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Appendix 1 of Schedule 2.2 (Performance Measures and Monitoring);

<b>"Taxation" or "Tax"</b>	means any form of taxation, duty, impost, levy, tariff of any nature whatsoever (including, without limitation, statutory, governmental, state, federal, provincial, local, government or municipal charges, duties, imposts, contributions, levies, withholdings or liabilities wherever chargeable and whether of the UK or any other jurisdiction) including: <ul style="list-style-type: none"><li>(a) (whether or not any such taxation, duty, impost, levy or tariff arises) in respect of actual, deemed, gross or net income, profit, gain, value, receipt, payment, sale, use, occupation, franchise, value added property or right;</li><li>(b) national insurance contributions in the UK (and corresponding obligations elsewhere);</li><li>(c) any withholding amount subject to PAYE or other amount of or in respect of any of the foregoing payable by virtue of any Tax statute; and</li><li>(d) any penalty, charge, surcharge, fine, charges or costs or interest payable in connection with any such taxation, duty, impost, levy or tariff;</li></ul>
<b>"Term"</b>	means the period commencing on the Signature Date and ending on: <ul style="list-style-type: none"><li>(a) the expiry of the Initial Term;</li><li>(b) if the DCC elects to extend the Term in accordance with Clause 5.2, the expiry of the relevant Extension Period; or</li><li>(c) if applicable, the earlier termination of this Agreement;</li></ul>
<b>"Termination Assistance Charge"</b>	means the Charge identified as such and calculated in accordance with paragraph 13 of Part D of Schedule 7.1 (Charges and Payment);
<b>"Termination Assistance Notice"</b>	has the meaning given in paragraph 2.1 of Part F of Schedule 8.5 (Exit);
<b>"Termination Assistance Period"</b>	means the period during which the Contractor shall provide the Termination Assistance Services (as specified in a Termination Assistance Notice from the DCC), as further described in paragraph 2.2 of Part F of Schedule 8.5 (Exit) and as may be extended in accordance with paragraph 2.3 of Part F of Schedule 8.5 (Exit);
<b>"Termination Assistance Services"</b>	means the services and activities to be performed by the Contractor pursuant to the Exit Plan, including those activities listed in paragraph 4 of Part F of Schedule 8.5

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	(Exit), as specified in the Termination Assistance Notice;
<b>"Termination Date"</b>	means in relation to the Agreement (or any part of the Agreement (as the context requires)): <ul style="list-style-type: none"><li>(a) the final day of the Termination Assistance Period; or</li><li>(b) if the DCC does not require a Termination Assistance Period:<ul style="list-style-type: none"><li>(i) the date on which any Termination Notice takes effect in accordance with the provisions of this Agreement; or</li><li>(ii) on expiry of the Term, as the case may be;</li></ul></li></ul>
<b>"Termination Notice"</b>	means a notice to terminate this Agreement or part of the Services either immediately or at a date specified in the notice;
<b>"Termination Payment"</b>	means the payment calculated in accordance with the formula set out in paragraph 3 of Schedule 7.2 (Payments on Termination);
<b>"Territory"</b>	means Great Britain;
<b>"Terrorism"</b>	means the use or threat of action, designed to influence the government or intimidate the public or for the purpose of advancing a political, religious or ideological cause and which involves serious violence against a person or serious damage to property, endangers a person's life, creates a serious risk to the public or is designed to seriously interfere with or disrupt an electronic system;
<b>"Third Party Software"</b>	means any software: <ul style="list-style-type: none"><li>(a) which is used by any Contractor Person to provide the Services (or is made available to the DCC as part of the Services); and</li><li>(b) the Intellectual Property Rights in which are owned by a third party (other than any Contractor Person or any Affiliate of any Contractor Person);</li></ul>
<b>"Transferable Asset Value"</b>	has the meaning given in paragraph 1.1 of Part B of Schedule 8.5 (Exit);
<b>"Transferable Asset"</b>	has the meaning given in paragraph 1.1 of Part B of Schedule 8.5 (Exit);
<b>"Transferring Agreements"</b>	has the meaning given in paragraph 3.2 of Part G of Schedule 8.5 (Exit);
<b>"Transport Layer"</b>	has the meaning given in Part Q of this Schedule 1;



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<b>"UK"</b>	means the United Kingdom;
<b>"Unavoidable Breach"</b>	has the meaning given in Clause 16;
<b>"Unavoidable Delay"</b>	has the meaning given in Clause 13;
<b>"Underlying Obligation"</b>	has the meaning given in paragraph 6.3 of Part B of Schedule 2.2 (Performance Measures and Monitoring);
<b>"Unresolved"</b>	means, in relation to an Incident, that such Incident has not been Resolved;
<b>"Unsuitable Person"</b>	means a person who in the reasonable opinion of the DCC: <ul style="list-style-type: none"><li>(a) would not meet any of the mandatory or discretionary exclusion criteria set out in the pre-qualification questionnaire under which this Agreement was initially procured (as further explained in the Recitals) (were such applied to it today, with any reference to Law set out therein including such Laws and all Laws that from time to time have replaced, modified, extended, re-enacted or amended the same);</li><li>(b) has failed or is reasonably likely to fail (or lacks or is reasonably likely to lack capacity or capability) to comply with any obligation of the Contractor under this Agreement and/or any material obligation under its or any other Sub-contract;</li><li>(c) is reasonably likely to present an actual or potential risk to the safety, welfare or security of any DCC Eco-System Entity, any part of the End-to-end Smart Metering System (or any associated Systems), any Consumer or member(s) of the public, or Great Britain;</li><li>(d) is reasonably likely to undermine public confidence in (or damage the reputation or goodwill of) the DCC or the Smart Metering Programme;</li><li>(e) is or is reasonably likely to be:<ul style="list-style-type: none"><li>(i) unreliable or untrustworthy; and/or</li><li>(ii) otherwise not a fit and proper person to be engaged, or employed or hold office in or in connection with the provision or performance of any of the Services;</li></ul></li><li>(f) is suffering (or is reasonably likely to suffer) any Insolvency Event;</li><li>(g) is subject to any Financial Distress Event;</li></ul>

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- (h) has a Conviction; and/or
- (i) is Controlled by an Unsuitable Person or employs or has as a director or officer (or any directors or partners or any other person who has powers of representation, decision or control over it (directly or indirectly)) that is an Unsuitable Person.

