

This document is classified as **Clear** in accordance with the Panel Information Policy. Recipients can distribute this information to the world, there is no limit on disclosure. Information may be shared without restriction subject to copyright.

MP244 ‘Device Alerts for Smart Meter credit replenishment’

Annex B

Legal text – version 0.1

About this document

This document contains the redlined changes to the SEC that would be required to deliver this Modification Proposal.

This document contains the changes required to deliver the Proposed Solution.

SEC Schedule 8 - GB Companion Specification v4.3

Amend Table 16.2 as follows:

Add the new Alert with the Alert Code 0x81D5 'Supply Armed Then Enabled - Credit Added' to Table 16.2. The resulting table is embedded below:



MP244_Table16-2_G
BCS-v4-3__2024_05

Schedule 9 'Smart Metering Equipment Technical Specifications'

These changes have been redlined against Schedule 9 version 5.0.

These changes will be applied to versions new sub-version to 5.x.

Amend Section 4.4.7.2 as follows:

Prepayment Mode

GSME shall be capable of operating in Prepayment Mode, including during periods of loss of its Communications Link via its HAN Interface, and maintaining a balance of credit and reflecting any reduction in credit based on Consumption, standing charge and Time-based Debt Recovery.

GSME shall be capable of adding credit to the Error! Reference source not found.~~Meter Balance~~(Error! Reference source not found.~~4.6.5.11~~) (as set out in Sections Error! Reference source not found.~~4.5.2.2~~ and Error! Reference source not found.~~4.5.3.3~~) and reducing the amount of credit in the Error! Reference source not found.~~Meter Balance~~(Error! Reference source not found.~~4.6.5.11~~).

GSME shall be capable of making Emergency Credit available to the Consumer (by means of the Error! Reference source not found.~~Emergency Credit Balance~~(Error! Reference source not found.~~4.6.5.8~~)) if the Error! Reference source not found.~~Meter Balance~~(Error! Reference source not found.~~4.6.5.11~~) is below the Error! Reference source not found.~~Emergency Credit Threshold~~(Error! Reference source not found.~~4.6.4.14~~). GSME shall be capable of displaying the availability of Emergency Credit on its User Interface and of generating and sending an Alert indicating the availability of Emergency Credit via its HAN Interface. The amount of Emergency Credit made available to the Consumer shall be equal to the Error! Reference source not found.~~Emergency Credit Limit~~(Error! Reference source not found.~~4.6.4.13~~). GSME shall be capable of reducing the amount of credit in the Error! Reference source not found.~~Emergency Credit Balance~~(Error! Reference source not found.~~4.6.5.8~~) where Emergency Credit is activated (as set out in Sections Error! Reference source not found.~~4.5.2.1~~ and Error! Reference source not found.~~4.5.3.1~~) and the Error! Reference source not found.~~Meter Balance~~(Error! Reference source not found.~~4.6.5.11~~) is at or below the Error! Reference source not found.~~Disablement Threshold~~(Error! Reference source not found.~~4.6.4.12~~). Any Emergency Credit used shall be repaid when credit is added to GSME (as set out in Sections Error! Reference source not found.~~4.5.2.2~~ and Error! Reference source not found.~~4.5.3.3~~).

GSME shall be capable of reducing the Error! Reference source not found.~~Meter Balance~~(Error! Reference source not found.~~4.6.5.11~~) until it reaches the Error! Reference source not found.~~Disablement Threshold~~(Error! Reference source not found.~~4.6.4.12~~) followed by reducing the Error! Reference source not found.~~Emergency Credit Balance~~(Error! Reference source not found.~~4.6.5.8~~), where activated, until it reaches zero, on the basis of:

- i. the Consumption in the Error! Reference source not found.~~Tariff TOU Register Matrix~~(Error! Reference source not found.~~4.6.5.20~~) converted by Error! Reference source not found.~~Calorific Value~~(Error! Reference source not found.~~4.6.5.20~~)

Managed by

- found.4.6.4.3) and Error! Reference source not found.Conversion Factor(Error! Reference source not found.4.6.4.5) and the Prices in the Error! Reference source not found.Tariff TOU Price Matrix(Error! Reference source not found.4.6.4.32) and, if operating Time-of-use with Block Pricing, the Consumption in the Error! Reference source not found.Tariff Block Counter Matrix(Error! Reference source not found.4.6.5.19) converted by Error! Reference source not found.Calorific Value(Error! Reference source not found.4.6.4.3) and Error! Reference source not found.Conversion Factor(Error! Reference source not found.4.6.4.5) and the Prices in the Error! Reference source not found.Tariff Block Price Matrix(Error! Reference source not found.4.6.4.29);
- ii. the Error! Reference source not found.Standing Charge(Error! Reference source not found.4.6.4.23); and
 - iii. the recovery of debt hourly or daily through each of the Error! Reference source not found.Time Debt Registers [1 ... 2](Error! Reference source not found.4.6.5.21) at rates defined by the Error! Reference source not found.Debt Recovery Rates [1 ... 2](Error! Reference source not found.4.6.4.9).

