Smart Energy Code

MP134B

'Use of SMKI Certificates relating to a SoLR event – Part 2'

Modification Report

Version 0.4

11 April 2022

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About this document

This document is a draft Modification Report. It currently sets out the background, issue, solution, impacts, costs, implementation approach and progression timetable for this modification, along with any relevant discussions, views and conclusions. It will be updated as the Modification progresses.

Contents

This document also has three annexes:

- **Annex A** contains the business requirements for the solution.

- **Annex B** contains the full Data Communications Company (DCC) Preliminary Assessment response**.**

- **Annex C** contains the Refinement Consultation responses.

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1. Summary

This proposal has been raised by Easton Brown from the Data Communications Company (DCC).

The Supplier of Last Resort (SoLR) process was developed by Ofgem to manage the exit of failed Suppliers from the market where no trade sale or commercial agreement is possible. Once Ofgem revokes the supply Licence of a failing Supplier, the DCC is required to revoke the Smart Metering Key Infrastructure (SMKI) Certificates. Whilst SoLRs to date have involved Suppliers exiting the market in an 'orderly' way, there is a concern that a Supplier falling out of the market in a 'disorderly manner' could expose their prepayment consumers to the risk of supply continuity.

The Smart Energy Code (SEC) Panel requested that the Smart Energy Code Administrator and Secretariat (SECAS) set up a project to examine the risks to consumers from a possible disorderly exit from the market and to propose the solution options available[1]. This project concluded in June 2020 when the final update was presented to Panel[2] and the Proposed Solution was taken forward under MP134.

The original modification was split into two parts. [MP134A 'Use of SMKI Certificates relating to a SoLR event'](#), implemented on 4 October 2021, allows the SMKI Policy Management Authority (PMA) to delay the revocation of a failed Suppliers' SMKI Certificates and thereby allow any Shared Resource Provider (SRP) appointed to send a Service Request to put prepayment consumers in 'safe' mode where they would not lose supply. The solution for MP134B aims to implement a DCC System change to address concerns expressed by the Security Sub-Committee (SSC) around the extended use of SMKI Certificates.

This modification will impact the DCC, Suppliers and SRPs. The estimated DCC cost to implement this modification is between £632,500 to £1,082,500 up to Pre-Integration Testing (PIT). If approved this modification will be targeted for the June 2023 SEC Release. This is a Self-Governance Modification. The legal text this will be provided with the DCC Full Impact Assessment.

2. Issue

What are the current arrangements?

The SoLR process was developed by Ofgem to manage the exit of failed Suppliers from the market where no trade sale or commercial agreement is possible. This situation most likely applies to Small Suppliers. In this situation Ofgem can use its SoLR powers to revoke the failing Supplier's Licence and appoint a new Supplier (the SoLR) for the impacted customers.

Following an increase in the number of Supplier failures leading up to February 2020 which revealed weaknesses in the current Supplier of Last Resort (SoLR) processes, the SEC Panel tasked SECAS with co-ordinating a piece of work to ensure that all SoLR scenarios are documented, processes improved, and the interactions between different Parties clarified[1]. SECAS's final recommendations were presented in June 2020[2].

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[1] Please see Panel paper SECP_77_1402_06 (AMBER) for further details

[2] Please see SEC Panel paper [SECP_81_1906_09](#) (GREEN) for further details

Whilst SoLR events to date have involved Suppliers exiting the market in an 'orderly' way, there is a concern that a Supplier falling out of the market in a 'disorderly manner' could expose its consumers to the risk of supply continuity. Smart meters rely on a Supplier having valid Certificates to interact with meter functions, switching modes between credit and pre-payment and managing credit balances. These SMKI Certificates require a Private Key which is only held by the Supplier (or in the case of some smaller Suppliers, their agent, an SRP). Once Ofgem revokes the supply Licence, the DCC is required by SEC Section L 'Smart Metering Key Infrastructure and DCC Key Infrastructure' to revoke the SMKI Certificates. In addition, if a Supplier fails and experiences a 'disorderly exit' from the market there may not be any staff to manage consumer queries and problems. Once the SoLR is appointed the transfer of consumers can take between two and four weeks while the new Supplier performs a Change of Supplier (CoS) process on each and every consumer.

In March 2021 Ofgem implemented changes to the Supply Licence Conditions requiring Suppliers to develop and submit a Customer Supply Continuity Plan (CSCP) to set out what will be in place to safeguard the continuity of supply for its customers in the event of its exit from the market.

What is the issue?