Without limitation, the Contractor agrees that the DCC's opinion shall in all cases be reasonable if based on an opinion given by any Regulatory Body;

- "Unsuitable Staff"** has the meaning given in Clause 22.4;
- "Unsuitable Sub-contractor"** means any Sub-contracting / that:
- (a) is or that is Controlled by an Unsuitable Person;
  - (b) that places or is reasonably likely to place the DCC in breach of the SEC or DCC Licence or is objected to by Ofgem in writing; or
  - (c) is Controlled by a SEC Party, the DCC or any other External Service Provider (or any Affiliate of any SEC Party, the DCC or any other External Service Provider);
- "Urgent Change"** has the meaning given in Schedule 8.2 (Change Control);
- "Use"** means:
- (a) with respect to Contractor Software, the right to load, execute, store, transmit, display and copy (for the purposes of loading, execution, storage, transmission or display) and utilise the relevant Software;
  - (b) with respect to any Third Party Software, the right to load, execute, store, transmit, display and copy (for the purposes of loading, execution, storage, transmission or display) that Software;
  - (c) with respect to any Project Specific IPR other than Software, the right to copy, adapt, publish, distribute or otherwise use such Project Specific IPR;
- "VAT"** means value added tax as provided for in the Value Added Tax Act 1994;
- "Waste"** means all wastes arising in the carrying out of the Services and in complying with this Agreement including those which arise from the use, testing, manufacturing, packaging, processing, storage, transportation, distribution, treatment, disposal and other associated handling activities in connection with the Services and includes WEEE;

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<b>"WEEE"</b>	means Waste Electronic and Electrical Equipment as defined in the Waste Electrical and Electronic Equipment Directive (2012/19/EU);
<b>"Working Day"</b>	means any day other than a Saturday, Sunday or public holiday in Great Britain;

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## PART C – SYSTEMS

**Note:** "System" is defined in Part B of this Schedule 1 (above).

### Key types of System:

**"Other Energy Industry Systems"** means (other than the End-to-end Smart Metering System):

- (a) all DCC Service User Systems;
- (b) Registration Systems;
- (c) all Systems used by or on behalf of any DCC Service User to the extent those Systems are entitled in connection with the SEC to interface with any part(s) of the DCC & Contractor Systems;

### Definitions relating to End-to-end Smart Metering System:

**"Communications Hub" or "Comms Hub"** means:

- (a) devices (including any HAN module and/or SMWAN modules) installed within Consumer Premises with the purpose of providing connectivity between the SMWAN provided by the relevant CSP and the Home Area Network;
- (b) any auxiliary equipment (including aerials) used to connect the relevant device referred to in paragraph (a) to the SMWAN;
- (c) (unless the context otherwise requires) any equipment and/or part(s) that are to remain physically connected to the relevant device referred to in paragraph (a) for the purposes of physically connecting it to any part of: (i) any Consumer Premises; (ii) any Smart Meter and/or (iii) any other HAN module; and
- (d) any Gas Proxy associated with the relevant device referred to in paragraph (a);

**"Contractor System"** means the Systems used by or on behalf of any Contractor Person in performing the Services including the Software, the Contractor Equipment and related cabling, but excluding all parts of any Other ESP Solution(s);

**"DCC Systems"** means collectively the DCC Data Systems and the DCC Service Management System;

**"DCC & Contractor"** means (excluding all Smart Appliances and Smart

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<b>Systems"</b>	Metering Systems (except the Communications Hub)); (a) the DCC Environment; (b) the Other ESP Solution(s); and (c) the Contractor System, and including the DCC User Gateway and the other DCC Interfaces & Gateways;
<b>"DCC Environment"</b>	means the Systems used by or on behalf of the DCC, excluding all parts of any Other ESP Solution, or the Contractor Systems;
<b>"Home Area Network" or "HAN"</b>	means the network to be provided by the Comms Hub and through which communication between elements of the Smart Metering System (and Consumer Access Devices) in Consumer Premises is effected;
<b>"Smart Metering Device"</b>	means: (a) any Smart Meter (including microgeneration Smart Meters) in connection with which the DCC provides any data, communications or other services; (b) any Communications Hub in connection with which the DCC provides any data, communications or other services; (c) any Type 1 Device; (d) any Type 2 Device
<b>"Smart Metering System" or "SMS"</b>	means a system comprised of Smart Metering Devices (including at least one Communications Hub)
<b>"SMWAN" or "Smart Metering Wide Area Network"</b>	means the wide area network provided by a CSP that connects the Communications Hub with the Systems of the Prime DSP;

### Definitions relating to Other Energy Industry Systems:

<b>"DCC Service User Systems"</b>	means the Systems used by or on behalf of DCC Service Users and/or DCC Service User Providers excluding the End-to-end Smart Metering System;
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### PART E – DCC SERVICE PROVIDER AND OTHER PROVIDER DEFINITIONS

