SVG117/02

Meeting name	Supplier Volume Allocation Group (SVG)
Date of meeting	2 November 2010
Paper title	Change Proposal Progression
Purpose of paper	For Decision
Synopsis	This paper provides: • CP1341 for decision; and • details of all Open Change Proposals.

1 Summary

1.1 This paper provides details of CP1341 for you to consider and agree on its progression. This CP was issued for Party/Party Agent Impact Assessment in September as part of the Change Proposal Circular 687 (CPC00687).

1.2 In addition to the above CP, we've also included the 2010 - 2011 Change Proposal Batching timetable (please refer to attachment D) for your information, which we issued to industry for assessment in September. The majority of respondents were in agreement with the timetable, with a minority choosing to remain neutral.

2 Summary of Change Proposal for Decision

2.1 CP1341 'Unmetered Supplies: Accommodating Multi-Level Static Dimming Devices in Half-Hourly and Non-Half Hourly Settlement'

2.1.1 New products are emerging for dimming/switching of street lamps. These meet the criteria for Unmetered Supplies (UMS), and can help UMS customers reduce their energy consumption and achieve associated carbon savings.

2.1.2 We raised CP1341 on 3 September 2010 to ensure that the BSC's Settlement arrangements do not prevent customers achieving energy savings from these products. This was as a result of DCP0046, which sought industry views on the Multi-Level Static Dimming UMS Group's recommended solution.

2.1.3 All respondents to the CP impact assessment either supported the intention of the change or were neutral. They also agreed that the CP had addressed their previous concerns from the DCP stage as far as possible/practicable. No respondents had any comments on the proposed redlining.

2.1.4 Respondents did raise two specific areas which led us to recommend changing the implementation approach slightly, and to change one point of solution detail. We've discussed these with all of the respondents, who support this approach, and with the UMSUG. We therefore do not believe that the changes require further consultation. You can find more details in the detailed assessment report (appendix 1) of this paper.

2.2 We recommend that you:

a) **APPROVE** CP1341 for implementation in the June 2011 Release;

b) **AGREE** that the CP1341 solution will be mandatory for UMSOs and optional for MAs;

c) **APPROVE** the attached redlining to BSCP520;

d) **NOTE** that we will amend the attached redlined OID changes to remove the ability for seasonal/day of week changes in light/energy levels, and will implement the changes in a future version of this guidance document in time for the Implementation Date;

e) **NOTE** the interim approach that we will follow until the CP is implemented; and

f) **NOTE** that we will conduct an education exercise with UMSOs, MAs, customers and manufacturers on the process for using the devices and obtaining energy benefits.

Stuart Holmes

ELEXON Configuration Manager

Tel: 0207 380 4135

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Appendix 1 - Detailed analysis of CP1341

1 Why Change?

1.1 Background, Description of the Problem and Intended Benefits

1.2 We raised CP1341 on 3 September 2010, from DCP0046.

1.3 New products are emerging for dimming/switching of street lamps. They meet the criteria for Unmetered Supplies (UMS) because they are configured to switch at specific times and to dim to specific levels (i.e. the load is predictable). These products can help UMS customers reduce their energy consumption and achieve associated carbon savings. However, the BSC's Settlement arrangements cannot currently calculate the reduced energy used by these devices. The CP seeks to ensure that the BSC arrangements do not prevent customers achieving energy-saving benefits from these products.

1.4 Following discussions at the UMS Users Group (UMSUG) and the SVG, an industry expert group (the Multi-Level Static Dimming UMS Group) discussed the issue and recommended a solution for progression.

1.5 We raised DCP0046 on 28 May 2010 to seek views from UMS Operators (UMSOs) and Meter Administrators (MAs) on the practicalities, impacts, costs and lead times of our suggested lower-level process to support the expert group's solution. We issued the DCP for industry impact assessment as part of CPC00681.

1.6 All DCP respondents supported the intention of the change or were neutral. Although respondents had divergent views on some points of detail, there was a clear majority preference on the way forward. You can find the full (non-confidential) DCP responses here.

1.7 After discussing the next steps with each respondent and the UMSUG, we raised CP1341 to progress the preferred solution for implementation.

2 Solution

2.1 The following is a summary of the CP1341 solution. For a fuller description of the requirements, see the CP form attached to this paper (Attachment A).

2.2 The solution impacts UMSOs, MAs, ELEXON, UMS customers who wish to use multi-level static dimming devices to reduce their energy consumption, and the manufacturers of these devices.

2.3 Enabling customers to achieve the energy savings in Settlement requires the following steps:

1) A **dimmer manufacturer** must apply to ELEXON for a Charge Code for its product, including test evidence of the energy drawn by the dimmer. ELEXON will calculate a new Charge Code for the product and publish it in the list of Charge Codes on our website.

2) A **Non-Half-Hourly (NHH) or Half-Hourly (HH) UMS customer** wishing to use one of the products must apply (either directly or through the ballast or dimmer manufacturer) to ELEXON for a Switch Regime. This application must include certain information relating to the product and the lamp/ballast combination with which the customer intends to use it. Where we have not already approved and published a Switch Regime for this combination of dimmer, lamp and ballast, the customer must also provide manufacturer evidence that the chosen dimming product will dim the lamp/ballast combination to the levels stated by the customer. The customer's application must include an undertaking from the dimmer manufacturer to configure and label the product with the configuration at the factory, and to remove the ability for the customer to reconfigure the product (to ensure that it retains the correct Switch Regime).

3) **ELEXON** will allocate the correct Switch Regime. Where we have not already approved and published a Switch Regime for the requested combination of dimmer, lamp and ballast, we will calculate a new Switch Regime and publish this in our list of Switch Regimes on our website. We will use 3-digit alpha-numeric regime IDs to ensure that the current limit of 3-digit IDs does not restrict the number of new Switch Regimes.

4) **ELEXON** will record all valid product/Charge Code/ballast combinations, mapped to Switch Regimes, in a new table on our website.

5) The **customer** must provide the Charge Codes and Switch Regime information to the UMSO in its detailed inventory. The **UMSO** must validate the NHH or HH UMS customer's inventory against our website table of valid product/Charge Code/ballast/Switch Regime combinations, before calculating the appropriate Estimated Annual Consumption (EAC) values.

6) **MAs** will accommodate the new Switch Regimes in Equivalent Meter software for HH UMS customers, using our website table of valid product/Charge Code/ballast/Switch Regime combinations. The UMSO will send the summary inventory to the MA as currently.[1]

2.4 The UMSUG will discuss all applications, which will go through the Market Domain Data (MDD) change process managed by the SVG.

3 Industry Views

3.1 We issued CP1341 for industry impact assessment on 3 September 2010 as part of CPC00687.

3.2 The impact assessment included copies of our proposed redlined changes to BSCP520 'Unmetered Supplies registered in SMRS' and our Operational Information Document (OID). The OID is a guidance document which we publish on our website, rather than a Configurable Item. Because most of the solution detail will be included in the OID rather than the BSCP, we provided the OID redlining for information to help participants respond to the impact assessment.

3.3 Summary of Responses

3.3.1 All CP respondents also supported the intention of the change or were neutral. Respondents agreed that the CP had addressed their previous concerns from the DCP stage as far as possible/practicable. No respondents had any comments on the proposed redlining.

[1] Note that we recommend making the solution optional for MAs. Section 5 explains.

3.4 Two Changes Arising from Responses

3.4.1 Respondents did raise two specific areas which have led us to recommend changing the implementation approach slightly, and to change one point of solution detail. We describe our recommended solution change below. You can find details of our recommended implementation approach, and our reasons for this, in Section 5.

Number of permitted switching times

- All respondents agreed with our suggestion that, to keep software development manageable, customers should be limited to 8 changes in energy/light levels during a 24-hour period. We had also originally suggested a limit of 4 seasonal changes a year (see Step 7 of the solution in the CP form). This suggestion did not come from the expert group, UMSUG or DCP respondents, but from our desire to try to future-proof against possible requests for these kinds of switch patterns (e.g. for different summer/winter patterns to take account of clock changes, or different weekday/weekend patterns).

- However, following concerns raised by one respondent and further investigation we have established that the Equivalent Meter systems cannot currently easily be amended to support Switch Regimes which differ by day or season. They can be amended to support 8 changes in light/energy levels during a day, providing these are the same for every day of the year.

- There are potentially ways in which the Equivalent Meter systems could support regimes which differ by day/season (e.g. by using start and end dates and manual intervention by MAs). There is, however, no simple solution and any proposals in this area are likely to require considerable further discussion. We therefore recommend that the pragmatic way forward is to limit the CP1341 solution to a single switch pattern (with up to 8 light/energy level changes) which is the same for every day of the week and every season of the year.

- We are currently unaware of any existing/emerging devices with the capability for different time of year/day of week switch patterns. If we receive significant numbers of customer applications which request this kind of flexibility, we will discuss with the UMSUG how these can best be supported and raise a separate CP if necessary.

3.4.2 We have discussed our recommended way forward with all of the respondents, who support this approach, and with the UMSUG. We therefore do not believe that this change requires further consultation. The change does not affect the redlined text for BSCP520, but will require a minor change to Section 6.3 of our proposed OID redlining. We ask you to note that we will make this change when publishing the revised guidance document.

4 Impacts and Costs

Market Participant	Cost/Impact	Implementation Time Needed
ELEXON (implementation)	Our implementation costs are 14 man days of effort (equating to **£3,360**) to implement the redlined changes to BSCP520 and the OID, update our LWIs and website guidance, create the new website spreadsheets and Switch Regime calculation, and provide education to UMSOs, MAs, UMS customers and manufacturers.	June 2011 Release suitable.
UMSOs	The impact on UMSOs will vary according to whether they are already able to support alpha-numeric Switch Regime codes in their validation of inventories (which a majority can, and therefore have minimal process impacts) or need to make changes to their systems. Those UMSOs whose systems are impacted have quoted costs in the region of **£10,000**. One UMSO provided confidential costs which are consistent with the figures given by these other respondents.	UMSOs' stated lead times ranged from minimal/none to 6 months, with **6 months** being the most requested timescale. This is consistent with a June 2011 Release implementation.
MAs	Costs quoted by MAs for amending Equivalent Meter software to support the new Switch Regimes for HH UMS customers were in the range of **£10,000-£15,000**. One MA provided confidential costs which are consistent with the figures given by other respondents.[2]	All MAs requested a lead time of **6 months**. This is consistent with a June 2011 Release implementation.
Suppliers	One Supplier indicated that they would need to make updates to their UMS system, but did not have cost information available. Another Supplier noted no impact.	The impacted Supplier supports a June 2011 Release implementation.

5 Implementation Approach

Recommended Implementation Approach – Updated Following Impact Assessment

5.1 We originally proposed in DCP0046 that implementation should be mandatory for both UMSOs and MAs. At that point we were proposing a February 2011 Release implementation. However, the lead times needed by most UMSOs and MAs made delivery in this Release unfeasible.

5.2 We therefore considered proposing a June 2011 Release implementation that was mandatory for both UMSOs and MAs. However, one MA respondent to the DCP impact assessment indicated that they needed an implementation lead time of 12-15 months – giving uncertainty as to whether they would be able to make this Release. Further discussions with respondents and the

[2] Note that we recommend making the solution optional for MAs. Section 5 explains.

UMSUG also highlighted some wider commercial uncertainty around the future of one of the Equivalent Meter systems.

5.3 This led us to propose in CP1341 that implementation should still be in the June 2011 Release, but that adopting the solution would be optional/voluntary for UMSOs and MAs. This was intended to avoid delaying the benefits of the CP for customers whose MAs were able to support the new Switch Regimes from June.

5.4 All CP respondents supported making the solution optional for MAs, but some respondents queried whether this was appropriate for UMSOs. This is because, while MA services are competitive, UMSO services are not. Although a customer could choose to switch MA (making it a commercial decision for MAs as to whether they offer support for the dimming devices), the customer could not choose to switch UMSO. If their UMSO did not support the devices, the customer would be unable to achieve the energy savings.

5.5 We therefore agree with these respondents that the CP solution should be mandatory for UMSOs, who will need to support the new BSCP process from 30 June 2011. This is compatible with the lead times provided by UMSOs in their CP impact assessment responses.

5.6 Although no MAs who responded to the CP stated longer lead times than 6 months (which would be compatible with a June 2011 implementation), we are aware that there is still some uncertainty around one of the Equivalent Meter systems. We also recognise that MAs were responding on the basis of the proposed optional implementation. We therefore recommend that the CP1341 solution remains optional for MAs. This is consistent with the SVG's previous agreed approach for implementing Central Management Systems for UMS under CP1196.

5.7 We have contacted all impacted respondents, who all support this approach. We also updated the UMSUG on the way forward at its meeting on 20 October 2010. We therefore do not believe that the revised implementation approach requires further consultation (which would delay implementation), and invite you to approve the CP for the June 2011 Release on the basis that it will be mandatory for UMSOs and optional for MAs.

Interim Approach Between Approval and Implementation

5.8 We recognise that ELEXON cannot practicably prevent UMS customers from using multi-level static dimming devices before the CP is implemented, or from using them without applying for the correct Switch Regime (and therefore without the knowledge of ELEXON or their UMSO). This is another reason for recommending the earliest possible implementation, and for making the solution mandatory for UMSOs.

5.9 As an interim approach between approval and implementation of CP1341, we intend to allow UMS customers to apply to install the products under existing Switch Regimes. This will allow customers to obtain the resulting carbon benefits, but will mean that the energy saved by the dimmer will not be settled or billed accurately until the CP is implemented. Under this interim solution, the manufacturer must still apply for a Charge Code, and the customer must apply for an existing Switch Regime (providing the same evidence as under the enduring CP solution described in Section 3). When the CP is implemented in June 2011, the customer will need to apply for a new (correct) Switch Regime and submit an updated inventory to the UMSO.

5.10 We believe that customers will have a natural incentive to apply for the correct Switch Regimes once the CP solution is live, as without it they will be unable to achieve the devices' energy-saving benefits. If they have made the effort to register a device under an existing Switch Regime, it is

unlikely that they would not wish to incur the minor additional effort needed to obtain the correct regime after June 2011.

5.11 The interim solution gives a process for a customer to register a device and Charge Code in advance of the full enduring solution, so that the energy drawn by the dimmer is correctly declared. It also provides a way for us to know which customers already have the devices, so that we can contact them to remind them of the need to apply for the correct Switch Regime after 30 June 2011. Without this, there is a greater risk that customers could install the devices without ELEXON or their UMSO knowing.

5.12 Respondents support this approach but note that it is crucial to educate customers on the benefits of applying for the correct Switch Regime. We agree, and will undertake an education exercise with UMSOs, MAs, customers and manufacturers on both the interim solution and enduring CP requirements.