Where configured by Error! Reference source not found.Suspend Debt Emergency(Error! Reference source not found.4.6.4.28) to do so and when Emergency Credit is in use, GSME shall be capable of suspending the application of (ii) and (iii) to the Error! Reference source not found.Emergency Credit Balance(Error! Reference source not found.4.6.5.8), and accumulating (ii) and (iii) in the Error! Reference source not found.Accumulated Debt Register(Error! Reference source not found.4.6.5.1).

GSME shall be capable of recording debt recovered, or accumulated in the Error! Reference source not found.Accumulated Debt Register(Error! Reference source not found.4.6.5.1), in the Error! Reference source not found.Billing Data Log(Error! Reference source not found.4.6.5.3).

GSME shall be capable of monitoring the Error! Reference source not found.Meter Balance(Error! Reference source not found.4.6.5.11) and where activated the Error! Reference source not found.Emergency Credit Balance(Error! Reference source not found.4.6.5.8) and:

- iv. if the combined credit of the Error! Reference source not found.Meter Balance(Error! Reference source not found.4.6.5.11) and Error! Reference source not found.Emergency Credit Balance(Error! Reference source not found.4.6.5.8) falls below the Error! Reference source not found.Low Credit Threshold(Error! Reference source not found.4.6.4.16), displaying an Alert to that effect on its User Interface and generating and sending an Alert to that effect via its HAN Interface;
- v. if the Error! Reference source not found.Meter Balance(Error! Reference source not found.4.6.5.11) is below, or falls below the Error! Reference source not found.Disablement Threshold(Error! Reference source not found.4.6.4.12) and, if Emergency Credit is activated, the Error! Reference source not found.Emergency Credit Balance(Error! Reference source not found.4.6.5.8) is, or falls to zero: receiving and executing Error! Reference source not found.Add Credit(Error! Reference source not found.4.5.3.3) and Error! Reference source not found.Activate Emergency Credit(Error! Reference source not found.4.5.3.1) Commands from a PPMID and a Gas Proxy Function; and once any such Commands have been executed if the Error! Reference source not found.Meter Balance(Error! Reference source not found.4.6.5.11) remains below the Error! Reference source not found.Disablement Threshold(Error! Reference source not found.4.6.4.12) and, if Emergency

- Credit is activated, the Error! Reference source not found. Emergency Credit Balance(Error! Reference source not found. 4.6.5.8) is zero, Disabling the Supply, displaying an Alert to that effect on its User Interface and generating and sending an Alert to that effect via its HAN Interface;
- vi. where the Supply is Disabled (as set out in (0b) above):
 - where configured by Error! Reference source not found. Suspend Debt Disabled(Error! Reference source not found. 4.6.4.27) not to suspend Time-based Debt Recovery, continuing to apply (ii) and (iii) above to reduce the Error! Reference source not found. Meter Balance(Error! Reference source not found. 4.6.5.11);
 - where configured by Error! Reference source not found. Suspend Debt Disabled(Error! Reference source not found. 4.6.4.27) to suspend Time-based Debt Recovery, suspending the application of (iii) above to the Error! Reference source not found. Meter Balance(Error! Reference source not found. 4.6.5.11) and continuing to apply (ii) above to reduce the Error! Reference source not found. Meter Balance(Error! Reference source not found. 4.6.5.11); and
 - vii. if the Supply is Enabled, suspending the Disablement of Supply (as set out in (0b) above) during periods defined in the Error! Reference source not found. Non-Disablement Calendar(Error! Reference source not found. 4.6.4.20), continuing to reduce the Error! Reference source not found. Meter Balance(Error! Reference source not found. 4.6.5.11) on the basis of (i), (ii) and (iii) above, displaying on its User Interface an indication that the Error! Reference source not found. Meter Balance(Error! Reference source not found. 4.6.5.11) is below the Error! Reference source not found. Disablement Threshold(Error! Reference source not found. 4.6.4.12) and, if Emergency Credit is activated, the Error! Reference source not found. Emergency Credit Balance(Error! Reference source not found. 4.6.5.8) is zero and that Disablement of Supply due to insufficient credit has been suspended, and generating and sending an Alert that Disablement of Supply due to insufficient credit has been suspended via its HAN Interface.
- If the Error! Reference source not found. Meter Balance(Error! Reference source not found. 4.6.5.11) is equal to or below the Error! Reference source not found. Disablement Threshold(Error! Reference source not found. 4.6.4.12) GSME shall be capable of maintaining a calculation of the Debt to Clear based on:
- viii. the difference between the Error! Reference source not found. Meter Balance(Error! Reference source not found. 4.6.5.11) and the Error! Reference source not found. Disablement Threshold(Error! Reference source not found. 4.6.4.12);
 - ix. amount of debt accumulated in the Error! Reference source not found. Accumulated Debt Register(Error! Reference source not found. 4.6.5.1);
 - x. amount of Emergency Credit activated and used by the Consumer; and
 - xi. the payment-based debt to be collected based on (viii), (ix) and (x) (as defined by Error! Reference source not found. Debt Recovery per Payment(Error! Reference source not found. 4.6.4.8) taking account of the amount remaining in the Error! Reference source not found. Payment Debt Register(Error! Reference source not found. 4.6.5.13), the payment-based debt payments in the Error! Reference source not found. Billing Data Log(Error! Reference source not found. 4.6.5.3) and the Error! Reference source not found. Debt Recovery Rate Cap(Error! Reference source not found. 4.6.4.10)).

