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Consultation

Retail Energy Code: Technical Specification approach consultation

APPENDIX 4: Testing approach

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1. Testing approach

Appendix summary

This appendix describes the proposed testing approach for new market entrants under the REC. The parties within scope of entry testing are gas and electricity suppliers as well as Distribution Networks. This paper also describes the testing approach for existing Market Participants, for example when a change to systems and processes are introduced.

Questions

Question 1: Do you agree with the approach set out in this document for developing the enduring REC testing requirements?

Question 2: Do you agree with the proposed approach to Qualification?

Question 3: Do you agree with the proposed approach to Maintenance of Qualification?

1. Introduction

1.1. This appendix details the proposed approach to enduring entry assessment testing under the REC. A separate transitional testing approach has been developed for testing prior to Central Switching Service (CSS) go live and the period immediately after CSS go live, which is governed by the REC V1 Transition Schedule. Transitional testing delivered as part of the Design, Build and Test (DBT) phase of the Switching Programme is therefore out of scope and this approach document focuses on the enduring CSS testing arrangements and non-CSS provisions that will be incorporated in the REC as part of the Retail Code Consolidation (RCC) and Switching Significant Code Reviews (SCRs).

1.2. The REC is expected to include provisions relating to entry assessment testing to be used when new organisations enter the market or make a change to their systems and processes that warrants additional testing as explained further in Section 4. The process for entry assessment will be specified within the Entry Assessment and Qualification Schedule,[1] with details of specific market scenario testing included in the Testing Specification.[2]

[1] Consulted upon on June 2019 and due to be updated and re-baselined, taking into account responses, in early 2020. https://www.ofgem.gov.uk/system/files/docs/2019/06/rec_entry_assessment_and_qualification_schedule.pdf
[2] The REC Testing Specification will be a baselined REC document and subject to change management requirements described in the REC Change Management Schedule. Further information on change management is set out in the

1.3. The Testing Specification will also include details of the test environment(s) available for Market Participants and Service Providers to carry out testing on future system releases. Further information regarding enduring requirements for system release testing (eg covering central systems services release testing and market participant release testing) will be provided at a later date, once the DBT testing arrangements have been finalised.

1.4. The information included within this appendix will be used to further develop the Entry Assessment and Qualification Schedule and the REC Testing Specification which will form part of the overall Technical Specification.

1.5. A summary of our proposals and assumptions is set out in Section 9 below.

Question 1: Do you agree with the approach set out in this document for developing the enduring REC testing requirements?

2. Scope of Entry Assessment

2.1. The Switching Programme has already developed high level proposals relating to the REC entry assessment process as reflected in the Entry Assessment and Qualification Schedule. This schedule sets out the process to be undertaken by the Code Manager to assess new entrants (referred to as applicants) and those making changes to their systems and processes, to determine whether they pose a risk to consumer outcomes or other Market Participants.

2.2. These provisions have been developed with the aim of minimising the burden on new entrants by delivering a risk based approach which complements the existing Balancing and Settlement Code (BSC) and Smart Energy Code (SEC) requirements; whilst still retaining a comprehensive process to ensure that new entrants have robust systems and processes in place to deliver their obligations under the REC.

2.3. A key outcome is therefore to develop and maintain a process that focuses on requirements with the highest impact on consumers and other Market Participants; and is applied proportionately, taking into account the circumstances relating to each individual applicant.

2.4. Although the REC will include provisions defining the high-level process; the Code Manager will have overall responsibility for ensuring this key outcome is delivered, with guidance and oversight from the REC Performance Assurance Board (PAB).

Why is a REC entry assessment process required?

2.5. Ofgem's June 2019 Switching Programme and Retail Code Consolidation Consultation stated that the REC will include entry assessment provisions to mitigate the risk to consumers and the market of a REC party not being capable of operating in accordance with its REC requirements. The consultation and draft schedule also referenced

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main body of this consultation.

requirements for parties to undertake 'Re-Qualification' where they undertake a material change to their systems and processes.[3]

2.6. Adopting risk-based entry assessment testing will ensure that a proportionate approach is implemented, focusing on the areas that the PAB determines to be the highest risk in terms of the impact of failure on the REC objectives.

What are the REC entry assessment testing requirements?

2.7. To understand the scope of the entry assessment testing requirements, it is useful to first understand what is covered by the CSS and non-CSS requirements separately.

2.8. The End-to-End Testing Plan[4] set out the user testing required ahead of CSS go live as part of the Switching Programme DBT phase, to demonstrate that relevant Market Participants have systems and processes in place that can interface with the CSS. It is assumed that enduring CSS testing requirements will have a similar scope i.e. the sending of CSS messages and receipt of responses required to deliver a consumer switch.

2.9. The non-CSS testing requirements will cover all other provisions within the REC where an interface with the CSS is not required; including the management of switching exception processes e.g. resolution of erroneous transfers, and non-switching provisions such as updates to meter technical details following installation of new metering equipment.

How do the existing entry assessment arrangements work?

Electricity

2.10. At present the Master Registration Agreement (MRA) includes an entry assessment process which covers the electricity processes defined above as the non-CSS arrangements. This MRA process includes:

- an initial assessment of the applicant's business solution, business processes, local work instructions, management procedures and IT applications and internal testing outputs undertaken by the MRA code administrator; and
- external testing to demonstrate that the applicant can meet its process and interface requirements under the MRA.

[3] Some respondents to the June 2019 consultation suggested a move towards the Code Manager offering support for parties going through system and process change rather than requiring Re-Qualification. Given the anecdotal evidence from code bodies around the reluctance of parties to come forward for Re-Qualification, we have revised our proposed approach as set out in Section 4 below.