5.13 We invite you to note our intended interim approach and education exercise.

6 Recommendations

6.1 We recommend, based on our agreed way forward with respondents, that you:

a) **APPROVE** CP1341 for implementation in the June 2011 Release;

b) **AGREE** that the CP1341 solution will be mandatory for UMSOs and optional for MAs;

c) **APPROVE** the attached redlining to BSCP520;[3]

d) **NOTE** that we will amend the attached redlined OID changes to remove the ability for seasonal/day of week changes in light/energy levels, and will implement the changes in a future version of this guidance document in time for the Implementation Date;

e) **NOTE** the interim approach that we will follow until the CP is implemented; and

f) **NOTE** that we will conduct an education exercise with UMSOs, MAs, customers and manufacturers on the process for using the devices and obtaining energy benefits.

Contact the Lead Analyst:

Kathryn Coffin
ELEXON Change Analyst
Tel: 0207 380 4030

[3] The instruction at the beginning of the BSCP520 redlining incorrectly states that there are changes to Section 1.3 of the BSCP. We ask you to note that there are no actual changes to this section.

Table 1: Industry Impact Assessment Summary for CP1341 – 'Unmetered Supplies: Accommodating Multi-Level Static Dimming Devices in Half-Hourly and Non-Half Hourly Settlement'

IA History CPC Number	CPC00687	Impacts	BSCP520 and ELEXON's OID		
Organisation	**Capacity in which Organisation operates in**		**Agree?**	**Impacted?**	**Days needed to implement**
Independent Power Networks Limited	LDSO, UMSO, SMRA		Yes	Yes	-
CE Electric UK	LDSO, UMSO		Neutral	Yes	60
E.ON UK Energy Services Limited	MOA NHHDC-DA (MIDE)		Neutral	No	-
TMA Data Management Ltd	HHDC, HHDA, NHHDC and NHHDA		Yes	-	-
Central Networks	UMSO		Yes	Yes	180
Western Power Distribution	LDSO, MOA, SMRA, UMSO, MA		No	Yes	180
E.ON	Supplier		Yes	Yes	180
EDF Energy Networks	EDF Energy Networks (EPN) plc, EDF Energy Networks (LPN) plc, EDF Energy Networks (SPN) plc, EDF Energy (IDNO) Ltd (EDFI)		Yes	Yes	180
Npower Ltd	Supplier, Supplier Agents		Neutral	-	-
Scottish Power			Yes	Yes	30
Southern Electric Power Distribution; Keadby Generation Ltd; SSE Energy Supply Ltd; SSE Generation Ltd; and Scottish Hydro-Electric Power Distribution Ltd; Medway Power Ltd; SSE Metering Ltd	Supplier/ Generator/ Trader / Party Agent / Distributor		Yes	Yes	6 months
Siemens Metering Services	HHDC, HHDA, NHHDA, NHHDC, HHMO, NHHMO, MA, CVAMO		Yes	Yes	180

Table 2: Impact Assessment Responses

Organisation	Agree?	Impacted?	Comments	ELEXON Response
Independent Power Networks Limited	Yes	Yes	**For which role is your organisation impacted? –** UMSO **Please state what the impact is -** There will be a small process change to IPNL's process for street lighting but this is not expected to have a detrimental impact. **Any other comments -** The success of the CP depends on the information being successfully and accurately provided by the customer. Our experience to date has shown that none of the NHH inventories we have received have previously made reference to dimming capability.	The respondent has confirmed that they have no issues with our recommended removal of the ability for seasonal/daily changes in switch patterns from the CP, or with our recommended revised implementation approach. See Sections 4 and 6. We have clarified with the respondent that the customer doesn't need to declare the dimming in the inventory, just the correct Charge Code and Switch Regime. The customer will have an incentive to apply for the correct Switch Regime as otherwise they won't receive the energy benefits.
CE Electric UK	Neutral	Yes	**For which role is your organisation impacted?** – UMSO **Please state what the impact is -** Inventory processing – and use of additional charge codes. Also may have an impact on physical auditing. **Would implementation in the proposed Release have an adverse impact on your organisation?** No **Associated costs** – not applicable.	The respondent has confirmed that they have no issues with our recommended removal of the ability for seasonal/daily changes in switch patterns from the CP, or with our recommended revised implementation approach. See Sections 4 and 6.
E.ON UK Energy Services Limited	Neutral	No	**Would implementation in the proposed Release have an adverse impact on your organisation?** No	-
TMA Data Management Ltd	Yes	No	-	-

Organisation	Agree?	Impacted?	Comments	ELEXON Response
Central Networks	Yes	Yes	**Please state what the impact is -** Our Unmetered Inventory Processing System will have to be modified to accept 3 digit alpha-numeric switch regime codes. Although on the face of it, this would appear to be a fairly minor change, our system already carries significant validation of charge code/switch regime combinations and in addition uses the switch regime code to determine the appropriate NHH profile, LLF Class, allocate additional MPANs where necessary, produce certificates, etc. On this basis our system will need significant checking and changes to cope with the change from numeric to alpha-numeric. **Please explain the lead time:** 180 days - Significant changes are required to our systems as described above. **Associated Costs:** Detailed costing of the changes have not been made, but based upon the last major changes that were made, we anticipate costs of at least £10,000. **Any other comments:** It would be useful if a fuller explanation of the interim solution described in paragraph 8 could be given. My reading of this is that if equipment can be shown to produce results that would equate to annual hours for an existing regime for one of the half night switch regimes, then that half night regime shall be used and the EAC will traded in the half night profile, rather than the dusk-dawn profile. The profile is determined by the switch regime within our system. If that is the case I would expect to see some guidance note confirming this arrangement published by Elexon. It is suggested that the implementation date is voluntary and that an UMSO/MA does not have to meet the obligation, but that the UMSO/MA runs the risk of customers appointing another UMSO/MA in their place. This is fine for the MA role which is competitive, but the UMSO is an agent of the LDSO and cannot be changed. I would suggest there has to be a date by which an UMSO must be compliant.	We've discussed the respondent's comments on the interim solution with them. Our preference is that customers should be put on the dusk-dawn profile (which will give them no energy benefits) until the correct Switch Regime is available. That way they will have an incentive to apply for the correct Switch Regime when the CP is implemented. If the customer is given a half-night Switch Regime for the interim period, they would get some energy benefits from this and therefore may not see the need/incentive to apply for the correct Switch Regime when the CP goes live. The respondent accepts this reasoning. We agree with the respondent's comments on making the CP mandatory for UMSOs (but not MAs), and recommend this as the way forward. See Section 5. The respondent also supports our recommended removal of the ability for seasonal/daily changes in switch patterns from the CP as a pragmatic way forward. See Section 3.

Organisation	Agree?	Impacted?	Comments	ELEXON Response
Western Power Distribution	No	Yes	**Agree change comment -** We are happy with most of the proposal including the facility for there to be up to 8 switching times per day per switch regime. However we do not agree with the proposal for there to be up to 4 different seasons for a switch regime. Having more than one season per switch regime would significantly increase the cost of the necessary development work. We are not sure where the proposal for multiple seasons has come from and believe this aspect of the change should be subject to further discussion at UMSUG. **Please state what the impact is -** UMSO & MA - Significant I.T development and amendment to manual processes **Please explain the lead time -** Significant I.T development and amendment to manual processes. **Calendar days 180 -** We could implement by the proposed date of June 2011 **Would implementation in the proposed Release have an adverse impact on your organisation?** No **Associated costs -** Approx £10K to £20K for development work, depending on whether switching times are year round of seasonal	Following discussion with the respondent and further investigation, we have established that the Equivalent Meter systems cannot currently be easily amended to support Switch Regimes which vary by day/season. See Section 3 The respondent therefore supports our recommended removal of the ability for seasonal/daily changes in switch patterns from the CP.
E.ON	Yes	Yes	**For which role is your organisation impacted?** – Supplier **Please state what the impact is** - Updates to our UMS System **Would implementation in the proposed Release have an adverse impact on your organisation?** No as it is optional **Associated costs** – Not available.	We've confirmed with the respondent that they are unaffected by our recommended change in implementation approach and the removal of one aspect of solution detail. See Sections 4 and 6.

Organisation	Agree?	Impacted?	Comments	ELEXON Response
EDF Energy Networks	Yes	Yes	**Agree change comment** - The proposals appear considerably refined / improved over those in DCP0046. Whilst this will still have a negative impact on the accuracy of UMS consumption calculations this has been mitigated so far as possible. **For which role is your organisation impacted?** – UMSO + LDSO **Please state what the impact is** - Software changes to permit alpha-numeric Switch Regimes and automated validation of permitted Charge Code / Ballast / Switch Regime Combinations. Process changes and training to support this additional complexity. Education of customers who will demand energy benefits without supplying genuine, valid Elexon-approved data. **Please explain the lead time -** The CP describes the facilitation of CP1341 by UMSOs/MAs as optional. We are not mandated to have the capability in place by 30 June 2011 or any future date. While I can understand this in respect of MAs (where customers can change agent) this doesn't make such sense for UMSOs (where they can't). So, is facilitation of CP1341 really optional for UMSOs? If not, what is the true deadline by which we must comply? **Any other comments** - The accuracy of timing of switching/dimming of events is not mentioned in the CP although it is picked up in Section 3.6 of the OID. Whilst perhaps secondary to the accuracy of % energy dimming values this is still important. Recent analysis of controllers supporting single-stage dimming have identified wide variations in accuracy and variability between different manufacturer's products.	We agree with the respondent's comments on making the CP mandatory for UMSOs (but not MAs), and recommend this as the way forward. See Section 5. The respondent also supports our recommended removal of the ability for seasonal/daily changes in switch patterns from the CP as a pragmatic way forward. See Section 3.
Npower Limited	Neutral	-	-	-

Organisation	Agree?	Impacted?	Comments	ELEXON Response
Scottish Power	Yes	Yes	**Agree change comment** - ScottishPower fully support the CP. The CP is an appropriate and measured response to introducing such devices into UMS. In regards to point 7 we can see no reason not to allow 8 stages in a 24 hour period and though it does appear excessive to us, if it is anticipated that there may be demand for such flexibility then we would be supportive of this. **For which role is your organisation impacted?** – UMSO **Please state what the impact is** - Internal process changes **Please explain the lead time** - Our current system can already manage alpha-numeric switch regimes. Therefore we would not require a long lead time. **Would implementation in the proposed Release have an adverse impact on your organisation?** No. We are of the opinion that an earlier implementation date than the proposed June 2011 date would be advantageous. As implementation will be voluntary and at the discretion of the UMSO/MA it would seem appropriate to allow an earlier adoption for those who will be ready by Feb 2011. It would also reduce any impacts that emerge from using the interim solution. **Associated Costs** - Not available at this time though costs are expected to be low. **Any other comments** - The establishment of the interim solution needs to be carefully considered to ensure that it does not lead to Customers not declaring the devices as and when an UMSO can accept them post-implementation. A robust solution must also be established to ensure that a record of these interim installations is recorded. The CP suggests that Elexon will supply the Customer with a new switch regime. How will this process be managed and where is the contact point with the relevant UMSO?	The respondent supports our recommended removal of the ability for seasonal/daily changes in switch patterns from the CP as a pragmatic way forward. See Section 3. Following discussion with the respondent, they also support our recommended revised implementation approach of a June 2011 implementation which is mandatory for UMSOs and optional for MAs. They note that making the solution mandatory for UMSOs effectively rules out a February 2011 implementation, as most impacted UMSOs require 6 months' implementation time. We believe the interim approach offers sufficient incentives on customers to apply for the correct Switch Regime, for the reasons we give in Section 5. The reference in the CP to ELEXON supplying the customer with their new regime on implementation is perhaps slightly misleading. Customers who have been given existing Switch Regimes before implementation will need to apply for the correct Switch Regime after the CP is implemented. If they don't do this, they won't receive the energy benefits of the dimming device. Allowing customers to use the interim approach gives us visibility of who has already installed the devices, and provides a route for us to notify them on implementation of the need to apply for the correct regime. The point of contact with the UMSO is that the customer must provide the UMSO with an updated inventory once they have applied for the correct Switch Regime. The respondent is happy with this clarification.

Organisation	Agree?	Impacted?	Comments	ELEXON Response
Southern Electric Power Distribution; Keadby Generation Ltd; SSE Energy Supply Ltd; SSE Generation Ltd; and Scottish Hydro-Electric Power Distribution Ltd; Medway Power Ltd; SSE Metering Ltd	Yes	Yes	**For which role is your organisation impacted** - Supplier, UMSO, MA **Please state what the impact is** - Changes to processes and systems	We've confirmed with the respondent that they are happy with our recommended revised implementation approach and our recommended removal of the ability for seasonal/daily changes in switch patterns from the CP. See Sections 4 and 6.
Siemens Metering Services	Yes	Yes	**Agree change comment** - We support this proposal being optional (i.e. the voluntary implementation) **For which role is your organisation impacted?** – MA **Please state what the impact is** - This would require software changes to LAMP. **Would implementation in the proposed Release have an adverse impact on your organisation?** No adverse impact and we would support the voluntary implementation. **Associated costs** - The costs for development and testing (for LAMP) would be in the region of £10 - £15,000	The respondent supports our recommended removal of the ability for seasonal/daily changes in switch patterns from the CP as a pragmatic way forward. See Section 3 The respondent also supports our recommended revised implementation approach. See Section 5.

Table 3: Comments on the redlined text

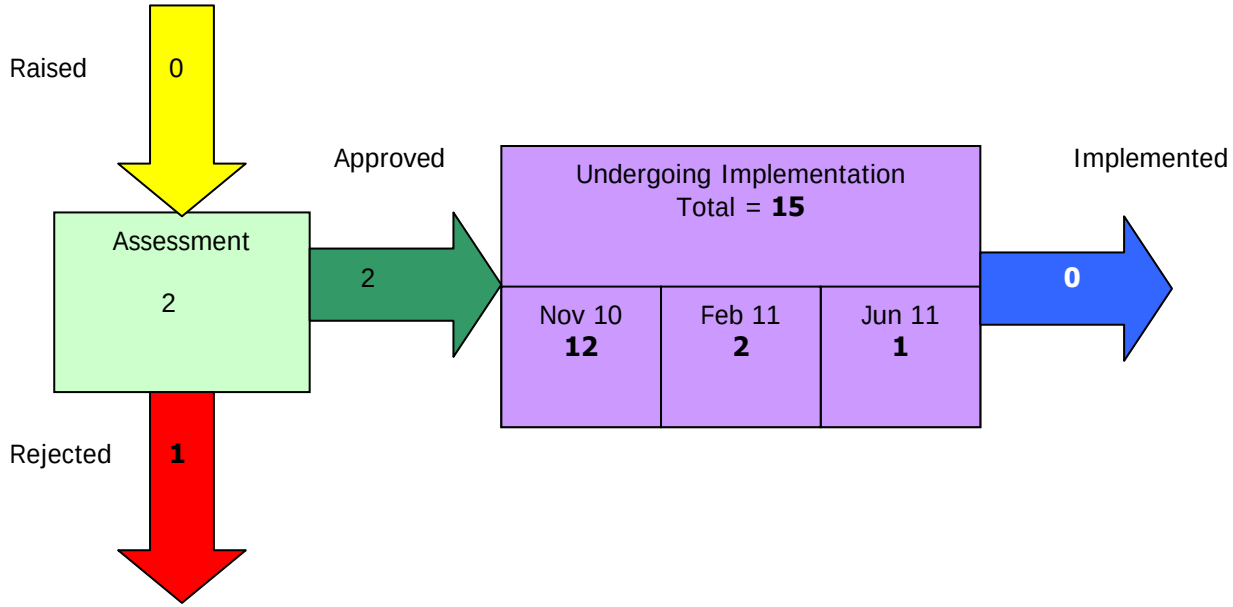
None received.