<b>"Comms Service Provider(s)", "Communications Service Provider(s)" or "CSP(s)"</b>	means: (a) the Prime CSPs; and (b) any Other CSP;
<b>"Data Service Provider" or "DSP"</b>	means: (a) the Prime DSP; and (b) any Other DSP (if any);
<b>"DCC Service Provider"</b>	means: (a) a third party with whom the DCC enters into a DCC Service Provider Contract or its servants or agents; and (b) any third party with whom a DCC Service Provider enters into a DCC Service Provider Contract or its servants or agents; and (c) without prejudice to the generality of the foregoing, any Replacement Contractor providing services in substitution for the Services or any part of the Services at any time;
<b>"DCC Service Provider Contract"</b>	means (excluding any arrangement that is a Sub-contract and/or this Agreement) any contract or agreement or proposed contract or agreement between the DCC or any DCC Service Provider and any third party whereby that third party agrees to provide to the DCC or any DCC Service Provider facilities, goods, services or other supply;
<b>"ESP Contract"</b>	means this Agreement and each contract between the DCC and each External Service Provider;
<b>"External Service Providers"</b>	means the Contractor and each DCC Service Provider who is a DSP or CSP;

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### PART F – DCC SERVICE USERS, SEC AND MULTI-PARTY FRAMEWORK AGREEMENT DEFINITIONS

<b>"Authorised Third Party"</b>	means an Other SEC Party;
<b>"Code Administrator"</b>	means the body providing SEC administration services;
<b>"DCC Service User"</b>	means (other than the DCC): <ul style="list-style-type: none"><li>(a) each person who receives or is to receive any services from the DCC (including any Other SEC Party) (other than any person acting solely as an Energy Consumer);</li><li>(b) each person who is a SEC Party; and</li><li>(c) any other persons to whom DCC is obliged under the SEC and/or DCC Licence to provide services (including, for example, provision of information to comparison and switching services);</li></ul>
<b>"DCC Service User Providers"</b>	means: <ul style="list-style-type: none"><li>(a) any third party (other than the DCC) with whom a DCC Service User enters into a DCC Service User Provider Contract or its servants or agents; and</li><li>(b) any third party (other than the DCC) with whom a DCC Service User Provider enters into a DCC Service User Provider Contract or its servants or agents (and so on);</li></ul>
<b>"DCC Service User Provider Contract"</b>	means (excluding any Sub-contract or DCC Service Provider Contract and this Agreement) any contract or agreement or proposed contract or agreement between a DCC Service User or any DCC Service User Provider and any third party (other than the DCC) whereby that third party agrees to provide to the DCC or any DCC Service User Provider facilities, goods, services or other supply;
<b>"Multi-Party Framework Agreement"</b>	means the "Framework Agreement" as defined in the SEC;
<b>"Other SEC Party"</b>	means a SEC Party but is not the DCC, a Network Operator or an Energy Supplier;
<b>"Relevant SEC Objectives"</b>	has the meaning given in the DCC Licence;
<b>"SEC Governance Framework"</b>	has the meaning given in Clause 16.4;
<b>"SEC Panel"</b>	has the meaning given in the DCC Licence;

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<b>"SEC Party"</b>	has the meaning given in the DCC Licence (and <b>"SEC Parties"</b> shall be construed accordingly);
<b>"SECCo"</b>	has the meaning given in the SEC;
<b>"Secretariat" or "SEC Secretariat"</b>	means the organisation providing SEC secretariat services;
<b>"Smart Energy Code" or "SEC"</b>	has the meaning given in the DCC Licence and including for the purposes of this Agreement: <ul style="list-style-type: none"><li>(a) the Multi-Party Framework Agreement (and any contractual or other arrangement giving effect to any part of the SEC);</li><li>(b) all SEC Subsidiary Documents as such term is defined in this Agreement; and</li><li>(c) all other "SEC Subsidiary Documents" as such term is defined in the SEC from time to time.</li></ul>



**PART G – INDUSTRY CODES AND ARRANGEMENTS, AND SEC  
SUBSIDIARY DOCUMENTS**

**Definitions relating to Industry Codes and Arrangements:**

- "Industry Codes and Arrangements"** means any binding code, code of practice, methodology or industry agreements (including contracts) relating to the DCC, the Services, DCC Services or DCC Service Users (including all that any DCC Eco-System Entity is a party to or subject to), including:
- (a) in relation to the electricity industry:
    - (i) the relevant "Core Industry Documents" as defined in Condition 21 of the DCC Licence (together with any replacement, extension, consolidation or amendments to the same (whether or not reflected in the DCC Licence from time to time)); and
    - (ii) the SEC; and
  - (b) in relation to the gas industry:
    - (i) the relevant "Core Industry Documents" as defined in Condition 21 of the DCC Licence; and
    - (ii) the SEC;
  - (c) each "Energy Licence" (as such phrase is defined in Condition 1.4 of the DCC Licence);
  - (d) the DCC Licence; and
  - (e) any other statement, code, methodology or other document which must be prepared by the DCC and approved by a Regulatory Body in accordance with DCC Obligations;

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### PART I –IMPLEMENTATION PHASES, IMPLEMENTATION, ACHIEVEMENT OF MILESTONES, TESTING AND ACCEPTANCE, ROLL OUT, MILESTONES AND ENTRY/EXIT

#### Definitions relating to Achieving Milestones, Testing and Acceptance:

"Achieve" means:

- (a) in respect of a Test, to successfully meet the Test Success Criteria (and have all relevant Test Reports approved by the DCC); and
- (b) in respect of a Milestone, the issue of a Milestone Achievement Certificate in respect of that Milestone,

and "**Achieved**" and "**Achievement**" shall be construed accordingly;

#### Definitions relating to Milestones:

"Milestone" means an event or task described in the Implementation Plan which, if applicable, must be completed by the relevant Milestone Date;

"Milestone Date" means the date set against the relevant Milestone in the Project Plan

"Milestone Value" has the meaning given in Schedule 7.1 (Charges and Payment);

"PID" means the Project Initiation Document which is the basis on which the project is authorised and allowed to progress. It is also the basis on which the project is measured both on delivery timescales and the content and quality of the deliveries overall success.