[4] https://www.ofgem.gov.uk/system/files/docs/2019/03/d-4.3.3_e2e_testing_plan_0.pdf

2.11. Each new electricity supplier and Distribution Network Operator (DNO) must undergo entry assessment which includes both a general assessment of the overall business solution and specific market scenario testing covering the provisions relevant to their intended role e.g. a Non-Half Hourly Supplier will have a different set of scenarios to a Half Hourly Supplier, with a DNO having a different set again.

2.12. In addition to the MRA testing, the BSC also includes a requirement on new electricity parties and supplier agents to undergo market entry testing. Due to the overlap between the BSC market entry testing and MRA entry assessment, a joint document has been created detailing the scenarios against which each applicant must be tested, these are defined in terms of distinct storyboards.[5]

2.13. Testing under the MRA includes internal tests where the applicant follows the storyboards and the MRA code administrator validates the testing outputs; and external testing where the MRA code administrator sends dummy flows to the applicant to ensure it can send and receive the required data flows in accordance with the Data Transfer Catalogue.[6]

2.14. Testing under the BSC is carried out in parallel, with the BSC qualification service provider assessing the evidence provided by applicants via the Self-Assessment Document and witnessing specific tests carried out by the applicant. Where possible, BSC and MRA testing is co-ordinated with joint planning meetings attended by the applicant and representatives from the MRA and BSC.

Gas

2.15. At present the Uniform Network Code (UNC) and Supply Point Administration Agreement (SPAA) do not include requirements on parties to undergo entry assessment testing. Once a new supplier, shipper or Gas Transporter (GT) has acceded to the relevant code, it can start registering metering points in accordance with the provisions. Consideration has previously been given to making a test environment available for users to undergo testing, however we understand that this has been discounted due to the cost of hosting the required test environment.

Who will be covered by the REC entry assessment requirements?

Suppliers

2.16. The June 2019 consultation re-iterated Ofgem's view that the entry assessment requirements should apply to both gas and electricity suppliers. From a CSS testing perspective, this is straightforward as all existing suppliers will need to go through the same level of testing prior to CSS go live; therefore it follows that any new supplier entering the market following CSS go live should also undergo testing, regardless of whether it plans to participate in the gas or electricity market.

[5] https://www.mrasco.com/becoming-a-party-to-the-mra/
[6] https://www.mrasco.com/mra-products/data-transfer-catalogue/

2.17. For non-CSS testing requirements we have considered what level of testing is required for gas suppliers. The joint MRA and BSC storyboards referred to above, include multiple scenarios which would equally apply to gas suppliers e.g. resolution of erroneous transfer. Therefore, it is proposed that as part of the activity to review these to reflect the new switching arrangements, they are also extended to cover gas processes currently defined in SPAA which will migrate to the REC in April 2021.

2.18. It should be noted that the scope of the REC will be wider than the MRA, and will include provisions relating to theft, migrated from the SPAA and Distribution Connection Use of System Agreement (DCUSA); and metering data and processes, migrated from the SPAA and potentially the BSC. It is proposed that the scope of entry assessment testing will include these additional provisions with scenarios developed alongside the review of the joint MRA and BSC storyboards, although their application within testing will be dependent on the assessment of risk by the Code Manager and PAB associated with those processes.

2.19. Although enduring testing requirements will be extended to cover gas processes and non-MRA arrangements e.g. theft, existing suppliers will not be required to undergo testing in these areas when they are introduced as part of the RCC SCR changes. Existing parties will be deemed to have passed the relevant assessment. Application of the extended testing requirements (covering both CSS and non-CSS testing) will be implemented for new market entrant gas and electricity suppliers and DNOs on a prospective basis at CSS go live. Note also that the revised arrangements for existing suppliers and DNOs to maintain their qualification under the REC (see Section 4) will also apply on a prospective basis from CSS go-live.

Network Operators

2.20. The situation with gas and electricity network operators is different due to the existing regulatory landscape. Electricity DNOs are required to undergo MRA entry assessment to demonstrate that they can receive data flows and carry out activities required in their role as Metering Point Administration Service (MPAS) Providers. As set out in the June 2019 consultation, the expectation is that this situation will remain when the MRA provisions migrate to the REC, although some activities currently defined as MPAS responsibilities will be removed as the requirements transfer to the CSS or the Supplier Meter Registration Service (SMRS) in the BSC.[7]

2.21. In gas, there are currently no entry assessment requirements for GTs as delivery of their obligations under the UNC are managed via Xoserve acting as the Central Data Service Provider (CDSP). This equally applies under the REC where Xoserve will deliver the Gas Retail Data Agent (GRDA) obligations on behalf of GTs. It is therefore assumed that the REC entry assessment provisions will not apply to GTs. However, where significant changes are made to the systems and processes that Xoserve manages, there may need to be system testing to ensure the end-to-end arrangements are not impacted. The testing requirements associated with implementation of change would be considered on a bespoke basis as part of the

[7] In June 2019 we consulted on how any remaining MPAS requirements, once switching obligations had moved to the CSS, should be governed. We are proposing a joint governance model across the REC, BSC and DCUSA. For SMRS, we expect requirements to be set out in the BSC. The reasons for this decision will be set out in the forthcoming RCC SCR Launch Statement.

overall change assessment e.g. the implementation approach, including required testing, would be set out within the relevant impact assessment.

Shippers

2.22. Shippers are not required to accede to the REC, therefore it would not be possible to include requirements on them to undergo entry assessment testing.

2.23. For the avoidance of doubt, this paper does not cover testing of provisions that fall under UNC or IGT UNC governance, specifically interfaces between shippers and the CSS; and the shippers' role in meter data update processes. However, the UNC Panel and IGT UNC Panel may wish to consider if shipper's interactions with the CSS and other non-switching activities offer a sufficient risk to warrant some form of entry assessment testing to protect the integrity of the data held by UK Link and / gas Suppliers.