Appendix 2: New Change Proposals

DCP/CP	CVA/ SVA	Title	Description	Raised
DCP0047	SVA	Profiling and Settlement Review Group proposals	We have established an expert group, the Profiling and Settlement Review Group (PSRG), to conduct a review of the profiling and Settlement processes on behalf of the SVG. Two proposals (raised by the PSRG) are set out in DCP0047: 1. Twice Yearly Profile Production 2. Cost-Reflective Application of GSP Group Correction The PSRG believes that the above issues can be addressed by amending the GSP Group Correction Scaling Factors in MDD to apply GSP Group Correction to each Consumption Component Class (CCC) in proportion to a best estimate of the volume of error per unit of consumption. DCP0047 will enable us to obtain an assessment of the impacts of these changes on industry participants. We will then consider how to progress the suggested changes and report back to the SVG.	01/10/2010

Appendix 3: Summary of Open Change Proposals

There are currently **17** open CPs, the SVG owns **9** CPs, the ISG and SVG co-own **7** CPs, and the ISG own the remaining CP. No new CPs have 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)		**1267, 1315, 1325*, 1327, 1328, 1329, 1330, 1331, 1333, 1337, 1338, 1339** **P243 Alt✓, P244 Alt✓**	The scope of the November 10 Release contains two Modifications and eleven Change Proposals. P243 'Publication of Generator Forward Availability by Fuel Type' and P244 'Provision of BritNed Data to BMRS' were both approved for implementation on 4 November as part of the Release. Both the Application Management and Development (AMD) and Business Process Operator (BPO) service providers are working together to deliver the changes for the Release. The AMD has completed the development of the changes to the BMRA system and are currently carrying out The AMD is carrying out Factory Acceptance Testing (FAT) which the BPO is witnessing 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)	**1340**	**1335, 1342**	The scope of the Feb 11 Release includes two approved CPs - CP1335 and CP1342. No Modifications have been approved for the Release yet.
Jun 2011 Scope (Imp. Date 30 Jun 11)	**1341**	**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×** **P256 Pro✓/Alt×** **P257 Pro✓/Alt×** **P258 Pro×/Alt×**		

* CP1325 has been approved to be implemented on the 1 November 2010, but is included in the November 10.
** CP1334 has been approved to be implemented on the 1 July 2011, but is included in the June 2011 Release.

Change Proposal – BSCP40/02	CP No: 1341 *Version No: 1.0*

Title

Unmetered Supplies: Accommodating Multi-Level Static Dimming Devices in Half-Hourly and Non-Half Hourly Settlement

Description of Problem/Issue

We have raised this CP from DCP0046.

New products are emerging for dimming/switching of street lamps, including pre-programmed devices. These products meet the criteria for Unmetered Supplies (UMS) because they are configured to switch at specific times and to dim to specific levels (i.e. the load is predictable).

These products can facilitate reductions in energy consumption and carbon savings for UMS. However, the BSC Settlement arrangements do not currently allow for an approach to calculating the energy where such equipment is fitted.

Following discussions at the UMS Users Group (UMSUG) and Supplier Volume Allocation Group (SVG), an industry expert group (the Multi-Level Static Dimming UMS Group) has discussed this issue and recommended a solution for progression.

We raised DCP0046 to seek views from Unmetered Supplies Operators (UMSOs) and Meter Administrators (MAs) on the practicalities, impacts, costs and lead times associated with the lower-level detail needed to support the expert group's solution.

All respondents supported the intention of the change. Although there were divergent views on some points, there was a clear majority preference on the way forward. After discussing the next steps with each respondent and the UMSUG, we have raised this CP to progress the solution for implementation (with the solution detail based on the majority industry view).

You can find copies of the (non-confidential) industry responses to DCP0046 on our website here.

Proposed Solution

This change impacts UMSOs, MAs, ELEXON and UMS customers who wish to use multi-level static dimming devices to reduce their energy consumption.

The solution contains the following steps:

1) A dimmer manufacturer submits an application to ELEXON for a Charge Code for its new product. The manufacturer will need to provide standard test data from an ISO 9001 accredited test house, to demonstrate the energy drawn by the dimmer. ELEXON will calculate a new Charge Code and publish it in our existing list of Charge Codes on our website.

2) A NHH or HH UMS customer (or the ballast or dimmer manufacturer on the customer's behalf) submits an application to ELEXON for a Switch Regime, containing the following information:

   a. The switching times for which the application is being made;

   b. The percentage energy and associated LUX[1] levels mapped to the switching times;

[1] LUX is a measure of brightness.

c. A statement of the dimmer type (i.e. the product), its Charge Code, and the range and type of electronic ballasts and lamps that will be used with the Switch Regime;

d. If the requested product/Charge Code/ballast/Switch Regime combination is not already a published valid combination on our website, then the application for the Switch Regime must include evidence from either the ballast or dimmer manufacturer that the dimming device will accurately dim the proposed ballast combinations (i.e. that the chosen product will dim the lamp/ballast combination to the levels at which the application has been made);[2]

e. A letter of undertaking from the dimmer manufacturer that it will undertake the initial configuration of the product at the factory, label the product with the configuration (to help UMSOs undertake on-site audits), and remove the ability for the product to be subsequently reconfigured; and

f. An undertaking from the dimmer manufacturer to provide subsequent confirmation to ELEXON (either directly or via the customer) that this configuration/labelling has occurred.[3]

3) ELEXON will allocate the correct Switch Regime. Where the requested product/Charge Code/ballast/Switch Regime is not already a published valid combination, ELEXON will calculate a new Switch Regime and record this in our existing spreadsheet of Switch Regimes on our website. 3-digit alpha-numeric regime IDs will be used to ensure that the number of new Switch Regimes IDs is not restricted by the current limit to 3 numeric digits.[4]

4) ELEXON will record all valid product/Charge Code/ballast combinations, mapped to Switch Regimes, in a new table on our website.

5) The customer will provide the Charge Codes and Switch Regime information to the UMSO in its detailed inventory. The UMSO will need to validate the NHH or HH UMS customer's inventory against our website table of valid product/Charge Code/ballast/Switch Regime combinations, before making the appropriate Estimated Annual Consumption (EAC) calculation.

6) MAs will accommodate the new Switch Regimes in Equivalent Meter software for HH UMS customers, using our website table of valid product/Charge Code/ballast/regime combinations. Providing that the resulting calculations will accurately model the energy consumption and profile of the new Switch Regimes, individual MAs can decide how best to accommodate the new Switch Regimes in their own software. The UMSO will send the summary inventory to the MA as currently.

7) To make system development manageable, the allowed number of changes in light levels during a 24-hour period will be limited. We propose a limit of 8, and invite you to comment on this as part of your impact assessment.[5] We also propose a limit of 4 seasonal changes per year, and that the switching times must be on the hour or half-hour.

8) As an interim solution before the CP is implemented, we will allow UMS customers to apply to install the products under existing Switch Regimes. This will allow customers to obtain the resulting carbon benefits, but will mean that the actual energy used by the products will not be settled or billed accurately until the CP is implemented. Under this interim solution, the manufacturer must still apply for a Charge Code as per step 1 above. The customer must also apply for an existing Switch Regime and provide ELEXON with the same evidence specified in step 2 above. When the CP is implemented,

[2] As we build up our list of valid product/Charge Code/ballast/Switch Regime combinations over time on our website, we will not need this evidence if the application is for one of our already-published valid combinations. This requirement is therefore not intended to be unduly onerous, and the effort involved should decrease over time. We also assume that customers themselves will want assurances from manufacturers that the product will work with their lamp/ballast combinations.

[3] Requirements 2e and 2f are intended to ensure that the product retains the correct Switch Regime. There was an almost-unanimous view from DCP respondents that the customer should not have the ability to reconfigure the product. Some respondents queried how manufacturers' configuration and labelling could be enforced. We have concluded that requiring a letter of undertaking and a follow-up letter of confirmation is the most that ELEXON could enforce in this area, but that this should help UMSOs with their own audits.

[4] Respondents to DCP0046 had split preferences/impacts between the 2 options. However, a large majority of respondents indicated that alpha-numeric IDs would have significantly less impact on their systems (some can already use these).

[5] This did not form part of DCP0046, but was suggested by one respondent. We have not identified any reason why a customer would require more than 8 light level changes within 24 hours.

ELEXON will provide the customer with their new (correct) Switch Regime and the customer must then submit an updated inventory to the UMSO.[6]

9) We will undertake an education exercise with UMSOs and customers through the UMSUG on both this interim solution and the CP requirements, to ensure customers are aware of the process and the benefits of applying for the correct Switch Regimes once the CP goes live.

All applications will be discussed at the UMSUG, and will go through the Market Domain Data (MDD) change process managed by the SVG.

You can find further lower-level details of the solution in Attachments A and B.

Justification for Change

The BSC arrangements should not be a barrier to Councils and Lighting Authorities installing products which can achieve reductions in energy consumption and associated environmental benefits.

To which section of the Code does the CP relate, and does the CP facilitate the current provisions of the Code?

This CP facilitates the UMS provisions of BSC Section S8, and the requirement on UMSOs to ensure that UMS energy is calculated to standards of accuracy which are no worse than those for metered supplies (S8.1.3).

Estimated Implementation Costs

Our implementation costs are 14 man days of effort (equating to £3,360) to implement the redlined changes to BSCP520 and the OID, update our LWIs and website guidance, create the new website spreadsheets and provide the necessary education to UMSOs, MAs and UMS customers.

There will also be some ongoing operational effort for us in processing applications.

Configurable Items Affected by Proposed Solution(s)

This CP will impact BSCP520 'Unmetered Supplies registered in SMRS'. We have provided our proposed redlined changes to the BSCP as Attachment A to this CP.

This CP will also impact our Operational Information Document (OID). This is a guidance document that we provide on our website. Because most of the solution detail will be included in this guidance rather than in BSCP520, we have attached an indicative redlined version of the OID to help you respond to this impact assessment.

We welcome your comments on the proposed BSCP/OID changes.

Impact on Core Industry Documents or System Operator-Transmission Owner Code

None.

[6] There was a significant majority preference for this interim approach among DCP respondents, although some noted that it was crucial to educate customers on the benefits of applying for the correct Switch Regime once the enduring CP solution is in place. As the customer's energy is likely to be overstated without the correct Switch Regime, there will be a natural incentive on the customer to apply for the correct Switch Regime and submit an updated inventory once the CP is implemented. We expect any initial uptake of the devices before 30 June 2011 to be low, and any overall Settlement consumption volume error in this period to be non-material. The interim solution also recognises that ELEXON cannot practicably prevent customers from using non-registered devices. It therefore provides a process for registering the device and Charge Code in advance of the full enduring solution, so that the energy drawn by the dimmer is correctly declared.

Related Changes and/or Projects

None.

Requested Implementation Date

30 June 2011 Release (assuming the CP is approved by the SVG on 2 November 2010).

This gives an implementation lead time of just under 8 months. The lead times needed by UMSOs and MAs (as provided in their responses to DCP0046) make a February 2011 implementation unfeasible, but all but one respondent stated that they could meet a June 2011 implementation based on this lead time.

One UMSO/MA stated in their response to DCP0046 that they needed a lead time of 12-15 months. In order not to delay the benefits of this CP, we propose that the CP is implemented on 30 June 2011 on a voluntary basis. This means that UMSOs/MAs who wish to offer customers the ability to use multi-level static dimming devices can do so as soon as they are able after 30 June. UMSOs/MAs who do not wish to offer this ability, or who delay offering it, will not be in breach of the BSC but will bear the risk that customers may choose to switch to an alternative UMSO/MA.

We have previously followed a similar implementation approach for the introduction of Central Management Systems (CMS) under CP1196, which facilitated (rather than mandated) the use of this technology in Settlement.

Version History *(mandatory by BSCCo)*

We raised version 1.0 of this CP on 3 September 2010 for industry impact assessment.

Originator's Details:

BCA Name: Kathryn Coffin

Organisation: ELEXON

Email Address: kathryn.coffin@elexon.co.uk

Telephone Number: 020 7380 4030

Date: 3 September 2010

Attachments: Yes

Attachment A – BSCP520 proposed redlining (18 pages)
Attachment B – OID indicative redlining (31 pages)

CP1341 Attachment – Proposed redlined changes to BSCP520 'Unmetered Supplies Registered in SMRS' version 17.1

CP1341 proposes changes to BSCP520 sections 1.2.5, 1.3.1, 1.7.2, 3.1, 3.2, 3.3.1, 3.11 and 3.12, and introduces a new section 4.3. We have redlined these changes against version 17.1 of the BSCP, which includes approved changes for CP1267 which will be implemented in the November 2010 Release.

[Sections 1.1-1.2.4 are unchanged]

1.2.5 Approval of Categories of Apparatus, Charge Codes and Switch Regimes

The Panel, or its nominated representatives, approve additions or alterations to the categories of Apparatus, Charge Codes and their associated load rating (and dimming level load rating if applicable)~~, and the~~ Switch Regimes and Valid Dimming Combinations in respect of static dimming equipment. Proposals for approval, and for load research (regarding associated load ratings and/or dimming level load rating) to be initiated, will be recommended by the Balancing and Settlement Code Company (BSCCo) to the Panel for approval. The Panel, or its nominated representatives, may request that the Unmetered Supplies User Group (UMSUG) meets from time to time to discuss issues relating to profiles, ~~T~~SRs, SSC, EACs, Equivalent Meters, protocols and general UMS issues.

BSCCo will be responsible for constructing Charge Codes, switching regimes, defining Valid Dimming Combinations and the notification of Panel decisions.