**PART K – PREMISES AND SITES**

<b>"Consumer Premises"</b>	means premises on which any energy consumption is metered using a Smart Metering System;
<b>"DCC Eco-System Premises"</b>	means all premises on which any part of the End-to-end Smart Metering System is installed or on which related services are provided or received and including all Consumer Premises, DCC Premises and Sites, and <b>"DCC Eco-System Premise"</b> shall be construed accordingly;
<b>"DCC Premises"</b>	means premises owned, controlled or occupied by the DCC or its Affiliates or any other DCC Eco-System Entity or their Affiliates which are made available for use by the Contractor or its Sub-contractors for provision of the Services (or any of them) on the terms set out in this Agreement or any separate agreement or licence;
<b>"Sites"</b>	means any premises: <ul style="list-style-type: none"><li>(a) from which the Services are provided;</li><li>(b) from which the Contractor manages, organises or otherwise directs the provision or the use of the Services;</li><li>(c) where any part of the Contractor System is situated; or</li><li>(d) where any physical interface between (i) the Contractor Solution and (ii) the DCC Environment and/or Other ESP Solution(s) takes place,</li></ul> but excluding any Consumer Premises.

**PART M – ENERGY SUPPLIERS, NETWORK OPERATORS (INCLUDING DNOs AND GTS) AND ENERGY REGISTRATION SERVICES**

- "Distribution Network Operator" or "DNO"** means a person that holds a licence under section 6(1)(c) of the Electricity Act 1989;
- "Energy Supplier"** means an organisation that is licensed by Ofgem to supply energy to Consumers;
- "Gas Transporter" or "GT"** means a person who holds a Gas Transporter licence under section 7(2) of the Gas Act 1986 to transport gas;
- "Network Operator"** means:
- (a) DNOs, and
  - (b) GTs.

PART Q – TECHNICAL DEFINITIONS

<b>"Access Control"</b>	<p>means a mechanism for determining whether a person attempting to access part of the End-to-end Smart Metering System and /or issue a Service Request is permitted to do so, including Role Based Access Control and measures to verify:</p> <ul style="list-style-type: none"><li>• that the person has permission to access to the type of service that it is attempting to access in its given role;</li><li>• where a person is attempting to access a specific meter point, that it is registered in industry registration systems with such meter point; and</li><li>• where a person is attempting to access or issue a Critical Service Request, that the meter holds relevant Security Credentials for that person;</li></ul>
<b>"Binding Document"</b>	<p>is a GB Smart Metering PKI-specific term to describe a lightweight X509 v3 based certificate used for Smart Metering Devices only. It binds the public key of the Smart Metering Device to a set of information that identifies the Smart Metering Device (specifically the unique ‘entity identifier’) with the use of the corresponding private key.</p>
<b>"Bulk Message"</b>	<p>means the requirement to deliver the same message (i.e. a specific HAN I/F command) to a group of Comms Hubs in a manner than does not preclude the use of multicast or a similar network-layer routing mechanism;</p>
<b>"Capacity Management"</b>	<p>means the process for ensuring that the maximum throughput of the relevant System(s) (and part(s) thereof) achieves all relevant obligations of the Contractor;</p>
<b>"Certificate Authority"</b>	<p>means a party trusted by both the subject (owner) of the certificate and parties relying on the certificate, the identity of which to be notified by the DCC to the Contractor from time to time;</p>
<b>"Certificate Revocation list"</b>	<p>means the method used in a PKI to maintain access to systems and devices through the use of a list of subscribers paired with digital certificate status. The list enumerates revoked certificates along with the reason(s) for revocation;</p>
<b>"Change of Supplier"</b>	<p>means the process for transfer of responsibility for the supply of energy and the metering equipment at a meter supply point from one registered energy supplier to another;</p>
<b>"Configuration"</b>	<p>means all components of the Operational Service, including</p>

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<b>Item" or "CI"</b>	all Systems, documents or things (or any part of any of the forgoing) that needs to be managed in order to deliver any part(s) of the Operational Service, including all Hardware, software, buildings, people, and formal documentation such as process documentation;
<b>"Configuration Management"</b>	means the process for managing Configuration Items and the Contractor CMDB;
<b>"Configuration Record"</b>	means a record (forming part of the Contractor's CMDB) containing the details of events that: create a Configuration Item; change a Configuration Item; or amend the status of a Configuration Item;
<b>"Data Store"</b>	means an area of the SMS capable of storing information for future retrieval;
<b>"DCC Inventory"</b>	means an electronic database created and maintained by the DCC which is capable of holding the following information in relation to devices (which must be listed on the Certified Products List, including: <ul style="list-style-type: none"><li>• Device ID;</li><li>• Manufacturer and model ;</li><li>• Device type (GSME, ESME, Comms Hub Function, Gas Proxy Function, IHD, CAD, PPMID, HCALC);</li><li>• Device Firmware Version;</li><li>• Device Status and Start Date of that status;</li><li>• Device Status History; and</li><li>• Where the device is a meter or type 1 device, the list of other devices associated with the device;</li></ul>
<b>"DCC Service Desk"</b>	means the Service Desk of the DCC;
<b>"Event Management"</b>	means the Process responsible for managing events throughout their lifecycle. Event management is one of the main activities of IT operations;
<b>"Event"</b>	means a Change of state that has significance for the management of an IT service or other Configuration Item. The term is also used to mean an Alert or notification created by any IT service, configuration item or monitoring tool. Events typically require IT operations personnel to take actions, and often lead to Incidents being logged;
<b>"Incident Management"</b>	means the Process responsible for managing the lifecycle of all Incidents. Incident management ensures that normal service operation is restored as quickly as possible and the