For Time-based Debt Recovery, the GSME shall be capable of recovering the lesser of:

the amount in the relevant Error! Reference source not found.~~Time Debt Registers [1 ... 2]~~(Error! Reference source not found.~~4.6.5.21~~); and

xii. the corresponding amount determined by the Error! Reference source not found.~~Debt Recovery Rates [1 ... 2]~~ (Error! Reference source not found.~~4.6.4.9~~).

For Payment-based Debt Recovery, the GSME shall be capable of recovering the lesser of:

- xiii. the amount defined by Error! Reference source not found.~~Debt Recovery per Payment~~(Error! Reference source not found.~~4.6.4.8~~) subject to the Error! Reference source not found.~~Debt Recovery Rate Cap~~(Error! Reference source not found.~~4.6.4.10~~); and
- xiv. the amount in the Error! Reference source not found.~~Payment Debt Register~~(Error! Reference source not found.~~4.6.5.13~~).

Where an Error! Reference source not found.~~Adjust Debt~~(Error! Reference source not found.~~4.5.3.5~~) Command is to reduce the amount in a Debt Register and the amount in the Command is greater than the amount in the Debt Register, GSME shall be capable of setting the amount in the Debt Register to zero then applying the difference in the amounts in the following order:

- xv. recovering debt accumulated in the Error! Reference source not found.~~Accumulated Debt Register~~(Error! Reference source not found.~~4.6.5.1~~);
- xvi. where the Error! Reference source not found.~~Meter Balance~~(Error! Reference source not found.~~4.6.5.11~~) is less than the Error! Reference source not found.~~Disablement Threshold~~(Error! Reference source not found.~~4.6.4.12~~), increasing the Error! Reference source not found.~~Meter Balance~~(Error! Reference source not found.~~4.6.5.11~~) until it is equal to the Error! Reference source not found.~~Disablement Threshold~~(Error! Reference source not found.~~4.6.4.12~~);
- xvii. repaying Emergency Credit activated and used by the Consumer and so increasing the Error! Reference source not found.~~Emergency Credit Balance~~(Error! Reference source not found.~~4.6.5.8~~) accordingly; and
- xviii. increasing the Error! Reference source not found.~~Meter Balance~~(Error! Reference source not found.~~4.6.5.11~~).

In executing the Error! Reference source not found.~~Adjust Debt~~(Error! Reference source not found.~~4.5.3.5~~) Command, GSME shall if Emergency Credit activated and used by the Consumer is fully repaid, deactivate Emergency Credit so that it is capable of activation when GSME is operating in Prepayment Mode where Emergency Credit is available (as set out in Section 04.4.7.2)

GSME shall be capable of monitoring the Error! Reference source not found.~~Meter Balance~~(Error! Reference source not found.~~4.6.5.11~~) and, where the Supply is Disabled, GSME shall be capable of Arming the Supply if the Error! Reference source not found.~~Meter Balance~~(Error! Reference source not found.~~4.6.5.11~~) rises above the Error! Reference source not found.~~Disablement Threshold~~(Error! Reference source not found.~~4.6.4.12~~), displaying any such change in the Error! Reference source not found.~~Supply State~~(Error! Reference source not found.~~4.6.5.18~~) on its User Interface and generating and sending an Alert that the Supply has been Armed via its HAN Interface.