[Sections 1.2.6-1.7.1 are unchanged]

1.7.2 Definitions

Full definitions of the above acronyms and other defined terms used in this BSCP are, where appropriate, included in the Code. For clarification, definitions are provided below for terms specifically associated with UMS:-

"Apparatus" means all equipment in which electrical conductors are used, supported or of which they may form part;

"Applicant" means a person applying to the BSCCo for a Charge Code, Switch Regime code or for Equivalent Meter approval;

"Astronomical Almanac" means the Astronomical Almanac published annually by the Stationery Office or other suitable publication;

"Central Management System" means a system that is able to dynamically control and manage the electrical load used by Apparatus registered as an Unmetered Supply;

"Charge Code" means a 13 digit numeric code assigned to unmetered Apparatus that specifies the associated circuit watts and other technical information for the Apparatus.

"Dawn" means 30 minutes before Sunrise;

"Dusk" means 30 minutes after Sunset;

"Equivalent Meter" means the hardware and software as defined in Section 1.2.6;

"Equivalent Meter UMS" means HH Unmetered Supplies;

"Invalid Dimming Combination" means a combination of Switch Regimes and Charge Codes that has not been approved for use in association with multi-level static dimming devices.

"MA System" means the software and hardware operated by the Meter Administrator and used to calculate half hourly consumption;

"PECU array" means the hardware described in Appendix 4.5;

"Percentage Dimming Level" means the percentage of its full load circuit loading (watts) at which the Apparatus is operating;

"Sub-Meter" means that within an Equivalent Meter there is more than one PECU array or more than one summary inventory associated with an MSID;

"Summary Inventory" means a summarised version (prepared and/or agreed by the UMSO) of the detailed inventory provided to the UMSO by the Customer including the CMS Control File (as described in 4.5.2.3) where appropriate;

"Sunrise" means the time when the sun's apparent disc is below and tangential to the horizon at sea level and to the east of the observer;

"Sunset" means the time when the sun's apparent disc is below and tangential to the horizon at sea level and to the west of the observer;

"Switch Regime" means a 3 digit numeric code assigned to unmetered Apparatus that specifies the switching times and other technical information for the Apparatus;

"Temporary Code" means a temporary 13 digit numeric code assigned to unmetered Apparatus that specifies the associated circuit watts and other technical information for the Apparatus and has been issued by the UMSUG chair for use, prior to formal approval from the Panel.

"Valid Dimming Combination" means an approved combination of Switch Regimes and Charge Codes for use in association with multi-level static dimming devices.

[Section 2 is unchanged]

3. Interface and Timetable Information

3.1 Establishment of a New UMS Inventory[1]

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.1.1		Agree that the application for UMS meets the requirements of Section 1.1 and receive and agree the inventory of Apparatus from the Customer.	UMSO.	Customer.	Signed UMS Connection Agreement. Customer's Approved Detailed Inventory.	Paper, fax or electronic media, as agreed.
3.1.2		Is UMS to be traded HH? If so, proceed to 3.1.3. If UMS not HH, proceed to 3.1.17.	UMSO.		Notification received from Supplier or Customer.	Internal Process.
3.1.3	If HH.	UMSO request new MSID.	UMSO.	SMRA.	P0171 Request Creation of UMS Skeleton SMRS Record.	Paper, fax or electronic media, as agreed.
3.1.4		SMRA Allocate MSID per UMS Certificate.	SMRA.			Internal Process
3.1.5		Create skeleton, record details of MSID in accordance with BSCP501. Send MSID(s) to UMSO.	SMRA.	UMSO.	P0171 Request Creation of UMS Skeleton SMRS Record.	Internal Process. Paper, fax or electronic media, as agreed.

[1] This process shall be followed where a new additional inventory is provided by the Customer.

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.1.6		Complete UMS Certificate. Issue to Customer. Issue to Supplier, if appointed by the Customer earlier on in the process	UMSO.	Customer, Supplier.	P0170 HH Unmetered Supply Certificate.	Internal Process. Paper, fax or electronic media, as agreed.
3.1.7	On Customer or Supplier request	Request from the UMSO the type of EM and the location, if any, of the PECU array(s) and other factors relevant to the PECU Array Siting Procedure in 4.5.1.1.	MA	UMSO.	P0176 Request for EM Details.	Paper, fax or electronic media, as agreed.
3.1.8	Within 5 WD of 3.1.	Agree the type of EM and the location, if any, of the PECU array(s) in accordance with the provision of the PECU Array Siting procedures in 4.5.1.1.	UMSO.	Supplier.		Paper, fax or electronic media, as agreed.
		Provide latitude and longitude information to Supplier and MA.		Supplier, MA.	P0068 UMS EM Technical Details.	
3.1.9		Send Supplier and registration details to SMRA.	Supplier.	SMRA.	D0055 Registration of Supplier to Specified Metering Point.	Electronic or other agreed method.
3.1.10		Record details for MSID in accordance with BSCP501.	SMRA.			Internal Process.

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.1.11		Send appointment details and additionally EM details to relevant recipients.	Supplier.	MA. HHDC. HHDA.	D0155 Notification of new Meter Operator or Data Collector Appointment and Terms. D0148 Notification of Change to Other Parties. D0155 Notification of new Meter Operator or Data Collector Appointment and Terms. D0148 Notification of Change to Other Parties. D0153 Notification of Data Aggregator Appointment and Terms.	Electronic or other agreed method.
3.1.12	Within 5 WD following 3.1.11.	Send Summary Inventory details to MA.	UMSO.	MA.	P0064 Summary Inventory (for Half Hourly Trading) and/or CMS Control File as appropriate.	Paper, fax or electronic media, as agreed.
3.1.13	Within 5 WD validate Summary Inventory against OID. If inventory fails validation.	Reject Summary Inventory and await new Summary Inventory.	MA.	UMSO.	List of invalid codes and/or Invalid Dimming Combinations.	Electronic or other agreed method.

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.1.14	If Summary Inventory passes validation.	Input into EM and send copy of Summary Inventory extracted from the MA System to UMSO and to Customer.	MA.	UMSO, Customer.	P0064 Summary Inventory (for Half Hourly Trading).	Internal Process. Paper, fax or electronic media, as agreed.
3.1.15	If unable to send HH data before SSD.	Inform the Supplier of an EM fault (as set out in 3.14.1).	MA.	Supplier. HHDC.		Electronic or other agreed method.
3.1.16	Prior to SSD or Energisation Date whichever is later.	Liaise with HHDC to ensure data from EM can be processed.	MA.	HHDC.	D0003 Half Hourly Advances or Section 4.5.4 EM Output File[2] (trial data see 3.15).	Electronic or other agreed method.
3.1.17	After 3.1.2 for NHH.	Request new MSID per SSC.	UMSO.	SMRA.	P0171 Request Creation of UMS Skeleton SMRS Record.	Paper, fax or electronic media, as agreed.
3.1.18		Allocate MSIDs per SSC per UMS Certificate. Create skeleton record details of MSIDs in accordance with BSCP501.	SMRA.			Internal Process.
3.1.19		Calculate EACs, complete UMS Certificate. Issue UMS Certificate to Customer and Supplier if appointed earlier on in the process.	UMSO.	Customer, Supplier	P0207 NHH Unmetered Supply Certificate.	Internal Process. Paper, fax or electronic media, as agreed.

[2] The EM Output file can only be used if a secure method of data transfer has been agreed between the MA and the HHDC.

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.1.20		Send Supplier and registration details to SMRA for all listed MSIDs.	Supplier.	SMRA.	D0055 Registration of Supplier to Specified Metering Point.	
3.1.21		Record details for all of the MSIDs in accordance with BSCP501.	SMRA.			Internal Process.
3.1.22		Send appointment details.	Supplier.	NHHDC. NHHDA.	D0148 Notification of Change to Other Parties. D0155 Notification of new Meter Operator or Data Collector Appointment and Terms. D0153 Notification of Data Aggregator Appointment and Terms.	Electronic or other agreed method.
3.1.23		Send split EAC, Profile Class and SSC details for each MSID.	UMSO.	Supplier, NHHDC.	D0052 Affirmation of Metering System Settlement Details.	Electronic or other agreed method.
3.1.24	On receipt of D0052.	Validate D0052.	NHHDC		In accordance with BSCP504 Non-Half Hourly Data Collection.	Internal Process.
3.1.25	If D0052 is invalid.	Send notification of invalid Metering System Settlement details.	NHHDC	UMSO, Supplier	D0310 Notification of Failure to Load or Receive Metering System Settlement Details.	Electronic or other agreed method.

3.2 Amendment to Inventory

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.2.1	When change(s) to Unmetered apparatus.	Send proposed revised detailed inventory to UMS.	Customer.	UMSO.	Customer's proposed revised detailed inventory.	Paper, fax or electronic media, as agreed.
3.2.2		Ensure revision to the inventory of Apparatus meets the requirements of Section 1.1 and also agree the revised inventory of Apparatus with Customer.	UMSO.	Customer.	Customer's Approved Detailed Inventory with agreed EFD.	Paper, fax or electronic media, as agreed.
3.2.3	If HH following 3.2.2, when UMSO has agreed amendment to Summary Inventory with Customer, then within 5 WD.	Send revised Summary Inventory details to MA.	UMSO.	MA.	P0064 Summary Inventory (for Half Hourly Trading) and/or CMS Control File as appropriate.	Paper, fax or electronic media, as agreed.

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.2.4	If items exist in the updated summary inventory for which no data on load and switching times have been defined.	Reject updated summary inventory, listing invalid codes and/or Invalid Dimming Combinations to the UMSO and continue to use or re-apply previous inventory.	MA.	UMSO.	List of invalid codes and/or Invalid Dimming Combinations.	Electronic or other agreed method.
3.2.5	Within 5 WD of receipt or by the EFD.	Input and send copy of Summary Inventory extracted from the MA System to UMSO and Customer.	MA.	UMSO, Customer.	P0064 Summary Inventory (for Half Hourly Trading) and/or CMS Control File as appropriate.	Internal Process. Paper, fax or electronic media, as agreed.
3.2.6	After 3.2.2 for NHH.	If required request additional MSID(s) per SSC.	UMSO.	SMRA.	P0171 Request Creation of UMS Skeleton SMRS Record.	Paper, fax or electronic media, as agreed.
3.2.7		Where appropriate allocate additional MSID(s) per SSC. Create skeleton record details of MSID(s) in accordance with BSCP501.	SMRA.			Internal Process.
3.2.8		Send MSID(s) to UMSO.	SMRA.	UMSO.	P0171 Request Creation of UMS Skeleton SMRS Record.	Paper, fax or electronic media, as agreed.

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.2.9		Calculate revised EACs. Complete UMS Certificate. Issue to Customer and Supplier.	UMSO.	Customer, Supplier.	See Appendix 4.4. P0207 NHH Unmetered Supply Certificate.	Paper, fax or electronic media, as agreed.
3.2.10		As required, for any MSID(s) with zero EACs follow de-energisation and Disconnection process as set out in (3.7) and (3.8) respectively. Send to SMRA for any additional listed MSIDs.	Supplier.	SMRA.	D0055 Registration of Supplier to Specified Metering Point.	
3.2.11		Record details in accordance with BSCP501.	SMRA.			Internal Process.
3.2.12		Where appropriate, send appointment details.	Supplier.	NHHDC. NHHDA.	D0148 Notification of Change to Other Parties. D0155 Notification of new Meter Operator or Data Collector Appointment and Terms. D0153 Notification of Data Aggregator Appointment and Terms.	Electronic or other agreed method.
3.2.13		Send revised split EAC, Profile Class and SSC details for each MSID.	UMSO.	Supplier, NHHDC.	D0052 Affirmation of Metering System Settlement Details.	Electronic or other agreed method.
3.2.14	On receipt of D0052.	Validate D0052.	NHHDC		In accordance with BSCP504 Non-Half Hourly Data Collection.	Internal Process.

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.2.15	If D0052 is invalid.	Send notification of invalid Metering System Settlement details.	NHHDC	UMSO, Supplier	D0310 Notification of Failure to Load or Receive Metering System Settlement Details.	Electronic or other agreed method.

3.3 Change of Supplier

3.3.1 Half Hourly Trading

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.3.1.1	By SSD – 1 WD.	Establish with the UMSO that the UMS meets the requirements of Section 1.1.	New Supplier.	UMSO.	UMS Connection Details.	Paper, fax or electronic media, as agreed.
3.3.1.2		Send agreed UMS Certificate	UMSO	New Supplier	P0170 HH Unmetered Supply Certificate.	Electronic or other agreed method.
3.3.1.3		Send Supplier and registration details to SMRA for all listed MSIDs.	New Supplier.	SMRA.	D0055 Registration of Supplier to Specified Metering Point.	Electronic or other agreed method.
3.3.1.4		Send appointment details to relevant recipients.	Supplier.	HHDC. HHDA. MA.	D0148 Notification of Change to Other Parties. D0155 Notification of New Meter Operator or Data Collector Appointment and Terms. D0153 Notification of Data Aggregator Appointment and Terms. D0155 Notification of New Meter Operator or Data Collector Appointment and Terms. D0148 Notification of Change to Other Parties.	Electronic or other agreed method.

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.3.1.5		Agree the type of EM and the location, if any, of the PECU array(s) in accordance with the provision of the PECU Array siting procedures in 4.5.1.1. Provide latitude and longitude information to Supplier and MA.	UMSO.	Supplier, MA.	P0068 UMS EM Technical Details.	Paper, fax or electronic media, as agreed.
3.3.1.6	If New MA	See Sections 3.4.3 to 3.4.5				
3.3.1.7	If New DC	See Sections 3.5.2 to 3.5.3				
3.3.1.8		Send appointment termination details.	Old Supplier.	Old MA. Old HHDC. Old HHDA.	D0151 Termination of Appointment or Contract by Supplier.	Electronic or other agreed method.
3.3.1.9		Send summary inventory details to MA. See Section 3.4.3	UMSO.	MA.	P0064 Summary Inventory (for Half Hourly Trading) and/or CMS Control File as appropriate.	Paper, fax or electronic media, as agreed.
3.3.1.10		Reject summary inventory, listing invalid codes and/or Invalid Dimming Combinations to the UMSO and continue to use or re-apply previous inventory.	MA.	UMSO.	List of invalid codes and/or Invalid Dimming Combinations.	Internal Process Paper, fax or electronic media, as agreed.

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.3.1.11	If New MA, Prior to SSD or Energisation Date whichever is later.	Liaise with HHDC to ensure data from EM can be processed.	MA.	HHDC.	P0068 UMS EM Technical Details. D0003 Half Hourly Advances **OR** Section 4.5.3 EM Output File[2] or trial data (see 3.15).	Electronic or other agreed method.
3.3.1.12	If concurrent with change of MA	Liaise with old HHDC to ensure data from EM can be collected up to end date.	Old MA.	Old HHDC.	P0173 Confirmation of End Readings Date.	Electronic or other agreed method.