2.24. Although there is no requirement on shippers to undergo entry assessment testing; there will be a requirement to undergo onboarding activities before receiving CSS messages. This is covered in more detail in Section 5.

Supplier Metering Agents

2.25. The MRA doesn't explicitly require supplier metering agents to undergo entry assessment, however the scenarios covered during supplier market scenario testing will include steps to be delivered by the agent. The majority of electricity requirements delivered by supplier metering agents are defined within the BSC and therefore tested as part of the BSC qualification process.

2.26. In gas, the majority of supplier metering agent requirements relate to Meter Asset Managers (MAMs) i.e. the update of meter details following installation, removal or exchange of the meter. These requirements are currently included within the Retail Gas Metering Arrangements (RGMA) and monitored via centralised reports defined within SPAA Schedule 22 'Metering Schedule'.

2.27. SPAA currently requires MAMs to undergo an audit via the MAM Code of Practice (MAMCoP). Whilst this refers to the provision of data via the RGMA, the MAMCoP audit is more focused on technical requirements relating to meter operations.

2.28. We propose that activities delivered by meter agents under the REC fall within the scope of the overall performance assurance framework.[8] This could be delivered by applying entry assessment provisions to meter agents, or it could be delivered by an increased focus on data provision within the metering audit. This will be considered further as the performance assurance provisions are developed.

[8] Further information will be set out in our forthcoming RCC SCR launch statement.

2.29. In addition to the entry assessment / audit requirements to test meter agent systems and processes, there will also be a requirement on supplier agents to undergo onboarding activities before receiving CSS messages as detailed in Section 5.

Meter Asset Providers (MAPs)

2.30. Similarly to shippers, MAPs are not required to accede to the REC, therefore it would not be possible to include requirements on them to undergo entry assessment testing.

2.31. Although there is no requirement on MAPs to undergo entry assessment testing; they will be required to undergo onboarding activities before receiving CSS messages as detailed in Section 5.

How will the REC entry assessment process be delivered?

2.32. As proposed in the Entry Assessment and Qualification Schedule, the REC process will comprise of a two-phase process, reflective of the existing MRA entry assessment provisions. The initial phase will include an assessment of the applicant's:

- business solution, business processes, local work instructions, management procedures and IT application(s);
- internal testing procedures and evidence from internal testing; and
- information security / data privacy arrangements.

2.33. This will be carried out by the Code Manager using a risk-based approach, in line with any direction from the PAB. To minimise the burden on applicants and avoid duplication, the Code Manager will co-ordinate with other code bodies[9] and may place reliance on assessments carried out elsewhere e.g. ISO27001 certification in relation to information security assessments.

2.34. The second phase covers external testing, to be carried out by applicants to demonstrate that they can send and receive CSS and non-CSS messages required by their market role type e.g. domestic gas supplier or Half Hourly (HH) electricity supplier. Section 3 includes further information on the external testing requirements, specifically the data and test environments required to support this testing; and the role of the Code Manager and CSS Provider / Switching Operator.[10]

2.35. The Code Manager will have overall responsibility for the entry assessment process and is responsible for determining whether an applicant has sufficiently demonstrated that it can meet its REC requirements. Applicants may not be required to pass every aspect of the entry assessment in order to be qualified. Where the Code Manager has

[9] We expect this to require reciprocal obligations on other code managers to cooperate with the REC Code Manager.
[10] DCC will perform the Switching Operator role and coordinate service management for the REC switching arrangements.

concerns regarding one or more aspects of the applicant's solution, they may still determine that the applicant be qualified, with conditions in place for additional monitoring post commencement of services. Whilst an applicant will not be required to pass every aspect of entry assessment, there will be key provisions which are applied against pass / fail criteria. For example, interoperability is a key requirement, therefore applicants must demonstrate that they can exchange data with other Market Participants and Service Providers via Market Messages before they can be qualified. Similarly, the information security and data protection requirements associated with the CSS and Enquiry Services must be met by applicants before they can become users of the relevant services.

2.36. The PAB and the Code Manager will both be tasked with ensuring that the individual applicant is assessed proportionately, taking into account overall market risks and also any specific circumstances relevant to the applicant. For example, where a supplier is using an 'off the shelf' solution which has already been tested, then they would not expect to have to repeat the same set of system tests as a supplier who has developed bespoke systems, although they would need to demonstrate that they have robust business processes. Equally if an applicant demonstrates that they have robust policies and procedures covering the key REC provisions; and internal testing shows that they have systems in place that deliver in line with these procedures, then it is not necessary to test that applicant against every single scenario applicable to their market role. Further consideration regarding the scope of CSS testing is required, once the testing requirements for the Design, Build and Test Phase have been agreed. This may result is a number of 'core tests' which all applicants must undertake.

2.37. The Code Manager will be held accountable for both the success of the process (does it target the right requirements?) and also the proportionality (is it pitched at the right level for individual applicants?). This should be actively monitored to ensure that the applicant's journey through the entry assessment process is appropriate to its individual circumstance and the Code Manager doesn't simply apply a blanket approach across all applicants.

What other criteria must an applicant meet to become qualified?

2.38. In order to initiate entry assessment, an applicant must accede to the REC. Following accession, the applicant will submit an entry assessment application form to highlight its intention to start operating as a supplier / DNO. There are no other criteria that the applicant must meet before commencing entry assessment; however, there are a number of other activities that must be completed under the REC and other industry codes, before the applicant can be Qualified:

- Having a valid Market Participant ID (the arrangements for which are specified in the UNC or BSC, as applicable);
- Becoming a gas and / or electricity Enquiry Service User in accordance with the Data Access Schedule;
- Becoming a CSS User in accordance with the CSS User Onboarding and Maintenance Schedule;
- Becoming a Switching Portal and REC Portal User;

- Completing accession to the Data Transfer Services Agreement and having a Data Transfer Network (DTN) gateway;
- Completing accession to the BSC;
- Completing accession to the Smart Energy Code (SEC) and becoming a DCC Service User;[11]
- Provide the Operational Contacts required under the REC, for example to escalate resolution of Erroneous Switches; and
- Obtaining the relevant Distribution, Electricity Supply and / or Gas Supply Licence.