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	business impact is minimized;
<b>"Install and Leave"</b>	means where a supplier installs smart metering equipment in a premise but does not complete the commissioning of communication services via the WAN to that equipment;
<b>"Installation Data"</b>	shall have the meaning as defined in the Device Notification Service Request in the DCC User Gateway Services Catalogue;
<b>"Known Error" or "KE"</b>	means a Problem that has a documented root cause and a workaround. Known errors are created and managed throughout their lifecycle by Problem Management. Known errors may also be identified by development or suppliers;
<b>"Link Layer"</b>	means the link layer (layer 2) as described in the OSI 7 layer model;
<b>"Major Incident"</b>	means the highest category of impact for an Incident. A major Incident results in significant disruption to the business;
<b>"Management Information"</b>	means information that is used to support decision making by managers. Management information is often generated automatically by tools supporting the various IT service management processes. Management information often includes the values of key performance indicators, such as 'percentage of changes leading to incidents' or 'first-time fix rate';
<b>"Network Layer"</b>	means the network layer (layer 3) as described in the OSI 7 layer model;
<b>"Problem Management"</b>	means the Process responsible for managing the lifecycle of all Problems. Problem management proactively prevents Incidents from happening and minimizes the impact of Incidents that cannot be prevented;
<b>"Problem"</b>	means a cause of one or more Incidents. The cause is not usually known at the time a Problem record is created, and the Problem Management process is responsible for further investigation;
<b>"Public Key Directory" or "PKD"</b>	means the storage location and / or database authorised by the PMA for the storage of Certificates, Binding Documents and related information for use by SMKI participants. The PKD is the community-wide accessible mechanism by which participants can obtain Certificates (or Binding Documents) or Certificate Status information to validate Certificates, and obtain Policy and other controlling information for the SMKI;
<b>"Registration Authority"</b>	means an entity that is trusted by the Certificate Authority to register or vouch for the identity of users;

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<b>"Release Management"</b>	means the Process responsible for planning, scheduling and controlling the build, Test and deployment of releases, and for delivering new functionality required by the business while protecting the integrity of existing Services;
<b>"Release"</b>	means one or more Changes to an IT service that are built, tested and deployed together. A single release may include Changes to Hardware, Software, Documentation, Processes and other components;
<b>"Resolution"</b>	means action taken to repair the root cause of an Incident or Problem, or to implement a workaround. In ISO/IEC 20000, resolution processes is the process group that includes Incident and Problem Management;
<b>"Role Based Access Control"</b>	means restricting physical and logical access to devices or systems including: <ul style="list-style-type: none"><li>• Smart Metering Devices; and</li><li>• DCC Systems,</li></ul> according to role permissions;
<b>"Root Cause Analysis "</b>	means an activity that identifies the root cause of an Incident or Problem. Root cause analysis typically concentrates on IT infrastructure failures;
<b>"Security Event"</b>	means any circumstances that have impacted, or could potentially impact, the security of the End-to-End Smart Metering System, and events generated by any Security Related Functionality;
<b>"Security Related Functionality"</b>	means all aspects of the Contractor Solution relating directly or indirectly to Security, including all management, operational and technical security controls (and their associated data types) employed within the Contractor Solution;
<b>"Service Level Management" or "SLM"</b>	means the process responsible for negotiating achievable service level agreements and ensuring that these are met. It is responsible for ensuring that all IT service management processes, operational level agreements and underpinning contracts are appropriate for the agreed service level targets. Service level management monitors and reports on service levels, holds regular service reviews with customers, and identifies required improvements;
<b>"SMKI Certificate Policies"</b>	shall be understood and constructed as "certificate policy" as defined in RFC 3647 (Internet X.509 Public Key Infrastructure Certificate Policy and Certificate Practices Framework);
<b>"SMKI" or "Smart"</b>	means the specific implementation of public key



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**Metering Key Infrastructure** infrastructure used in GB smart metering, as is described in this Agreement;

**"Transport Layer"** means the transport layer (layer 4) as described in the OSI 7 layer model;

**"Workaround"** means reducing or eliminating the impact of an Incident or Problem for which a full resolution is not yet available – for example, by restarting a failed Configuration Item. Workarounds for Problems are documented in Known Error Records. Workarounds for Incidents that do not have associated Problem Records are documented in the Incident Record.

## PART 5 – SMKI DEFINITIONS

**Activation Data** Private data, other than keys, that are required to access cryptographic modules.

**Approved Repository** The storage location and / or database authorised by the PMA for the storage of Certificates, Device Certificate Documents and related information for use by SMKI Participants. The Approved Repository is the community-wide accessible mechanism by which Participants can obtain Certificates (or Device Certificate Documents) or Certificate Status information to validate Certificates, and obtain Policy and other controlling information for the SMKI.

**Asymmetric Cryptosystem** A system which generates and employs a secure key consisting of a Private Key for creating a Digital Signature and a Public Key to verify a Digital Signature.  
Also known as Public Key Cryptography.

**Authentication** The process of establishing that individuals, organisations, or devices are who or what they claim to be. In the context of a PKI, authentication can be the process of establishing that an individual or organisation applying for or seeking access to something under a certain name is, in fact, the proper individual or organisation.

Authentication can also refer to a security service that provides assurances that individuals, organisations, or things are who or what they claim to be or that a Message or other data originated from a specific individual, organisation, or device. Thus, it is said that a Digital Signature of a Message authenticates the Message's sender.