Where the Supply is Armed following the rise of the Error! Reference source not found.(Error! Reference source not found.) above the Error! Reference source not found.(Error! Reference source not found.), the GSME shall be capable of monitoring the Error! Reference source not found.(Error! Reference source not found.), and, upon Enabling the Supply, generating and sending an Alert that the Supply has been Enabled via its HAN Interface.

GSME shall be capable of monitoring the Error! Reference source not found. Emergency Credit Balance(Error! Reference source not found. 4.6.5.8) and, where it falls to zero, of generating an entry to that effect in the Error! Reference source not found. Event Log(Error! Reference source not found. 4.6.5.9) and generating and sending an Alert to that effect via its HAN Interface.

Add Section 4.6.5.23 as follows:

4.6.5.18 Supply State

The state of the Supply, being Enabled, Disabled or Armed.

4.6.5.19 Tariff Block Counter Matrix

A 4 x 1 matrix for storing Block Counters for Block Pricing.

4.6.5.20 Tariff TOU Register Matrix

A 1 x 4 matrix for storing Tariff Registers for Time-of-use Pricing.

4.6.5.21 Time Debt Registers [1 ... 2]

Two Debt Registers recording independent debts to be recovered over time when operating Time-based Debt Recovery in Prepayment Mode.

4.6.5.22 Instantaneous Values Last Update Date and Time

The date and time at which, according to GSME's Clock, the consumption Register (4.6.5.4) was last updated.

Amend Section 4.4.7.2 as follows:

Prepayment Mode

ESME shall be capable of operating in Prepayment Mode, including during periods of loss of its Communications Link via its HAN Interface, and maintaining a balance of credit and reflecting any reduction in credit based on Consumption, standing charge and Time-based Debt Recovery.

ESME shall be capable of adding credit to the Error! Reference source not found. Meter Balance [INFO](Error! Reference source not found. 5.7.5.22) (as set out in Sections Error! Reference source not found. 5.6.2.2 and Error! Reference source not found. 5.6.3.3) and reducing the amount of credit in the Error! Reference source not found. Meter Balance [INFO](Error! Reference source not found. 5.7.5.22).

ESME shall be capable of making Emergency Credit available to the Consumer (by means of the Error! Reference source not found. Emergency Credit Balance [INFO](Error! Reference source not found. 5.7.5.15) if the Error! Reference source not found. Meter Balance [INFO](Error! Reference source not found. 5.7.5.22) is below the Error! Reference source not found. Emergency Credit Threshold [INFO](Error! Reference source not found. 5.7.4.17)). ESME shall be capable of displaying the availability of Emergency Credit on its User Interface and of generating and sending an Alert indicating the availability of Emergency Credit via its HAN Interface. The amount of Emergency Credit made available to the Consumer shall be equal to the Error! Reference source not

found.Emergency Credit Limit [INFO](Error! Reference source not found.5.7.4.16). ESME shall be capable of reducing the amount of credit in the Error! Reference source not found.Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15) where Emergency Credit is activated (as set out in Sections Error! Reference source not found.5.6.2.1 and Error! Reference source not found.5.6.3.1) and the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) is at or below the Error! Reference source not found.Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15). Any Emergency Credit used shall be repaid when credit is added to ESME (as set out in Sections Error! Reference source not found.5.6.2.2 and Error! Reference source not found.5.6.3.3).

ESME shall be capable of reducing the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) until it reaches the Error! Reference source not found.Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15) followed by reducing the Error! Reference source not found.Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15), where activated, until it reaches zero, on the basis of:

- xix. the Consumption in the Error! Reference source not found.Tariff TOU Register Matrix [INFO](Error! Reference source not found.5.7.5.34) and the Prices in the Error! Reference source not found.Tariff TOU Price Matrix [INFO](Error! Reference source not found.5.7.4.50), and if operating Time-of-use with Block Pricing the Consumption in the Error! Reference source not found.Tariff TOU Block Register Matrix (Error! Reference source not found.5.7.5.35) and the Prices in the Error! Reference source not found.Tariff Block Price Matrix [INFO](Error! Reference source not found.5.7.4.47);
- the Error! Reference source not found.Standing Charge [INFO](Error! Reference source not found.5.7.4.42); and
- the recovery of debt hourly or daily through each of the Error! Reference source not found.Time Debt Registers [1 ... 2] [INFO](Error! Reference source not found.5.7.5.36) at rates defined by the Error! Reference source not found.Debt Recovery Rates [1 ... 2] [INFO](Error! Reference source not found.5.7.4.12).

Where configured by Error! Reference source not found.Suspend Debt Emergency (Error! Reference source not found.5.7.4.46) to do so and when Emergency Credit is in use, ESME shall be capable of suspending the application of (Qii) and (Qiii) to the Error! Reference source not found.Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15), and of accumulating (Qii) and (Qiii) in the Error! Reference source not found.Accumulated Debt Register [INFO](Error! Reference source not found.5.7.5.1).