[Sections 3.3.2-3.10 are unchanged]

3.11 UMSO sends annual spreadsheet of all UMS EACs to Supplier

REF	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.11.1	By 10 WD before 30 June	Create and issue annual spreadsheet containing all UMS EACs for each MSID split by Settlement Register (using the appropriate Average Fraction of Yearly Consumption)	UMSO	Supplier	P0218 Collated Supplier UMS Registrations	Electronic or other method, as agreed.
		Send confirmation of annual spreadsheet being sent	UMSO	BSCCo.		Post / Fax / Email
3.11.2	Upon receipt of information detailed above.	Compare EACs detailed in spreadsheet with latest EACs received from the Non Half Hourly Data Collector.	Supplier			Internal Process
3.11.3	Within 6 weeks of 3.11.2 if discrepancy identified	Instruct UMSO to resend correct EAC(s) to NHHDC.	Supplier	UMSO		Post / Fax / Email
		If required, send correct EAC(s) to NHHDC		NHHDC	D0052 Affirmation of Settlement Details[3]	Electronic or other method, as agreed
3.11.4	Following request from Supplier	Resend correct EAC(s) to NHHDC.	UMSO	NHHDC	D0052 Affirmation of Metering System Details [3]	Electronic or other method, as agreed.

[3] Where a D0052 Affirmation of Metering System Settlement Details, electronic or otherwise, is received from UMSO or Supplier for an Unmetered Supply, this value must be sent to the NHHDA on a D0019 Metering System EAC/AA Data for use in Settlement. The D0052 Affirmation of Metering System Settlement Details received from UMSO should be used in preference where available.

3.12 Approval of New Switch Regimes, ~~and / or~~ Charge Codes and/or Valid Dimming Combinations

REF	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.12.1	When required	Receive application for a new Charge Code, ~~and/or~~ Switch Regime and/or Valid Dimming Combination.	Applicant[4]	BSCCo	Details of new apparatus, Switch Regime or dimming regime.	Electronic or other method as agreed.
3.12.2	Following 3.12.1, if more information is required	Request~~s~~ more testing evidence or additional information from A~~a~~pplicant.	BSCCo	Applicant	Details of information or evidence required.	Electronic or other method as agreed.
3.12.3	Following 3.12.1 or 3.12.2 (if required)	Construct Charge Code~~s~~, ~~and/or~~ Switch Regime and/or Valid Dimming Combination (seeking input from industry experts if required) Or Inform~~s~~ Applicant that a suitable Charge Code, ~~and/or~~ Switch Regime and/or Valid Dimming Combination can~~-~~not be constructed and discuss next steps.	BSCCo BSCCo	 Applicant	Details of new ~~-~~apparatus, Switch Regime or dimming regime. Notification and possible next steps.	Internal Process. Electronic or other method as agreed
3.12.4	Following 3.12.3 if Charge Code~~s~~, ~~/~~Switch Regime and/or Valid Dimming Combination constructed	Raise and progress MDD change in accordance with BSCP509 in relation to proposed new Charge Code, Switch Regime~~s~~ and/or ~~Charge Codes~~Valid Dimming Combination.	BSCCo		BSCP509.	Internal Process.

[4] Although Charge Codes are published via MDD, "Applicant" in this case does not relate to MDD authorised signatories.

REF	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
3.12.5	Following 3.12.4 if Change to MDD is approved	If MDD change approved, publish approved Charge Code~~s, and/or~~ Switch Regime~~s~~ and/or Valid Dimming Combination on BSC Website.	BSCCo		BSC Website.	Internal Process.
3.12.6	Following 3.12.4 if change to MDD is not approved.	Inform ~~a~~Applicant of decision and discuss next steps.	BSCCo	Applicant	SVG decision.	Electronic or other method as agreed.

[Sections 3.13-3.15 are unchanged]

4. Appendices

4.1 Categories of Unmetered Apparatus

Note that the categories of Unmetered Apparatus can be found in the OID and associated Charge Codes may be found on the BSC Website in the Operational Information Charge Code spreadsheet.

4.2 Switch Regimes

Note that the Switch Regime is described in the OID and a complete list may be found on the BSC Website~~BSC Website~~ in the Operational Information Switch Regime spreadsheet.

4.3 Valid Dimming Combinations

Note that a Valid Dimming Combination is described in the OID and a complete list may be found on the BSC Website in the Operational Information Valid Dimming Combination spreadsheet.

[Sections 4.3-4.8 are unchanged]

OPERATIONAL INFORMATION DOCUMENT

A Guide to Unmetered Supplies under the BSC

Contents Table

1 An Introduction to Unmetered Supplies

1.1 What are Unmetered Supplies under the BSC?

An Unmetered Supply (UMS) means a supply of electricity to a particular inventory of equipment in respect of which a Licensed Distribution System Operator has issued an Unmetered Supply Certificate. For example, this equipment could be any electrical equipment that draws a current and is connected to the Distribution Network without a meter, i.e. there is no meter recording its energy consumption, e.g. street lights, traffic signs, zebra crossings, etc.

1.2 What is the Purpose of this Document?

This Document aims to provide guidance on:

- What Charge Codes are (unique code representing unmetered equipment);
- The meaning of a Charge Code's structure;
- The testing required to obtain a Charge Code;
- How to account for equipment such as traffic signals in customer inventories;
- Switch Regime codes (and Part Night dimming);
- The difference between Non Half Hourly and Half Hourly trading; and
- Other useful operational information relating to Unmetered Supplies under the BSC.

1.3 Before reading on, some key roles and terms explained…

The Customer – typically a county, metropolitan, unitary or borough council that has an Unmetered Supply inventory in Great Britain. They are responsible for maintaining a detailed inventory of all their UMS equipment and providing regular updates to their Unmetered Supplies Operator (UMSO). The customer is also responsible for contracting with the Meter Administrator (MA), if the UMS is traded Half Hourly under the BSC. The Supplier will appoint the MA for Settlement purposes. Customers should contact their UMSO if they have any questions on how to submit equipment in their detailed inventory.

The Unmetered Supplies Operator (UMSO) – The UMSO is part of the Licensed Distribution System Operator (LDSO), also known as the Distribution Business or Network Operator. The UMSO is responsible for looking after all of the Unmetered Supplies on its Network. The UMSO makes new connections and decides what equipment is suitable for treatment as an Unmetered Supply. The UMSO provides a summarised inventory to the MA for Half Hourly traded UMS, or calculates an Estimated Annual Consumption (EAC) for Non Half Hourly traded UMS.

The Meter Administrator (MA) – is responsible for providing Half Hourly consumption data into Settlement. This is the consumption of a particular customer in kWh, for each half hour of every day. The Supplier will appoint the MA for Settlement purposes.

BSCCo (the Balancing and Settlement Code Company, the role fulfilled by ELEXON) - is responsible for ensuring that the processes within BSCP520 'Unmetered Supplies Registered in SMRS' are carried out effectively. BSCCo is also responsible for issuing Charge Codes and Switch Regimes to customers such as product manufacturers and county councils that have an Unmetered Supply inventory. BSCCo also coordinates the Central Management Systems (CMS) approval process.

Unmetered Supplies User Group (UMSUG) - An expert group reporting to the Supplier Volume Allocation Group (SVG), advising them on the UMS arrangements under the Balancing and Settlement Code (BSC). Their work includes reviewing Charge Code applications, advising on changes to the relevant BSC subsidiary documents (e.g. BSCP520), the resolution of issues and new developments relating to UMS. The UMSUG is chaired by BSCCo and meets on an ad-hoc basis driven by the SVG and business need.

2 What are Charge Codes?

A Charge Code is simply a 13 digit number which represents a specific type of UMS equipment. It is used by UMSOs and MAs to look up the power value (known as circuit watts) associated with the equipment and calculate consumption.

The Charge Code itself also contains information in its structure. The first two digits (first three digits for miscellaneous equipment) provide an indication of the type of equipment, for instance whether it is a new LED street light or a high pressure sodium lamp. The Charge Code also includes the nominal wattage for the equipment. Typically this could be the 'printed value' on the equipment, e.g. the power value on a lamp, 100W SON. For equipment without any 'printed' values, the nominal wattage could be the rating at which the product is marketed by the manufacturer.

2.1 Why do I need one?

Charge Codes are required so that the energy consumption of the equipment can be recorded as accurately as possible. By having a Charge Code it shows that the manufacturer has provided load research for the equipment (as explained below) and the Charge Code has been issued by BSCCo~~O~~.

Equipment shall not be connected to the Distribution Network without first being issued with a Charge Code. The issue of a Charge Code does not guarantee~~oblige~~ an unmetered connection to a Distribution Network. Connection to a network is at the discretion of the Distribution Business following its licence conditions and UMS connections policy.

Power Factor

It is historically a standard requirement of Unmetered Connection Agreements that the power factor of connected equipment shall be as near to unity as practicable but in any case not less than 0.85 lagging or 0.95 leading. If the equipment does not meet this standard then a Distribution Business may refuse to connect the equipment. For guidance, where an application is made for a piece of equipment with a circuit wattage of less than 25W then lower power factors will be considered.

2.2 The structure explained

The structure of the Charge Code depends on the type of equipment. There are currently three categories, Lamps, Traffic Equipment and Miscellaneous.

2.2.1 Lamps

Standard lighting equipment has the following structure:

Digits	Description
1 and 2	Identifies the lamp type
3, 4, 5 and 6	The nominal lamp wattage (typically the power value printed on the lamp, e.g. a 100W SON) N.B. this is not the same (usually less than) as the circuit watts
7	The control gear type
8, 9 and 10	Allows equipment with the same full circuit watts to have a different charge code
11, 12 and 13	The dimming level, i.e. the percentage of full load (N.B. '100' = full load circuit watts)

Definition of digits 1 and 2:

Code	Description	Definition Letters	Comments
01	General lighting service filament	GLS, GLD	
03	Tungsten Halogen	TH	
11	Low Pressure Sodium	SOX, SOXPLUS	SOX - Low pressure sodium
12	Low Pressure Sodium (Economy)	SOX/E, SOX-PLUS, SOX-HF	SOX E – Low pressure sodium – energy efficient – i.e. lower wattage for same light output and HF would be High Frequency electronic ballast; and
14	High Pressure Sodium	SON, SON/T, SON/+	SON – High pressure sodium that has many suffixes such as T – tubular or PLUS being high output
21	High Pressure Mercury	MBF/U, MBFR/U	MBF - Mercury Blended Fluorescent
23	High Pressure Mercury (Blended)	MBTL/U	
24	High Pressure Mercury (Halide)	MBI	
25	High Pressure Mercury (Induction)	QL	
26	High Pressure Mercury (Ceramic Discharge Metal Halide)	CDM-T, CDM-TT, CDO	CDO - Ceramic Discharge Outdoor CDM - Ceramic Discharge Metal
27	High Pressure Mercury (Metal Arc)	MP	
28	Cosmopolis	CPO	CPO - Cosmopolis
29	Cold Cathode		
31	Low Pressure Mercury (Fluorescent Tube) - Single Lamp	MCF/U	MCF - Mercury Coated Fluorescent Codes 31 and 32 are for the same lamps. These lamps are often mounted in a tray as twin lamps and used in traffic sign illumination. The difference is that code 31 is for a single lamp with its own control gear. Two lamps in a tray would therefore require a quantity of 2 in the number of

Code	Description	Definition Letters	Comments
			lamps. However it is possible to mount 2 lamps in a tray in series with a single set of control gear.
32	Low Pressure Mercury (Fluorescent Tube) - Twin Lamp (two lamps operated in series on a single ballast)	MCF/U	See Note in 31 above, Code 32 is rated to cover two lamps and the single ballast. In this case the quantity to be entered in the number of lamps is only one.
33	Low Pressure Mercury (Compact) - Single Lamp	SL, PL-S, PL-L	See Note in 31 above, Codes 33 and 34 follow the same principle but for a compact type.
34	Low Pressure Mercury (Compact) - Twin Lamp (two lamps operated in series on a single ballast)	PL-S, PL-L	See Note in 31 above, Codes 33 and 34 follow the same principle but for a compact type.
35	Low Pressure Mercury (Compact) - Single Lamp	PL-C, PL*E/C	
36	Low Pressure Mercury (Compact) - Single Lamp	PL-T	
37	Low Pressure Mercury (2D) - Single Lamp	2D	
39	Low Pressure Mercury – Compact Integral Standard Gear		
40	Light Emitting Diodes (LEDs)		LED lights that are used for traffic sign illumination or aesthetic and other purposes..g. not set in a lighting column, see code 41.
41	LED Street Lights		LED Street Lights are distinct from other LEDs. This code is for LEDs that are set in a lighting column (or similarly mounted) and are used to illuminate roads and highways. LEDs that are for aesthetics or other purposes use the Code 40.
45	Luminescent		
50	Electronic Ballasts		This code is reserved for electronic ballasts that will drive lamps at a given wattage regardless of the specification of the lamp attached to the ballast.
51	Multi-level Dimming Equipment integral to an Electronic Ballast		This code is reserved for electronic ballasts that have pre-programmable dimming capability built into the ballast.

Code	Description	Definition Letters	Comments
Codes with higher numbers are covered later in the document			

Definition of digits 3, 4, 5 and 6

These represent the nominal rating of the equipment in watts, i.e. '0250' represents a lamp with a nominal rating of 250 watts.

Definitions of digit 7

Control Gear Code	Control Gear Description	Applicable Lamp Types	Explanation
0	No Control Gear	GLS/GLD, TH, MBT, SL, PL*E/C, LED	Lamps which do not require control gear or where the control gear is incorporated into the lamp envelope. LED drivers are incorporated into equipment.
1	Standard Control Gear (auto leak)	HPL & HPI, MBF, SOX & SOX/E, SLI, MCF, PL-S, PL-L, PL-C, PL-T & 2D	Consists of a ballast/transformer and capacitor. A starter switch may also be incorporated.
2	Low Loss Control Gear	SOX & SOX/E, SON & SON/T, CDM-T, MP	Consists of a ballast/transformer and capacitor together with an electronic ignitor.
3	High Frequency (H/F) Electronic Ballast (Frequencies greater than 1 kHz)	HPL & HPI, MBF, SOX & SOX/E, SON & SON/T, SLI, MCF, PL-S, PL-L & PL-C, QL	Provides the initial ignition pulse and the subsequent voltage / current control of the lamp.
4	SOX/E Optimum Gear	SOX/E	Consists of a ballast / transformer and capacitor together with an electronic ignitor to provide the ignition pulse to the lamp.
5	Low Frequency (L/F) Electronic Ballast (Frequencies lower than 1 kHz)		Provides the initial ignition pulse and the subsequent voltage/current control of the lamp.

Definition of digits 8, 9 and 10

These digits allow equipment with the same first 7 digits but different circuit watts to be uniquely identified. Where equipment has another code with dimmed values, these 3 digits shall be same for the same equipment running undimmed (100% or full brightness), and for each of its dimmed codes.