2.39. These criteria will need to be met at different points within the entry assessment process; for example, an applicant will need to become a CSS Service User and obtain a DTN gateway before commencing external CSS and non-CSS testing. Therefore, the Code Manager will work with the applicant to determine an entry assessment plan to incorporate each of these requirements. The Code Manager will also check that these criteria have all been met before the applicant becomes qualified. Note that where the applicant fails to complete entry assessment, access to the enquiry services will be removed and the associated Market Participant ID will be made redundant.

3. External Testing

Why is external testing required?

3.1. The overall entry assessment process is required to mitigate the risk that new organisations enter the market without being able to meet their REC requirements. The Code Manager's desk-based assessment of the applicant's business processes will facilitate identification of gaps in the applicant's policies and procedures. However, this will not identify inconsistencies between the applicant's documented procedures and their actual delivery against REC requirements.

3.2. It is therefore proposed that external testing is included within the scope of the overall entry assessment provisions. Requiring applicants to demonstrate that they can satisfy the requirements included in a number of relevant scenarios will provide comfort to the PAB, Service Providers and other Market Participants that the applicant has robust systems and process that will enable them to meet their code obligations effectively.

3.3. In addition to providing assurance to the market as a whole, external testing will provide applicants with the opportunity to test their systems, providing comfort that

[11] We are currently working with MRASCo to ensure that newly qualified suppliers have become DCC Service Users before the exit Controlled Market Entry. We propose that, given the intended timing of these new entry requirements in 2021, new suppliers should become DCC Service Users so that they can operate with smart meters, as a precondition of entering the market.

they can interface with other organisations effectively before fully committing to their new market role.

How do the existing entry assessment arrangements work?

3.4. Under the MRA, applicants are required to undertake internal and external testing based on relevant scenarios (referred to as storyboards), for example a Non-Half Hourly Supplier has a different set of scenarios to a Half Hourly Supplier, with a DNO having a different set again.

3.5. Internal tests consist of each applicant testing its system functionality and internal procedures required to deliver against the defined scenarios. Where activities are delivered by an agent, then the applicant is responsible for including agent activities within the end-to-end tests.

3.6. The output from each test scenario is provided to the MRA code administrator for review. This includes copies of internal procedure documents demonstrating how the relevant requirements have been met and any messages created as part of the process. The MRA code administrator reviews this test documentation to ensure it accurately reflects the process requirements and the format and structure of data flows defined within the Data Transfer Catalogue.

3.7. External tests require the applicant to send messages to, and receive messages from, the MRA code administrator that reflect interfaces that would be in place between the applicant and other Market Participants. This testing ensures that the applicant's systems are configured correctly to receive messages across the required communication network and that the messages they generate are consistent with the format and structure defined in the Data Transfer Catalogue.

How will the REC external testing be delivered?

3.8. As noted above, the REC will include provisions relating to the switching process as well as other retail activities, for example provisions relating to theft and meter agent activities. A set of test scripts will be developed to reflect the different scenarios that applicants will need to deliver against in order to carry out their specific market role.

3.9. To ensure the entry assessment requirements are proportionate and do not provide a barrier to entry, it is anticipated that individual applicants will not be required to participate in all relevant scenarios; but will instead undertake a sample of tests as directed by the Code Manager, based on the PAB's assessment of the level of risk in relation to a particular area of the code. The Code Manager may also use its discretion to determine the focus of the testing based on any areas of concern identified during the review defined in paragraph 2.32.

3.10. Rather than simply extending the existing MRA provisions related to non-CSS testing to cover new REC scenarios and transferring testing responsibility from the MRA code administrator to the REC Code Manager, it is proposed that the full scope of market scenario testing is considered along with the most effective delivery approach.

Could REC and BSC testing be consolidated?

3.11. The current entry assessment provisions allow for interaction between the MRA and BSC testing requirements, with a single set of scenarios and co-ordinated review of testing outputs so that a single applicant only needs to carry out tests once. However, the BSC and MRA still have distinct requirements so a new supplier would need to complete the BSC Self-Assessment Document and undergo MRA entry assessment separately. In considering the delivery of testing under the REC, an option of consolidating existing entry assessment provisions into a single set of tests covering both BSC and REC requirements has been considered. This would result in a single assessment as to whether the applicant has met the requirements under both the BSC and MRA. Note, this could be extended to cover UNC testing if this is introduced at a later date.

3.12. Whilst this option could bring benefits to new entrants, reducing the existing barriers to entry, it would require significant work to develop the process, agree assessment criteria and determine who manages the process. Given the amount of critical work being undertaken to develop the REC and the associated switching requirements, plus the expected changes to settlement arrangements with the introduction of Market-wide Half Hourly Settlement (MHHS), we are not proposing to take this option forward under this programme of work.

3.13. However, Ofgem believes there is merit in considering a more centralised entry process, which could also include UNC parties, once the REC has been implemented. The introduction of MHHS will significantly change the electricity arrangements; therefore, the RECCo Board, BSC Panel and UNC Panel should consider developing a central testing service at this stage, which could be used by all new entrants to test that their systems can interface with each other and central services.

Role and responsibilities

3.14. Whilst the Entry Assessment and Qualification Schedule has been drafted on the basis that the Code Manager will deliver the business process assessment and determine the level of external testing required; it is silent on the role of the Code Manager in supporting the delivery of external testing.[12] This appendix therefore includes more detailed proposals for the delivery of external testing for both CSS and non-CSS testing.

