |
| **Website address for document:** | |

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# 1 Introduction

This framework is a product of the Advanced Metering Interoperability Review. The framework seeks to provide an agreed statement of the changes required to:

- enable Suppliers to demonstrate compliance with the proposed Electricity Supply Licence condition to install Advanced Metering for Profile Class 5 to 8 Metering Systems; and
- facilitate effective market operation and interoperability for Profile Classes 5-8

from the 1 January 2009 (the earliest date by which the new licence obligation could come into effect).

# 2 Modification to the Standard Conditions of the Electricity Supply Licence

## *2.1 Proposed new Licence Condition*

The proposed modification to the Standard Conditions of the Electricity Supply Licence condition is as follows:

**"Smart Metering for Medium and Large Premises**

**12.17** On or from [1 January 2009], where a licensee installs or arranges the installation of an Electricity Meter to the premises of a Non-Domestic Customer where the premises fall within profile class 5, 6, 7 or 8 as defined in the Balancing and Settlement Code, the meter must either on its own or with an ancillary device -

(a) store measured electricity consumption data for multiple time periods; and

(b) provide remote access to such data by the licensee.

**12.18** As from 1 January 2014, the licensee must not supply electricity to the premises of a Non-Domestic Customer where the premises fall within profile class 5, 6, 7 or 8 as defined in the Balancing and Settlement Code, other than through such a meter.

**12.19** In response to a request from a Customer, timely access to the data from the meter must be given to the Customer supplied through that meter, or to the Customer's nominated agent.

**12.20** Paragraph 12.18 does not apply where the licensee is unable to install or arrange the installation of such a Meter, despite taking all reasonable steps to do so."

## *2.2 Standard Approach to Meeting the Licence Condition*

The requirement in paragraphs 12.17 and 12.18 should be met by installing CoP10[1] or CoP5[2] compliant meters into premises classed as Profile Class 5-8. These meters would be capable of providing Half Hourly interval data, although Metering Systems will continue to be settled under the Non Half Hourly arrangements, unless the Supplier chooses otherwise. CoP10 covers whole current metering, so any transformer operated metering would have to be compliant with CoP5.

[1] Code of Practice for Whole Current Metering of Energy via Low Voltage Circuits for Settlement Purposes

[2] Code of Practice for the Metering of Energy Transfers with a Maximum Demand of up to (and including) 1MW for Settlement Purposes

This should be a mandatory requirement, which will require a BSC Party to propose a Modification to Section L of the BSC.

Other types of metering (for example, multi-register) could be deemed to meet the licence condition, depending on how it is interpreted. As such, prescribing the use of CoP5 or CoP10 exceeds the requirements of the new licence condition. Alternative approaches would be to have no prescription, leaving the metering installed dependent on Suppliers' interpretation of the licence condition, or to promote the use of CoP 5 and CoP 10 compliant metering by means of a voluntary agreement. These alternatives would leave a risk of interoperability issues, so the preferred option is to mandate CoP 5 and CoP 10 metering for Profile Classes 5 to 8 via a Modification to Section L of the BSC.

## *2.3 Implementation Considerations*

The requirement to install CoP 5 and CoP 10 metering for Profile Classes 5 to 8 will need to be aligned with paragraph 12.20, i.e. the exclusion where "the licensee is unable to install or arrange the installation of such a Meter, despite taking all reasonable steps to do so". For example, installation of an advanced meter may not be practicable, where a meter is replaced under the Urgent Metering Services (UMetS) arrangements.

Use of CoP10 is dependent on the implementation of Change Proposal CP1261[3], currently planned for February 2009.

## *2.4 Provision of data to customers*

The approach to meeting the requirement in paragraph 12.19 should not be standardised. CoP 5 and CoP 10 metering does not preclude the provision of 'timely access' to meter data by the customer. These Codes of Practice support, but do not mandate, the provision of 'day-plus-one' data. This area should be left to the commercial relationship between Suppliers and their customers, particularly where there is an expectation by the customer of real-time availability of data.

# 3 Goals of the Operational Framework and Criteria for Success

The goals are the ideal scenarios that could be accomplished by the framework. The success of the framework will be assessed against the criteria in section 3.2 which relate to the goals in section 3.1.

## *3.1 Goals*

**1. On a Change of Supplier (with or without coincident CoA):**

- There will be no need for change of metering equipment (although this does not preclude a change by choice of the Supplier or customer) and consequently the process will not oblige a site visit (except in the case where the communications or sim card need to be changed which presumably would not be an extensive visit);

[3] 'Introducing Metering Code of Practice 10 to facilitate smart metering in the Half Hourly (HH) market'

- The new hub will have sufficient information about the asset to process data for Settlement/billing within the timescales as defined in the BSC;
- The new Supplier will have sufficient information to:
  - manage asset provision arrangements,
  - check compliance with the licence obligation and
  - deal with any shared arrangements that were in place (gas using electricity comms).

**2. The solution will provide adequate security (meters and communications) such that only authorised parties have access to data/meters.**

### *3.2 Criteria for Success*

1. Arrangements that enable the first goal around CoS are agreed (via the Operational Framework) and put in place;

2. Agreement obtained from Suppliers (via the Operational Framework) as to how to prevent unauthorised access to data/meters.

