PRODUCT CONTROL SHEET

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1   INTRODUCTION

1.1   One of the key elements of the REC Technical Specification is a Data Specification that will include:

- A Data Item Catalogue - containing details of all the data items that are sent and received between Market Participants, Service Providers and Third Parties (such as Price Comparison Websites);

- A Message Catalogue - containing the list of all messages sent/received between Market Participants / Service Providers. This will include the source and destination of each message, details of the data items contained within the message and the message structure; and

- E2E Processes and Interaction Sequence Diagrams (ISDs) - the graphical representation of the End to End (E2E) switching process (currently presented in ABACUS) and any other process defined within the REC, together with ISDs which illustrate the source, destination, flow and sequencing of messaging between parties.

1.2   As highlighted in our June Switching Programme and Retail Code Consolidation consultation[1], we expect the contents of the existing electricity Data Transfer Catalogue (DTC), RGMA Data Flow Catalogue (DFC), gas Supplier DFC and potentially the UK Link Manual[2] to migrate into the REC, with provisions being included within the Data Specification alongside the definition of new CSS data items and messages. The migration of the electricity DTC and gas DFCs will be delivered via the Retail Code Consolidation Significant Code Review (SCR) as there is a clear requirement for this migration to occur in April 2021, in parallel with the closure of the Master Register Agreement (MRA) and Supply Point Administration Agreement (SPAA).

1.3   The June consultation also highlighted that in the long term there should be a single Data Item Catalogue; however, it may not be possible to fully consolidate the existing and new data catalogues in advance of the operational REC being implemented in April 2021, therefore the REC Data Specification may initially include more than one Data Item Catalogues. This is explored further in section 4 below.

1.4   This paper sets out the proposed migration plan for the transfer of responsibility for the existing data catalogues into the REC, focusing on the migration of the metadata currently held by existing code bodies and the development of governance provisions under the REC to robustly manage future change. It also covers the inclusion of Central Switching Service (CSS) related metadata relating to the new CSS messages. Any development activity must also take into account other data related projects such as the development of midata and Mandatory Half Hourly Settlement provisions and outcomes of the Energy Data Taskforce as discussed further in section 6.

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[1] https://www.ofgem.gov.uk/system/files/docs/2019/06/june19_switching_programme_and_retail_code_consolidation_consultation_final_2.pdf

[2] For the purpose of this paper, it is assumed that the UK file formats will migrate to the REC, however this is the subject of a separate paper.

2   SUMMARY OF EXISTING DATA CATALOGUES

2.1   This paper sets out the approach for migrating the metadata (i.e. the content) held within existing data catalogues governed by the MRA, SPAA and Uniform Network Code (UNC). The electricity DTC holds details of data items and data flows that are either owned by the MRA or the Balancing and Settlement Code (BSC) to facilitate switching, metering activities and settlement processes. In gas the equivalent data items and data flows are held in separate catalogues with some aspects of metering and switching activities covered by the RGMA and Supplier DFCs governed by SPAA; and other aspects of metering and switching activities defined in the UK Link Manual and governed by the UNC, together with settlement related data definitions.

2.2   With the planned closure of SPAA and MRA as part of the Retail Code Consolidation SCR it is assumed that the content of the electricity DTC and SPAA DFCs will migrate to the REC on implementation of this SCR i.e. April 2021. The transfer of UK Link metadata is not directly linked to the Retail Code Consolidation SCR and can therefore occur at a separate time. However, it is assumed that UK Link metadata will not migrate to the REC in advance of the Retail Code Consolidation SCR, which will introduce the required governance provisions.

2.3   Further background information on the existing energy data catalogues can be found in Appendices 1 to 4.

3   REC DATA SPECIFICATION GOVERNANCE

3.1   One of the activities to be delivered prior to the migration of existing electricity and gas data catalogues, is the establishment of an enduring governance framework to enable future changes to be assessed and implemented. It is proposed that the REC will host the Data Item and Message Catalogues and that the REC Code Manager will be responsible for publishing these catalogues and implementing updates. In addition, it is important to ensure that the overall governance framework places responsibility and control over the actual metadata held within the Data Specification on those organisations that create and / or use the relevant data.

3.2   As the REC does not require key market participants to accede e.g. supplier agents and shippers, this governance framework will need to facilitate assessment of changes by organisations not captured by REC. The June 2019 consultation set out proposals relating to the establishment of a robust cross code co-ordination function to manage changes that impact multiple industry codes. The key principles to be reflected within this cross code governance framework are:

- Requirements to send messages to reflect the content and format defined in the REC Technical Specification (and specifically the Data Specification) will be included in the REC and any other industry code that relies on the metadata held within the Data Item and Message Catalogues. Each code will also include a statement that where a conflict exists, the REC Data Specification will take precedence.

