RETAIL ENERGY CODE

This document is classified as **WHITE**.
Information is for public, unrestricted dissemination and publication.

| | |
|---|---|
| 01 | Initial Assessment Report |
| 02 | Preliminary Change Report |
| 03 | Final Change Report |

# INITIAL ASSESSMENT REPORT

## R0142 – AMENDMENT TO MULTIPLICATION FACTOR ENUMERATIONS TO SUPPORT HYDROGEN TRIALS

| | |
|---|---|
| DOCUMENT VERSION | V1.0 |
| DATE ISSUED | 24/11/2023 |
| DOCUMENT APPROVAL STATUS | APPROVED |

| | | | |
|---|---|---|---|
| RESPONSIBLE COMMITTEE | TECHNICAL EXPERT PANEL | CHANGE PATH | SELF-GOVERNANCE |
| PRIORITY STATUS | MEDIUM | URGENCY | STANDARD |

| | |
|---|---|
| DEADLINE FOR ALTERNATIVE CHANGE PROPOSALS | 19/01/2024 |


**LEAD CHANGE ANALYST**



**Lydia Bentley**

Click to send an email

020 3922 0748


## CHANGE OVERVIEW

The H100 hydrogen gas trial involves the supply of hydrogen gas to households in place of natural gas. The quantity of gas supplies needs to be billed in a way that is comparable to standard gas supply. To facilitate the trial, a multiplication factor enumeration value must be established within the Data Specification that can replicate hydrogen's calorific value, therefore allowing accurate billing.

| | |
|---|---|
| | High Impact:<br>Gas Suppliers |
| | Medium Impact:<br>Central Data Service Provider<br>Gas Transporters<br>Meter Equipment Managers |
| | Low Impact:<br>Gas Consumers |

RETAIL ENERGY CODE

## 1 BACKGROUND

When the H100 hydrogen gas trial takes place, Consumers supplied with hydrogen gas must be able to have their consumption measured such that they are not been charged more than they would have been, had they consumed the equivalent energy from natural gas. This is to ensure both a fair outcome for the Consumer, and that REC Parties and Service Providers taking part in the trial are able to accurately report trial data, as well as being properly remunerated for their participation.

Gases that can be used as fuels have a calorific value. When natural gas is supplied to a property, it is assigned a daily calorific value at each Local Distribution Zone by the Gas Transporter based on the physical and chemical properties of the gas supplied. This is a calculation of the energy content of a gas. The multiplication factor is a value inherent to a Gas Metering Asset that standardises the measurement of the physical supply of gas into the asset, so that it can be recorded predictably as a volume through the meter. Both of these values are used in the calculation of a kilowatt hour (kWh), which is used to bill Consumers.

During these initial stages of the H100 trial, changes to Market Messages will need to be made to ensure that hydrogen gas can be billed, using the same methodology used in natural gas billing. In the longer term, a more permanent methodology will be developed, which will include using a different calorific value specific to hydrogen gas. As a result of the lower calorific value of hydrogen, approximately 12 (MJ/M3) compared to the natural gas calorific value ranging from 38 to 41MJ/M3, the volume of gas used by consumers will be approximately three times greater to deliver an identical equivalent energy requirement. This solution will adjust the metered volume, while retaining the existing natural gas calorific value and will remain representative of the actual energy used at the Consumers' premises. It will equalise the resultant charges for the Consumers, irrespective of the fuel source being used.

Changes to calorific values are technically challenging and are expected to result in substantial consequential changes. A simplified temporary approach has been put forward for the trial, to modify the multiplication factor by an amount that will result in a corrected kWh figure for hydrogen, based on what the correct calorific value would have calculated instead.

## 2 PROBLEM STATEMENT

In order for the H100 gas trial to be successful, a billable value for hydrogen gas needs to be accurately calculated from supplied physical volumes. To do this, relevant Data Items (relating to the calculation of billable gas volumes) within the Data Specification need to be updated to allow a new value for the multiplication factor. This change seeks to introduce a new enumeration value for the multiplication factor needed to facilitate the addition of this new value.