## 4 Principles and Assumptions

### *4.1 Principles*

The following principles have been used when determining solutions:

- The framework should be capable of implementation with effect from 1 January 2009 and, where solutions cannot be implemented until after 1 January 2009, the framework should contain appropriate workarounds and mitigation of legacy issues;
- The framework should be capable of being enduring but it is recognised that some aspects may be superseded in time by other areas of work;
- The framework should be the minimum required to satisfy the goals i.e. to enable the market, allowing it to find solutions within the framework where appropriate, not over-engineering the market, possibly imposing unnecessary constraints;
- The framework should build on work already done i.e. BSC Smart Metering Review (although those issues that were deemed outside of the BSC may need to be revisited as the scope of this work is not confined to BSC);
- The framework should focus on the Change of Supplier process as that is where interoperability becomes an issue;
- The framework should not preclude the use of electricity infrastructure for gas metering.

### *4.2 Smart Metering Implications*

It is recognised that during the five year implementation period for advanced metering for Profile Class 5 to 8 Metering Systems, decisions will be made about the roll-out of smart meters in the

Profile Class 3-4 and 1-2 sectors. Some Suppliers may elect to install smart meters, rather than AMR, in the Profile Class 5-8 sector. The higher volumes of Metering Systems in Profile Classes 1 to 4 will pose a different and more challenging set of interoperability issues than those for Metering Systems in Profile Classes 5–8. The Energy Retail Association (ERA)'s Supplier Requirements of Smart Metering (SRSM) project has carried out a significant amount of work to address interoperability issues in the domestic sector. It is not possible to address interoperability issues facing the whole of the Non Half Hourly market within the limited timescales before the proposed effective date of the Profile Class 5-8 implementation.

The principles of keeping industry change to a minimum and avoiding imposing unnecessary constraints are aimed at ensuring that the Profile Class 5-8 framework is 'forward compatible' with the, as yet, undefined arrangements for Profile Classes 1-4. Conversely, future work on interoperability in Profile Classes 1-4 will need to address 'backward compatibility' with this framework (for example, addressing the co-existence of both AMR and smart metering within the Profile Class 5-8 sector).

## *4.3 Assumptions*

The following assumptions have been made about the scope of the framework:

- The scope of the framework will exclude
  - Intra-hub activities (CoA, CoMC, meter exchanges)
  - Dual fuel considerations
  - Schemes for asset transfers (except by removing any barriers that would prevent the market from developing its own schemes)
- Solutions of the gas interoperability group should be compared with the electricity solutions at some point for compatibility.
- The framework will not seek to address commercial issues unless they are being impeded by the BSC.

# 5 Barriers to Goals and Solutions

This section contains the barriers to achieving the goals and the solutions to these issues. The solutions have been determined in line with the principles in section 4.1 and use the current market setup as a baseline.

## *5.1 Supplier Knowledge of Advanced Metering*

### 5.1.1 Issue

Currently there are complications when appointing agents within the CoS process where AMR metering is involved. Agents who do not have the capability to read the meter are being appointed in the first instance. These agents then have to be de-appointed and the previous agents appointed. While this has been manageable in low numbers the new licence condition will vastly increase the number of sites with advanced metering.

Suppliers need to be able to find out at the beginning of the CoS process whether advanced metering is installed, and who the MAP is. This will give Suppliers enough information to appoint the correct agents or to withdraw from the registration altogether.

### 5.1.2 Solution

A DTC CP that introduces two new Meter Types into the valid set has been approved for February 2009. Suppliers can carry out a pre registration check on ECOES to determine the Meter Type (i.e. whether AMR metering is installed), MAP ID and MOA.

Knowing the identity of the MAP and whether the meter is AMR or AMM will be sufficient in the short term as there are currently limited AMR service offerings. In the longer term, as AMR service offerings increase, more information may be required. There is a potential need for a Meter Type for smart meters.

### 5.1.3 Governance

The pre registration check cannot be mandated and so will be voluntary. If Suppliers choose not to carry out the check there could still be problems within the CoS process as described in 5.1.1. As there are sufficient natural incentives on Suppliers to use this information, no changes to existing governance are proposed.

## *5.2 Inadequate Meter Technical Details for Advanced Meters*

### 5.2.1 Issue

The NHH Meter Technical Details (D0150) flow does not contain all the required data items for advanced metering. This can lead to register mapping issues and to further information about the meter having to be exchanged through alternative, less efficient methods. The increased number of advanced meters will make a process relying on communication outside of the DTN difficult to manage. Additionally, there is no BSCP requirement to transfer communication and password details, irrespective of whether the D0150 supports this information. On change of agent, this can result in the new agent receiving Meter Technical Details via the DTN, but not receiving (by other means) sufficient data to read the meter remotely.

### 5.2.2 Solution

A DTC change will be raised to alter the D0150. The changes will be the minimum necessary to make the D0150 fit for purpose. Guidance on the population of the data flow items is likely to be required. An obligation will also be placed on Meter Operators (via BSCP514 and BSCP504) for the transfer of Meter Technical Details to include communications and password data for remotely read meters.

