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## Stage 03: Final Modification Report

# SECMP0023:

# Correct Units of Measure for Uncontrolled Gas Flow Rate

What stage is this document in the process?

|      |                     |
|------|---------------------|
| 01   | Initial Assessment  |
| 02   | Refinement Process  |
| 03   | Modification Report |
| ▶ 04 | Decision            |

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## Summary

Currently the Great Britain Companion Specifications (GBCS) limits the unit values of the Uncontrolled Gas Flow Rate (UGFR) to be defined in whole cubic meters. This modification proposes to allow this unit to be defined to an accuracy of four decimals places.

## Working Group Conclusions



- The Working Group **unanimously** believe that SECMP0023 should be **approved**.

## Impacts



- Suppliers & Other SEC Parties
- Data Communications Company (DCC) Central Systems and Party interfacing systems

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## About this Document

This document is the Final Modification Report (FMR) for SECMP0023. This document provides detailed information on the issue, solution, impacts, costs, industry consultation as well as Working Group (WG) and Panel discussions and conclusions on the modification.

This document has four attachments:

- Attachment A contains the approved legal text changes to support this modification;
- Attachment B contains the Solution Design Specifications;
- Attachment C contains the full responses to the Working Group Consultation (WGC); and
- Attachment D contains the full responses to the Modification Report Consultation (MRC).

The Change Board considered this modification at its meeting on 23 May 2018, where it will determine whether SECMP0023 should be approved.

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## 1. Summary

### What is the issue?

The Great Britain Companion Specification (GBCS) requires the unit value of the Uncontrolled Gas Flow Rate (UGFR) on Gas Smart Metering Equipment (GSME) to be set in whole metres cubed per hour. This current requirement does not provide the level of granularity needed to achieve the functionality the UGFR was established for.

### What is the Proposed Solution?

The Proposer suggests that UGFR should continue to be measured in m<sup>3</sup>/hour, but that it should be measurable to three decimal places. This will allow the UGFR to achieve its purpose.

### Impacts

#### Party

|                             |   |                        |   |
|-----------------------------|---|------------------------|---|
| Large Supplier Parties      | X | Small Supplier Parties | X |
| Electricity Network Parties |   | Gas Network Parties    |   |
| Other SEC Parties           |   |                        |   |

#### System

|                        |   |                           |  |
|------------------------|---|---------------------------|--|
| DCC Systems            | X | Party Interfacing Systems |  |
| Smart Metering Systems |   | Communication Hubs        |  |
| Other Systems          |   |                           |  |

### Implementation Costs

The total estimated implementation cost to deliver SECMP0023 is approximately £417,393. This total cost consists of:

- **£3,000** in SEC Administration effort; and
- **£414,393** in DCC effort.

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## Implementation Date

SECAS recommends an implementation date of:

- **27 June 2019**, if a decision to approve is made by 27 June 2018; or
- **7 November 2019**, if a decision to approved is made after 27 June 2018 but on or before 7 November 2018.

## Working Group's views

The Working Group (WG) believe unanimously that SECMP0023 does better facilitate the SEC Objectives. The WG therefore believe that this Modification Proposal should be approved.

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## 2. What is the issue?

### Background

The Smart Metering Equipment Technical Specification (SMETS) requires that GSME has an UGFR configuration data item. The UGFR function provides an additional control mechanism for gas monitoring. Specifically, when Gas Supply is Enabled, the GSME must check that the flow rate does not exceed the set UGFR. If the flow rate does exceed the value set, the Gas Supply is disabled.

Currently, GBCS requires that the UGFR is set in whole number of metres cubed per hour. Gas Supplier Users can set UGFR on GSME by sending Service Request Variant (SRV) 6.7 'Update Device Configuration (Gas Flow)'.

At the January 2016 Technical Specification Issue Resolution Sub-group (TSIRS) meeting, the Department of Business, Energy and Industrial Strategy (BEIS) asked the Energy Utilities Alliance (EUA) and Supplier Parties to confirm that the current range and granularity of UGFR set values is applicable.

At the February 2016 TSIRS meeting, EUA stated that, based on industry input, the unit of measure should be set to litres per hour. Subsequently, a BEIS Change Resolution Proposal (CRP) was raised by EUA.