RETAIL ENERGY CODE

## 3 USER STORIES

| REF. | USER STORIES |
|---|---|
| **CONSUMER USER STORIES** | |
| C1 | As a Consumer taking part in the H100 trial, I want to be charged based on the amount of gas I consume, such that I am not charged more than I would have been, had I consumed the equivalent energy from natural gas. |
| **MARKET PARTICIPANT USER STORIES** | |
| M1 | As a Gas Supplier, I want to ensure H100 trial Consumers, are not charged more than they would have been, had they consumed the equivalent energy from natural gas. |
| M2 | As a Gas Transporter, I want to accurately know how much hydrogen gas is being offtaken, so that I can support Suppliers. |
| M3 | As the Central Data Service Provider (CDSP), I want Market Messages relating to meter asset information to be accurate, so that I am better able to support dependant REC Parties |
| M4 | As a Meter Equipment Manager (MEM), I want my metering assets compatible with the H100 trial to be underpinned by accurate Market Messages, so that I able to manage these meters correctly. |

## 4 IMPACTS

| CONSUMERS |
| --- |
| Gas Consumers |

| REC SERVICE PROVIDERS |
| --- |
| Central Data Service Provider |
| Gas Retail Data Agents |

| REC PARTIES AND SERVICE USERS |
| --- |
| Gas Suppliers |
| Gas Transporters |
| Meter Equipment Managers |

| REC DOCUMENTS / PRODUCTS |
| --- |
| Data Specification |

The Code Manager expects that Gas Suppliers will be impacted by this change. We anticipate that addition of a new enumeration value for multiplication factor may affect Supplier's billing platforms and systems.

The Code Manager also expects an impact on REC Parties, non-REC Party service users, and Service Providers who interact with the five Market Messages that contain the multiplication factor Data Item. Process mapping conducted by the Code Manager shows that Suppliers, Shippers, MEMs and the CDSP are all originators or recipients of Market Messages containing multiplication factor, so any change to this Data Items is likely to impact these groups.

There will be a Data Specification impact, as the multiplication factor is a Data Item within it, that will need to have the enumerations increased from 4 to 5.

## 5 CROSS CODE IMPACTS

Uniform Network Code (UNC) Modification 0799 was approved for implementation by the Authority on the 22 November 2022. That change established UNC business rules to facilitate the H100 trial, so that the methodology used for energy allocation and transportation charges being applied under the UNC was reflective of the energy consumed, regardless of the fuel type involved. This REC change is to ensure that the values needed by Suppliers would be communicated using the REC Data Specification and Market Messages, so Consumer's bills would also remain reflective of the actual energy consumed at these end Consumers' premises.

## 6 CHANGE PATH AND RESPONSIBLE COMMITTEE

| CHANGE PATH | SELF-GOVERNANCE |
|---|---|

| RESPONSIBLE COMMITTEE | TECHNICAL EXPERT PANEL |
|---|---|

This change will follow a Self-Governance change path.

Changing fuel source from natural gas to hydrogen gas is likely to have substantial benefits across the market for Consumers as the hydrogen schemes progress. Ofgem's enduring priority to focus on advancing decarbonisation of energy sources, enabling investment in low carbon infrastructure at a fair price, to deliver a future retail market that works for all consumers and the planet and also to ensure energy system governance, including Ofgem, are fit for the future.

The Responsible Committee for making self-governance decisions on changes to the Data Item Catalogue is the Technical Expert Panel (TEP) as set out in the REC Baseline Statement.

## 7 PRIORITY STATUS AND URGENCY

### PRIORITISATION MATRIX

| Category | Significance / Resource impacts / Urgency | Further selection / breakdown | Score (0-3) | Weighting | Weighted Score |
|---|---|---|---|---|---|
| Impacts | Consumer Impact | Direct | 1 | 27 | 27 |
| | Retail Markets Impact | Innovation and Market Arrangements | 1 | 17 | 17 |
| | RECCo / REC Party / REC Service Provider Impact | Operational Effectiveness and Efficiencies | 1 | 7 | 7 |
| | | Legal and Regulatory Compliance | 1 | 14 | 14 |
| Resource | Complexity / Effort / Duration | | 3 | 9 | 28 |
| Strategic Alignment | Contribution to/ Alignment with the objectives of the REC | | 1 | 17 | 8 |
| | Contribution to/ Alignment with RECCo's Forward Work Plan | | 1 | | 8 |
| Urgency *(The need to progress a change to meet a targeted date)* | | Other Planned Activity | 3 | 10 | 30 |
| | | | | Overall Priority Score (rounded) | 138 |

| Priority Score | Priority Status |
|---|---|
| 171 and above | Critical |
| 151 to 170 | High |
| 101 to 150 | Medium |
| 0 to 100 | Low |

| | |
|---|---|
| Priority Status | MEDIUM |
| Change Proposal Type | STANDARD |

*Urgent Change Proposals meet the Criteria for Urgency as set out by Ofgem*

This Change Proposal has a medium priority status based on a score of 138.