During the Ofgem process to revoke the Supply Licence of a failing Supplier and the appointment of SoLR, consumers will continue to use energy. Consumers on credit meters are unlikely to experience any supply problems but consumers using prepayment meter modes could run out of credit and lose supply. In this situation they would usually call their Supplier to ask for Emergency Credit or purchase a 'top-up'. However, if the Supplier is undergoing a 'disorderly exit' there will not be any answer to their phone calls, and they may have no means to regain their supply until the new Supplier has performed the CoS process.

MP134A gave the SMKI PMA powers to delay the revocation of a failed Supplier's SMKI Certificates to enable an SRP to send a Service Request to put prepayment consumers in a 'safe' mode where they will not lose supply. The SSC expressed concerns that allowing a SEC Party to use another Party's SMKI Certificates contradicted the security trust model and that a DCC System solution should be developed.

What is the impact this is having?

The current process whereby Ofgem revoke the Supply Licence of a failing Supplier and the DCC then revoke the SMKI Certificates means that prepayment consumers could lose supply and have no means to regain it until the SoLR has been appointed and the new Supplier has performed the CoS process (at which point the new Supplier's SMKI Certificates are placed on the Device). This is mitigated by the SMKI PMA temporarily delaying the revocation of the failed Supplier's SMKI Certificates. However, the Security Sub-Committee believes a more robust solution should be developed to ensure the security trust model is not compromised.

Impact on consumers

Consumers with meters in prepayment mode are of particular concern, as they could potentially lose their supply should their credit run out and their Supplier be unable to support continued top-ups. Vulnerable consumers may lose supply, and this would be of particular concern over the winter period.

3. Solution

Proposed Solution

The Proposed Solution would apply where a failing Supplier exits the market without ensuring their prepayment consumers are protected from losing energy supply.

To mitigate the potential risk and adhere to the security trust model, a new User Role will be created for SRPs to send commands to Devices in the event of a Supplier failure. The User Role would identify the SRP acting in this capacity and limit its capabilities in that capacity. The Users in the User Role will only be allowed to submit SR 1.6 'Update Payment Mode'. This will be managed via configuration so that other Service Requests can be made available to this User Role if needed in the future. During the Working Group discussions Suppliers highlighted that Service Reference Variant (SRV) 1.6 'Update payment mode' was not the preferred service request as it would most likely confuse prepayment consumers. However, during discussions at the business requirement workshop with Data Service Providers (DSPs) it was agreed that the SRPs in the User role would not be able to set an open ended non-disconnect calendar as they would not have authorisation to set the Anomaly Detection Attributes (ADAs). For this reason, it was agreed SRV 1.6 was the only practical service request to use in this situation.

To allow processing of a Service Request in the new User Role, the DSP will be required to verify that the corresponding Supplier has been identified as a failed Supplier. SECAS or the DCC will provide the list of failed Suppliers (updated to Self Service Management Interface (SSMI)), for whom the new Users can act in the new User Role. New Anomaly Detection Threshold (ADT) rules will be required to be uploaded to allow the User to send any Service Requests in the new User Role. By default, the ADT will be set to zero.

The Service Audit Trail (SAT) log entries in the SoLR processing scenario will use the ID of the sender of the request rather than the ID of the Business Originator. The responses to the Service Requests will be delivered to the sender of the request instead of the Business Originator. Similarly, any DCC Alerts arising out of failed Commands will also be delivered to the sender of the relevant Service Request.

The business requirements for this solution can be found in Annex A.

4. Impacts

This section summarises the impacts that would arise from the implementation of this modification.

SEC Parties

SEC Party Categories impacted			
✓	Large Suppliers	✓	Small Suppliers
	Electricity Network Operators		Gas Network Operators

SEC Party Categories impacted			
✓	Other SEC Parties	✓	DCC

Breakdown of Other SEC Party types impacted			
✓	Shared Resource Providers		Meter Installers
	Device Manufacturers		Flexibility Providers

Suppliers will be impacted if they are appointed as a SoLR as they will have the responsibility for the consumers and ensuring they are kept on supply. SRPs will be required to send specified Service Requests to consumers of the failed Supplier.

DCC System

This modification will impact the DCC System. The Systems Integration Testing (SIT) will include test preparation, execution and reporting as required, as well as Service Reference Variant (SRV) testing to verify the use of critical commands on selected Devices. It is anticipated this modification will require some pre-go live service preparation to update support documentation and some early life support for a short period after go-live. A more detailed service impact will be completed as part of the Full Impact Assessment.