**Authorised Device** A Smart Metering device connected to the HAN, that is

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<b>(or Device)</b>	allowed to issue, or perform, a range of HAN Interface Commands. An Authorised Device is known to the DCC and is allowed to interact as part of the Smart Metering Equipment in the home, both responding to commands and initiating communications with other Smart Metering Equipment.
<b>Certificate</b>	<p>A collection of data that at a minimum:</p> <ul style="list-style-type: none"><li>• Identifies the Issuing Authority</li><li>• Names or identifies its Subject</li><li>• Contains the Subject's Public Key</li><li>• Identifies the operational period of Certificate</li><li>• Bears the Digital Signature of the Issuing Authority</li></ul> <p>Also known as a Public Key Certificate</p>
<b>Certificate Authority (CA)</b>	This is a trusted entity which issues Public Key Certificates. This will include both the Issuing Authority and the Certificate Manufacturing Capability (which itself may be subcontracted).
<b>Certificate Discovery</b>	The process of obtaining a subscribers certificate. Typically from a directory or database.
<b>Certificate Manufacturer</b>	The entity providing Certificate management services and facilities for a Certificate Authority.
<b>Certificate Policy (CP)</b>	<p>Certificate Policy (CP)</p> <p>A named set of rules that indicates the applicability of a Certificate/Device Certificate to a particular community and/or class of application with common security requirements. The CP is written, maintained, published and owned by the Policy Management Authority (PMA).</p>
<b>Certificate Revocation List (CRL)</b>	A list maintained by, or on behalf of, an Issuing Authority of the Certificates that it has issued, that have been Revoked or Suspended before the expiry stated in the Certificate.
<b>Certificate Signing Request (CSR)</b>	An electronic document sent to a Certification Authority to request the issue of a Public Key Certificate.
<b>Certificate Status Discovery</b>	The process of ascertaining the Operational Status of a Certificate. Typically via a controlled mechanism from a Repository.
<b>Certificate Status Information</b>	Information that indicates whether Certificates have been Revoked or Suspended; commonly provided via Certificate Revocation Lists, or individually through specific online

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enquiries (e.g. OCSP).

<b>Certification Path</b>	A logical and ordered sequence of Certificates which, together with the Public Key of the initial object in the Certification Path, can be processed to obtain that of the final object in the Certification Path.
<b>Certification Practice Statement (CPS)</b>	A statement of the procedures and practices employed in the issuing, managing, revoking, and renewing of certificates. A CPS may support of one or more Certificate Policies.
<b>Confirm</b>	Ascertain through appropriate inquiry and investigation.
<b>Content Commitment</b>	<p>An action whereby a signer of a message commits to the content being signed by them.</p> <p>This term is sometimes used synonymously with Non-Repudiation, however, in any specific context the detailed definition may result in its legal standing differing from that of Non-Repudiation.</p> <p>See also Non-Repudiation</p>
<b>Corresponding Private Key / Corresponding Public Key</b>	Given a public key taken from a key pair, the corresponding private key is the private key from that same key pair, (and vice-versa for corresponding public key).
<b>Critical Command</b>	An electronic or digital instruction to Smart Metering Equipment in Smart Metering which could affect supply or lead to financial fraud.
<b>Cross-Certificate</b>	A Certificate used to establish a trust relationship between two Issuing Authorities
<b>Device Certificate</b>	An SMKI-specific term to describe a lightweight X509 v3 based Certificate used for Smart Metering Devices only. It binds the public key of the Device to a set of information that identifies the Device (specifically the unique 'Entity Identifier') with the use of the corresponding private key.
<b>Device Certificate Authority (DCA)</b>	A trusted entity which issues Device Certificates. These Device Certificates are digitally signed with the private key of the Device Certificate Authority. This will include both the Issuing Authority and the Device Certificate Document Manufacturing Capability (which itself may be subcontracted).
<b>Device Certificate Authority Certificate (DCA-Certificate)</b>	See Issuing Device Certificate Authority Certificate.

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<b>Device Certificate Authority Key (DCA-Key)</b>	The Private Key used by the BA for signing Certificates and other objects.
<b>Device Certificate Document Repository</b>	A store of Device Certificate Documents accessible by all interested parties – the Approved Repository. In the SMKI, this may be realised by the Public Key Repository in the DCC.
<b>Device Certificate Manufacturer</b>	The entity providing Device Certificate management services and facilities for an Device Certificate Authority.
<b>Device Certificate Policy (CP)</b>	<p>A named set of rules that indicate the applicability of a Certificate or Device Certificate to a particular community and/or class of application with common security requirements. A Device Certificate Policy may be employed by a Device Certificate user to help in deciding whether a Device Certificate (and the Device Certificate therein), is sufficiently trustworthy for a particular purpose.</p> <p>A BP may be supported by one or more CPSs.</p>
<b>Device Certificate Profile</b>	See Certificate Profile
<b>Device Certificate Request</b>	The equivalent of a Certificate Signing Request for Authorised Devices.
<b>Device Certificate Signing Request (CSR)</b>	An electronic document sent to a Device Certificate Authority to request the issue of a Device Certificate Document.
<b>Device Identifier</b>	An item of data that uniquely identifies a Device and thereby distinguishes it from all others in Smart Metering. A Device Identifier is tightly bound to the device that it identifies by physical (e.g. barcode etched in the device casing) and electronic (e.g. firmware parameter set at manufacture) means.
<b>Device Inventory</b>	The record of Smart Metering Devices (and associated details) held by the DCC.
<b>Device SMKI</b>	That part of the SMKI which manages and issues Device Certificate Documents to Smart Metering Equipment
<b>Digital Signature</b>	A piece of information appended to a message which is created using the sender's Private Key, can be verified using the sender's Public Key and provides the receiver with assurance that the sender is who they claim to be, the message is as sent by the sender and that the sender sent the message. Like terms shall be construed accordingly.
<b>Digital Signing</b>	A private key used for digital signing.

### Private Key

### Disclosure Statement

A Disclosure Statement is a vehicle for disclosing, summarising and emphasising information normally covered in detail by associated CP and/or CPS documents. A Disclosure Statement is not intended to replace a CP or CPS.

### End-Entity

Those using Digital Certificates or Digital Device Certificates. See Subscriber and Relying Party

### Enhanced In Home Device (Enhanced IHD, eIHD))

An IHD that can also send commands to SME on the HAN in relation to pre-payment top-ups.

### Firmware

The embedded software programmes and/or data structures that control electronic Devices.

### Gas Proxy Device (GPD)

A Device connected to the HAN that is allowed to perform a range of HAN Interface commands, holds data provided to it by the GSME and can enforce RBAC to that data, according to the Security Credentials provided to it by the GSME.

### Gas Smart Metering Equipment (GSME)

Used for measuring gas consumption.

### HAN

See Home Area Network

### Hash

The output produced by a Hash Function upon processing a Message (see also Message Digest).

