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Switching Programme

Data Landscape Review

Confidential

October 2018

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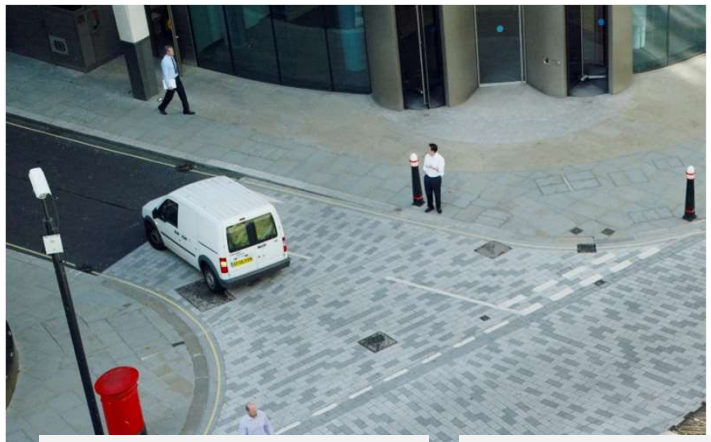

Contents

Background & approach

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1 Background and approach

This document summarises our review of the data landscape of the Central Switching Solution (CSS) implementation. It considers the current data model, the proposed data migration, transition, and in-flight switching approaches, as well as the activities already being performed by industry participants and existing forums to address potential data issues.

The objective of the review was to assess whether the approach taken to managing data related risks in the Switching Programme is appropriate. To achieve this, we took the following approach:

1. Reviewed the CSS data model, data migration plan, transition plan and in-flights principles in light of the high level programme plan, with the following specific enquiries:
    - Is the intended data migration journey appropriate, including the proposed data sources (UKLink & MPAS)?
    - Are proposed governance mechanisms, including the Data Working Group sufficient to identify and resolve data risks as they arise?
    - Are there appropriate checks and milestones built into the overall plan in relation to data risks?
    - Are the planned post go-live reliability checks appropriate to drive towards a goal of next day switching?
2. Reviewed the outputs from existing data related forums, augmented by interviews and considered the draft terms of reference for a 'Data Working Group' with the following key questions:
    - Are existing service providers and wider market participants aware of their responsibilities?
    - Have existing service providers made sufficient progress to date?
    - To what extent do these provide assurance over the risks and needs identified in (1) above
3. From (1) and (2) above, we summarised key themes, including the strengths of the proposed approach and what needs to be done to monitor that these are being carried out. In addition, we considered the risks inherent in the proposed approach and what assurance activities could be put in place to mitigate these risks.

Key themes

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2 Key Themes

Overall, there is a clearly defined data model, which has been published to the industry. Through the published plans, the issues that typically affect data quality and therefore, system success in the industry have been identified, with appropriate measures to address these risks. Success depends on the industry committing to the actions implicit in these plans, in particular, making an early start to resolving known data issues with address and meter asset data. It is unrealistic to expect all participants to live up to these responsibilities and therefore, ongoing monitoring and governance, aided by a 'Data Working Group' is recommended. Specific areas for governance to monitor are listed in the 'Strengths' section of this report.

Summary of observations

Data model – there is a clearly defined logical data model, which has been published to industry and reflects feedback. It has been baselined and is subject to change control. The model is structured to support the objectives of faster switching and manage the complexities of bringing gas and electricity together for the first time. Although there will inevitably be refinements as this model is applied to a physical implementation, the data model should provide industry with a clear guide in which to begin their initial preparations for data cleansing and migration. Participants should be reviewing the data model and actively assessing their priorities for data cleansing (e.g. issues where a significant number of records have quality issues).

Migration, Transition and In-Flight Plans - these address issues that we have seen in Nexus, building on learning from that project. These plans cannot be complete or address all possible risks at this stage but, as long as they are taken forward by the SI and CSS Provider they will allow the most likely issues to be anticipated, responses to those issues monitored, and for these risks to have sufficient visibility to programme management and governance functions.

Current data cleanse initiatives and forums – Near Term Improvements plans are focusing on critical known data issues, for example, plot to postal address, meter technical details, MAP ID creation and, in gas, Shipper-Supplier mapping. These are all positive actions and improvements on previous industry-wide initiatives, *however, this work will is not being tracked for completion by the end of the year, and there are other data issues that could be remediated ahead of a physical data design,. This supports the idea of an overarching data forum as discussed below.*

Industry engagement – there is industry engagement, primarily from Existing System Providers. Across the wider industry, the focus is mostly on understanding and assessment and there is the opportunity for more work to be performed on data cleansing ahead of the appointment of a CSS provider.

Data Working Group – We agree with the proposal for a Data Working Group, and with its broad terms of reference. Consideration should be given to how it escalates issues and works with other governance bodies, such as the design authority, to ensure sufficient action is taken, especially as data issues will need to be worked well in advance of other activities such as testing and cutover, worthy of a Risk & Issues Advisory Group.