The CRP was initially targeted for implementation as part of Release 1.0. However, the proposed CRP was not considered urgent, given that UGFR is not a health and safety feature.

Subsequently, the CRP was withdrawn with the agreement that the following workarounds should be put in place:

- Meter Manufacturers will pre-set the UGFR rate to a suitable value at manufacture, allowing the meter to operate as desired by Suppliers; and
- Gas Supplier Users will not set UGFR by sending SRV 6.7 'Update Device Configuration (Gas Flow)' until a SEC Modification Proposal has been progressed, and implemented, to introduce the proposed changes to UGFR values.

### What is the issue?

The Proposer (RWE Npower) reiterates that the current unit value of the UGFR (whole metres cubed per hour) does not provide the level of granularity needed to achieve the functionality the UGFR was established for.

Industry has indicated that a typical value for a UGFR threshold should be litres per hour. This is well beyond the precision offered by the current unit and therefore, a typical UGFR would be undetectable with the current precision under the SEC.

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### 3. Proposed Solution

#### Solution

SECMP0023 proposes to amend GBCS to require that the UGFR can be set on a GSME in ten-thousandths of metres cubed per hour (tenths of a litre per hour).

This will require a new GBCS Use Case with a new fixed value of the divisor parameter in the Command, which changes from 1 to 10,000.

Changes will also be required to the DCC User Interface Specification (DUIS) to modify the existing SR 6.7 'Update Device Configuration (Gas Flow)' to reflect this change of granularity.

The full detailed solution requirements can be found in the Solution Design Specification document attached (Attachment B).

#### Draft legal text

The proposed legal text changes to the SEC are provided in Attachment A.

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## 4. Impacts

The following section sets out the impacts associated with the implementation of SECMP0023.

### SEC Party impacts

|                             |   |                        |   |
|-----------------------------|---|------------------------|---|
| Large Supplier Parties      | X | Small Supplier Parties | X |
| Electricity Network Parties |   | Gas Network Parties    |   |
| Other SEC Parties           |   |                        |   |

### Large and Small Supplier Parties

SECMP0023 will impact **Large and Small Supplier Parties**, as it allows them to set the UGFR on a GSME in in ten-thousandths of metres cubed per hour.

Supplier Licences requires Supplier Parties to install GSME that comply with SMETS and SMETS requires that the GSME comply with GBCS. Therefore, the GBCS changes required in this modification would be a requirement on Supplier Parties in relation to any GSME they install after this modification is implemented, as these must comply with the version of GBCS in force at that time.

SECMP0023 will also impact the DCC as it will have to facilitate the necessary system changes to support the implementation of this modification. Further information on the impacts to DCC Systems is detailed below.

### Central System impacts

|                        |   |                           |   |
|------------------------|---|---------------------------|---|
| DCC Systems            | X | Party Interfacing Systems | X |
| Smart Metering Systems |   | Communication Hubs        |   |
| Other Systems          |   |                           |   |

### DCC Systems

The DCC has advised, through the full DCC Impact Assessment (IA), that SECMP0023 will primarily impact the Data Service Provider (DSP) systems. The main impacts on the DSP systems include:

- introduction of the amended SR into the DCC User Interface;
- required schema updates for the Message Mapping Catalogue (MMC);

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- uplift to Parse and Correlate to support new the Command; and
- new Anomaly Detection Thresholds to be defined.

## Party Interfacing Systems

SECMP0023 requires changes to the existing DUIS SR 6.7 'Update Device Configuration (Gas Flow)' to allow Supplier Users to choose to set the UGFR with or without decimal places (to align with the relevant version of GBCS). Therefore, Large and Small Supplier Parties will be required to update their DCC User Interface.

## Testing

The DCC will be required to carry out Pre-Integration Testing (PIT) and System Integration Testing (SIT) for SECMP0023.

SECMP0023 will also require Supplier Users to demonstrate that they are able to support the sending of the amended SR and the receiving of the Service Response. Therefore, the DCC shall provide Testing Services to support the implementation of SECMP0023 to prove:

- the DCC User/Test Participant can successfully execute the SRs and can use them effectively in Production; and
- that the code should be uplifted into Production.