Where the equipment is set up for reduced operation by the manufacturer, the 3 digits shall be set to a unique value, normally the 3 digits are incremented by 1 (or the next available 3 digits), e.g. '001', '002', '003', etc. If for example a piece of equipment has the 3 digits of '001' and is also indicating 100% operation, if the manufacturer then applies for the same piece of equipment to be set up with reduced operation '002' shall be used.

Definitions of digits 11, 12 and 13

The last three digits of the code represent the % of full power that dimming of the equipment will produce.

For example '070' at the end of a code for an LED street lamp would indicate that the equipment dims down to operate at 70% of the full power of the lamp. For equipment without any dimmed circuit watts, or running permanently at reduced operation, or operated by CMS equipment the last 3 digits of the charge code will always be "100" where the actual dimmed levels are determined from the event file.

If the equipment can be run at full power with no dimming by the customer, BSCCo will issue an undimmed version of the code, i.e. 100%. This applies to where a manufacturer is applying for a series of dimmed Charge Codes but no 100% code exists. To calculate the dimming percentage, take the dimmed circuit watts, divide them by the full power circuit watts and then multiply by 100 and finally round to the nearest whole number.

For example; if the equipment had full power circuit watts of 7 and dimmed circuit watts of 3.

The code would end: (3/7) x 100 = 42.8571 = 43% (nearest whole number) = 043.

Please note, that for part night dimming to be used, a part night dimming Switch Regime must be used. Switch Regimes are explained later on in this document.

Example of Lamp charge code

For example, if the lamp is a High Pressure Sodium (SON/T or SON/PLUS) with a nominal rating of 100W then the first 2 digits of the charge code will be '14'. The next 4 digits will be '0100'. If the lamp is controlled by a high frequency electronic ballast the next digit will be '3' and if the ballast is a new type the next 3 digits will be a unique identifier, e.g. '003'. Finally if the lamp is dimmed to 60% energy over part-night then the last 3 digits are '060'.

Thus two codes would be issued, where it is operating at 100% with no dimming, the code will be 14 0100 3003 100, where the equipment is dimming the code will be: 14 0100 3003 060. The spacing is used to better communicate the codes in documents such as this, but the charge code must not contain spaces in the detailed inventory.

2.2.2 Traffic Equipment

All traffic codes start with 79 and can be on continually, switched manually and can have more than one brightness level.

Where a traffic signal dims its brightness from dusk to dawn the Customer shall declare the appropriate switch regime, i.e. 821 if switching controlled by an electronic 70/35 Lux photocell. The UMSO and MA will

make the appropriate adjustment using the full and dimmed circuit watts (in this context known as day/night watts) declared for the equipment. Please see guidance on dimming traffic signals in Section 4.2.2~~xxx~~.

Digits	Description
1 and 2	Always 79. Traffic signal codes begin with "79" as the first two digits.
3 and 4	Numeric code that represents the type of traffic signal equipment
5, 6 and 7	The nominal wattage (not the same as circuit watts).
8, 9 and 10	A numeric code that allows equipment with the same first seven digits of the charge code but with different circuit watts to be uniquely identified.
11, 12 and 13	Always "100". It should be noted that traffic lights and other non-lighting traffic equipment may have 'day' and 'night' watts. This means that there is no need for a fixed dimming percentage at the end of the code because dimming percentages apply to part night dimming in conjunction with part nigh switching regimes. For a fuller explanation see 4.2.2.

Definitions of digits 3 and 4:

Code	Equipment Description	Comments
01	3 lamp aspect (undimmed)	Non LED lights, see below for LED codes
02	3 lamp aspect (dimmed)	Non LED lights, see below for LED codes
03	2 lamp aspect (undimmed)	Non LED lights, see below for LED codes
04	2 lamp aspect (dimmed)	Non LED lights, see below for LED codes
05	Wait Signal/Push Button (undimmed)	Non LED lights, see below for LED codes
06	Controller	
07	Vehicle Detector	
08	Cable less Link Unit (CLU)	
09	Lamp Monitoring Unit (LMU)	
10	Outstation Monitoring Unit (OMU)	
11	Outstation Transmission Unit (OTU)	
12	Detector Power Pack Unit (DPU)	
13	Speed Discrimination Unit (SDU)	
14	Variable Maximum Unit (VMU)	
15	Microprocessor Optimised Vehicle Actuation (MOVA)	
16	Belisha Beacons	Non LED lights, see below for LED codes
17	Regulatory or Box Sign	Non LED lights, see below for LED codes
18	School Crossings	
19	Pole Mounted Responder	
20	Traffic Counter	
21	Speeding / Red Light Camera	
22	Motorway Overhead Gantry	
23	Ticket Machine	
24	Wait Signal/Push Button (dimmed)	
25	Speed Warning Signs	
26	Variable Message Signs	
27	Vehicle Aspect - Filter lamp (undimmed)	Non LED lights, see below for LED codes
28	Vehicle Aspect - Filter lamp (dimmed)	Non LED lights, see below for LED codes
29	Vehicle Activated Sign (Dimmed Activated)	
30	Weather detection/measurement equip	
31	Supply cabinet	
32	CCTV equipment	See also Miscellaneous codes for CCTV, Code 80
33	Audio equipment	
34	Radio equipment	
35	Telephone equipment	
36	Communications equipment	
37	LED Street Signs	
38	LED Wait Signal/Push Button (undimmed)	

Code	Equipment Description	Comments
39	LED Wait Signal/Push Button (dimmed)	
40	LED 3 lamp aspect (undimmed)	
41	LED 3 lamp aspect (dimmed)	
42	LED 2 lamp aspect (undimmed)	
43	LED 2 lamp aspect (dimmed)	
44	LED filter (undimmed)	
45	LED filter (dimmed)	
46	LED Belisha Beacons (undimmed)	
47	LED School Crossings	
48	LED Regulatory Sign Light:	
49	*[Not currently used]*	
50	LED Belisha Beacons (dimmed)	
51	*[Not currently used]*	
52	Pedestrian Detector	
53	Pedestrian Detector with night light	
54	LED Pedestrian Nearside Wait Signal/Push Button (undimmed)	
55	LED Pedestrian Nearside Wait Signal/Push Button (dimmed)	

Definition of digits 5, 6 and 7

These represent the nominal rating of the equipment in watts, i.e. "025" may represent a pedestrian detector with a nominal rating of 25 watts.

Definition of digits 8, 9 and 10

A numeric code that allows equipment with the same first seven digits of the charge code but with different full circuit watts to be uniquely identified.

Definition of digits 11, 12 and 13

Always "100". It should be noted that the UMSO and MA systems were designed to take account of any day and night watts associated with traffic lights and other non-lighting traffic equipment. This means that there is no need for a dimming percentage at the end of the code.

2.2.3 Miscellaneous Equipment

The structure of the code is:

Digits	Description
1, 2 and 3	Digit 1 is always 8. Digits 2 and 3 represent the type of Equipment, see below table.
4, 5, 6 and 7	Circuit watts
8, 9 and 10	Same as for traffic signals
11, 12 and 13	Dimming level, i.e. percentage of full load (N.B. '100' = full load circuit watts)

Definition of digits 1, 2 and 3

Code	Description	Comments
802	AA/RAC Boxes	
804	Advertising Hoardings	
806	Alarm System	
807	Automated Number Plate Recognition System	
808	Automatic Railway Crossing	
810	Battery Charger	
811	Bus Information Systems	
812	Bus Shelter	
813	Cable Network Pillar	
814	Cathodic Protection	
816	Clock	
817	CMS Equipment	
818	Damp Proof Course	
820	Door Answering Service	
821	Electrical Isolation Device	
822	Fire Warning System	
824	Flood Warning System	
826	Gas Governors	
828	Gauging Flume	
830	Ice Detector	
832	Illuminated Map Cabinets	
834	Lifting Barrier	
835	Information Systems	
836	Navigation Signal	
838	Pay & Display Machine	
839	People Counter	
840	Phone card Phones	
842	Police Boxes	
844	Pump	
846	Radio Transmitter	

Code	Description	Comments
848	Radio Relay Station	
850	Railway Signal	
852	Rain Gauge	
854	Security Camera	
856	Septic Tanks	
858	Sewage Flow Recorder	
860	Storm Overflow	
862	Tannoy Alarm System	
863	Telephone Kiosks	
864	Ticket Machine	
866	TV Aerial	
868	TV Amplifier	
870	TV Camera	See Paragraph 3.4
871	CCTV illuminator	
872	TV Relay	
873	Trafficmaster Units	
874	Ventilation Unit	
876	Warden Call Equipment	
878	Warning Bell	
880	Water Level Indicator	
899	Unknown	

Definition of digits 4, 5, 6, and 7:

For miscellaneous equipment, the nominal watts will always equal the circuit watts.

Definition of digits 8, 9 and 10

A numeric code that allows equipment with the same first seven digits of the charge code but with different full circuit watts to be uniquely identified.

Definitions of digits 11, 12 and 13

If there are any dimmed circuit watts, the dimming percentage shall be reflected in the last three digits of the Charge Code (see Digits 11, 12 and 13 for Lamps above).

Issuing of Miscellaneous Charge Codes

UMSOs may issue Miscellaneous Charge Codes without having them published in the BSCCoO Charge Code spreadsheet where the equipment is to be used solely within the UMSO's area. This means that it is important that the nominal watts always equal the circuit watts.

Charge Codes for CMS Equipment or unmetered equipment used nationwide

CMS equipment and equipment that will be used nationwide (such as LED bus information signs) will be submitted to BSCCoO for Charge Codes to be issued in the usual way. In these cases the Charge Code will continue to be issued by BSCCoO and published on the BSC WwebsiteBSC Website.

2.2.4 Control Equipment

These have the exact same structure as Lamp codes (please see above)

Definition of digits 1 and 2

Equipment Codes	Description	Comment
91	Time Switch Controllers	Load is continuous
92	Thermal Photocells	Are based on 3 watts when the lamp is switched "OFF" and 0 watts when lamp is switched "ON".
93	Hybrid Photocells	Are based on 3 watts when the lamp is switched "OFF" and 0 watts when lamp is switched "ON".
94	Electronic Photocells	Can only to be used for specifically approved cells.
95	Electronic Photocells (Latching relay)	A photo cell which is fitted with a latching relay which only consumes power for the instance of switch "ON" or switch "OFF".
96	Infra Red Photocells	
97	Electronic Photo Cell Timeswitch	A~~a~~ photo cell controller with an electronic fixed time switch off (Part night operation).
98	Electronic Controls (e.g. CMS devices)	Relates to a controller for CMS equipment. e.g. a node or telecell connected to the lamp/ ballast to facilitate dimming and switching.
99	Multi-level Static Dimming Controls	Relates to stand alone dimming controls or controls integral to the Photocell. N.B. where the control is stand alone, the associated circuit wattage will contain a Photoelectric Control Unit (PECU) 'uplift' to account for the associated photocell energy.

2.2.5 Motorway Signals - Devices with Variable Hours

These are Charge Codes which begin "60" and are currently processed by the UMSO separately. As such they are not contained in the Operational Information Charge Code spreadsheet available on the BSC~~CO~~ W~~w~~ebsite but are in a separate spreadsheet on the BSC~~ELEXON~~ W~~w~~ebsite:

http://www.elexon.co.uk/participating/umschargecodes.aspx

Currently, the Highways Agency makes the calculations for Motorway signals. Additionally, Annual motorway operating hours will be calculated by the Highways Agencies based on actual operational information. Threes states of load should be submitted with an application for a Charge Codes as follows:

- Quiescent: equipment is on but signal is not illuminated;
- Dim: equipment is on and signal on at reduced brightness; and
- Bright: equipment is on and at full load.

The Dim and Bright circuit watts include the quiescent load.

3 How do I apply for a Charge Code?

3.1 Considerations in respect of Charge Code applications

In order to apply for a Charge Code, please contact ELEXON's Unmetered Supplies Operations at ums.operations@elexon.co.uk.

Further guidance and application checklist can be found on the Charge Codes and Switch Regimes and Unmetered Supplies pages of the BSCELEXON Wwebsite (and http://www.elexon.co.uk/participating/unmeteredSupplies.aspx).

The applicant shall ensure the provision of the following information or necessary conditions are met:

- Test Data shall be provided along with a clear description of typical operation and installation of the equipment:- e.g. brochures, explanation of equipment operation, etc;
- Wherever appropriate, photographs of the equipment should be included;
- Testing shall be carried out by an ISO 9001 accredited test house or other test house agreed by BSCCoO;
- BSCCoO reserves the right to witness the tests if so required;
- Both power/voltage and volt-ampere/voltage curves will be required with measurements taken at 210, 220, 230, 240 and 250 volts, 50 hertz. Typically the power measurements provided shall be greater or equal to the nominal wattage stated in the Ceharge Ceode application;
- The accuracy of the measurements shall be stated and the minimum accuracy shall be ±2% of the recorded value;
- The power measurements shall include any voltage transformers, drivers or any other equipment necessary to operate the equipment from the mains. In the case of traffic signals, where there are multiple pieces of equipment being supplied by one transformer- the power measurements shall exclude the transformer. Please note that an uplift of 10% will be added to the power measurements in deriving the circuit (and/or dimming) wattages;
- The sample size shall be a minimum sample size of five. Additional samples shall be requested where the test data provided is deemed to be unsatisfactory or insufficient by BSCCo;
- Samples shall be tested after operating for sufficient time to reach their steady load state. If it is likely that the load will vary over the life of the equipment, then the tests shall be carried out after at least one hundred hours of operation (sSee also 3.5 Test Procedure for Constant Light Output LEDs);
- If the equipment consists of both lamps and control gear, then the control gear shall be divided into at least three batches of 5 samples, e.g. 15 samples in total. Each batch is to be tested with lamps supplied by a different major manufacturer. Electronic ballasts that drive more than one lamp type to the same wattage should also be tested with 5 samples of each lamp type that can be operated with the ballast;
- If the equipment includes facilities to dim to a fixed load level, then data for full load as well as each dimmed load is required;

- If the equipment includes a dimmable ballast, then the applicant shall submit load curve data, giving the relationship between the control parameter (e.g. 0-10V or DALI/DSI/MALDI or other control methods) and the power input to the equipment. Additionally the minimum level to which these ballast can operate shall be provided with the Charge Code application;
- If the equipment is housed within a cabinet, then clear evidence shall be provided that additional equipment cannot be added (e.g. not scaleable) and that a meter cannot be installed or that it fits the criteria for an unmetered supply as defined in the Unmetered Supply Statutory Instrument (2001 No. 3263);
- If the equipment incorporates heating (e.g. frost heaters) or cooling equipment (e.g. fans) then the estimated operating hours under the different regimes should be reported.