2 Key Themes

Although our view on the Data Landscape is generally positive, there are risks inherent with the approach that require attention. The recommendations related to these risks are summarised below.

Summary of recommendations to address key risks
Industry's ability to make changes to internal systems – the effort required for industry to make the changes necessary to provide data to the CSS should not be underestimated, and early engagement is required to ensure that they are able to meet their commitments (recommendation 1).
Early progress on data cleansing – because there is a good, clear, logical data model, industry can do more sooner to progress data cleansing. This is important because next-day switching will place higher demands on data quality. As a guide, any inconsistency in the customer address, energisation status, domestic indicator, and meter details can be worked be worked without requiring a physical data model. Also, as a principle, participants should not expect data transformation rules to be available as a substitute for cleansing (recommendations 2 & 3).
Data assurance requirements – although the overall plan for data loads makes sense, it will be important for the System Integrator and CSS Provider to develop detailed plans at an early stage, including assurance requirements, in order to build industry confidence in data quality (recommendations 4 & 5).
Data in the DBT Plan – the DBT plan should reflect that there is a 'soft' go-live for data at the end of Stage 1, from which some data elements will be loaded and maintained in the CSS system. (Recommendation 6)
Transition planning, including in-flights – the plan for transition, including in-flights makes sense at this stage. We have identified four areas of specific focus which require attention: managing the risk that one or more DNOs cannot meet the deadline for making changes to their instance to MPAS for data transition stage 1; enforcing a principle of full data reconciliation for any data load that involves future production data; early testing of the planned dual running of updates to CSS and DSP during data transition stage 2; and testing of non-functional requirements for in-flights (recommendations 7 – 10).
Delta loads – There is an inherent tension between minimising the period over which delta loads are required and ensuring that data is properly migrated and reconciled. The approach to this and the performance of delta loads requires early and thorough consideration (recommendations 11 – 12).
Data working group – Although we agree with the concept and terms of reference of the Data Working Group, further consideration needs to be given to how it can propose and drive actions related to data (recommendation 13). Although it will be another forum for industry a overarching Data Working Group will provide a single view of data issues that is missing from the current framework of data forums and be an essential vehicle for addressing the challenges of ensuring data issues are resolved in a way that is practical for both the electricity and gas industries.
Involvement of MOPS – The assumption that MOPS do not need to be significantly engaged with the Switching Programme should be reviewed given that, as owners of meter data they will need to work with MPAS (25 systems, one for each DNO) instead of one system (ECOES). They should be consulted on this impact so that plans can address any consequent risks to the MOPs (recommendation 14).

Project strengths

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3 Detailed observations – strengths (1 of 3)

During the Data Landscape Review we have observed the following strengths inherent in the programme design. It is important to recognise that many of these strengths require continued attention to ensure that the programme benefits from the good work that has been done so far.

Title	*Description*	*Why is this a strength*	*What needs to be done to ensure this strength is realised*
Roles & responsibilities	Clear description of roles in relation to data is evident in the data migration and transition documents.	This makes it easier for participants to understand their responsibilities and therefore discharge them. This also provides a framework to refer back to when identifying responsibility for issues that will inevitably arise in relation to data.	Standing topic for Programme Coordinator to consider in their assurance role, for example, observing issues arising in the Data Working Group to assess whether roles and responsibilities are working in practice.
Engagement of Existing System Providers during Design Build & Test (DBT)	The importance of agreement between the CSS Provider and the Existing System Providers during DBT is recognised.	Co-operation between these parties is the main essential factor in the initial build of the CSS database.	Standing topic for the Core Systems Assurance Provider to consider in their assurance services.
Principle of data cleanse at source	Where data is not up to the standards required by the physical CSS data model it should be cleansed in the source system before being migrated to CSS services.	It is essential that originators of data have got the data correct, otherwise data errors will be replicated once the system goes live and improvements from data cleanse will be short-lived. Alternatively, the CSS solution will need to maintain complex transformation rules indefinitely, with increased cost of operations and difficulty to make changes to the CSS model (as each transformation rule will need to be retested).	Standing topic for the Data Working Group to consider.
Use of Retail Energy Location as a single point of reference/truth	The CSS system will use a new address field, the Retail Energy Location that can be mapped to address and meter point location data in both electricity and gas.	This is required to resolve address data issues both internally in the gas and electricity markets and to 'referee' between the two and avoids a hugely expensive exercise to move both industries to a common standard from day one.	Consider early testing of this model to flush out any issues, so that these can be resolved prior to finalising the physical design of the CSS database.