SEC and subsidiary documents

The following parts of the SEC will be impacted:

- Section A 'Definitions and Interpretations'

- Schedule 11 'TS Applicability Tables'

- Appendix E 'DCC User Interface Service Schedule'

- Appendix R 'Common Test Scenarios Document'

- Appendix AD 'DCC User Interface Specification'

The legal text will be developed in parallel with the Impact Assessment. The DCC will provide the detailed DCC User Interface Specification (DUIS) changes as part of the DCC Impact Assessment.

Technical specification versions

MP134B will require changes to the DUIS. This will be implemented in the next version of the DUIS at the time of implementation.

In the Preliminary Assessment, the DCC noted that updates to the DUIS schema and the DCC User Gateway Interface Design Specification (DUGIDS) are anticipated to incorporate any additional error codes and responses. It is anticipated this modification will require some pre-go live service preparation to update support documentation and some early life support for a short period after go-live. However, it is not thought that there will be a material impact on the ongoing service. A more detailed service impact will be completed as part of the Full Impact Assessment.

Devices

Devices impacted			
✓	Electricity Smart Metering Equipment	✓	Gas Smart Metering Equipment
	Communications Hubs		Gas Proxy Functions
	In-Home Displays	✓	Prepayment Meter Interface Devices
	Standalone Auxiliary Proportional Controllers		Home Area Network Connected Auxiliary Load Control Switches
	Consumer Access Devices		Alternative Home Area Network Devices

MP134B solution will impact Devices including ESME, GSME and Prepayment Meter Interface Devices. SoLR Contingency Users will be required to submit SR 1.6 (using each valid Command Variant) to set a meter (ESME and GSME) into Credit mode for a Failed Supplier, otherwise getting an error..

Consumers

Consumers, specifically prepayment consumers, will be prevented from losing supply if their Supplier fails and undergoes a disorderly exit from the market.

Other industry Codes

There will be no changes to other industry Codes as a result of this modification.

Greenhouse gas emissions

There will be no impact on greenhouse gas emissions as a result of this modification.

5. Costs

DCC costs

The estimated DCC implementation costs to implement this modification is between £632,500 to £1,082,500 up to PIT. The Design, Build and PIT is expected to take between three to six months to complete. The breakdown of these costs are as follows:

Breakdown of DCC implementation costs	
Activity	**Cost**
Design, Build and Pre-Integration Testing (PIT)	£632,500 to £1,082,500
Systems Integration Testing (SIT)	TBC
User Integration Testing (UIT)	TBC
Implement to Live	TBC
Application Support	TBC

More information can be found in the DCC Preliminary Assessment response in Annex B

SECAS costs

The estimated Smart Energy Code Administrator and Secretariat (SECAS) implementation cost to implement this as a stand-alone modification is two days of effort, amounting to approximately £1,200. This cost will be reassessed when combining this modification in a scheduled SEC Release. The activities needed to be undertaken for this are:

- Updating the SEC and releasing the new version to the industry.

SEC Party costs

Most SEC Parties who responded to the Refinement Consultation highlighted their organisation will incur costs in implementing MP134B in the Refinement Consultation response. One Large Supplier advised it would incur costs between £100k-£250k. It advised it would incur one off and ongoing project costs to qualify and maintain qualification, product changes to accommodate the specific requirements in MP134B, costs to implement and main system environment along with associated operational, security and application support costs.

The full Refinement Consultation responses can be found in Appendix C.

6. Implementation approach

Recommended implementation approach

SECAS is recommending an implementation date of:

- **29 June 2023** (June 2023 SEC Release) if a decision to approve is received on or before 29 June 2022; or

- **27 June 2024** (June 2024 SEC Release) if a decision to approve is received after 29 June 2022 but on or before 27 June 2023.

This modification is DCC System impacting and should be implemented alongside other DCC System impacting modifications for efficiency. The next available DCC System impacting release this modification could be targeted for is the June 2023 SEC Release.

The next available DCC System impacting release following the June 2023 SEC Release is expected to be the June 2024 SEC Release. Therefore, if MP134B misses the June 2023 SEC Release, it will be targeted for the June 2024 SEC Release.

7. Assessment of the proposal

Areas for assessment

Sub-Committee input

SECAS has engaged with the Chairs from the Operations Group (OPSG), the Technical Architecture and Business Architecture Sub-Committee (TABASC), the Security Sub-Committee (SSC) and the Smart Metering Key Infrastructure Policy Management Authority (SMKI PMA) to confirm what input is required from these forums. SECAS believes the following Sub-Committees will need to provide the following input to this modification:

Sub-Committee input	
Sub-Committee	**Input sought**
OPSG	No input required
SMKI PMA	Will the solution support the SMKI architecture or arrangements?
SSC	Will the solution support the security architecture or arrangements?
TABASC	Will there be any negative impact to the technical architecture or arrangements?