- Each data item and message will have a defined owner which identifies the industry code which has overall control of the metadata. Changes to these data items and messages may be considered under other codes with industry impact assessments where required; **however the lead code will be responsible for deciding whether a change should be made**. This approach reflects the fact that code objectives may differ, therefore it is appropriate for the change to be considered under the relevant code(s).

- Where a single industry change requires modification to multiple industry codes i.e. the end to end switching process amends switch request messages owned by the REC and settlement flows owned by the BSC / UNC, the relevant change proposals should be progressed in parallel and implemented at the same time. In this scenario, if any change proposal is rejected under any of the impacted codes, then none of the linked change proposals will be implemented. Any cross code dependencies will be identified within each impacted change proposal and taken into account within the implementation approach defined for each change.

- Where changes are approved which impact multiple codes, parties to any of the impacted codes may appeal the decision to the Authority, based on defined criteria.

- The proposed REC change process allows any party to raise a change proposal, this may include market participants that are not required to accede to the REC e.g. supplier agents or shippers. This ability to raise change proposals does not extend to other industry codes e.g. BSC and UNC, therefore the REC Code Manager should be able to raise changes under the other industry codes in limited circumstances e.g. to progress a change to the Data Specification where data items and messages impact the REC but are owned by a separate code.

- The REC Code Manager shall be responsible for updating and publishing the Data Specification to reflect decisions made as part of the REC change process; or, where the data item or message is owned outside the REC, any other industry code change process.

3.3   The June consultation proposed the establishment of a Cross Code Steering Group to oversee the assessment of changes that impact multiple codes. It is proposed that these key principles are reflected within the Cross Code Steering Group Terms of Reference (ToRs) together with provisions relating to other types of change that do not directly impact the Data Specification e.g. changes to the data access provisions included in the Data Access Matrix.

3.4   Whilst the Cross Code Steering Group ToRs will not be required until the group is established late 2020, it is proposed that draft ToRs are developed ahead of the Autumn 2019 consultation to provide clarity on the cross code governance arrangements. This will enable change to other industry codes to be developed to reflect the cross code governance arrangements, for consultation in Spring 2020 and implementation as part of the Retail Code Consolidation SCR. These consequential

changes are expected to include provisions that allow the REC Code Manager to raise changes under other codes.

4   TRANSFORMATION OF DATA CATALOGUE METADATA

4.1   As highlighted above, the Data Specification will include a Data Item Catalogue specifying the metadata associated with each data item and a Message Catalogue defining the contents and format of each message / interface. This will include data flows transmitted across a communications network such as the Data Transfer Network (DTN) / Information Exchange (IX); and also Application Programming Interfaces (APIs) used to share data between market participants / service providers.

4.2   A common metadata standard is required to ensure data defined within the Data Specification is consistently described, can be used across a variety of interfaces and transferred between a variety of users. The metadata standard is being developed in parallel with this approach paper and will be included in the Autumn consultation.

4.3   Transformation of the CSS interface definition and data dictionary will be carried out following approval of the documents developed by the CSS Provider and the proposed REC metadata standard.

4.4   Further consideration is required around the process for transforming metadata held within existing data catalogues. Three potential options have been identified for progressing this migration activity:

- Option 1 – the electricity and gas metadata continues to be hosted by the existing service providers (Gemserv for the DTC, ElectraLink for the SPAA DFCs and Xoserve for the UK Link Manual) and the output is provided to industry via the existing mechanisms (although publication would be on the existing REC Website rather than the SPAA and MRA websites). This option is not recommended for the electricity DTC and gas DFCs as it will result in additional complexity with the maintenance of commercial arrangements with service providers who have no ongoing relationship within the REC environment. However, it may be required in the short term if the metadata cannot be migrated to the REC ahead of April 2021.

- Option 2 – New databases are developed under the REC to host the metadata for each of the separate data catalogues. This will allow the metadata from each data catalogue to be migrated into the REC without undergoing any transformation. This option is not recommended as it would not provide any benefits over and above options 1 as the content of the data catalogues would not be consolidated. It would also result in time consuming development activity that would have a limited shelf-life as future consolidation activities are delivered.