3 Detailed observations – strengths (2 of 3)

Title	Description	Why is this a strength	What needs to be done to ensure this strength is realised
Registration history	Registration history will not be taken forward but remain in existing enquiry services (MPAS, UKLink, DES, ECOES).	Reduces the volume and complexity of the data migration (and the challenge of deciding whether or not to cleanse legacy records).	None required.
Progressive data migration	Progressive data migration, including capturing data ahead of address service	Allows early 'market testing' of data quality, alongside the CSS design to iron out potential but avoidable data issues.	Standing topic for the Data Working Group to consider.
In-flight transactions – approach	In-flight transactions already considered, with preferred solution that builds on learning from the similar issues faced in Project Nexus.	Gives the market clarity on this subject well ahead of time, so that there is no excuse for last minute issues, and it can be incorporated in plans.	Standing topic for the Data Working Group and Cutover Working Group (when it is stood up) to consider.
In-flight transactions - design	In-flight transactions will use a permanent transactional interface to load.	Reduces complexity and uses a robust and tested process for uploading in-flights.	None required.
Testing approach	Approach to testing will require reconciliation and evidence of that data reconciliation process.	Enables the ability for independent assurance to give the market confidence that data migration is progressing successfully.	Standing topic for Core Systems Assurance Provider and Licenced Systems Assurance provider to consider in their services, with review from the Programme Coordinator.
Testing landscape	Proposed use of a pre-production instance for data migration testing.	Allows practical simulation of issues, at scale, so that there are no surprises at actual production load, as well as the opportunity to iron out issues that arise.	None required.

3 Detailed observations – strengths (3 of 3)

Title	Description	Why is this a strength	What needs to be done to ensure this strength is realised
Implementation Planning – data factored into high level approach	The high level plan and data migration plan have clearly identified data stages – with clear stage gate criteria (stages 0, 1, 2, and 3).	Provides a clear structure and opportunities for data quality to be monitored and issues identified at an early stage - as well as the opportunity to focus the Data Working Group and other project and assurance activities towards the successful achievement of data stage gates.	Use as basis to develop the agenda / plans for the Data Working Group.
Implementation Planning – considers data implementation issues	Potential implementation issues have already been considered and factored into the high level plan (see migration principles above).	Plans that are structured to include consideration of data risks are more likely to succeed, not only because risks are being managed but also because attention to data makes it more likely that unforeseen issues will be detected at the earliest opportunity.	None required.
Cutover Planning	The plans involve preparation for detailed 'run books' for migration activities.	These are essential to building industry co-operation around these complex areas..	Standing topic for the Data Working Group to consider, primarily towards data Stage 1, especially to ensure that industry are aware of the overall plans and that participants are confident that they can align their individual plans to the overall timetable. The Data Working Group would hand over concerns on cutover to the Cutover Working Group, once it is stood up.

Risks & recommendations

4

4 Detailed observations – risks and recommendations (1 of 8)

From our view, the programme has a good understanding of data-related risks. With any transformation of this scale there will be a need to continually monitor for new and changing data risks. We have identified the following risks inherent in the plan, which we think should be monitored and action taken at the indicated date. We have made recommendations that we believe should address those risks, together with a proposed owner and time to take the recommended actions. Many of the actions will sit with a Data Working Group, as discussed in section 5.

Title	Risk Description	Recommendation	Owner	Date
1. Ability of suppliers (and shippers) to make changes to their system to accommodate changes to data	Where shippers and suppliers are required to make changes to their systems, they need sufficient time to understand those requirements, design and build a solution, test that solution and fit it into an existing change cycle. Data required by the CSS services typically resides in core systems (such as SAP IS-U), which are large and complex. Changes to these systems need to be scheduled alongside other regulatory and commercial change requirements, and will require substantial internal end-to-end testing and a scheduled change window. Although the data model has been published, the actual realisation of these flows and the testing will require the CSS Provider to be appointed and build a working model of this part of the data solution. Availability of windows to make these changes, therefore, may be a constraint on the timetable.	Impacted shippers and suppliers should be engaged at an early stage so that they can plan and provide information about when they can make the changes. This should then be monitored by the overall PMO with the assistance of the Data Working Group.	Data Working Group	Raise awareness – Q4, 18 Follow-up by June 2019

4 Detailed observations – risks and recommendations (2 of 8)

Title	Risk Description	Recommendation	Owner	Date
2. Data cleansing requirements and data quality standards	Data cleansing requirements have only been identified in principle, not as far as an outline plan. We have observed a hesitancy to engage in data cleansing until there is a clear 'physical' model of the data demonstrated by a selected CSS Provider. Many of the issues with address data, MAP IDs, and asset deployment data are already known by Existing Service Providers and market participants and are independent of the final format of the data (which, realistically, is unlikely to change from current formats). The current address data quality target of 95%-99% high quality address data records would, with a monthly switching volume of 1 million would lead to delays or fails of 10,000 – 50,000 switches each month. Next day switching would make manual correction of data/exceptions during the objection window impossible, increasing the likelihood that a data issue will impact a customer's ability to switch.	The Data Working Group should discuss the next published edition of the data model, (a) to risk weight the proposed data elements in the CSS solution in light of the specific risks of next day switching, (b) based on this risk weighting prioritise pre-cleanse activities, and (c) consider how Existing System Providers would be able to provide quality metrics to monitor progress.	Data Working Group	November / December 2018
3 Data transformation rules	So far 3 data transformation rules have been identified, all linked to the need to create new domestic/non-domestic indicators and MAP IDs in the CSS, which do not currently exist in UKLink or MPAS. Data transformation rules are counter to the general principle espoused by the DCC that data should be fixed at source. There is a risk that the presence of data transformation rules will encourage market participants to request data transformation rules to resolve data quality issues.	Clear ground rules are established (and monitored by the Data Working Group) for transformation rules. Transformation rules should be restricted to correct standing data that will not be published or reused	Ofgem Data Working Group	Q4, 2018 Ongoing