BSCCoO (with input from UMSUG where appropriate) will consider the test results in recommending an appropriate Charge Code for inclusion in the Operational Information Charge Code spreadsheet. Any questions raised by BSCCoO to the applicant shall be answered in full before the application can proceed.

The object of this testing procedure is to provide an accurate indication of the load at the Distribution Network terminals of the particular equipment under normal conditions; i.e. to establish what consumption would be recorded by a standard meter fitted at the supply terminals. The load tests for equipment designed for operation at other voltages MUST include an appropriate transformer (unless directed otherwise by BSCCoO).

Brief details of the equipment, including the Product Name and Product Code (and version number if applicable) used by the manufacturer, shall be supplied with the test data to enable the list of agreed ratings to be maintained.

3.2 Test Procedure for LED Variable Message and Bus Information Signs

Test Data shall be provided along with a description of typical operation and installation of the equipment. Application for Charge Codes shall be made on a per unit basis, e.g. one charge code per item, such as controller, heating elements, and the message block sign. The message blocks shall be tested with either 'BBBB' or '8888' illuminated for the full width of the block. Where a message sign can be dimmed test data shall be provided on the same basis as for full load with the sign dimmed.

The applicant shall provide clear detail on why the load is deemed to be predictable and why the equipment cannot, or is impractical for it to, be metered.

This equipment is deemed to be on continuously. There should be one Charge Code which includes an agreed percentage for all of the elements making up the full installation, such as heater, controller, etc. It will be necessary to determine an average load for the display, taking into consideration any night time dimming.

The equipment shall then be tested in line with the testing requirements described in the section above.

BSCCoO will consider the test information provided and consult with the customer as to an appropriate figure for the circuit watts.

3.3 Test Procedure for Belisha Beacons

Belisha Beacons shall be tested at a constant load with the lamp constantly on (i.e. no flashing). BSCCoO will then take 62% of the full circuit watts to account for the lamp flashing. Alternatively, the energy

consumed over the period of say 10mins will give the average consumption while flashing. When submitting test evidence the method of test should be clearly stated.

3.4 Test Procedure for CCTV Equipment

The following individual components will need the circuit watts / VA measured:

The camera itself; and then where applicable:

Equipment	% of circuit watts used in calculation
Fibre Optic Transmitter (or other communication method)	100%
Microwave link	100%
Tel. Receiver	100%
Cabinet heater 5°C thermostat	13%
Demister 5°C thermostat	13%
Heater 5°C thermostat	13%
Pan & tilt motor	5%
Washer	5%
Wiper	5%
Zoom	10%
N.B. Since these Codes fall in the Miscellaneous 800 range, UMSOs can allocate their own Charge Codes using the table. Nominal Watts must equal Circuit Watts. For Highways Agency equipment this must be submitted to BSCCo as used nationwide.	

3.5 Test Procedure for Constant Light Output LEDs

Test data supplied for LEDs that have Constant Light Output shall be provided for the 'beginning of life' and ''end of life' 'data. Where, 'End of life' is currently defined as 50,000 hrs. BSCCo with advice from UMSUG will review this 'end of life' definition periodically.

E.gG. If the end-of-life current is 20% higher than the beginning-of-life current, then the driver output current should be adjusted to simulate 'end of life' conditions and the appropriate measurements taken.

This may be achieved by using a resistor or other methodology. A clear statement of methodology shall be supplied with the application.

The mid-point of the 'beginning of life' and ''end of life' data will then be calculated by BSCCo as the circuit watts for the Charge Code.

The nominal Watts for the LED will be given as the mid-point circuit watt value.

3.6 Test Procedure for Multi-level Static Dimming Devices

Multi-Level Static Dimming equipment will have different types of Charge Codes depending on whether they are integral to the ballast or not. Stand-alone devices will be coded as a control, as will devices that are integral to the photocell. Where the dimming control is integral to the ballasts, the equipment will be coded as 'Multi-level Dimming Equipment integral to an Electronic Ballast'. These codes can be coded with specific lamp types or with any lamp type if the ballast will drive the lamps to specific values. In addition to the requirement for test data set out in 3.1, evidence of the accuracy of the equipment in setting the switching times for on/off and dimming shall be provided. The manufacturer shall also provide evidence of the relationship between the control signal (e.g. 0-10v, DALI/DSI) and the percentage dimming with the application. Where the application is in association with a specific lamp then evidence shall be supplied showing the lamp being dimmed at 10% levels from 50% **energy** to full power. Where the equipment can be used with a range of lamps the manufacturer shall provide appropriate evidence that the product will dim correctly.

The Charge Codes provided will be associated with specific Switch Regimes and 'Valid Dimming Combinations' will be published on the BSC Website:

http://www.elexon.co.uk/participating/umschargecodes.aspx

Applications for Switch Regimes shall be made by the customer (or the dimmer or ballast manufacturer on the customer's behalf) in accordance with the Multi-level Switch Regime application process defined in 6.3.

Manufacturers selling Multi-level Dimming Equipment to customers have a requirement to label the product with its programmed dimming regime at the factory prior to delivery. A letter (electronic) must be provided to BSCCo confirming that this has been done, together with a statement that the product cannot be re-programmed by the customer.

4 How are Charge Codes Calculated?

4.1 Equipment that is less than 3 watts

For equipment that is rated as less than 3 watts BSCCo will issue circuit watts to the nearest 1 decimal place, e.g. 2.125 = 2.1 watts (1.d.p.). Please note that control equipment (Charge Codes beginning with '90' and above) will still always be given circuit watts to 2 decimal places.

Miscellaneous equipment is an exception and will always be coded to the nearest watt to allow for the same value to be used as the nominal watts in construction of a miscellaneous Charge Code.

4.2 Traffic signal heads

Cyclically operating lamps are treated as a continuous load and use the following assumed percentage operating times to give a load value per lamp head. Please see below for an example calculation and how to record traffic signals in your inventory:

Signal Lamp Type	% Operating Times Used in Charge Code Calculation
3 lamp heads	55% of red lamp + 5% of amber lamp + 45% of green lamp
2 lamp heads	50% of each lamp for tungsten

Signal Lamp Type	% Operating Times Used in Charge Code Calculation
	80% of red lamp + 20% of green lamp for LED
Pedestrian "Wait" signals	50% of each lamp for tungsten 80% of red lamp + 20% of green lamp for LED
Filter lamps	20% of each lamp
LED Belisha Beacons	62% of each lamp
School Crossings	50% of each lamp
Tungsten dimmed lamps	Shall be rated at the full nominal wattages for the daytime period and at 66% of the nominal wattage for the night-time period.

Example

Let us consider the following example:

For some manufacturers of LED lamp aspects the wattage may vary by the lamp colour. The nominal wattage used in the Charge Code will be the average of the different colour lamp wattages.

A manufacturer contacts BSCCo~~O~~ with a new traffic signal with a 3 aspect head, red of 11.8W, Amber 11.1W and green 14W.

So from the section above, the operating time for each aspect is as follows:

- The red aspect is on 55% of the time 11.8W x 0.55 = 6.49W
- The amber aspect is on 5% of the time 11.1W x 0.05 = 0.56W
- The green aspect is on 45% of the time 14.0W x 0.45 = 6.30W

This accounts for the signal aspects being on for a different amount of time depending on the colour. The total power is 13.35W, but then this figure is then divided by 3, which gives the circuit watts of an individual lamp aspect. In this case it is 4.4W per aspect. This figure is rounded to the nearest watt to give 4W per aspect.

Exactly the same process would apply for calculating the dimmed circuit watts if applicable.

The code would thus be: 79 xx 004 000 100, circuit watts (day) = 4W.

(xx is used to represent whether the traffic signal is LED, Tungsten, dimmed/undimmed, etc...)

4.2.1 How do I record traffic signal equipment in my inventory?

For inventory purposes, the Charge Code is for each individual lamp head or aspect. From the section above you can see that the circuit watts are calculated for each aspect, taking into account how long each colour aspect is on for. This means that the Charge Code shall be entered as a quantity of 3 for a standard 3 aspect traffic signal.

4.2.2 Dimming Traffic Signals

All Traffic Signals take an electricity supply on a continuous basis and normally in an inventory would be allocated against Switch Regime Code 001. However, large numbers of Traffic Signals can operate in a

dimmed mode at night through voltage reduction. The switch to dimmed mode is triggered by the operation of a dusk to dawn PECU (or time switch), which when switched on in the evening, causes the voltage to reduce. This means that the equipment is now operating at the dimmed watts (or night watts) figure shown in the Operational Charge Code table. When the PECU switches off in the morning the voltage increases and the equipment operates at full brightness and circuit watts in the Operational Charge Code table.

When submitting such equipment in an inventory, the switch regime code for the PECU (or time switch) in the Operational Switch Regimes table should be shown against that item.

If the item is traded on a Non Half Hourly basis the operating hours to be used in the EAC calculation for the dimmed (dusk to dawn) operation will be those shown against the relevant Switch Regime in the Operational Switch Regimes table, i.e. 821 for a 70/35 Lux electronic photocell.

For the day time (dawn to dusk) operation the hours to be used will be the continuous hours of for switch regime 001 (8,766 hours) minus the dimmed hours. A worked example is shown below:

Take an inventory in the Midlands, which includes 300 x 50 watt Red Amber Green Vehicle Aspects with a charge code of 7902050000100. These are switched to dimmed operation by use of 70/35 Electronic PECUs which is Switch Regime 821.

The calculation will be:

300 items x 12W x 4,080 hours / 1,000 = 14,688.0 kWh allocated to the Dusk to Dawn profile.

300 items x 18W x 4,686 (8,766-4,080) hours / 1,000 = 25,304.4 kWh allocated to the Dawn to Dusk profile.

If the item is traded on a Half Hourly basis the Equivalent Meter will work out bright and dimmed loads based on the hours of operation of the relevant photocell.

4.2.3 What are filter signals?

The coding for a traffic light containing four or more heads depends upon the use of the other heads.

4 (or more) Signal Heads

If the fourth aspect is on for the same time as another head, e.g. left arrow on at the same time as the straight ahead signal, then a quantity of 4 must be associated with the corresponding 3 head lamp Charge Code.

If the length of time is the same as (or greater) than the green signal light, it shall be counted as a normal green signal lamp. In this case a quantity of 4 (1 red + 1 amber + 2 green aspects) would be entered on the detailed inventory for the relevant Charge Code.

Part of Green Sequence

If the fourth aspect is only on for part of the time, e.g. a right filter arrow on for part of the time of the straight ahead signal, then a quantity of 3 shall be associated with the correct Charge Code and also a quantity of 1 shall be associated with the correct Charge Code for the filter lamp head.

Traffic filter signals are coded as 20% of the full circuit watts of the lamp to recognise that they are only illuminated for part of the green sequence. The definition of a green filter signal is a green signal indicating movement for a specific amount of time. This amount of time **must** be less than the time that the main green signal light is on for.

5 What is Half Hourly and Non Half Hourly Trading?

Currently Ceustomers can trade their electricity in three ways, either Non Half Hourly, passive Half Hourly or dynamic Half Hourly. The main difference between them is the use of dynamic data.

Dynamic data is actual recorded data such as the switching times of a representative sample of photocells contained in a Photoelectric Control Unit (PECU) array. Data recorded by a Central Management System is also dynamic data, with the switching times of each individual lamp controlled by the system and/or power levels being recorded.

Half Hourly (HH) data is the energy consumption of a Ceustomer in kWh, apportioned into the correct half hour of each day.

Dynamic Half Hourly trading achieves this by use of the data obtained from PECU arrays and/or any Central Management System(s).

Passive Half Hourly achieves this by using the calculated sunrise/sunset times. Passive Half Hourly does not use any dynamic data.

In order to trade Half Hourly (HH) a Meter Administrator (MA) must be appointed.

The MA is appointed by the Supplier and contracted by the Ceustomer (who may have chosen to operate HHalf Hourly (HH)).

Non Half Hourly (NHH) trading does not use any dynamic data and instead uses an estimated number of annual hours for each type of photocell. These annual hours are published by BSCCoO in the Operational Switch Regime spreadsheet.

6 What are Switch Regimes?

Switch Regimes are 3 digit codes that allow the operating hours for equipment to be determined. This information together with the power information obtained from the Charge Code allows annual consumption (kWh) to be calculated.

The Switch Regime is a component of the Detailed Inventory submitted by the Customer to the UMSO. This is then used by the UMSO (for NHH Customers) or the MA (for HH Customers) to determine the consumption.

The Customer's own records include, in some format, the switching arrangement. The record for each item shall be completed at the initial installation and then updated when any changes take place. The failure to record changes in lamp or Switch Regime is one of the most common sources of inventory errors.
Switching devices are purchased either by the Customer or by the Customer's contractors to the Customer's specification. The Customer specifies the switching arrangement for a particular item on the work order issued to the installer or the repair/maintenance operative.

The Regime Code for a particular device is usually obtained from either the BSCELEXON Wwebsite, the manufacturer of the control device or the UMSO.

Customers normally have a definite policy on the use of particular switching regimes and only use a few codes. The current emphasis on energy saving, carbon reduction and cost control has resulted in some Ceustomers starting programmes to change areas to part night operation and/or to specify photocells that operate at lower light levels. It is important to use the correct code so as to ensure that the expected cost benefits are actually achieved.

The following Switch Regime Codes provide a standardised listing of switch types. For Non Half Hourly Trading these cross reference to annual burning hours used in the calculation of the Estimate of Annual Consumption (EAC). If an inventory is Half Hourly traded either calculated switching times (passive data) or the switching times from either a PECU array or a Central Management System (dynamic data) will be used to calculate half hourly consumptions.

BSCCo will from time to time review the annual burning hours used for Non Half Hourly EAC calculations and adjust the hours based upon representative data obtained from PECU Arrays. A default value for burning hours will be assigned to a new Switch Regime until 12 months' data has been collected and the burn hours can be calculated.