- Option 3 – A new database is developed under the REC based on the agreed REC metadata standard. Metadata held within existing data catalogues will undergo a transformation exercise as part of the migration into the REC which will

consolidate data items to remove existing duplication (where a single data element is currently defined in multiple codes). This will not require changes to the logical format for any data and is simply a change to the way the information is held within the relevant database. This is the preferred option, therefore the timeline in section 7 reflects the steps required to deliver this option ahead of April 2021, with interim steps to carry out the transformation activity early 2020, which we believe is an achievable milestone.

4.5   In addition to the transformation of metadata, a further strand of work will be required to develop a user interface to enable the metadata held by the Code Manager to be provided to market participants and service providers. This information will need to be accessible to a range of individuals within a variety of organisations e.g. to support technical system development and operational activities. The delivery of a user interface will be developed by the Code Manager at a later stage, for implementation ahead of the operational REC being implemented in April 2021 as part of its overall digitalisation strategy.

5   DEVELOPMENT OF INTERACTION SEQUENCE DIAGRAMS

5.1   The existing industry codes include a number of diagrams reflecting current industry processes including the MRA Golden Threads and the RGMA process diagrams. In addition, the CSS design documentation includes an end to end representation of the switching process held in ABACUS.

5.2   The REC is expected to take a digitalised form to enable users to quickly and easily follow the processes and understand the obligations that are relevant to them. A key element of this will be clear and accurate ISDs for each process.

5.3   The format of these ISDs, with examples, will be included in the Autumn consultation; however, the expectation is that full development of ISDs will be delivered by the Code Manager to ensure consistency with the digitalisation strategy.

6   INTERACTION WITH OTHER INDUSTRY PROJECTS

Energy Data Task Force Recommendations

6.1   The Energy Data Taskforce published its recommendations on 12 June 2019[3] One of the key recommendations was the establishment of a Data Catalogue to provide visibility through standardised metadata of Energy System Datasets across government, the regulator and industry.

6.2   The development of a single Data Specification defining the metadata for retail and settlement energy interfaces, as proposed within this approach document, is consistent with this recommendation. The Data Specification will be implemented alongside REC data access provisions seeking to develop an open data framework as recommended by the task force.

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[3] https://es.catapult.org.uk/news/energy-data-taskforce-report/

6.3 We will continue to work with the Energy Data Taskforce to ensure that the REC outcomes are aligned to the overall vision set out in their recommendations paper.

Mandatory Half Hourly Settlement

6.4 Mandatory Half Hourly Settlement will result in significant changes to the existing data and interfaces currently used for settlement purposes. This is likely to result in the removal of a number of existing DTC flows and data items which will be replaced with new interfaces. Our expectation is that the metadata required for these new interfaces will be included in the REC Data Specification alongside the metadata for other industry interfaces.

Midata

6.5 The objective of the midata project is to develop a secure way to quickly and easily give trusted Third-Parties (this may include Price Comparison Websites or suppliers that are not registered to the specific meter point) access to consumer's energy data. The intention is that this will lead to increased consumer engagement, better service, more innovation and more effective competition.

6.6 The REC Data Specification will be flexible and scalable to enable the addition of new data items and messages as and when these are developed for midata, or any other industry project.

7   ROLES AND RESPONSIBILITIES

7.1 This approach document highlights a number of deliverables / activities that must be developed during 2019 / 2020. This section summarises each of the key deliverables and the organisation(s) responsible for delivery:

- **Development Approach** – (this paper) sets out the proposed approach to the migration of the existing data catalogues into the REC. Ofgem's Switching Programme is responsible for developing this document in consultation with existing code bodies (e.g. ELEXON, ElectraLink, Gemserv and Xoserve). Proposals will be reviewed by the Regulatory Design User Group (RDUG) prior to the Autumn consultation.

- **Metadata Standard** – a separate paper will be developed detailing proposals relating to the metadata structure to be utilised within the Data Specification. Ofgem's Switching Programme is responsible for developing this document in consultation with existing code bodies (e.g. ELEXON, ElectraLink, Gemserv and Xoserve) and also DCC with respect to CSS messages. Proposals will be reviewed by the Design Forum and Data Working Group prior to the Autumn consultation.

- **Gap Analysis and Transformation Plan** – the gap analysis will be delivered to understand how the existing metadata fits within the proposed REC metadata standard and the level of transformation required. This will include the population of new data attributes such as metadata owner, data master and responsible user. Ofgem's Switching Programme is responsible for carrying out

this gap analysis in consultation with existing code bodies (e.g. ELEXON, ElectraLink, Gemserv and Xoserve) and also DCC with respect to CSS messages. Proposals will be reviewed by the Design Forum and Data Working Group prior to the Autumn consultation.

