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Action:	For Decision

Introduction of hydrogen meters into the UK smart infrastructure

1. Purpose

The Smart Energy Code Administrator and Secretariat (SECAS) has been approached to identify potential Smart Energy Code (SEC)-impacting issues that relate to the introduction of hydrogen into the gas network, and identify solutions. The potential Proposer and SECAS request that the Technical Architecture and Business Architecture Sub-Committee (TABASC) provide input into the issues identified and provide its feedback on the current modification scope. We recommend that there should be further investigation into the technical specifications to understand the level of compatibility with the introduction of hydrogen. Therefore, following TABASC feedback, it is recommended that, if necessary, the Technical Specifications Issue Resolution Sub-Group (TSIRS) considers TABASC views on this modification prior to its own discussion on the topic.

2. Facilitating hydrogen

To facilitate the use of hydrogen within the existing gas network, Industry must consider if the SEC is currently able to facilitate hydrogen (at varying percentages mixed with natural gas) and provide the appropriate information to Suppliers. Industry will need to identify how the SMIP will work with hydrogen and where it may need to adapt. This will include Devices and Data Communications Company (DCC) Systems. SECAS request that the TABASC considers if and how the SEC and current smart metering technical and business architecture may need to change in order to facilitate hydrogen. The potential Proposer has identified specific areas of the SEC that they initially believe will need to be considered in order to facilitate the introduction of hydrogen into the gas network.

The areas that require investigation are:

2.1 Calorific Value and Conversion Factor

It should be noted a hydrogen meter will require different Calorific Values (CVs) to be set (average value around as low as 10 MJ/m³ for pure hydrogen, compared to 40 MJ/m³ for natural gas) to support consumer billing. Since the CV and Conversion Factor is provided to the Supplier by the Gas Transporter, we do not believe this needs a change to the SEC.

2.2 Identification of meters measuring hydrogen

As the phased introduction of hydrogen progresses, Suppliers will need to be able to manage their portfolio of meters and it is envisaged that this may require remote verification of the type of meter capability in order to ensure the meter is correctly configured (for example, with the correct Calorific Value). Meters passing hydrogen will be all meters in a particular area covered by the Gas Transporter (likely by postcode, not at an individual premises level). SECAS suggest this should be a single source of data such as the Registration Data, to avoid duplication and the inevitable errors that come with having two alternate sources of information.

2.3 Excess Flow configuration

Some safety aspects also need further consideration. It is anticipated that hydrogen meter thresholds will need to be configured upon installation, while considering the number of attached appliances and that it may require re-configuration during post installation. If the gas flow within the customer premise exceeds certain thresholds during installation (and purging air from the gas pipes), the Excess Flow valve will disable the supply. SECAS suggest additional advice for installers should be covered by the Smart Metering Installers Code of Practice (SMICoP).

2.4 Other issues

Please note that the scope of this Anticipated Modification is still open, and SECAS will consider the feedback from each Sub-Committee.

3. Next steps

Following discussions at the TABASC, SECAS suggest that any TABASC feedback be sent to the TSIRS for further investigation, discussion and comment. Once any SEC changes have been identified the proposal can be raised, if necessary.

4. Recommendations

The TABASC is requested to:

- **NOTE** the contents of this paper;
- **CONSIDER** any SEC changes that will be required to facilitate the introduction of hydrogen; and
- **AGREE** the next steps.

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SECAS Team

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