ESME shall be capable of recording debt recovered, or accumulated in the Error! Reference source not found.Accumulated Debt Register [INFO](Error! Reference source not found.5.7.5.1), in the Error! Reference source not found.Billing Data Log (Error! Reference source not found.5.7.5.10).

ESME shall be capable of monitoring the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) and where activated the Error! Reference source not found.Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15) and:

- if the combined credit of the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) and Error! Reference source not found.Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15) falls below the Error! Reference source not found.Low Credit Threshold [INFO](Error! Reference source not found.5.7.4.23), displaying an Alert

to that effect on its User Interface and generating and sending an Alert to that effect via its HAN Interface;

if the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) is below, or falls below, the Error! Reference source not found.Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15) and, if Emergency Credit is activated, the Error! Reference source not found.Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15) is, or falls to, zero, Disabling the Supply, displaying an Alert to that effect on its User Interface and generating and sending an Alert to that effect via its HAN Interface;

where the Supply is Disabled (as set out in (0v) above):

a) where configured by Error! Reference source not found.Suspend Debt Disabled(Error! Reference source not found.5.7.4.45) not to suspend Time-based Debt Recovery, continuing to apply (0ii) and (0iii) above to reduce the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22);

where configured by Error! Reference source not found.Suspend Debt Disabled(Error! Reference source not found.5.7.4.45) to suspend Time-based Debt Recovery, suspending the application of (0iii) above to the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22), and continuing to apply (0ii) to reduce the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22); and

if the Supply is Enabled, suspending the Disablement of Supply (as set out in (0v) above) during periods defined in the Error! Reference source not found.Non-Disablement Calendar [INFO](Error! Reference source not found.5.7.4.30), continuing to reduce the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) on the basis of (xixi), (0ii) and (0iii) above, displaying on its User Interface an indication that the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) is below the Error! Reference source not found.Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15) and, if Emergency Credit is activated, the Error! Reference source not found.Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15) is zero and that Disablement of Supply due to insufficient credit has been suspended, and generating and sending an Alert that Disablement of Supply due to insufficient credit has been suspended via its HAN Interface.

If the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) is equal to or below the Error! Reference source not found.Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15) ESME shall be capable of maintaining a calculation of the Debt to Clear based on:

the difference between the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) and the Error! Reference source not found.Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15);

amount of debt accumulated in the Error! Reference source not found.Accumulated Debt Register [INFO](Error! Reference source not found.5.7.5.1);

amount of Emergency Credit activated and used by the Consumer; and

the payment-based debt to be collected based on (0viii), (0ix) and (0x) (as defined by Error! Reference source not found.Debt Recovery per Payment [INFO](Error! Reference source not found.5.7.4.11)) taking account of the amount remaining in

the Error! Reference source not found.Payment Debt Register [INFO](Error! Reference source not found.5.7.5.23), the payment-based debt payments in the Error! Reference source not found.Billing Data Log(Error! Reference source not found.5.7.5.10) and the Error! Reference source not found.Debt Recovery Rate Cap [INFO](Error! Reference source not found.5.7.4.13)).

For Time-based Debt Recovery, the ESME shall be capable of recovering the lesser of:

- the amount in the relevant Error! Reference source not found.Time Debt Registers [1 ... 2] [INFO](Error! Reference source not found.5.7.5.36); and
- the corresponding amount determined by the Error! Reference source not found.Debt Recovery Rates [1 ... 2] [INFO](Error! Reference source not found.5.7.4.12).

For Payment-based Debt Recovery, the ESME shall be capable of recovering the lesser of:

- the amount defined by Error! Reference source not found.Debt Recovery per Payment [INFO](Error! Reference source not found.5.7.4.11) subject to the Error! Reference source not found.Debt Recovery Rate Cap [INFO](Error! Reference source not found.5.7.4.13); and
- the amount in the Error! Reference source not found.Payment Debt Register [INFO](Error! Reference source not found.5.7.5.23).

Where an Error! Reference source not found.Adjust Debt(Error! Reference source not found.5.6.3.5) Command is to reduce the amount in a Debt Register and the amount in the Command is greater than the amount in the Debt Register, ESME shall be capable of setting the amount in the Debt Register to zero then applying the difference in the amounts in the following order:

- recovering debt accumulated in the Error! Reference source not found.Accumulated Debt Register [INFO](Error! Reference source not found.5.7.5.1);
- where the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) is less than the Error! Reference source not found.Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15), increasing the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) until it is equal to the Error! Reference source not found.Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15);
- repaying Emergency Credit activated and used by the Consumer and so increasing the Error! Reference source not found.Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15) accordingly; and
- increasing the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22).