Observations on the issue

This issue was originally discussed at the SEC Panel meeting in February 2020. The Change Sub-Committee (CSC) and other Sub-Committees agreed that a solution should be investigated.

Solution development

The results of the SECAS project can be summarised by highlighting that in the majority of cases a failing Supplier will work with Ofgem and industry to agree a commercial sale. In this situation the consumers will continue to receive services until a new Supplier becomes the Responsible Supplier for those consumers. Where this is not possible a failed Supplier that makes a disorderly exit from the market may be able to leave consumers with a DCC enrolled meter in a 'safe' state before their demise, however there is a risk that they may not.

The Authority approved MP134A 'Use of SMKI Certificates relating to a SoLR event' on 1 October 2021. It allows the SMKI PMA to authorise the DCC to delay the revocation of the failed Suppliers' SMKI Certificates. This allows SRP, on instruction from the Authority, to send limited communications to the failed Supplier's Device to ensure prepayment consumers are not at risk of losing supply. The implementation of MP134A built an interim solution to ensure consumers are protected especially over the winter months. The SSC was supportive of MP134A's proposed solution, but some members were concerned that the solution did not fit the security trust model. An enduring solution requiring DCC System changes was proposed but it was anticipated that this would take a significant amount of time to implement.

During Working Group discussions, a Working Group member queried what the incentive was for SRPs to take on this role, particularly since they are not set up to service end consumers. SECAS highlighted that offering this service would be part of the requirement a Supplier would be looking for to fulfil its CSCP duties. Contact with end consumers would not be required by the SRPs since they would simply be sending a Service Request to ensure continuity of supply.

Suppliers were concerned that changing consumers from prepayment mode to credit mode might cause more confusion as they would not be able to top up (as they would not need to), however discussions at the business requirements workshop with the DSP concluded that setting a 'non-disconnect calendar' with no end date would not be technically feasible. For this reason, it was agreed SRV 1.6 'Update payment mode' was the only practical service request to use in this situation and this was reflected in the Refinement Consultation responses.

Concerns were raised around consumers who have self-disconnected (deliberately not topped-up their credit). However, the DCC responded that any Service Request sent would re-arm the supply but would not activate supply it unless the consumer selected to start the supply again.

The SSC was supportive of MP134B and advised it should progress to DCC Impact Assessment stage but requested the targeted implementation date be brought forward from November 2023 to November 2022. However, the Preliminary Assessment states that since MP134B is a technical specification impacting modification there will be an estimated lead time of 12 months following the Change Board decision to implement. This may reduce following the more detailed Impact Assessment. The TABASC considered the modification to be too expensive and highlighted no new environments will be needed for the implementation and supplier keys will still be used within certificates that have been revoked, furthermore private keys can still be used to wrap the GBCS message to send into DCC. The TABASC highlighted the modification needs to articulate the level of risk that a high enough proportion of Suppliers are likely to exit in an uncontrolled way, leaving pre-payment consumers at risk of no access to energy. The TABASC requested SECAS to provide an end-to-end picture, including User entry with the model articulating the risk of partied defaulting. SECAS acknowledged the request and will investigate and include this as the modification progresses.

8. Case for change

Business case

The modification proposes a more robust solution that does not compromise the security trust model compared to the interim solution implemented under MP134A. There has been concerns surrounding the high cost of the modification. SEC Parties also highlighted concerns whether the MP134B solution should be mandated as without any obligation on Suppliers or SRPs to register in the 'SoLR Contingency' role and act using the functionality proposed, it is possible the solution will be unused while incurring a significant cost.

Views against the General SEC Objectives

Proposer's views

SEC Objective (a)[3]

The Proposer believes this modification will better facilitate SEC Objective (a) by ensuring that consumers, particularly prepayment consumers, do not lose supply in the event of a disorderly exit of a Supplier from the market and the necessary appointment of a SoLR.

SEC Objective (b)[4]

The Proposer believes this modification will better facilitate SEC Objective (b) by ensuring the obligations on the DCC are fulfilled with the highest possible security level.

Industry views

SECAS received seven responses to the Refinement Consultation. Most respondents were not in favour of taking MP134B forward any further, with one Party suggesting the costs should not be expended on the DCC Impact Assessment. Industry Parties highlighted there would be impact to their organisation if MP134B was approved, incurring charges and a need for further debt management processes.