4 Detailed observations – risks and recommendations (3 of 8)

Title	Risk Description	Recommendation	Owner	Date
4. Defining data quality requirements over data loads	Although the programme has already developed a detailed logical data model, the exact data quality rules will depend on the final data formats and build of the CSS solution. The programme will load production data progressively, from a relatively early stage in (transition 1), so data quality cannot be compromised. If data quality rules are not made available sufficiently early, there is a risk there will be surprises (to the industry) about the level of data cleansing required (or insufficient opportunity for constructive discussion about the best way to resolve a data issue) leading to delays.	Use the review in recommendation 3 and subsequent activities as a basis to proactively engage the selected System Integrator and CSS Provider on the most efficient and effective way to resolve data quality challenges.	Data Working Group	Q2, 2019
5. Monitoring progress of data loads	The CSS Application will be progressively built up from data, both bulk and delta loads. This provides the opportunity for assurance activities to monitor data quality. Individual data loads could be large and take extended periods to run. If these loads fail and that failure is only detected at the end of the run, this could delay the programme, due to the lost time to discover the error, resolve it, and start the run.	The SI/CSS Provider should demonstrate their ability to track data quality and build assurance over data quality into their plans. The approach to building and providing this evidence should be reviewed by the Programme Coordinator to confirm that this is a sufficient basis for building industry confidence. The SI/CSS Provider should be able to demonstrate a progressive approach to proving data loads, with the potential to perform interim checks on long-running data loads to ensure that they are progressing effectively.	SI / CSS Provider	Q2, 2019

4 Detailed observations – risks and recommendations (4 of 8)

Title	Risk Description	Recommendation	Owner	Date
6. DBT plans for Data	The DBT plan does not recognise that there is a 'soft' go-live for data. From Stage 1, certain data elements will be loaded and maintained in the production CSS system. These will be progressively added to through stage 2, by which time most of the data will be loaded, with this data maintained through delta loads in stage 3. If there is insufficient discipline and attention to data quality, there is the risk that these initial production data loads will contain errors that persist to the actual go-live. Although there will be the opportunity to continue to remediate this data at source (and for those corrections to flow through delta loads), there is a risk that the plan does not recognise the level of discipline required and related milestones needed for this 'soft' go-live.	Review the DBT plan and consider additional milestones for data quality at the end of Stage 1 and Stage 2.	Ofgem	Q4, 2018

4 Detailed observations – risks and recommendations (5 of 8)

Title	Risk Description	Recommendation	Owner	Date
7. Migration of address data from MPAS	For Gas, the UKLink system holds address and asset data, and so it is a sufficient repository to populate CSS. For Electricity the Meter Asset Data resides in ECOES. The Transition plan proposes that there is a two stage transition process for this data, Stage 0 will migrate the data from ECOES to the 25 MPAS applications and Stage 1 will migrate this data from MPRS applications (along with other data) to CSS. Although this is a practical method, as the MPAS applications will, in future, need to hold this data to support switching, it does create a dependency on MPAS Providers to update their applications and successfully migrate Meter Asset Data. This could create impact the critical path (the chances of at least 1 out of 25 migrations failing, even if they are in theory, all based on the same data model, are high).	The feasibility of a contingency approach of providing this data directly from ECOES should be considered as a method of populating CSS for Stage 1, particularly for a single DNO. (The most likely scenario would be one or two DNOs struggling with system upgrade/data cleanse).	System Integrator / CSS Provider	Q2, 2019
8. Principle of control over temporary interfaces	Section 3.5.1 of the CSS Data Migration Plan considers that some temporary point to point interfaces could be used to migrate data and that these may need lesser reconciliation requirements. In our view, there is a risk that this could be misinterpreted and lead to insufficient reconciliation controls. The need for reconciliation is driven by the need to prove the migrated data is sufficiently complete, accurate, and reliable (including integrity) not by the method in which the data is migrated (although the method may have an impact on the ease of performing the reconciliation, which could be a consideration).	Principles for data reconciliation requirements should be developed and documented. Whatever the mechanism for loading data into the CSS, if that data will end up as 'production data' then the migration of that data should be reconciled..	Ofgem ./ DCC	Q4, 2018