Non-CSS testing

3.15. It is proposed that where the Code Manager identifies non-CSS scenarios that should be tested, a process similar to the existing MRA arrangements would be followed. This would involve internal testing where the applicant follows the test script and makes testing documentation available to the Code Manager for review; and external testing where the applicant interfaces with the Code Manager using dummy data and test

[12] It should be noted that there is nothing to prevent the Code Manager outsourcing its role to a third-party service provider; therefore, references to the Code Manager with respect to delivery of external testing also include any third party acting on their, or the RECCo Board's, behalf.

flows. This process is effective for non-CSS electricity requirements as each interface is delivered via a defined data flow using the DTN. Therefore, the Code Manager would mimic the originator or recipient of a flow, taking on various market roles such as supplier, Meter Equipment Manager etc.

3.16. This approach works for electricity suppliers and DNOs and would also enable testing of gas supplier to supplier interactions which utilise the DTN. However, there are a number of gas interfaces which allow parties to use the DTN or Xoserve's Information Exchange (IX) network e.g. interactions with party agents. Therefore, the applicant will need to demonstrate its ability to meet these requirements through other means e.g. evidence of internal testing.

3.17. It is acknowledged that there will be minimal benefit in the Code Manager establishing an IX connection to test these interfaces, as the IX does not include any specific validation and there are a limited number of parties that would use an IX connection to communicate with suppliers. If this were to change, the PAB may choose to reconsider the approach to testing this functionality.

3.18. In addition to interfaces that utilise the DTN, there may also need to be new scenarios to cover theft detection processes and the interaction with the theft service providers. These will be developed as and when the enduring theft arrangements are better understood.

CSS Testing

3.19. For the CSS element, the Code Manager will determine the scenarios to be tested, based on its business process assessment.[13] DCC as Switching Operator will then be responsible for managing the CSS testing with the applicant.

3.20. The Switching Operator would be required to make a test environment available to facilitate testing and would provide the applicant with a test URL to use when communicating with the test environment. This would require the following functionality:

- The ability to receive CSS messages from the applicant and send an appropriate response. This would be used to test messages initiated by the applicant e.g. the switch request;
- The use of the relevant public and private keys in the sending of test messages and receipt from CSS;
- The ability to validate CSS messages received against the relevant business rules; and
- The ability to send CSS messages to the applicant (when prompted by the arrangements established by the Switching Operator) and receive an

[13] Note there may be a set of core tests that each applicant must undertake as referenced in paragraph 2.36.

appropriate response. This would be used to test messages that are initiated by the CSS Provider e.g. the invitation to intervene.

3.21. The Switching Operator would provide a report to the Code Manager detailing the tests carried out and the outcome.

3.22. This testing would be limited to the applicant's ability to create, send and receive CSS messages with the correct structure, content and security wrapper. To enable an applicant to initiate CSS testing, it would need to become a CSS Service User. This is covered further in Section 5.

Test Environments

3.23. Under the proposed external testing arrangements set out above, a centralised end-to-end test environment will not be required for non-CSS testing and messages will be simulated by the Code Manager. In this case, messages must be clearly identified as test rather than production, to prevent information erroneously being included in live systems.

3.24. In order to simulate these messages, the Code Manager will be required to have a Market Participant Identifier held within the gas and electricity Market Participant Data managed by Xoserve and Elexon. The Code Manager must also have a DTN connection for the routing of electricity flows and gas supplier to supplier communications.

3.25. The Code Manger will agree a plan with each individual applicant regarding the timing of external testing for non-CSS testing to ensure there is sufficient resource to support the process and that the required DTN connections are in place. This may include prioritisation where multiple applicants are seeking to undergo testing at the same time. Prioritisation will be delivered on a 'first come first served' basis.

3.26. For CSS testing, a test environment will be established by the Switching Operator. This will allow CSS messages to be sent and received; but we do not expect it to include additional functionality for end-to-end integration testing.

3.27. The scope of CSS testing and the detailed environment specifications are currently being developed for application within the DBT phase. We anticipate using the DBT provisions as the baseline for enduring CSS testing, noting that a more streamlined approach may be required post CSS go live. Therefore, further information relating to the enduring CSS test environments and testing provisions will be included at a later date, once the DBT requirements have been approved.

4. Maintenance of Qualification

4.1. The Entry Assessment and Qualification Schedule published as part of the June 2019 consultation included provisions requiring parties to re-qualify where they underwent material changes to systems and processes. Historically, issues have been highlighted regarding this approach and specifically how to incentivise parties to identify changes before implementation. It has therefore been proposed that a change to the drafting should be made to refer to ongoing maintenance of qualification.

4.2. In order to demonstrate their ongoing compliance with the REC provisions, all Qualified Parties will be required to submit an Annual Status Report, signed by a company director, detailing any changes made to systems and processes during the previous year and flagging any planned changes in the forthcoming year. Parties will be asked to highlight whether they expect to utilise central testing facilities to support delivery of internal change, which will help the Code Manager co-ordinate use of these facilities.

4.3. The Annual Status Report will require parties to have carried out an internal risk assessment on any proposed changes and highlight where they believe planned changes will impact interfaces with service providers or other Market Participants; and to provide details of any internal testing that will be delivered as part of the change

4.4. The Code Manager will provide advice and guidance to parties intending to make changes to their systems and processes. In particular, the Code Manager will identify potential impacts in relation to key market scenarios where additional testing may be required to ensure the party continues to be able to deliver its obligations.

4.5. Where a Qualified Party decides to make a change to its systems and processes that may impact interfaces with central service providers or other Market Participants; and has not had the opportunity to flag this within their Annual Status Report, they will be obliged to provide a Maintenance of Qualification submission to the Code Manager detailing the proposed changes.