Switch Regime	Switch Regime Description	Examples of Equipment Type
001	No switching – 24 Hour Burning	Traffic signals, traffic signs continuously burning, variable message signs, Pedestrian underpass/subway lighting (although some installations may be under time control), CCTV Systems and various detection equipment, Traffic Counters, and much of the miscellaneous equipment
020-099	Manual Switching Equipment - to be used for equipment which is manually switched on and off for pre-determined periods per day, month or year.	School Patrol Crossing Flashing Lights
100-199	Motorway Control Centre Switching	
200-399	Time Switch Control - - to be used for equipment which is controlled by a time switch that has pre-determined on/off periods per day, month or year.	Normal time switch control, Part night lighting controlled by time switch
400-499	Thermal Photo Cells (Positive Differential Switch "ON/OFF")	Thermal photo cell controllers are units in which the output of the photo cell is directly fed to the bi-metallic strip which provides both the switching and the time delay. These units generally have a positive differential for switching. For example, 100 Lux "ON" 200 Lux "OFF" although other switch "ON/OFF" levels are available.
500-599	Electronic Photo Cell Time Switch (Part Night Dimming Controller)	Equipment which is automatically switched on and then to a single preset dimming level for part of the night. These are given in GMT and clock times. Please refer to information given below on part-night dimming.
600-699	Hybrid Photo Cells (Negative Differential Switch "ON/OFF")	Hybrid photo cell controllers are units in which the output of the photo cell is fed to the bi-metallic strip via an electronic circuit which provides the time delay. The bi-metallic thermal strip only acts as switching mechanism. These units generally have a negative differential for switching. For example, 70 Lux "ON" 35 Lux "OFF" although other switch "ON/OFF" levels are available. See further detail on Hybrid/ Thermal PECUs given below.
700-799	Electronic Photo Cell Time Switch (Part Night Controller)	The actual switch "ON" times are controlled by a photo electric cell with the midnight switch "OFF" times being factory preset (alternative factory switching "OFF" times are available). An early morning switch "ON" factory preset for 05.00 (alternative factory switching "ON" times

Switch Regime	Switch Regime Description	Examples of Equipment Type
		are available) with the switch "OFF" being controlled by the photo electric cell.
800-997	Electronic Photo Cells (Negative Differential Switch "ON/OFF")	Electronic photo cell controllers are units in which the output of a photo cell is fed to a switching mechanism (generally solid state but can be an electro mechanical relay) via an electronic circuit which provides the time delay. These units generally have a negative differential for switching. For example, 70 Lux "ON" 35 Lux "OFF" although other switch "ON/OFF" levels are available.
998-999	CMS Controlled Equipment	CMS controlled equipment only. The Switch Regime code shall be set to 999 to denote the use of switched equipment (i.e. normal operation is dusk to dawn), or 998 to denote equipment which is normally operating continuous.
A01 to Z99	Multi-level Dimming Switch Regimes	For use with valid combinations of Multi-level dimming equipment.

A complete list of all Switch Regimes may be found on the BSC Website ~~ELEXON website~~.

6.1 Hybrid/Thermal Photoelectric Control Units (PECUs)

Unlike Electronic PECUs these items only use energy when the PECU is switched off, i.e. between dawn and dusk.

If an inventory is traded Non Half Hourly, in order to calculate an EAC it is necessary to determine the dawn to dusk operating hours. The hours to be used will be the continuous hours of 8,766 less the dusk to dawn hours shown in the Operational Switch Regimes table for a particular type of PECU, the remainder being the dawn to dusk operating hours.

Example
An inventory in the Midlands GSP Group has a total of 10,000 Thermal 70/140 PECUs, Switch Regime 421. The operating hours for this switch regime from dusk to dawn are 4,181, which means that each PECU uses 3 watts of electricity for 4,585 hours (8,766-4,181) annually between dawn and dusk. The EAC calculation is 10,000 items x 3 watts x 4,585 hours / 1,000 = 137,550 kWh allocated to the Dawn to Dusk profile.

If the PECUs are included in a Half Hourly inventory the Equivalent Meter will apply the circuit watts to the energy consumption calculations for those periods when the associated PECU in the Array is in a "switched off" state and zero watts when the PECU is logged as "switched on".

6.2 Part Night Dimming

Part night dimming allows Customers to reduce their energy consumption and carbon emissions for part of the night. The power of the lamp will be reduced typically around midnight, returning to full power at the desired time, typically when traffic volumes increase again in the morning.

Under the current arrangement only a single dimming step can be accommodated as described in the guidance note on the BSC~~ELEXON~~ W~~w~~ebsite:

Dimming_lighting_guidance_note.pdf

If more than one level of dimming is required a Central Management System (CMS) must be used. For more information on CMS please refer to the ELEXON CMS fact sheet on the ~~website~~BSC Website.

The codes required for part night dimming are the "500" Series. These are given in GMT and clock time. These have a calculated number of hours per annum that the lamp will be on at full power and at dimmed power. In order to use these reduced hours, a Charge Code with dimmed circuit watts will also need to be quoted on the Ce~~c~~ustomer's inventory (i.e. the last three digits of the Charge Code should be less than 100, such as 060).

Part night cells are a direct plug-in replacement for normal photocells. They can either simply switch the load 'ON', 'OFF', 'ON', 'OFF' during the night or 'ON', 'DIM', 'BRIGHT', 'OFF' according to the type of cell and the particular equipment they are controlling. In the middle of summer, the cells may not switch back 'ON' in the morning.

Typically, they calculate midnight by determining the mid-point of the last 3 on-off cycles then switch the load 'ON', 'DIM' and 'OFF' at the times already programmed into the cell at the time of manufacture.
A more sophisticated version is available that adjusts for the change from GMT to BST and back to GMT. The transition is triggered when the time that the cell is switched 'ON' during 24 hours equals the time the cell is switched 'OFF'.

E.G. Assuming a Ce~~c~~ustomer has a SELC 4000 ECONO 100 Watt Part Night Ballast (Dimmed 72% Circuit Watts). The Ce~~c~~ustomer wants to benefit from the dimming available. They contact their UMSO to inform them that they are now dimming their lamps from 23:00 to 05:00.

The Ce~~c~~ustomer would update the Switch Regime in their inventory to 530. They would also need to quote the correct Charge Code: 14 0100 5004 072.

To calculate the energy consumption (using the NHH hours published for the Eastern GSP Group) the following would apply;

Bright Hours = 1680, Dimmed Hours = 2404, Full Power Circuit Watts = 110, Dimmed Circuit Watts = 79

(1680 x 110) / 1000 + (2404 x 79) / 1000

= Dimmed Consumption 184.8 + Full Power Consumption 189.916

= 375kWh per annum (to the nearest kWh)

For a full list of Charge Codes that support dimming please see the Operational Information Charge Code spreadsheet on the BSC Website ~~Operational Information Charge Code spreadsheet~~).

6.3 Multi-Level Dimming Switch Regimes

A Customer (or the dimmer or ballast manufacturer on the customer's behalf) can apply for a Multi-Level Switch Regime from BSCCo. The application can have up to 8 different dim levels in a 24 hour period, and up to 4 seasonal changes per annum. The switching times applied for with the Switch Regime must be on the hour or half-hour. The application will state all the lamp ballast combinations that the Multi-Level device will be used in conjunction with, together with evidence from either the dimming device manufacturer or the lamp ballast manufacturer that the device will work with the proposed lamp/ballast combination and will dim accurately.

The applicant will also provide a letter of undertaking from the Multi-Level dimming device manufacturer that it will label the dimming devices with the Switch Regime information at the factory prior to delivery, and will ensure that the product cannot be re-programmed by the Customer.

If the combination of lamps and dimming devices is already a 'Valid Dimming Combination' as defined in the table on the BSC Website then the customer does not need to provide the test evidence from the Manufacturer. However, the letter of undertaking will still be required.

~~6.3~~6.4 Motorway Operating Hours

Annual motorway operating hours will be calculated by the Highways Agencies based on actual operational information

7 Standard File Format for Detailed Inventories

7.1 General Comments

The inventory shall be submitted either as a fixed format text file or as a comma separated file with a line for each item of inventory.

The file format below is that which shall be supplied by the Customer or as otherwise agreed with the UMSO. The file format shall contain, as a minimum, the following information:

a) a list of items of Unmetered Equipment providing a unique identification and geographical location of each item;

b) the number of items of each category of Unmetered Equipment, classified by Charge Code and Switch Regime. Items not able to be so classified shall be identified and quantified separately;

c) the nominal rating for each Charge Code shall be indicated; and

d) the Switch Regime for each UMS equipment. Items not able to be so classified shall be identified separately.

For the purposes of this Unmetered Supplies Operational Information document, reference to the summary inventory means only the summarised information identified in (b), (c) and (d) above.

7.2 Standard File Format

Field No.	Name	Details Required	Type	Length	Start Position	Finish Position
1	Road Reference	e.g. Ordinance Survey Number	Text	8	1	8
2	Town, Parish, District		Text	30	9	38
3	Road Name		Text	30	39	68
4	Location		Text	20	69	88
5	Unit Type	Identifies the record as a lamp or a sign, etc. B = bollard; F = school crossing flashers; L = street light; M = miscellaneous; P = pillar; R = Refuge Beacon; S = sign light; T = traffic signal equip; Z = Belisha Beacon (Zebra)	Text	1	89	89
6	Unit Identity	Identity shown on unit (if any)	Text	12	90	101
7	CMS Unit Reference	Unique alphanumeric identifier of the CMS Unit (if applicable)	Text	12	102	113
8	Charge Code	Appropriate BSCP520 code	Numeric	13	114	126
9	No. of Items	Number of items of this charge code at this location	Numeric	3	127	129
10	Switch Regime	Appropriate BSCP520 code	Numeric	3	130	132
11	No. of Controls	Number of PECs or time switches on the item	Numeric	1	133	133
12	Control Charge Code	Appropriate BSCP520 code for the control device	Numeric	13	134	146
13	Ordinance Survey Grid ref 'East' or Latitude	This can be either in Latitude or Eastings	Text	11	147	157
14	Ordinance Survey Grid	This can be either in	Text	11	158	168

Field No.	Name	Details Required	Type	Length	Start Position	Finish Position
	ref 'North' or Longitude	Longitude or Northings				
15	Exit Point (Optional)	Y if Yes, N if No, U if Unknown	Text	1	169	169

The data, with the originator clearly identified, shall be either on a CD or attached to an e-mail. It may be a compressed .ZIP file but NOT a 'self extracting .EXE' archive.

7.3 Notes on Standard Inventory Format

This format has been developed to provide the information required for the operation of BSCP520 and the auditing requirements of Distribution Businesses in a standard way. It is expected to be of particular benefit to Ceustomers with unmetered equipment in more than one Distribution Licence area and to suppliers of inventory software who wish to provide a standard extract package for their Ceustomers.

It is NOT intended to supersede existing arrangements where both the customer and the Distribution Business agree to continue with a different format. With respect to the longer, 13 digit Cecharge Ceode, the Distribution Business will continue to support the 'old' seven digit Charge Code format for a period of time to be agreed with the UMS customer.

Field 1 Road Reference

National Street Gazetteer Unique Street Reference Number is the preferred format because it provides a better location than the combination of road name and town. It is also a very useful sort field when checking for duplicate records.

NSGIR codes are not available for motorways so the motorway reference shall be used e.g. M42, A1(M)

Field 3 Road Name

In the case of Motorways this will be the Motorway reference number e.g. M42, A1(M)

Field 5 Unit Type

B = bollard	F = school crossing flasher	L = street light
M= miscellaneous	P = pillar	R = refuge beacon
S = sign light	T = traffic signal equip	Z = zebra crossing

Field 7 CMS Unit Reference

Where this field is populated, the Switch Regime code in Field 10 shall be reported as either 998 or 999.

Field 11 No. of Controls

In the case of isolation pillars which only contain a time control device and no other load consuming device then the number of time control devices shall be entered here and the appropriate charge code in field 11. Zeros shall be entered in fields 8 & 9.

Fields 13, 14 Grid References or Latitude and Longitude

Data is to be inserted in these fields when available. The increasing use of GPS equipment provides very accurate location data which may supplement or be in addition to the location in Field 4.

Field 15 A 'Y' identifies if the equipment is connected directly to the Distribution network, a 'N' indicates fed via some private distribution network, i.e. a sign light looped from a lighting column, or column fed from private distribution cables.

SVG117/02 - Attachment D

Change Proposal Impact Assessment Timetable 2010 – 2011

Submission deadline of DCPs/CPs for next CPC batch	Monthly CPC batch to be Issued	IA to be Returned	IA responses published	ISG meeting paper day	SVG meeting paper day	ISG Meeting	SVG Meeting	Committee decisions published
29-Oct-2010	05-Nov-2010	25-Nov-2010	02-Dec-2010	13-Dec-2010	23-Dec-2010	21-Dec-2010	04-Jan-2011	11-Jan-2011
19-Nov-2010	26-Nov-2010	16-Dec-2010	23-Dec-2010	17-Jan-2011	24-Jan-2011	25-Jan-2011	01-Feb-2011	08-Feb-2011
31-Dec-2010	07-Jan-2011	27-Jan-2011	03-Feb-2011	14-Feb-2011	21-Feb-2011	22-Feb-2011	01-Mar-2011	08-Mar-2011
21-Jan-2011	28-Jan-2011	03-Mar-2011	10-Mar-2011	21-Mar-2011	28-Mar-2011	29-Mar-2011	05-Apr-2011	12-Apr-2011
25-Feb-2011	04-Mar-2011	31-Mar-2011	7-Apr-2011	18-Apr-2011	26-Apr-2011	26-Apr-2011	03-May-2011	10-May-2011
25-Mar-2011	01-Apr-2011	28-Apr-2011	05-May-2011	16-May-2011	23-May-2011	24-May-2011	31-May-2011	07-Jun-2011
29-Apr-2011	06-May-2011	02-Jun-2011	09-Jun-2011	20-Jun-2011	27-Jun-2011	28-Jun-2011	05-Jul-2011	12-Jul-2011
27-May-2011	03-Jun-2011	30-Jun-2011	07-Jul-2011	18-Jul-2011	25-Jul-2011	26-Jul-2011	02-Aug-2011	09-Aug-2011
24-Jun-2011	01-Jul-2011	28-Jul-2011	04-Aug-2011	15-Aug-2011	22-Aug-2011	23-Aug-2011	30-Aug-2011	06-Sep-2011
29-Jul-2011	05-Aug-2011	01-Sep-2011	08-Sep-2011	19-Sep-2011	26-Sep-2011	27-Sep-2011	04-Oct-2011	11-Oct-2011
26-Aug-2011	02-Sep-2011	29-Sep-2011	06-Oct-2011	17-Oct-2011	24-Oct-2011	25-Oct-2011	01-Nov-2011	08-Nov-2011
23-Sep-2011	30-Sep-2011	27-Oct-2011	03-Nov-2011	14-Nov-2011	21-Nov-2011	22-Nov-2011	29-Nov-2011	06-Dec-2011

Key

	Cut-off for the submission of DCPs for June 11 Release*		Cut-off for the submission of CPs for June 11 Release*		Scope of June 11 Release finalised and closed
	Cut-off for the submission of DCPs for Nov 11 Release*		Cut-off for the submission of CPs for Nov 11 Release*		Scope of Nov 11 Release finalised and closed
	Cut-off for the submission of DCPs for Feb 12 Release*		Cut-off for the submission of CPs for Feb 12 Release*		Scope of Feb 12 Release finalised and closed

*** Please note** that the dates indicated are based on document only changes and, due to the varying size and scope of CPs, ELEXON cannot guarantee that a change submitted by these cut-off dates will be included in the requested Release.