4 Detailed observations – risks and recommendations (6 of 8)

Title	Risk Description	Recommendation	Owner	Date
9. Transition Plan – address data	In the Transition Plan (Page 8) at Transition 2, there is a discussion about how to provide address data to the DSP (Smart Meter Data Services Provider. The preferred approach is to have dual messaging of RMP data from suppliers to both the CSS and the DSP. This would provide a failsafe if there was a catastrophic failure of the CSS at go-live. We anticipate that by this stage, nearly all premises should have moved to smart meters, with data residing in both CSS and DSP and so this will be critical to ensure completeness and consistency of switching related data. if this approach is taken then there would need to be reconciliation controls to make sure that the data accepted by CSS was the same as the data accepted by DSP. It will not be good enough for the suppliers to check they have sent two files, but also for CSS and DSP to check that they have each processed all of the records or that they have a consistent set of rejections.	The CSS Provider to test this aspect of dual data transfer at an early stage with the DCC/DSP to demonstrate the appropriate controls can be applied. If this approach cannot be proven to be capable of satisfactory controls, the other options should be re-evaluated.	System Integrator / CSS Provider	Q2, 2019
10. In-flight switches – non-functional requirements	Any switches not confirmed by the cutover (i.e. still in an objection window) will be held back by suppliers and processed over the two weeks following go-live. This means that there will be an increased volume of switches over the first two weeks, in order to process the backlog. This will create increased workload in the first few days of system operation, when there is a higher risk of performance. In addition, there is the risk that trying to run backlog processes in the middle of on-line switch submissions could cause contention for system resources, and have an impact on performance out of proportion to the additional volume of transactions processed.	A key part of the CSS Provider's testing should be to demonstrate capacity to handle this (smoothed) backlog process for in-flight switches. in addition, as part of their dress-rehearsal for cutover and post-live they should test the backlog process in conjunction with simulated switch requests.	System Integrator / CSS Provider	Q1, 2020

4 Detailed observations – risks and recommendations (7 of 8)

Title	Risk Description	Recommendation	Owner	Date
11. RMP Delta Loads	RMP data will be loaded into CSS at Stage 1. This will then have to be kept up to date by a series of delta loads up to and including the cutover process. There is tension between the desire to compress stages 1 to 3 and minimise the number/extent of delta loads (which the DCC would like) and the need to ensure that there is appropriate validation and review, especially of other data loads and builds in Stage 2 (including address data). There is a risk that the level of validation and review will be compromised.	The Programme Coordinator should work with CSS Provider, consulting the Data Working Group to review risks (and related assumptions) on the delta load approach. This can only be fully planned as DBT gets under way and it can be modelled with an understanding of the real physical interfaces and data flows as modelled by the appointed CSS Provider.	Programme Coordinator, CSS Provider	Q3, 2019
12. Delta Load Performance	Performance of delta loads can be difficult to manage as they often require search for a small number of (changed) records in a large database, which, for many databases is performance intensive. Poorly designed or planned data loads could impact the performance of existing systems with the risk that they exceed the available overnight window.	The CSS Provider should prioritise the development of delta loads with Existing System Providers and demonstrate ability to perform delta loads at a relatively early stage – potentially monitored by the Existing System Provider's Forum. The Data Plan should be updated to include this activity.	CSS Provider, Existing System Providers Forum	Q3, 2019

4 Detailed observations – risks and recommendations (8 of 8)

Title	Risk Description	Recommendation	Owner	Date
13. Data Working Group – terms of reference	The current terms of reference for the Data Working Group set it out as a body that co-ordinates understanding of data issues, reviews progress on resolving those data issues, takes specific action on data related issues and escalates data issues to higher bodies. As such it is not constituted to drive action. This is appropriate, as this could distort the programme command and control system (participants could be confused if there were conflicting messages between the DWG and Design Authority or DWG and the wider Implementation Group). The creates, however, the risk that timing between DWG and other bodies could introduce delays (of up to six weeks) in escalating data related issues, which could impact the critical path.	The terms of the Data Working Group should be reviewed to clarify the way in which it will work upon other bodies to drive action and escalate issues. This should include escalation paths to the CSS Provider, System Integrator, Design Authority, Programme Coordinator and Programme Assurance Providers, agree escalation paths for data related issues.	Programme Coordinator, CSS Provider	Q3, 2019
14. Impact on MOPS of MPAS becoming the reference system for address and asset data	The programme assumes that MOPS will not be significantly impacted by switching as they will continue to interact with the same service providers and solutions, primarily ECOES. With Faster Switching, however, ECOES becomes purely a reference system rather than a system of record for MAP ID and Asset Deployment Data. A possible consequence of next day switching is an increase in the level of requests for a meter read or inspection where disputes arise over opening/closing reads. It is not clear to us whether using a reference system rather than the system of record will provide sufficient currency of data to support such activities.	There should be further consultation with MOPS to assess how this risk could be addressed, for example, participation in the Data Working Group, or a specific session with the Cutover Working Group..	Ofgem	Q4, 2018