In executing the Error! Reference source not found.Adjust Debt(Error! Reference source not found.5.6.3.5) Command, ESME shall if Emergency Credit activated and used by the Consumer is fully repaid, deactivate Emergency Credit so that it is capable of activation when ESME is operating in Prepayment Mode where Emergency Credit is available (as set out in Section 05.5.7.2).

ESME shall be capable of monitoring the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) and, where the Supply is Disabled, ESME shall be capable of Arming the Supply if the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) rises above the Error! Reference source not found.Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15), displaying any such change in the Error! Reference source not found.Supply State [INFO](Error! Reference source not found.5.7.5.32) on its User

Interface and generating and sending an Alert that the Supply has been Armed via its HAN Interface.

Where the Supply is Armed following the rise of the Error! Reference source not found.(Error! Reference source not found.) above the Error! Reference source not found.(Error! Reference source not found.), the ESME shall be capable of monitoring the Error! Reference source not found.(Error! Reference source not found.), and, upon Enabling the Supply, generating and sending an Alert that the Supply has been Enabled via its HAN Interface.

ESME shall be capable of monitoring the Error! Reference source not found.Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15) and, where it falls to zero, of generating an entry to that effect in the Error! Reference source not found.Event Log(Error! Reference source not found.5.7.5.16) and generating and sending an Alert to that effect via its HAN Interface.

Amend Section 5.11.2.2 as follows:

Prepayment Mode

ESME shall be capable of operating in Prepayment Mode, including during periods of loss of its Communications Link via its HAN Interface, and maintaining a balance of credit and reflecting any reduction in credit based on Consumption, standing charge and Time-based Debt Recovery.

ESME shall be capable of adding credit to the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) (as set out in Sections Error! Reference source not found.5.6.2.2 and Error! Reference source not found.5.6.3.3) and reducing the amount of credit in the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22).

ESME shall be capable of making Emergency Credit available to the Consumer (by means of the Error! Reference source not found.Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15) if the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) is below the Error! Reference source not found.Emergency Credit Threshold [INFO](Error! Reference source not found.5.7.4.17)). ESME shall be capable of displaying the availability of Emergency Credit on its User Interface and of generating and sending an Alert indicating the availability of Emergency Credit via its HAN Interface. The amount of Emergency Credit made available to the Consumer shall be equal to the Error! Reference source not found.Emergency Credit Limit [INFO](Error! Reference source not found.5.7.4.16). ESME shall be capable of reducing the amount of credit in the Error! Reference source not found.Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15) where Emergency Credit is activated (as set out in Sections Error! Reference source not found.5.6.2.1 and Error! Reference source not found.5.6.3.1) and the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) is at or below the Error! Reference source not found.Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15). Any Emergency Credit used shall be repaid when credit is added to ESME (as set out in Sections Error! Reference source not found.5.6.2.2 and Error! Reference source not found.5.6.3.3).

ESME shall be capable of reducing the Error! Reference source not found. Meter Balance [INFO](Error! Reference source not found.5.7.5.22) until it reaches the Error! Reference source not found. Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15) followed by reducing the Error! Reference source not found. Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15), where activated, until it reaches zero, on the basis of:

- i. the Consumption in the Error! Reference source not found. Tariff TOU Register Matrix [INFO](Error! Reference source not found.5.7.5.34) and the Prices in the Error! Reference source not found. Tariff TOU Price Matrix [INFO](Error! Reference source not found.5.7.4.50), and if operating Time-of-use with Block Pricing the Consumption in the Error! Reference source not found. Tariff TOU Block Register Matrix (Error! Reference source not found.5.7.5.35) and the Prices in the Error! Reference source not found. Tariff Block Price Matrix [INFO](Error! Reference source not found.5.7.4.47);
- ii. the Consumption in the Error! Reference source not found. Secondary Tariff TOU Register Matrix [INFO](Error! Reference source not found.5.13.2.10) and the Prices in the Error! Reference source not found. Secondary Tariff TOU Price Matrix [INFO](Error! Reference source not found.5.13.1.1);
- iii. the Error! Reference source not found. Standing Charge [INFO](Error! Reference source not found.5.7.4.42); and
- iv. the recovery of debt hourly and daily through each of the Error! Reference source not found. Time Debt Registers [1 ... 2] [INFO](Error! Reference source not found.5.7.5.36) at rates defined by the Error! Reference source not found. Debt Recovery Rates [1 ... 2] [INFO](Error! Reference source not found.5.7.4.12).