### 5.2.3 Governance

These changes will not be implemented by 1 January. However, once the changes have been agreed, guidance can be issued on the agreed contents of the flow, pending implementation.

## 5.3 Agent Access to Protocols

### 5.3.1 Issue

With advanced metering Supplier Agents need access to the meter protocol in order to read the meter remotely, as in the current HH market. With the advances in meter technology and the introduction of the licence condition, it is anticipated that there will be a variety of different meters being used, each with different protocols. If agents do not have access to all protocols Suppliers may not be able to use their preferred agents.

### 5.3.2 Solution

Metering manufacturers should be making their protocols available to qualified parties (market experience suggests that it would be in their interests to do so). A change to this effect in BSCP601 'Metering Protocol Approval and Compliance Testing' would mean that as part of the protocol approval process the meter manufacturer should agree to make protocols available to qualified participants, subject to non-disclosure agreements. A change will also be needed to CoP10 to require the use of BSCP601 for Profile Class 5-8 Metering Systems.

Further consideration will also be given to a proposal, made during the BSC Review of Smart Metering and AMR, to lodge protocols under an escrow arrangement. This could be extended to Half Hourly Metering Systems.

### 5.3.3 Governance

A change cannot be implemented by the 1 January 2009. Once approved, changes to BSCP601 and the introduction of CoP10 can be communicated to meter manufacturers. Manufacturers could apply for approval before the changes are implemented, with approval being granted on implementation. This will shorten the lead time for ensuring compliant metering within the Profile Class 5 to 8 sector. Early approval against CoP 10 will give all parties (Suppliers, customers and Meter Asset Providers) confidence in the procurement of meters.

## 5.4 Meter Access

### 5.4.1 Issue

Remote access to metering systems currently requires different levels of password. Due to the current design of the D0150, there is no process for password transfer within the NHH market. Current flows would not support the transfer of passwords. Without the passwords agents will not be able to read meters remotely, a process that relies on communication outside of the DTN would become difficult to manage in large numbers.

There may be issues for NHHDCs reading sim cards with GPRS (widely used) and SMS (where access to the sim card is needed to tell the meter where to send readings).

### 5.4.2 Solution

It is proposed that security of data and access to meters is delivered, as is currently done in the Half Hourly market, by the use of passwords. A tiered password-based security regime is mandated for CoP 5 meters, but has been left optional for CoP 10 meters on the basis that this could constrain more innovative security regimes once smart meters were available in the Profile Class 1 to 4 market. However, for the time being, it is proposed that a tiered password-based security scheme, as used in the Half Hourly market, should also be used in the PC5-8 sector.

Changes to the D0150 will be needed to support this (to be included in the D0150 changes in 5.2).

Regarding other communication issues, it is accepted that in some cases, to enable the Supplier's choice of NHHDC to read a meter, a site visit to change the communications (e.g. replace a sim card) may be necessary. However, the meter itself should not need to be changed. Also, there will be a natural commercial incentive for interoperability.

### 5.4.3 Governance

No change is proposed to CoP 10, because current meters are understood to use tiered password-based security methods. Therefore it is not considered necessary to mandate the security regime used.

## *5.5 Change of Supplier Process*

### 5.5.1 Issue

Increased use of advanced metering will give rise to issues such as the potential access to meters prior to the Supply Start Date in order to re-configure the meter so that a tariff can be changed with immediate effect. Reconfiguration by the new Supplier hub could impact the old Supplier hub's ability to obtain the readings it needs.

The current change of Supplier process places the obligation to obtain and process the change of Supplier reading on the new Supplier's Data Collector, whereas the old Supplier's hub is likely to be better placed to obtain a reading when the meter is remotely read. There is a risk that by not making such readings available to the new Supplier's Data Collector, that CoS readings could be deemed, in spite of the availability of actual, remote readings.

### 5.5.2 Solution

Whilst it is acknowledged that improvements to the change of Supplier process are likely to be possible as a result of advanced and smart metering, it would be more appropriate to consider enduring solutions in the context of interoperability for Profile Class 1 to 4 Metering Systems.

## *5.6 Installation of Advanced Metering*

### 5.6.1 Issue

Consideration needs to be given to how the requirement to provide an advanced meter is communicated by Suppliers to their agents and whether a uniform approach is applied across the industry.

### 5.6.2 Solution

Whilst it may be desirable to develop a working practice for the installation of advanced metering, this will not be done under the umbrella of this framework, which specifically excludes intra-hub activities.

# 6 Document Control

## a Authorities

| Version | Date | Author | Reviewer | Reason for review |
|---|---|---|---|---|
| 0.1 | 14/10/2008 | Helen Boothman | AMEG | Fitness for purpose |
| 0.2 | 24/10/2008 | Jon Spence | AMEG<br>Peter Davies<br>John Lucas | Fitness for purpose |
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| Version | Date | Author | Approver | Signature |
|---|---|---|---|---|
| 1.0 | 27/10/2008 | Jon Spence | SVG | |
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## b Distribution

| Recipient | Version | Date | Reason |
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## c References

| Reference | Document |
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