Data Working Group

5

5 Data Working Group – the need for an overarching forum

There is an argument that there are existing forums in place to manage data quality, in both the Electricity and Gas industries. The model on the proceeding page does have multiple touch points, especially for suppliers, and there is a risk that introducing another forum could be counterproductive. We believe, however, that an overarching group is required for the following reasons:

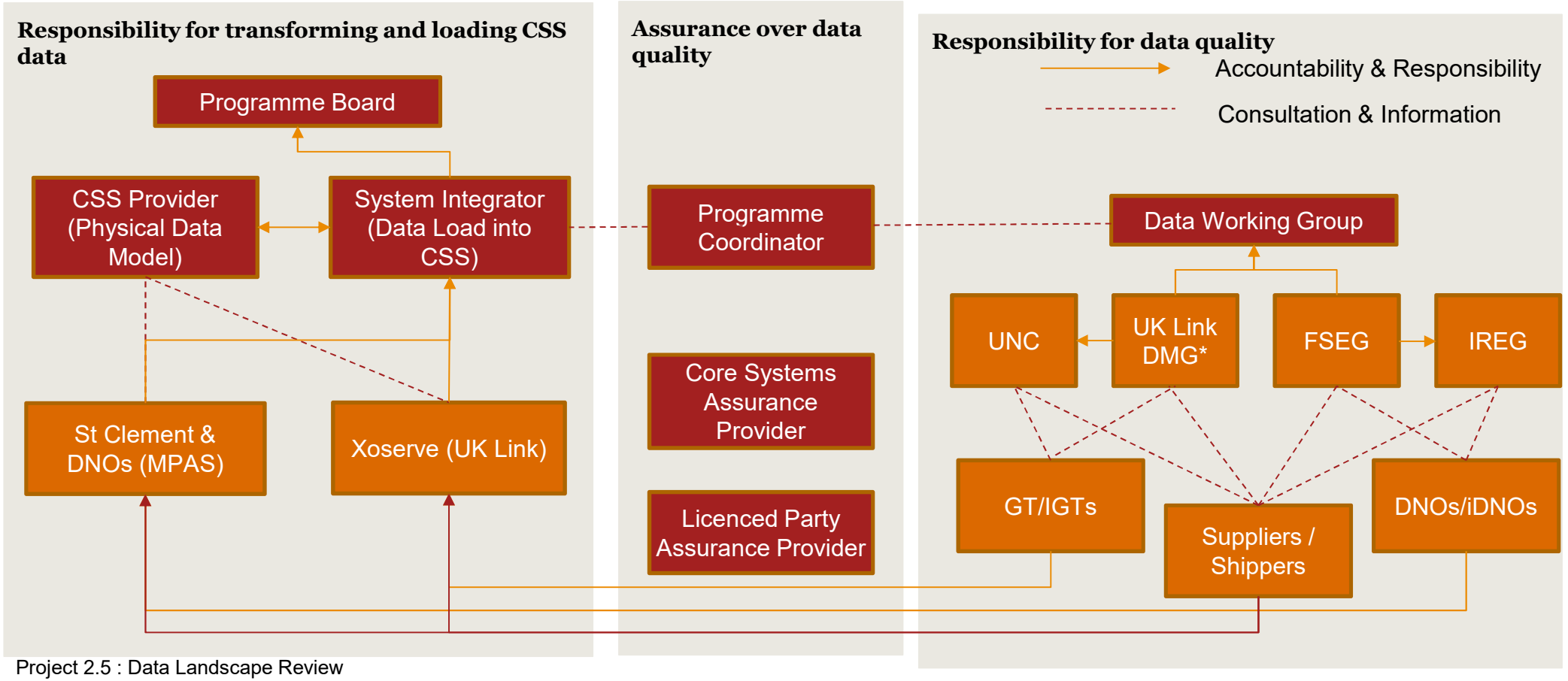
Observation	Risk	Recommendation for the Data Working Group
There is currently no single view of data issues that will affect CSS. Both gas and electricity have Near Term Improvement Groups, working specific topics.	There may be data issues with long lead times that are not being addressed, with consequent risk of impact to the Faster Switching timeline.	The Data Working Group reviews the results of the Data Landscape Review and revisits priorities, commissioning action if there are any gaps in current preparations.
Near term improvements are working on issues that are critical to success and can be tackled in isolation – plot to postal cleansing, meter technical details and, in gas shipper-supplier mapping etc. These do not, however, consider cross-industry risks.	Faster switching depends on the assumption that the Retail Energy Location will provide a single point of reference for address to which all parties can subscribe. The Near Term Improvements Plan, however, does not test this assertion by testing how easy it is to map gas and electricity address and meter reference details.	The Data Working Group identifies volunteers who can pilot the matching of address data ahead of the selection of a CSS Provider to develop specific understanding of the risks and potential mitigation required to combine and map cross-industry data into the Retail Energy Location.
Current operation of Near Term Improvements and working groups is not sufficient to drive progress. The minutes do not include metrics, and participants were not clear of the December deadline.	The Near Term Improvements may make insufficient progress, leading to pressure on resources to resolve data issues at later, more critical stages in the project.	Based on the outcome of the Data Landscape Review, key metrics for progress of the Near Term Improvements are commissioned and reviewed, to drive progress
The System Integrator's priority will be to ensure a successful data load into CSS, rather than give priority to industry concerns.	Data migration decisions may be made that make it more difficult for industry to perform cleansing and achieve adequate data quality.	The Data Working Group gives industry an opportunity to provide a single clear voice to the System Integrator and negotiate practical responses to resolving data challenges, facilitated by the Programme Coordinator.