### Hash Function

An algorithm mapping or translating one sequence of bits into another, generally smaller, set (the Hash or Message Digest) such that:

- A Message yields the same Hash result every time the algorithm is executed using the same Message as input;
- It is computationally infeasible that a Message can be derived or reconstituted from the Hash result provided by the algorithm; and
- It is computationally infeasible that two Messages can be found that produce the same hash result using the algorithm.

### High Security Zone

An area to which access is controlled through an entry point and is limited to authorised, appropriately screened personnel and properly escorted visitors. High-Security Zones should be accessible only from Security Zones, and

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are separated from Security Zones and Operations Zones by a perimeter built to the specifications recommended in a threat risk assessment. High-Security Zones are monitored 24 hours a day and 7 days a week by security staff, other personnel or electronic means.

### **Home Area Network (HAN)**

A short range network that is present within the proximity of the consumer's premises and exists for the purposes of providing a defined set of message protocols and secure connectivity for SME to communicate with one another.

### **In Home Display (IHD)**

A device that provides consumers with access to consumption and pricing data.

### **Incorporate by Reference**

Make one Message a part of another Message by:-

Identifying the Message to be incorporated;

Providing information which enables the Receiving Party to access and obtain the incorporated Message in its entirety; and

Expressing the intention that it be part of the incorporating Message.

The incorporated Message shall have the same effect as if it had been fully stated in the incorporating Message to the extent permitted by law.

### **Issuance (Issue a Certificate)**

The acts of an Issuing Authority in creating a Certificate or Device Certificate Document which is bound to a Subscriber. The process requires Authentication of the Subscriber and/or Subject.

### **Issuing Authority**

An Issuing Authority is the entity listed in the issuer field of a Digital Certificate. The Issuing Authority may obtain benefit in return for taking on the risks associated with transactions secured by Digital Certificates, for example, risk of fraud. The Issuing Authority has the responsibility for deciding who may be issued with a Certificate carrying its name. Within Smart Metering, both Device Certificate Authorities and Certificate Authorities are Issuing Authorities

### **Key Agreement (KA)**

A Key Agreement is a means by which two parties can agree a shared Private Key (also known as a secret or symmetric key) for use in cryptographic algorithms, which is known to both parties but which is never sent between the two.

### **Key Agreement Key**

A Public-Private Key pair used for Key Agreement.

### **Key Pair**

In an asymmetric cryptosystem - a Private Key and its mathematically related Public Key having the property that the Public Key can verify a Digital Signature that the

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	Private Key creates.
<b>Local Registration Authority (LRA)</b>	See Registration Authority
<b>Message</b>	A digital representation of information.
<b>Message Authentication</b>	This provides the receiver with assurance that the sender is who they claim to be, and the message is as sent by the sender. This relies on a secret key known by the sender and the receiver of the message. A third party would not be able to tell which party created the message, since both sender and receiver know the secret key.
<b>Message Authentication Code (MAC)</b>	A piece of information calculated from a message and appended to it by the sender which allows Message Authentication by the receiver.
<b>Message Digest</b>	The output produced by a Hash Function upon processing a Message.
<b>Message Integrity</b>	The assurance of the unaltered status of a Message.
<b>Network Operator</b>	The term 'Network Operators' refers collectively to electricity distribution and gas transportation companies that are responsible for the gas and electricity networks that deliver energy to consumers' homes / business premises. Network Operators must hold a Licence issued by OFGEM and comply with all Licence Conditions for networks that they own and operate.
<b>Non-Critical Command</b>	Any command not deemed to be a Critical Command
<b>Non-repudiation</b>	Strong and substantial evidence of the identity of the Signer of a Message and of Message Integrity, sufficient to prevent a party from successfully denying the original submission or delivery of the Message and the integrity of its contents.
<b>Notify</b>	Communicate or make available information to another person as required under the circumstances
<b>OCSP (Online Certificate Status Protocol)</b>	A network protocol used to ascertain the current validity status of a Certificate.
<b>Operational Period of Certificate or Device Certificate Document</b>	The Operational Period of a Certificate or Device Certificate Document begins on the date and time it is issued by an Issuing Authority (or on a later date and time certain if stated in the Certificate), and ends at the completion of its Validity Period unless it is earlier Revoked or Suspended.
<b>Organisation SMKI</b>	That part of the SMKI which manages and issues Certificates to the DCC Service Users or DCC Service

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Providers.

<b>Other DCC Service Users</b>	An organisation, other than a consumer's Registered Energy Supplier or Relevant Network Operator, which can use the DCC's energy related services.
<b>Participant</b>	An individual or organisation that plays a role within SMKI, typically as a Subscriber, Relying Party, CA, RA or Certificate Manufacturer. Entities other than Subscribers, Subjects and Relying Parties (i.e. not End Entities) may also be known as a SMKI Contractor (CSP).
<b>PKI Disclosure Statement (PDS)</b>	<p>An instrument that supplements a BP or CPS by disclosing critical information about the policies and practices of a BA/PKI.</p> <p>A PDS is a vehicle for disclosing, summarising and emphasizing information normally covered in detail by associated BP and/or CPS documents. A PDS is not intended to replace a BP or CPS.</p>
<b>Policy Management Authority (PMA)</b>	The entity that has ultimate responsibility for governance and control over the issuance, management and usage of a specified set of Certificates and Device Certificate Documents. The PMA uses a Certificate Policy as the mechanism to exercise control over all Participants in the SMKI.
<b>Policy Qualifier</b>	Policy dependent information that may accompany a BP identifier in an X.509 certificate.
<b>Post-Authorisation</b>	<p>A Registration Authority process whereby Certificate Applicants and Device Certificate Applicants have their identity authenticated during the Certificate or Device Certificate application process.</p> <p>Also know as Post-Authentication</p>
<b>Pre-Authorisation</b>	<p>A Registration Authority process whereby Certificate or Device Certificate Applicants have their identity authenticated prior to submitting a Certificate or Device Certificate application.</p> <p>Also know as Pre-Authentication</p>
<b>Private Key</b>	The key in a Public-Private Key Pair which must be kept secure by its owner.
<b>Public Device Certificate Document</b>	The equivalent (but lighter-weight version) of a Public Key Certificate used with Authorised Devices. See also Device Certificate or Device Certificate Document
<b>Public Key</b>	The key in a Public-Private Key Pair which can be distributed to other parties.



