INTRODUCTION OF NEW DEFAULT SWITCH REGIMES

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Purpose of paper	Information
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Summary	The UMSUG is invited to note the introduction of new Default Switch Regimes (SRs) for Photo Electric Control Units (PECUs) with lower lux levels when a customer's PECU Array does not contain PECUs that represent all of the Switch Regimes in the customer's detailed inventory.

1. What is the paper informing you?

1.1 ELEXON has created new, and amended the existing, default time switch Switch Regimes (SR) to be used by the Meter Administrator (MA) when a customer's PECU Array does not contain PECUs that represent all of the Switch Regimes in the customer's detailed inventory supplied by the Unmetered Supplies Operator (UMSO). We have also prepared an update to the Operational Information Document to identify when the default Switch Regimes are to be used.

2. What is the rationale for the New SRs?

2.1 Default SRs are used by MAs where the Equivalent Meter (EM) is being operated on a passive basis or the calculation of the PECU representation in the PECU Array specified in section 4.6.2 of BSCP520 indicates that the PECU type may be omitted from the PECU Array and default arrangements applied.

2.2 In the early days of the Carbon Reduction Commitment over eight years ago, passive EMs were excluded from the reporting requirements and most customers opted to have their PECU Array data removed from the EM with energy calculations through a passive EM. At that time there was only one default SR where a PECU Array was not in use and it was recognised that additional defaults were required to ensure that the passive energy calculations used burning hours that remained representative of the actual street lighting operation. There were three additional SRs created (206, 207, & 208) to be used in the default arrangements where high lux level PECUs were in use, i.e. 70/35 and above.

2.3 Over the subsequent years developments in Street Lighting using LEDs that provide immediate switch on at full Illumination mean that the switching lux levels of PECUs have fallen to much lower on and off operating levels with consequent lower annual hours of operation. For example, there is a current application for a SR where the PECU switches on and off at 5 lux. The proposed hours to be used by UMSOs for NHH calculations in the Eastern GSP are 4,064, but the nearest existing default SR is 205, which will result in annual hours of 4,100 in an EM calculation.

2.4 The offset minutes from sunrise and sunset that are published for the default switch regimes are also used when defining SRs in an EM that use PECUs for the ON and OFF events. For example a Variable Power SR (VPSR) that is defined as a 20/20 lux SR will use the same offset from sunrise and sunset times for the daily switch off and on as the default switch regime. In some cases this will also result in a disparity between NHH and HH energy calculations.

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3. What are the new SRs and how are they mapped?

3.1 As PECUs with relatively high lux levels are declining we have not revisited those SRs. This paper only relates to those switch regimes where levels lower than 70/35 (105 lux in total) are in use. For ease of illustration only the annual hours for the Eastern GSP are shown in the comparison table that follows:

SR	Description	Hours	Default SR	Mins after Sunset	Mins before Sunrise	Hours	Diff.
611	Hybrid PEC – 55/28	4131	206	10	11	4155	24
802	Electronic PEC - 5/5	4064	205	15	15	4100	36
805	Electronic PEC - 10/10	4073	205	15	15	4100	27
806	Electronic PEC 20/20	4092	205	15	15	4100	8
807	Electronic PEC 35/35	4119	205	15	15	4100	-19
808	Electronic PEC 35/18	4103	205	15	15	4100	-3
809	Electronic PEC 40/60	4146	206	10	11	4155	9
810	Electronic PEC 40/20	4110	205	15	15	4100	-10
811	Electronic PEC 55/28	4131	206	10	11	4155	24
821	Electronic PEC 70/35	4151	206	10	11	4155	4

3.2 There are only two default switch regimes in use for the lower lux levels. We have created two new default SRs, 203 & 204) with annual hours of 4,070 and 4,125 respectively. Where the difference in hours shown in the table at 3.1 above is greater than 10, new default SRs have been assigned as below;

SR	Description	Hours	Default SR	Mins after Sunset	Mins before Sunrise	Hours	Diff.
611	Hybrid PEC – 55/28	4131	204	10	11	4125	6
802	Electronic PEC - 5/5	4064	203	18	18	4070	6
805	Electronic PEC - 10/10	4073	203	18	18	4070	-3
807	Electronic PEC 35/35	4119	204	14	13	4125	6
811	Electronic PEC 55/28	4131	204	14	13	4125	-6

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4. Operational Information Document Update

4.1 The OID has been updated with the following wording:

"BSCP520 specifies that where an Equivalent Meter does not have actual switching times for a PECU Switch Regime available from PECU array data then a default PECU Switch Regime as defined in the Operational Switch Regime Spreadsheet shall be used. The default PECU Switch Regime is determined by reference to the annual burning hours calculated by BSCCo for NHH calculations. The default PECU Switch Regime will be in the Time Switch Control range (200-399) and shall have switching times that result in a total annual burning hours calculation that approximate the PECU Switch Regime annual burning hours for NHH calculations."

5. Recommendations

5.1 We invite you to:

a) **NOTE** the new Default Switch Regimes and their mapping to existing SRs; and

b) **NOTE** the updated wording to be included in the OID.

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