- **Cross Code Steering Group ToRs** - Ofgem's Switching Programme is responsible for developing the ToRs in consultation with existing code bodies (e.g. ELEXON, ElectraLink, Gemserv and Xoserve) and the RECCo Board. The draft ToRs will be reviewed by the RDUG prior to the Autumn consultation.

- **Transformation of existing metadata into proposed REC structure** – Ofgem's Switching Programme is responsible for this activity as part of the development of the REC. The initial output will be developed in consultation with existing code bodies (e.g. ELEXON, ElectraLink, Gemserv and Xoserve) and also DCC with respect to CSS messages. The output will also be reviewed by the Design Forum and Data Working Group prior to the Spring 2020 consultation. Following consultation, this metadata register (which will form the data item and message catalogues) will be maintained until April 2021, alongside the other Retail Code Consolidation SCR drafting, in parallel with the existing code bodies managing the live service.

- **Development of consequential changes** – Existing code bodies have been asked to develop consequential changes for inclusion in the Switching SCR to enable proposed changes to be included in the Autumn consultation. We do not expect these changes to include provisions relating to cross code co-ordination as the requirements have yet to be agreed. It is therefore proposed that a similar approach be taken for the development of consequential changes required to deliver the full cross code governance framework (eg to support Data Specification changes) with existing code bodies responsible for developing the changes to proposed code drafting following the Autumn consultation (once the proposed provisions are clear). These consequential changes should be provided to Ofgem in advance of the Spring 2020 consultation.

- **Design, development and implementation of user interface** – It is expected that the RECCo Board will be responsible for this activity either delivering it themselves via the REC Website or included within the initial requirements placed on the newly appointed Code Manager.

- **Development of ISDs** – The Code Manager will develop ISDs once appointed in line with their digitalisation strategy. If possible these will be delivered prior to the REC being baselined in November 2020.

7.2 Although the delivery of some activities will be the responsibility of code bodies and / or the RECCo Board, Ofgem will retain oversight of each element via the SCR arrangements to ensure delivery in line with the proposed timeline set out in section 8.

8   PROPOSED TIMELINE

Date	Activity
Jul – Oct 2019	Data Specification development approach, example ISDs and metadata standard developed.
Sep – Oct 2019	Cross Code Steering Group ToRs developed.
Sep – Dec 2019	Xoserve review of UK Link metadata (taking into account proposed REC metadata standard).
Aug – Dec 2019	Gap analysis of existing metadata against proposed metadata standard including population of new attributes such as metadata owner, data master and responsible user.
Autumn 2019	Industry consultation on development approach, ISD proposal, metadata standard and Cross Code Steering Group ToRs.
Feb 2020	Ofgem decision on way forward post consultation including decision on whether, how, when to migrate UK Link metadata.
Jan – Mar 2020	Development of REC database and transformation of existing and new CSS metadata into proposed REC structure including addition of new attributes such as data master and consolidation of data items with the same structure to ensure a single version of the truth e.g. RGMA definition of MPRN and UK Link definition specified as a single data item.
Jan – Mar 2020	Development of consequential changes to BSC, UNC and other industry codes to reflect the cross code governance requirements.
Spring 2020	Code Manager appointed
Spring 2020	Ofgem consultation on content of the REC Data Specification (existing and new CSS metadata held within Data Item and Message Data Catalogues).
May - Nov 2020	Maintenance for REC Data Specification content, taking into account changes progressed via existing code or changes to the CSS metadata identified with the delivery of the full physical design.
Apr 2020 – Apr 2021	Design, development and implementation of user interface i.e. digitised data catalogue.
Nov 2020	Baseline REC drafting (including Data Item and Message Catalogues and ISDs held within Data Specification).
Nov 2020 –	Establish Cross Code Steering Group.

Apr 2021	
Apr 2021	Retail Code Consolidation SCR implemented with full Data Specification – including online publication of Data Item and Message Catalogues[4]. Further digitalisation may be delivered at a later date.

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[4] CSS Messages included as part of the Switching SCR may initially be 'switched off' until CSS go live. A separate paper is being developed to consider the transitional choreography.

APPENDIX 1 - ELECTRICITY DATA TRANSFER CATALOGUE

The electricity DTC was introduced in 1998 with the emergence of competition in the electricity supply market and is governed by the MRA with changes to the content of the catalogue progressed via a bespoke DTC change process. Data items and data flows held within the DTC are either owned by the MRA or the BSC and this responsibility is taken into account within the change process.