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<b>Public Key Certificate</b>	An electronic document issued by a Certification Authority which confirms the ownership of a Public Key. Also known as a Public Certificate or Certificate.
<b>Public Key Cryptography</b>	<p>A system which generates and employs a secure key consisting of a Private Key for creating a Digital Signature and a Public Key to verify a Digital Signature. A Public Key system also uses Public – Private Key Pairs for the purposes of agreeing symmetric keys.</p> <p>Also known as Asymmetric Cryptosystem.</p>
<b>Public-Private Key Pairs</b>	Two numbers which are mathematically related and are for use in cryptographic algorithms. One of the numbers is designated the Private Key, and should never be circulated beyond the party owning it, while the other number is designated the Public Key and can be circulated to other parties.
<b>Recovery</b>	The process of reassigning any of the Public Key Certificates on a device should a compromise occur of the corresponding Private Key.
<b>Registered Supplier</b>	The identity of the DCC Service User registered by the consumer as their supplier of gas or electricity, and by whom the GSME / GPD or ESME in the consumer premises is managed.
<b>Registration Authority (RA)</b>	<p>An entity that is authorised or licensed by an Issuing Authority to carry out the practices and procedures for one or more of the following functions:</p> <ul style="list-style-type: none"><li>• the identification and authentication of Certificate applicants;</li><li>• the approval or rejection of Certificate applications;</li><li>• initiating Certificate Revocations under certain circumstances;</li><li>• processing requests to revoke or suspend Certificates;</li><li>• approving or rejecting requests by for the Renewal or Re-Key of Certificates.</li></ul> <p>An RA does not have responsibility for signing or issuing Certificates or Certificate Status Information.</p>
<b>Re-Keying</b>	The process by which an existing Certificate or Device Certificate Document has its Public Key value changed by issuing a new Certificate with a different (usually new) Public Key.

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Notably all characteristics relating to the Subject of the Certificate remain unchanged unless Re-Key is combined with a Renewal or Issuance of a new Certificate.

<b>Relying Party</b>	A recipient of a Public Certificate or Public Device Certificate Document who acts in reliance on that Certificate and/or any Digital Signatures verified using that Certificate.
<b>Relying Party Agreement (RPA)</b>	An agreement between an Issuing Authority and a Relying Party that typically establishes the rights and obligations between those parties regarding the verification of Digital Signatures or other uses of Certificates.
<b>Renewal</b>	The process by which an existing Certificate or Device Certificate Document that is bound to a Subscriber is replaced by issuing a new Certificate or Device Certificate Document to that Subscriber. Typically this is based upon the validity of the existing Certificate or Device Certificate Document. This process normally involves a Re-Key.
<b>Repository</b>	The entity providing community-wide accessible mechanisms by which Participants can obtain Certificates or Device Certificates, and Policy and other controlling information for the PKI.
<b>Revocation</b>	Permanently end the Validity Period of a Certificate from a specified time.
<b>Sensitive Data</b>	Data within a message which contains Personal Data (under the terms of the Data Protection Act) and therefore needs to be kept confidential during transit. Data can be kept confidential by using encryption.
<b>Subject</b>	<p>The entity named or identified in a Certificate issued to a person, organisation or device, and who holds a Private Key corresponding to the Public Key listed in the Certificate.</p> <p>A Subject must always be either:</p> <ul style="list-style-type: none"><li>• a Subscriber; or</li><li>• formally bound under the jurisdiction of a Subscriber</li></ul>
<b>Subscriber</b>	An entity that contracts with an Issuing- OCA or Issuing-DCA for the issuance of Certificates or Device Certificates. The Subscriber bears ultimate responsibility for the use of the Private Key associated with the Certificate or Device Certificate.
<b>Subscriber Agreement</b>	An agreement between an Issuing-OCA or Issuing-DCA and a Subscriber that establishes the rights and responsibilities of the parties regarding the issuance and management of Certificates or Device Certificates and Associated Private

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	Keys.
<b>Suspension (Suspend a Certificate)</b>	Temporarily make a Certificate or Device Certificate non-Operational from a specified time for a period up to the end of its Validity Period
<b>Time-stamp</b>	<p>To create a notation that indicates, at a minimum, the correct date and time of an action or activity and the identity of the entity that created the notation; or such a notation is appended, attached or referenced as a part of a data structure.</p> <p>Time-stamps may, but do not require derivation of chronological data from a secure time source and/or use cryptographic techniques to persevere the integrity of the Time-stamp.</p>
<b>Trust Service</b>	Comprises services offered or performed by an Issuing Authority, Registration Authority, Certificate Manufacturer or other trusted intermediary relating to the issuance and control of Certificates and Device Certificate Documents, (e.g. manufacture, Issuance, Revocation, publication, registration, validity-checking or defining policy).
<b>Trusted Source</b>	A source whose identity is confidently and reliably validated.
<b>Validity Period</b>	The period that is defined within a Certificate or Device Certificate Document, during which that Certificate or Device Certificate Document is intended to be valid.
<b>Verify (a Digital Signature and/or Message Integrity)</b>	<p>In relation to a given Digital Signature, Message and Public Key, to determine accurately:</p> <p>That the Digital Signature was created during the Operational Period of a valid Certificate or Device Certificate by the Private Key corresponding to the Public Key listed in the Certificate or Device Certificate; and that the Message has not been altered since its Digital Signature was created.</p>
<b>Vetter</b>	Registration Authority staff member with approvals to conduct a limited set of Certificate and Device Certificate management functions