4.6. We also consider that the Annual Status Report should be used to reaffirm the accuracy and completeness of other information held in relation to suppliers and DNOs, for example Operational Contacts. The accuracy of these contact details, for example to escalate problems with resolving erroneous switches, has historically been problematic. We think that inclusion within the Annual Status Report will help to ensure that maintenance of operational contacts is given the attention that it deserves.

4.7. The Code Manager will assess each Annual Status Report and Maintenance of Qualification submission and determine whether additional external testing is required before the change is implemented. Where the Code Manager recommends additional testing and the party agrees, then the central costs for delivering the testing functionality will be included in the overall REC costs and therefore socialised across all suppliers. Where the Code Manager recommends additional testing and the party does not agree, then the Code Manager will flag this to the PAB, who may determine that additional monitoring is required.

4.8. If the party implements changes without undertaking the recommended testing and as a result, fails to meet its REC obligations; the central costs of rectifying the issue and carrying out additional testing will be recovered from the relevant party. Conversely if the party makes changes without undertaking recommended testing with no adverse effects, the Code Manager will record details and reflect this in any future considerations.

4.9. This concept of maintenance rather than Re-Qualification is consistent with proposals being developed under the BSC and should therefore allow parties to deliver REC and

BSC requirements in parallel.[14] The required BSC modifications are due to be progressed in 2020, therefore we propose to work closely with Elexon to ensure the resulting processes are aligned and provisions are included in both the BSC and REC to facilitate communication between codes where an organisation highlights a change to its systems and processes, so the requirements under both codes can be considered in parallel.

4.10. It should be noted that whilst the information security and data privacy assessment is included within the scope of entry assessment; the enduring requirements are being considered separately (as part of the overall security and data protection approach – see Appendix 3).

5. CSS User Onboarding Requirements

5.1. The entry assessment provisions have been designed to mitigate the risks that new entrants (or existing parties who make material changes to their systems and processes) pose to consumer outcomes or other Market Participants.

5.2. As part of the entry assessment process, REC parties will apply to the DCC as Switching Operator to establish any required security credentials and URLs for use when sending and receiving CSS messages. The Switching Operator will also provide support to the party, ensuring that it can interface correctly with the CSS.

5.3. For non-REC Parties such as Shippers, MAPs and Supplier Metering Agents, there is no requirement to undergo entry assessment. However, these parties will need to undertake onboarding activities to ensure they can receive CSS messages and that they have appropriate security and data protection arrangements in place.

5.4. It is therefore proposed that onboarding provisions are defined as a separate activity to the entry assessment process as they apply to all Market Participants, not just those parties who must be Qualified. This is covered in more detail within the security and data protection appendix - see Appendix 3.

6. Testing Specification Change Control

6.1. Our overall approach to managing the change control arrangements for the REC Technical Specification is set out in the main body of this consultation. This section provides additional detail.

6.2. The following documents are referenced in the Entry Assessment and Qualification Schedule and will need to be maintained by the Code Manager:

- Entry assessment information pack;

[14] https://www.elexon.co.uk/documents/groups/pab/2019-meetings-pab/224-september/pab224-11a-pat-review-recommendations-report-qualification-re-qual/

- Entry assessment application form;
- Self-assessment form;
- Test scripts reflecting market scenarios for testing.

6.3. It is proposed that the self-assessment form and test tools are included within the Testing Specification and will be Category 2 changes where the most appropriate committee will be identified to approve changes. This will ensure that changes to the provisions used to define the scope of testing arrangements are delivered via a robust change process.

6.4. The purpose of the formal change management procedure is to ensure that impacts, including costs, of the proposed change are understood and there is a robust, fair and transparent decision-making process, with a mechanism to allow individuals to challenge the decision via a formal appeals route.

6.5. The lower level operational documentation, including the application form and information pack will be classified as Category 3. This will enable the Code Manager to make changes where required, provided these are managed transparently with full visibility to Market Participants.

6.6. Although it is proposed that the provisions within the Testing Specification will be defined as Category 2 documents, enabling a more streamlined change process to be applied, it is important that potential changes to these documents are identified where material changes to REC provisions are made.

6.7. These key principles should therefore be reflected within the Code Manager accountabilities.

- Changes to the Testing Specification resulting from a category 1 change - it is assumed that the majority of changes to the market scenarios defined within the Testing Specification will be as a result of a wider industry change. Therefore, the Code Manager will be responsible for assessing each REC change proposal and highlighting whether a change is required to the baselined market scenarios and / or the self-assessment document. Where a change is identified, the Code Manager should highlight this as part of the change assessment and amend the testing documentation on implementation of the change proposal.

- Changes to the Testing Specification not resulting from a category 1 change – the Code Manager may identify changes to the market scenarios, not associated with a change to any category 1 provisions or may be asked to make changes in response to a risk identified by PAB. Examples of this would be a change to the requirements resulting from an operational change governed under the REC Service Management Schedule, or a change required to address a mismatch identified between the requirements in the REC and the associated testing scenario. In these instances, the category 2 change process will apply with the PAB determining whether the proposed change should be implemented.

6.8. Any change to the market scenario testing documentation will need to consider the implementation approach and the impact on any organisation going through the entry assessment process at the time the new market scenarios become effective.

7. Test Assurance

7.1. The Code Manager will have overall responsibility for the entry assessment process. Entry assessment will include activities delivered by the applicant, Code Manager and the Switching Operator.

7.2. The Code Manager will initially assess the applicant's business solution and the output from any internal testing and determine the level of external testing required. Following completion of CSS testing, the Switching Operator will provide a report to the Code Manager highlighting whether the applicant has successfully completed the required tests.

7.3. This report will feed into the Code Manager's overall assessment of the applicant's capabilities alongside consideration of the applicant's non-CSS testing outcomes and information security and data privacy assessment.