5 Data Working Group

Data is critical to the success of Faster Switching, for the following reasons:

1) 80% of failures in the current switching process are down to data errors;
2) Next day switches will make it impossible for manual resolution of data issues, so will increase the data quality required (i.e. if data quality isn't improved more switches are likely to fail; and
3) The CSS registration and address services increase the number of interfaces and therefore points of data-related failure.

This risk is recognised and Ofgem have introduced appropriate mechanisms to mitigate this risk, which we have summarised in the diagram below.



5 Data Working Group – over the Faster Switching life-cycle

The role of the Data Working Group will change over the programme's life time, to respond to the changing nature of the data risks. The critical assumption is that primary responsibility for data quality lies with the SI and the CSS Provider, but they can only achieve this with support and commitment from the electricity and gas industries. This is especially critical during Stage 0, where significant progress can be made on cleansing data to reduce pressure on later stages of the programme.

Stage 0

Key risk: insufficient attention is placed on resolving known data risks, storing up delays

Current known risks ⊂ All data risks

Data risks currently being addressed ⊂ Data risks inherent in plan and data model

- Map known data cleansing activities (e.g. through FSEG, Gemserv, Xoserve) to CSS Model
- Perform gap and risk analysis (what risks are not currently being considered and do they need to be)
- Agree 'no regret' cleansing activities (if an address is wrong it can be fixed without needing to know the final format)
- Identify long lead time issues (for example where physical inspection is required to confirm data)

This is the 'phoney war' – although 'battle' i.e. DBT has not started yet, it's time to prepare and mobilise on data so that participants are ready

Stage 1

Key risk: data risks arising from Design Build & Test are not resolved promptly or properly

SI owns data resolution issues

DWG

DWG is essential in co-ordinating industry to respond data issues

- Consulted on design and build decisions that impact data – to asses industry impact – and advise on practical responses
- Co-ordinate industry wide actions in response to DBT data-related problems
- Anticipate test requirements and ensure market participants are prepared to provide consistent data to support market testing
- Support development of industry go-live criteria
- Ongoing monitoring of data cleanse items outstanding from Stage 0

This assumes that data cleansing activities are addressed in Stage 0; focus is on emerging items.

Stage 2

Key risk: inadequate go-live preparation

SI

DWG

- Progress final data cleanse to go-live criteria
- Resolve any new issues arising from final testing
- Co-ordinate industry activities in relation to data migration

If Stages 0 and 1 are delivered well, there should be no crises at this stage

Stage 3 and post-go-live

Key risk: data issues delay stability

CSS

DWG

- DWG on standby for data remediation issues
- Monitor operation of transition to BAU in regard to data issues
- Assess ability of data quality to support next day switching
- Handover /hand back to permanent governance forums

Appendices

Appendix 1 – cross reference to terms of reference

Key question	Outline Approach	Key considerations in drawing a conclusion	Outputs	How this question has been addressed
Is the intended data migration journey appropriate, including the proposed data sources (UKLink & MPAS)?	Consider the appropriateness of proposed data sources and any equivalents • Whether they are the primary source of data required for CSS • The extent to which there are known data gaps that would need to be bridged, including capability to derive new fields required in the CSS design from existing data • The extent of any logistical challenges in extracting the data (for example 25+ instances of MPAS vs 1 instance of ECOES) • Consideration of the suitability and risks relating to using the live interfaces between UKLink/MPAS and CCS Review the program plan, in the light of the above considerations, to assess whether it allows sufficient time to resolve the data cleansing and migration challenges related to those considerations, including: • Time taken to resolve data issues and migrate data prior to go-live • Provision of sufficient data (quantity and quality) to support testing and trial migration activities.	The proposed data source should be a sufficient, complete and accurate base for populating the CSS. Data gaps, and the root cause for any gaps, should be understood with a clear strategy to mitigate, within the programme timeframe. The intended data migration journey should support other programme activities such as testing as well as consider any changes to design that may be necessary to support recommendations.	***Risk assessment of chosen data migration journey with commentary on the relative risk of alternative options.*** ***Recommendations to reduce risk***	Detailed review of the baselined and current data models provided by the DCC, considering potential data sources and logistical challenges. In general, as covered in the conclusion the data model is logical and practical and minimises the challenges posed by bringing gas and electricity together through the Retail Energy Location. There are some risks inherent with this approach which we have addressed in: • Recommendation 1 - Ability of suppliers (and shippers) to make changes to their system to accommodate changes to data • Recommendation 6 - Migration of address data from MPAS • Recommendation 13 - Impact on MOPS of MPAS becoming the reference system for address and asset data The risks associated with using live interfaces has been addressed in: • Recommendation 7 - Principle of control over temporary interfaces • Recommendation 8 - Transition Plan – address data We have reviewed the program plan and the related data migration, transition, and in-flights plans and how it has dealt with options. With the exception of one point we are comfortable with the preferred options. • Recommendation 8 - Transition Plan – address data