Further details of the requirements relating to User Testing can be found in the Solution Design Specification (Attachment B).

## SEC and Subsidiary Document impacts

SECMP0023 requires changes to the following [SEC documentation](#):

- SEC Schedule 8 – GBCS;
- SEC Schedule 11 – Technical Specification Applicability Tables;
- SEC Appendix AD – DUIS; and
- Appendix AF – Message Mapping Catalogue.

## Impacts on other industry codes

No impact on other industry codes.

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## Greenhouse Gas Emission impacts

No impact on Greenhouse Gas emissions.

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## 5. Costs

### Estimated Implementation costs

The total estimated implementation cost to delivery SECMP0023 is approximately **£417,393**.

### SEC costs

The estimated SEC implementation cost is detailed in the table below:

| SECAS implementation costs                                                                                                                                                                      |                   |                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------|
| Implementation Activity                                                                                                                                                                         | Effort (man days) | Cost                |
| Application of approved changes to the SEC.<br>Publication of new version of the SEC on the SEC Website and issuance to SEC Parties.<br>Review and updated any impacted SEC guidance materials. | Five              | £3,000 <sup>1</sup> |

### DCC costs

The estimated DCC implementation cost is detailed in the table below:

| DCC implementation costs (excluding VAT)        |                 |
|-------------------------------------------------|-----------------|
| Implementation Activity                         | Cost            |
| Design                                          | £414,393        |
| Build                                           |                 |
| Pre-Integration Testing                         |                 |
| System Integration Testing                      |                 |
| User Testing                                    |                 |
| Implementation to Live                          |                 |
| <b>Total estimated DCC implementation cost:</b> | <b>£414,393</b> |

<sup>1</sup> SEC man day effort based on a blended rate of £600 per day.



## 6. Implementation

### Recommended implementation date

The Panel has agreed an implementation date for SECMP0023 of:

- **27<sup>th</sup> June 2019**, if a decision to approve is made by 27<sup>th</sup> June 2018; or
- **7<sup>th</sup> November 2019**, if a decision to approved is made after 27<sup>th</sup> May 2018 but before 7<sup>th</sup> November 2018.

The DCC has advised that it requires 12 months lead time, from the date of approval, to implement the proposed changes.

SEC Parties have advised that they require a maximum of 12 months lead time, from the date of approval, to implement the changes required to Party Interfacing Systems and processes.

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## 7. Working Group Discussions

### Terms of Reference Terms of Reference

The WG have considered and answered the questions put forward in the SECMP0023 Terms of Reference (ToR). A summary of their discussions and conclusions are detailed below.

#### Is UGFR a health and safety feature?

During WG discussions of the issue SECMP0023 is seeking to solve, it was noted that the UGFR may be a safety feature which provides the control mechanism for disabling Gas Supply.

It was highlighted that this matter had been addressed and closed through the BEIS CRP process.

BEIS confirmed that SMETS does not specify the UGFR as a safety feature. At TSIRS, EUA and a number of Supplier Parties also confirmed that UGFR is only an indicator of gas flow, and is therefore not a safety feature. It was highlighted that UGFR only operates on enablement of supply. Once supply has been enabled then, providing it has not disabled the supply, the UGFR is not active.

#### What is UGFR value granularity

The original proposed solution was to require that the UGFR can be set on a GSME in thousandth of metres cubed per hour. It was questioned whether this level of granularity is sufficient, noting that another modification would be required to amend it in the future, if SECMP0023 was approved.

The WG agreed to amend the solution to specify a greater level of granularity (ten-thousandths of metres cubed per hour) in order to avoid a future modification, in case this value of UGFR is required in the future.

#### DCC Demand Spike

The DCC questioned, through the DCC Preliminary Assessment, whether Supplier Users would update all their GSME Device Configurations as soon as this modification is implemented (if it were to be approved). This is because there were concerns that there could be a risk of a demand spike in DCC Systems if this was to occur.

The WG agreed that, as the UGFR is set at the point of manufacture of a GSME, SECMP0023 will not create any additional demand in business as usual cases. This is because the UGFR on GSME that have already been installed will be set at an appropriate value. Therefore, Supplier Users will not have to reset the UGFR value on existing GSMEs as soon as this modification is implemented (if approved).