7.4. Following review of all the required assessment information, the Code Manager will determine whether the applicant should be Qualified.

7.5. Where the Code Manager or the Switching Operator identifies issues / defects with the applicant's systems or processes through with the internal or the external testing; these will be raised by the Code Manager, with the applicant within the timescales defined in the REC Schedule to enable rectification within the agreed timeline. Failure to rectify the issue may result in the applicant's qualification request being rejected, or they could be subject to additional monitoring following qualification. Should the applicant disagree with the assessment of the Code Manager regarding a highlighted defect, then it may appeal the decision to the PAB, as described in the draft REC Entry Process and Re-Qualification Schedule.

8. Transition From Existing Requirements

8.1. This section describes three phases of activity to introduce the entry assessment testing arrangements into the REC:

- Phase 1 - Preparation for migration of requirements to the REC;
- Phase 2 – RCC until CSS go live; and
- Phase 3 – Enduring business as usual following CSS go live.

8.2. Each of these phases have been considered below with key milestones reflected in the timeline in Section 11.

Phase 1

8.3. Ahead of MRA closure, work is required to develop the enduring testing requirements, as part of the RCC SCR. As highlighted above, the Entry Assessment and Qualification Schedule has been drafted and issued for consultation twice. Comments received in response to the June 2019 consultation are currently being reviewed and will be reflected in an updated schedule which we expect to publish in Q1 2020. This updated schedule will also include changes to reflect the more detailed proposals set out within this appendix and responses to this consultation.

8.4. The other existing MRA documents that are used as part of the testing activity i.e. storyboards used for market scenario testing have not yet been reviewed; therefore, a key activity during this phase of work will be reviewing these storyboards in conjunction with the BSC and amending them to reflect the future, post CSS scenarios. Additional scenarios will also need to be developed to cover other REC processes relating to provisions migrating from SPAA, DCUSA and, potentially, the BSC. Both the pre- and post-CSS scenarios will form part of the RCC SCR for utilisation in phases 2 and 3.

Phase 2

8.5. Between the implementation of the RCC SCR and CSS go live, the Code Manager will manage the entry assessment process based on the REC Entry Assessment and Qualification Schedule with associated self-assessment documentation. Any party becoming qualified in this period will need to meet the existing code requirements pre-CSS and will therefore need to be tested using existing pre-CSS testing scenarios. We expect these will be transferred to the REC without amendment. As with all other suppliers and DNOs, any newly qualified parties during this period will also need to undergo CSS testing to ensure they can deliver requirements post CSS go live.

8.6. To avoid the development of pre-CSS gas test scripts which will only be utilised for a short time between the closure of SPAA and CSS go live, it is proposed that entry assessment will not be extended to gas suppliers or non-MRA provisions such as theft until CSS go live.

Phase 3

8.7. Following CSS go live (or a defined period after CSS go live, taking into account the Post Implementation Phase defined by the Switching Programme), the enduring provisions will be effective and any new applicant will be assessed using the post-CSS test scenarios. Any redundant pre-CSS testing documentation will be removed from the code when convenient.

8.8. Entry assessment will be extended to include non-MRA provisions including gas processes and dual fuel arrangements such as theft. These provisions will be applied prospectively, therefore, existing parties will not be required to undergo testing in respect of these new areas.

In flight assessments

8.9. There are likely to be applicants going through entry assessment during each transition from phase 1 to 2 and phase 2 to 3. These have been considered separately below.

8.10. The transition from phase 1 to 2 will not affect the non-CSS requirements that applicants are being tested against as these existing MRA requirements will remain the same until CSS go live. The only change at this stage is a change in the management of the process from the MRA code administrator to the REC Code Manager, with information regarding in-flight assessments handed over to the Code Manager at RCC implementation.[15] It is therefore proposed the Code Manager will take responsibility for any 'in flight' applications being progressed at the RCC SCR implementation date. These will be progressed in line with the REC Entry Assessment and Qualification Schedule with the Code Manager determining whether the applicant has successfully completed the process.

8.11. The transition from phase 2 to 3 will be more complicated as the scenarios that applicants are being tested against will be fundamentally changing. All gas and electricity suppliers and electricity DNOs will undergo CSS transitional testing as part of the Switching Programme led activities. Therefore, at CSS go live there will be a mixture of parties:

- Suppliers and DNOs who have successfully completed CSS and non-CSS testing (this will include the majority of existing suppliers) – these are Qualified Parties and no further action is required.

- Suppliers and DNOs who have successfully completed non-CSS testing but have not completed CSS testing. Suppliers who have not completed CSS testing will not be able to register new RMPs following CSS go live until they are Qualified.

- Suppliers and DNOs who have not completed CSS or non-CSS testing – consideration will need to be given to whether testing is initiated in the period running up to CSS go live. At CSS go live any applicant still going through testing will need to focus on enduring requirements and any pre-CSS testing will be removed from the Code Manager assessment.

8.12. We have considered a risk that new suppliers and DNOs would seek to enter the market in the run up to the new switching arrangements going live, without having the capability to operate in the new environment. We would welcome engagement with any suppliers and DNOs that are looking to enter the market over the period so that we can outline our expectations and the testing requirements and timescales.

8.13. At this stage, we do not propose to introduce any formal blocks for new parties entering the market. For suppliers that are not ready to use the new switching arrangements, we have developed a fall-back position so that they can get the information that they need to be able know when a consumer has switched away. This

[15] Note, the applicant will be informed of this transfer and asked to confirm that the information can be shared with the Code Manager. Without explicit agreement on this from the applicant, the application will cease.

would be the same for new suppliers and existing suppliers. Once the new switching arrangements have been introduced, a supplier will not be able to gain a new consumer until they have completed the necessary testing requirements. It will therefore have a strong commercial incentive to put the necessary arrangements in place.