The full Refinement Consultation responses can be found in Appendix C.

Views against the consumer areas

Improved safety and reliability

Consumers with meters in pre-payment mode are of particular concern, as consumers could potentially lose their supply should their credit run out and their Supplier be unable or unwilling to support continued top-ups. Vulnerable customers may lose supply, this would be of particular concern over the winter period. MP134B will provide an enduring solution which will be fit in line with the SSC's security trust model.

Lower bills than would otherwise be the case

The Modification Proposal is neutral against this consumer benefit area.

Reduced environmental damage

The Modification Proposal is neutral against this consumer benefit area.

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[3] Facilitate the efficient provision, installation, operation and interoperability of smart metering systems at energy consumers' premises within Great Britain.

[4] Enable the DCC to comply at all times with the objectives of the DCC licence and to discharge the other obligations imposed upon it by the DCC licence.

Improved quality of service

There will be an improved quality of service for prepayment consumers whose Supplier fails and undergoes a disorderly exit.

Benefits for society as a whole

The Modification Proposal is neutral against this consumer benefit area.

Final conclusions

The SSC was supportive of MP134B and advised it should progress to DCC Impact Assessment.

The TABASC advised an end-to-end process diagram of how the SoLR process works was needed and how the modification will impact SRPs.

The general theme of the Refinement Consultations response was not in favour of taking the modification forward. There were concerns that SR 1.6 was considered the only practical SR for the new DCC User role. Industry Parties highlighted they would incur charges and there will be a need for further debt management process. Industry Parties also suggested the costs should not be expended on the DCC Impact Assessment.

Appendix 1: Progression timetable

The Refinement Consultation responses have been presented to the relevant Sub-Committees. The Change Board will now be asked to approve the DCC Impact Assessment cost request.

Timetable	
Event/Action	**Date**
Issue discussed at Panel	14 Feb 2020
Draft Proposal raised	29 May 2020
Presented to CSC for final comment and recommendations	29 May 2020
Panel converts Draft Proposal to Modification Proposal	19 Jun 2020
Modification discussed with Working Group	1 Jul 2020
Modification discussed with SMKI PMA	21 Jul 2020
Modification discussed with SSC	28 Oct 2020
Business requirements discussed with TABASC	6 May 2021
Business requirements discussed with Working Group	2 Jun 2021
Preliminary Assessment requested	11 Aug 2021
Preliminary Assessment returned	1 Sep 2021
Preliminary Assessment discussed with Working Group	3 Nov 2021
Preliminary Assessment discussed with SMKI	8 Dec 2021
Refinement Consultation	28 Feb – 18 Mar 2022
Modification discussed with TABASC	7 Apr 2022

Timetable	
Event/Action	**Date**
Refinement Consultation responses discussed with SSC	13 Apr 2022
Refinement Consultation responses discussed with SMKI PMA	13 Apr 2022
Impact Assessment costs approved by Change Board	20 Apr 2022
Impact Assessment requested	25 Apr 2022
Impact Assessment returned	13 Jun 2022
Modification discussed with Working Group	6 Jul 2022
Impact Assessment response discussed with TABASC	7 Jul 2022
Modification Report approved by CSC	18 Jul 2022
Modification Report Consultation	25 Jul – 5 Aug 2022
Change Board Vote	24 Jul 2022

Appendix 2: Glossary

This table lists all the acronyms used in this document and the full term they are an abbreviation for.

Glossary	
Acronym	**Full term**
CoS	Change of Supplier
CoT	Change of Tenancy
CSC	Change Sub-Committee
CSCP	Customer Supply Continuity Plan
DCC	Data Communications Company
DCCKI	DCC Key Infrastructure
DUIS	DCC User Interface Specification
FIA	Full Impact Assessment
GBCS	Great Britain Companion Specification
IKI	Infrastructure Key Infrastructure
MAC	Message Authentication Code
OPSG	Operations Group
PIT	Pre-Integration Testing
PPM	Pre-Payment
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SIT	Systems Integration Testing
SMETS	Smart Metering Equipment Technical Specifications
SMKI	Smart Metering Key Infrastructure
SMKI PMA	SMKI Policy Management Authority

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Glossary	
Acronym	**Full term**
SSC	Security Sub-Committee
SoLR	Supplier of Last Resort
SRP	Shared Resource Provider
TABASC	Technical Architecture and Business Architecture Sub Committee
UIT	User Integration Testing

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