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It was highlighted that the new UGFR Command will be needed to set greater granularity in the future in order to support innovation. It was also noted that there is not an obligation on Meter Manufacturers to set the value at an appropriate value.

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## 8. Working Group Conclusions

The WG's initial unanimous view is that SECMP0023 better facilitates General SEC Objective a) and should be approved.

### Benefits and drawbacks of SECMP0023

The Proposer and the WG have identified the following benefits and drawbacks related to SECMP0023:

#### Benefits

SECMP0023 allows Gas Supplier Parties to set the UGFR at a more granular value than at present. This will enable them to set values that are more appropriate as, currently, the level of granularity means the lowest non-zero value that can be set is 1m<sup>3</sup>/h, meaning this is the flow rate that would have to be measured before the gas flow is cut off. This rate of flow is around an order of magnitude bigger than what would be a more meaningful value, with industry participants noting values of around 0.05-0.1m<sup>3</sup>/h being more appropriate. Implementing this change would therefore make the UGFR functionality able to fully deliver the purpose it was established for.

Furthermore, without this modification, the mechanism to set the UGFR via a DCC Service Request will not be used by Suppliers. The UGFR needs to be a configurable value as the acceptable UGFR can vary depending on the premise type. There is therefore no single value for UGFR that is suitable for all premises – the current default value being set in meters has the risk of being too high for some premises (and therefore not identifying a potentially unsafe flow of gas) and too low for other premises (which may affect the ability of some consumers to re-enable their supply). If the UGFR is not configurable then Suppliers will need to have meters with different pre-set UGFR values available to their installers which will impact the efficiency of the installation process. It also means that if the pre-set UGFR is found not to be suitable then an unnecessary meter exchange may need to take place. This would also mean that Device Manufacturers will have to set the UGFR at manufacture, which cannot be monitored through the SEC.

#### Drawbacks

The WG has not identified any drawbacks related to this modification.

### Views against the General SEC Objectives

#### Objective a)

The unanimous of the WG Members believe that SECMP0023 better facilitates General SEC Objective (a) because Gas Suppliers will be able to set the UGFR value to an

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appropriate level of granularity. This will facilitate the efficient provision and operation of GSME as the modification allows the UGFR functionality to be utilised in the capacity it was originally established for.

For the avoidance of doubt, the WG believes that SECMP0023 is neutral against all other SEC Objectives

### **Draft legal text changes**

- SEC Schedule 8 'GB Companion Specification Version' changes to Table 20
- SEC Appendix AD 'DCC User Interface Specification' changes to Section 3.8.58

For further reference see Attachment A.

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## 9. Panel discussions & conclusions

### Panel conclusions

The Panel **unanimously** agreed that due process has been followed and that SECMP0023 should progress to Modification Report Consultation.

The Panel also agreed that SECMP0023 should be a Path 3: Self-Governance Modification Proposal and that the draft legal text changes to the SEC deliver the intention of the modification.

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## Appendix 1: Glossary

The table below provides definitions of the terms used in this document.

| Acronym | Term                                                |
|---------|-----------------------------------------------------|
| CRP     | Change Resolution Proposal                          |
| DCC     | Data Communications Company                         |
| DSP     | Data Service Provider                               |
| DUIS    | DCC User Interface Specification                    |
| EC      | European Commission                                 |
| EUA     | Energy & Utility Alliance                           |
| GBCS    | Great Britain Companion Specification               |
| GSME    | Gas Smart Metering Equipment                        |
| HAN     | Home Area Network                                   |
| MMC     | Message Mapping Catalogue                           |
| MRC     | Modification Report Consultation                    |
| PIT     | Pre-Integration Testing                             |
| SEC     | Smart Energy Code                                   |
| SMETS   | Smart Metering Equipment Technical Specification    |
| TSIRS   | Technical Specification Issues Resolution Sub Group |
| SIT     | System Integration Testing                          |
| SRV     | Service Request Variant                             |
| UGFR    | Uncontrolled Gas Flow Rate                          |
| WG      | Working Group                                       |
| WGC     | Working Group Consultation                          |

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