Where configured by Error! Reference source not found. Suspend Debt Emergency (Error! Reference source not found.5.7.4.46) to do so and when Emergency Credit is in use, ESME shall be capable suspending the application of (iii) and (iiiiv) to the Error! Reference source not found. Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15), and of accumulating (iii) and (iiiiv) in the Error! Reference source not found. Accumulated Debt Register [INFO](Error! Reference source not found.5.7.5.1).

ESME shall be capable of recording debt recovered, or accumulated in the Error! Reference source not found. Accumulated Debt Register [INFO](Error! Reference source not found.5.7.5.1), in the Error! Reference source not found. Billing Data Log (Error! Reference source not found.5.13.2.3).

ESME shall be capable of monitoring the Error! Reference source not found. Meter Balance [INFO](Error! Reference source not found.5.7.5.22) and where activated the Error! Reference source not found. Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15) and:

- v. if the combined credit of the Error! Reference source not found. Meter Balance [INFO](Error! Reference source not found.5.7.5.22) and Error! Reference source not found. Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15) falls below the Error! Reference source not found. Low Credit Threshold [INFO](Error! Reference source not found.5.7.4.23), displaying an Alert to that effect on its User Interface and generating and sending an Alert to that effect via its HAN Interface;
- vi. if the Error! Reference source not found. Meter Balance [INFO](Error! Reference source not found.5.7.5.22) is below, or falls below, the Error! Reference source not found. Disablement

- ~~Threshold~~ [INFO](~~Error! Reference source not found.5.7.4.15~~) and if Emergency Credit is activated, the ~~Error! Reference source not found.Emergency Credit Balance~~ [INFO](~~Error! Reference source not found.5.7.5.15~~) is, or falls to, zero, Disabling the Supply, displaying an Alert to that effect on its User Interface and generating and sending an Alert to that effect via its HAN Interface;
- vii. where the Supply is Disabled (as set out in (vi) above):
 - a. where configured by ~~Error! Reference source not found.Suspend Debt Disabled~~(~~Error! Reference source not found.5.7.4.45~~) not to suspend Time-based Debt Recovery, continuing to apply (~~iii~~) and (~~iiiiv~~) above to reduce the ~~Error! Reference source not found.Meter Balance~~ [INFO](~~Error! Reference source not found.5.7.5.22~~);
 - b. where configured by ~~Error! Reference source not found.Suspend Debt Disabled~~(~~Error! Reference source not found.5.7.4.45~~) to suspend Time-based Debt Recovery, suspending the application of (~~iiiiv~~) above to the ~~Error! Reference source not found.Meter Balance~~ [INFO](~~Error! Reference source not found.5.7.5.22~~), and continuing to apply (~~iii~~) above to reduce the ~~Error! Reference source not found.Meter Balance~~ [INFO](~~Error! Reference source not found.5.7.5.22~~); and
 - viii. if the Supply is Enabled, suspending the Disablement of Supply (as set out in (vi) above) during periods defined in the ~~Error! Reference source not found.Non-Disablement Calendar~~ [INFO](~~Error! Reference source not found.5.7.4.30~~), continuing to reduce the ~~Error! Reference source not found.Meter Balance~~ [INFO](~~Error! Reference source not found.5.7.5.22~~) on the basis of (i) to (~~iiiiv~~) above, displaying on its User Interface an indication that the ~~Error! Reference source not found.Meter Balance~~ [INFO](~~Error! Reference source not found.5.7.5.22~~) is below the ~~Error! Reference source not found.Disablement Threshold~~ [INFO](~~Error! Reference source not found.5.7.4.15~~) and, if Emergency Credit is activated the ~~Error! Reference source not found.Emergency Credit Balance~~ [INFO](~~Error! Reference source not found.5.7.5.15~~) is zero and that Disablement of Supply due to insufficient credit has been suspended, and generating and sending an Alert that Disablement of Supply due to insufficient credit has been suspended via its HAN Interface.

If the ~~Error! Reference source not found.Meter Balance~~ [INFO](~~Error! Reference source not found.5.7.5.22~~) is equal to or below the ~~Error! Reference source not found.Disablement Threshold~~ [INFO](~~Error! Reference source not found.5.7.4.15~~) ESME shall be capable of maintaining a calculation of the Debt to Clear based on:

- ix. the difference between the ~~Error! Reference source not found.Meter Balance~~ [INFO](~~Error! Reference source not found.5.7.5.22~~) and the ~~Error! Reference source not found.5.7.5.22~~

- found.Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15);
- x. the amount of debt accumulated in the Error! Reference source not found.Accumulated Debt Register [INFO](Error! Reference source not found.5.7.5.1)
- xi. the amount of Emergency Credit activated and used by the Consumer; and
- xii. the payment-based debt to be collected based on (ix), (x) and (xi) (as defined by Error! Reference source not found.Debt Recovery per Payment [INFO](Error! Reference source not found.5.7.4.11) taking account of the amount remaining in the Error! Reference source not found.Payment Debt Register [INFO](Error! Reference source not found.5.7.5.23), the payment-based debt payments in the Error! Reference source not found.Billing Data Log(Error! Reference source not found.5.13.2.3) and the Error! Reference source not found.Debt Recovery Rate Cap [INFO](Error! Reference source not found.5.7.4.13)).