- We have identified a complexity score of three, representing a potential high complexity / effort / duration. This change is likely to impact, multiple REC Parties, non-REC Party service users, and REC Service Providers. Whilst we aim to keep the scope of this change relatively narrow, focusing only on changes to the Data Specification, there is the possibility for additional unforeseen complexity, which is reflected in the score.
- We have identified an Urgency score of three, representing a high urgency. This change must be implemented by Q4 2024 in order to meet the planned timescales for the H100 trial.

All other scores have been ranked as one, as appropriate.

## 8 SUMMARY OF CHANGE PROPOSAL PLAN

The scope of this change is narrow; the Code Manager will be making a change to the enumeration values for the Data Item “multiplication factor” in the Data Specification.

At the time of publication, the Code Manager is not expecting to make any changes to Schedule 1 – Interpretations and Definitions to include terminology used in the H100 trial. Whilst we do not rule this out as the change develops, at this stage we are not looking to introduce definitions for concepts such as hydrogen, as we are limiting the scope of this change to the data specification only.

| | FROM | TO |
|---|---|---|
| SERVICE PROVIDER IMPACT ASSESSMENT | 27/11/2023 | 11/01/2024 |
| PARTY IMPACT ASSESSMENT | 01/12/2023 | 22/12/2023 |
| PRELIMINARY CHANGE REPORT AND CONSULTATION ISSUED | 19/01/2024 | 19/01/2024 |
| CONSULTATION | 19/01/2024 | 09/02/2024 |
| FINAL CHANGE REPORT ISSUED | 20/02/2024 | 20/02/2024 |
| RESPONSIBLE COMMITTEE DECISION | 28/02/2024 | 28/02/2024 |
| APPEAL WINDOW CLOSURE | 13/03/2024 | 13/03/2024 |

## 9 GLOSSARY

| TERM | DEFINITION |
|---|---|
| Calorific Value | means the amount of energy released when a known volume of gas is completely combusted under specified conditions. |
| Central Data Service Provider | means the 'Central Data Service Provider' appointed by Gas Transporters pursuant to standard special condition A15 (Central Data Service Provider) of the Gas Transporter Licences. |
| Data Catalogue | means the catalogue of data flows, data definitions and data formats as approved and defined under the REC Data Specification. |
| Data Item | means the most granular level of data defining a specific attribute in respect of a data type, the permissible values for which are defined and controlled in the Data Item Catalogue. |
| Data Item Enumerations | means permitted values associated with specific Data Items. |
| Data Specification | means the document of that name forming part of the Technical Specification. |
| Gas Transporter | means a person holding a Gas Transporter Licence which requires that person to become a Party to this Code. |
| H100 | The H100 project is a 100% hydrogen network trial project managed and operated by Scotia Gas Network in Fife and forecast to operate from quarter one 2023 until 31st March 2027. |
| Market Message | means a structured communication sent between two Market Participants in the form and with the content required (and as otherwise specified) by the Data Specification. |
| Metering Asset | shall have the same meaning as Metering Equipment. |
| Multiplication Factor | means the multiplication factor detailed in the market domain data field in the Market Domain Data meter product table published under the Retail Energy Code. |
| Registered Supplier | means, in respect of an RMP and at any time, the Energy Supplier recorded against that RMP in the Central Switching Service at that time with an Active or Secured Inactive Registration Status (or, in respect of a period of time, the Energy Supplier that had, has or will have an Active or Secured Inactive Registration Status in respect of that RMP during that period). |
| Shipper | means a person holding a Shipper Licence. |
| Uniform Network Code | means the Uniform Network Code established under the Gas Transporter Licences. |