The DTC itself is provided in an online format on the MRA website and includes the following downloadable documents:

- **Annex A** - describes the specification and notation used to describe data flows and data items;

- **Annex B** - contains the data flow catalogue;

- **Annex C** - contains rules for the completion of Data Flows referenced in Annex B;

- **Annex D** - contains the data item catalogue, holding definitions for all data items referenced in Annex B;

- **Annex E** - lists the domain definitions for the data items listed in Annex D;

- **Annex F** - provides a cross-reference of data flows to source/recipient and

- **A Microsoft Access database containing all the domain types, data items, data groups and data flows**.

Market participants and other bodies in the energy market use the Microsoft Access database to drive automated processes and systems. For example, ElectraLink uses the database to drive the validation and file transformation functions within the Data Transfer Service (DTS).

APPENDIX 2 - RGMA DATA FLOW CATALOGUE

The Retail Gas Metering Arrangements (RGMA) Baseline was introduced in 2004 with the emergence of competition for meter services and is governed by the SPAA with changes progressed via the standard SPAA change process. The RGMA Baseline document defines standard flow formats and data item attributes for transferring information regarding installation, exchange and removal of meters, and transfer of information following change of Supplier or change of Meter Asset Manager (MAM).

In 2016, SPAA initiated a review of the RGMA Baseline in order to streamline the documentation and introduce an Online RGMA DFC. The Online RGMA DFC was implemented in June 2017 and includes the following downloadable documents:

- **RGMA Baseline** – defining the end to end processes, exceptions and guidance for designing data flows;

- **Annex A** - describes the specification and notation used to describe data flows and data items;

- **Annex B** - contains the data flow catalogue;

- **Annex C** - contains the data item catalogue, holding definitions for all data items referenced in Annex B; and

- **Annex D** - lists the domain definitions for the data items listed in Annex C.

A Microsoft Access database is also used to manage the underlying domains, data items and data flows. Managing the data in this database enables the on-line functionality and will facilitate added value services on the DTS in the future, such as file validation and file format translation.

The structure of the information contained within the RGMA Annexes reflects the structure of the information held within the electricity DTC, where possible.

APPENDIX 3 - GAS SUPPLIER DATA FLOW CATALOGUE

The SPAA also contains the definition of the following Supplier data flows:

- Notification of Old Supplier Information (NOSI) in Schedule 20;

- Resolution of Erroneous Transfer (RET) in Schedule 10:

- Supplier/Shipper Agreed Reads (SARs) in Schedule 11:

- Debt Assignment Protocol process (DAP) information in Schedule 9.

Historically, the definition of these data flows was included in SPAA Schedule 12 'BISCUIT Data Dictionary'. However, in recent years, changes have been progressed to mandate the sending of NOSI, RET, SAR and DAP flows via the DTS which has included a review of the flow definition and the transfer of information into separate SPAA Schedules.

Following the implementation of the Online RGMA DFC in June 2017, a new SPAA project was initiated to extend the DFC to include these Supplier data flows. The Supplier DFC was implemented in November 2018 resulting in a common approach to the definition of all SPAA data flows and data items.

APPENDIX 4 - UK LINK MANUAL

Data flows governed under the UNC are defined within the UK Link Manual and include flows to and from the UK Link system (this includes the UK Link Application, UK Link Gemini, the Data Enquiry System (DES), and the Contact Management System (CMS)). These systems are used by the Central Data Service Provider (CDSP) and UK Link Users, i.e. Shippers, Transporters (including IGTs and the Transmission System Operator) and the Daily Metered Service Provider (DMSPs), examples of flows are:

- Supply Point Administration – i.e. data flows to maintain the Supply Point Register from Shipper Users;

- Meter Reading flows – records received from Shipper Users and the Daily Metered Service Provider;

- RGMA flows i.e. the JOB and UPD sent from the Shipper to the CDSP;

- Settlement flows – invoices from CDSP to Shipper Users on behalf of Transporters.; and

- Delta flows to Transporters following updates of the Supply Point Register.

Some of these flows are used in conjunction with RGMA flows, to deliver the end to end flow of information from MAMs to the CDSP e.g. the ONJOB data flow is sent from MAM to Supplier following the installation of a meter. A further ONJOB is then sent from Supplier to Shipper under SPAA governance. Information from the ONJOB is then transferred to the CDSP by the Shipper via the JOB data flow governed by the UNC.

Due to the significant level of interaction between UK Link and RGMA flows, the data item definition must be the same within both arrangements. Whilst the introduction of the Online RGMA DFC amended the presentation of the data flow and data item information, consistency between the RGMA and UK Link flows was maintained.

A review of UK Link file formats is currently underway which will facilitate migration into the REC when required.