For Time-based Debt Recovery, the ESME shall be capable of recovering the lesser of:

- xiii. the amount in the relevant Error! Reference source not found.Time Debt Registers [1 ... 2] [INFO](Error! Reference source not found.5.7.5.36); and
- xiv. the corresponding amount determined by the Error! Reference source not found.Debt Recovery Rates [1 ... 2] [INFO](Error! Reference source not found.5.7.4.12).

For Payment-based Debt Recovery, the ESME shall be capable of recovering the lesser of:

- xv. the amount defined by Error! Reference source not found.Debt Recovery per Payment [INFO](Error! Reference source not found.5.7.4.11) subject to the Error! Reference source not found.Debt Recovery Rate Cap [INFO](Error! Reference source not found.5.7.4.13); and
- xvi. the amount in the Error! Reference source not found.Payment Debt Register [INFO](Error! Reference source not found.5.7.5.23).

Where an Error! Reference source not found.Adjust Debt(Error! Reference source not found.5.6.3.5) Command is to reduce the amount in a Debt Register and the amount in the Command is greater than the amount in the Debt Register, ESME shall be capable of setting the amount in the Debt Register to zero then applying the difference in the amounts in the following order:

- xvii. recovering debt accumulated in the Error! Reference source not found.Accumulated Debt Register [INFO](Error! Reference source not found.5.7.5.1);
- xviii. where the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) is less than the Error! Reference source not found.Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15), increasing the Error! Reference source not found.Meter Balance [INFO](Error! Reference source not found.5.7.5.22) until it is equal to the Error! Reference source not found.Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15);

- xix. repaying Emergency Credit activated and used by the Consumer and so increasing the Error! Reference source not found. Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15) accordingly; and
- xx. increasing the Error! Reference source not found. Meter Balance [INFO](Error! Reference source not found.5.7.5.22).

In executing the Error! Reference source not found. Adjust Debt (Error! Reference source not found.5.6.3.5) Command, ESME shall if Emergency Credit activated and used by the Consumer is fully repaid, deactivate Emergency Credit so that it is capable of activation when ESME is operating in Prepayment Mode where Emergency Credit is available (as set out in Section 05.11.2.2).

- xxi. ESME shall be capable of monitoring the Error! Reference source not found. Meter Balance [INFO](Error! Reference source not found.5.7.5.22) and, where the Supply is Disabled, ESME shall be capable of Arming the Supply if the Error! Reference source not found. Meter Balance [INFO](Error! Reference source not found.5.7.5.22) rises above the Error! Reference source not found. Disablement Threshold [INFO](Error! Reference source not found.5.7.4.15), displaying any such change in the Error! Reference source not found. Supply State [INFO](Error! Reference source not found.5.7.5.32) on its User Interface and generating and sending an Alert that the Supply has been Armed via its HAN Interface; and
- xxi-xxii. where the Supply is Armed following the rise of the Error! Reference source not found. (Error! Reference source not found.) above the Error! Reference source not found. (Error! Reference source not found.), the ESME shall be capable of monitoring the Error! Reference source not found. (Error! Reference source not found.), and, upon Enabling the Supply, generating and sending an Alert that the Supply has been Enabled via its HAN Interface.

ESME shall be capable of monitoring the Error! Reference source not found. Emergency Credit Balance [INFO](Error! Reference source not found.5.7.5.15) and, where it falls to zero, of generating an entry to that effect in the Error! Reference source not found. Event Log (Error! Reference source not found.5.7.5.16) and generating and sending an Alert to that effect via its HAN Interface.

Appendix AD ‘DCC User Interface Specification’

There are no changes to the body of Appendix AD, only changes required to the XML Schema. The XML Schema changes will be drafted during the design phase, post-decision of this modification against Appendix AD version 5.0.

These changes will be applied to a new sub-version, 5.x.

Appendix AF ‘Message Mapping Catalogue’

There are no changes to the body of Appendix AF, only changes required to the XML Schema. The XML Schema changes will be drafted during the design phase, post-decision of this modification against Appendix AF version 5.0.

These changes will be applied to a new sub-version, 5.x.