8.14. We think new DNOs entering the market creates a greater risk for the programme as these are central service providers and will need to interface with a range or parties to support effective market operation. We would therefore expect that all DNOs, including new DNOs to have in place the necessary systems and processes to manage the new switching requirements at go-live. We will engage with prospective new DNOs over the DBT Phase to stress the importance of meeting the Switching Programme timescales.

9. Summary of Entry Assessment Approach

9.1. This appendix includes a number of assumptions and proposals relating to the enduring entry assessment testing arrangements. These have been summarised below for ease of reference.

- Assumption that entry assessment will include an assessment of the applicant's business solution, internal testing evidence and information security / data protection arrangements, plus external testing relating to specific CSS and non-CSS scenarios;
- Assumption that entry assessment testing will apply to both new gas and electricity suppliers as set out in the June 2019 consultation;
- Assumption that entry assessment testing will apply to new DNOs as set out in the June 2019 consultation;
- Assumption that entry assessment testing will not apply to GTs as their obligations are met via Xoserve as the Gas Retail Data Agent or Central Data Service Provider;
- Proposal that the entry assessment provisions will cover all aspects of the REC, including those requirements which will migrate from the SPAA, DCUSA and potentially the BSC relating to theft and metering data and process activities;
- Assumption that entry assessment testing relating to these non-MRA provisions will be applied to suppliers and DNOs that want to become Qualified Parties after the RCC SCR is implemented. Existing parties are deemed to have passed the assessment;
- Proposal that the PAB will advise on the risks to be mitigated, which will in turn lead to the Code Manager developing a bespoke approach to external testing for each applicant;
- Proposal that the Code Manager will be held accountable for the success of the process (does it target the right requirements?) and also the proportionality (is it pitched at the right level for individual applicants?);

- Proposal that Supplier Agents are not captured by the entry assessment provisions as data aggregator and data collector processes are covered under the BSC audit and metering agents will be covered by the audit regime. However, as part of the onboarding process there will be a mechanism to ensure they can receive CSS messages;

- Proposal that MAPs and shippers are not captured by the entry assessment provisions. However, as part of the onboarding process there will be a mechanism to ensure they can receive CSS messages;

- Proposal that Qualified Parties will be required to provide an Annual Status Report indicating historic changes over the preceding year and potential changes to systems and processes, to replace the draft Re-Qualification provisions; and

- Proposal that the Code Manager will be responsible for delivery of non-CSS testing and DCC as Switching Operator will be responsible for CSS testing.

10. Development Roles and Responsibilities

10.1. This appendix 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.

10.2. Enduring Testing Approach –This consultation sets out the proposed approach to entry assessment testing covering both CSS and non-CSS requirements. Ofgem's Switching Programme is responsible for developing this document in consultation with existing code bodies (e.g. Elexon, Gemserv and Xoserve) and DCC with respect to CSS testing. Proposals have been reviewed by the REC Steering Board and Regulatory Design User Group (RDUG) prior to inclusion in this consultation.

10.3. Transformation of existing storyboards into proposed REC structure and extension to cover gas suppliers and non-switching provisions – The Code Manager will be responsible for developing enduring test scripts based on the existing MRA and BSC joint storyboards, amended to reflect the new switching provisions and extended to cover SPAA, DCUSA and potentially BSC processes migrating to the REC. These should be developed in conjunction with the BSC code body. If possible, the output will be reviewed by the REC Steering Board, RDUG and the Regulatory Group prior to the REC drafting being baselined in November 2020.

10.4. Development of the self-assessment form - The Code Manager will be responsible for developing the enduring self-assessment form. This should be developed to enable review by the REC Steering Board, RDUG and the Regulatory Group prior to the REC drafting being baselined in November 2020.

10.5. Development of supporting documentation – The Code Manager will be responsible for developing documentation to be used as part of the entry assessment and qualification process e.g. the entry assessment application form. This will be used from April 2021 when the REC Schedule is implemented within the code. As these documents sit outside the code itself, they will not be required to form part of the baselined SCR text; however, it is proposed that the Code Manager will consult with the MRA code

administrator, the BSC code administrator and industry parties to ensure the documents are fit for purpose.

10.6. Development of consequential changes – It is anticipated that there may be consequential changes required to the BSC and potentially the UNC to reflect the cross-code co-ordination required for the REC entry assessment process i.e. if the UNC needs to refer to the supplier qualification process. 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 relevant Ofgem consultation. It is proposed that a similar approach be taken for the development of consequential changes required to deliver the full entry assessment process with existing code bodies responsible for developing these changes following the Autumn consultation (once the proposed provisions are clear). These consequential changes should be provided to Ofgem in time so that they can be included in the Spring 2020 consultation.

10.7. 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 to ensure delivery in line with the proposed timeline set out in Section 11.

11. Proposed timeline

Date	Activity
Summer 2019	Entry assessment testing approach developed.
Autumn 2019	This industry consultation on entry assessment testing approach.
Feb 2020	Ofgem decision on way forward post this consultation.
Jan – Mar 2020	Development of consequential changes to BSC, UNC and other industry codes to reflect the cross-code testing requirements (if required).
Q2 2020	Code Manager appointed.
Spring 2020	Ofgem consultation on enduring testing documentation, specifically focusing on future release testing and the required test environments.
May 2020 – April 2021	Development of supporting documentation e.g. test scripts, entry assessment information pack, entry assessment application form and self-assessment form.
Q3-Q4 2020	Baseline REC drafting and consequential changes to other codes.

Nov 2020	REC and other code SCR changes finalised for approval (including phase 2 and 3 testing documentation).
Apr 2021	RCC SCR implemented with Code Manager taking responsibility for entry assessment based on pre-CSS functionality.
CSS go live	Entry assessment process amended to reflect post-CSS requirements.