Appendix 1 – cross reference to terms of reference

Key question	Outline Approach	Key considerations in drawing a conclusion	Outputs	How this question has been addressed
Are proposed governance mechanisms, including the Data Working Group sufficient to identify and resolve data risks as they arise?	Review the terms of reference and proposed attendees for the Data Working Group, to consider whether they are appropriate to act as a forum for raising data issues and coordinating industry activity in resolving data issues (including issues relating to Stage 0 and NTI). Review the extent to which the Design Authority, PMO, Steering Committee, Existing System Provider Forum, and other governance mechanisms have addressed data concerns raised so far. Understand whether there are other, existing mechanisms in place which could address data issues outside of the current governance arrangements.	Data issues are identified and resolved appropriately with appropriate drive and outcome focus on those that could impact the delivery timelines. Mechanisms for identifying the correct governance forum for owning data issues are operating, for example, where a data issue impacts design (e.g. change in field format or validation) it is routed to the Design Authority and where is about quality / cleansing it is routed to the Data working Group and relevant Existing System Provider. Appropriate escalation routes are in place for escalating data issues	***Recommendations for improvement to the Data Working Group and other governance mechanisms including the phase in which this improvement is made, for example, Enactment or DBT phases.***	Attendance at August and September Existing Provider Forum meetings. Attendance at Design Forums to discuss change requests. Review of the proposed Data Migration and Transition strategies. Review of the draft Data Working Group terms of reference and discussion with existing system providers including Xoserve, Electralink, and DCC. Industry has raised questions on the need for a Data Working Group when there are already industry activities such as Near Term Improvements in place. The rationale for an overarching Data Working Group and how its role will change over the lifetime of the Faster Switching Programme are addressed in Section 5. See also: • Recommendation 12 - Data Working Group – terms of reference.

Appendix 1 – cross reference to terms of reference

Key question	Outline Approach	Key considerations in drawing a conclusion	Outputs	How this question has been addressed
Are there appropriate checks and milestones built into the overall plan in relation to data risks?	Review the programme plan to assess the milestones relating to data, in particular the intention to define sufficient data quality standards for key data loads (in relation to testing and data migration) and develop go/no-go criteria and minimum viable data quality standards for go-live. This recognises that actual data quality standards will be need to be refined in conjunction with the solution provider(s) for the selected solution and the system integrators. Consider how work can be prioritised to provide early insights/delivery of data activities, for example, understanding mismatches between gas and electricity data in advance of CSS obtaining the data from the ESPs.	Consideration of the existing work which shows the relationships between current failed switches (including erroneous transfers) and data quality issues. This should be a basis for defining acceptable data quality standards for go-live. There should be an assessment of the current data quality challenges and development of a data improvement 'glide path' to show how these issues are worked to reach the go-live data standards.	***Assessment of current checks and milestones and recommendations for improvement.***	Review of Data Migration, Transition, and in-flight plans as well as the overall DBT plan. In general the approach is logical and builds on learnings from Nexus. Specific recommendations over data quality standards are: • Recommendation 2 - Data cleansing requirements and data quality standards • Recommendation 4 - Defining assurance requirements over data loads • Recommendation 5 - Monitoring progress of data loads • Recommendation 7 - Principle of control over temporary interfaces • Recommendation 10 - RMP Delta Loads

Appendix 1 – cross reference to terms of reference

Key question	Outline Approach	Key considerations in drawing a conclusion	Outputs	How this question has been addressed
Are the planned post-live reliability checks appropriate to drive towards a goal of next day switching?	Based on the step above, assess the gap between the standards identified as a go-live minimum, and that required to support next day switching, including understanding the criteria required for next day switching. Consider how current and proposed 'near-term improvements', i.e. activities that are already under way to improve data quality will support post-live reliability. Review proposed post-live reliability checks and consider whether these are adequate.	Go-live criteria should be for data to be sufficient to support next day switching. There should be a mechanism in place to track progress of the industry through this process and identify ETs that are out of scope for the CSS. The post-live reliability checks should be designed to detect operational issues that would impact next-day switching.	***Recommendations for improvement to the approach to post-live data reliability checks.***	Review of Data Migration, Transition, and in-flight plans as well as the overall DBT plan. In general the approach is logical and builds on learnings from Nexus. As we built up the role of the Data Working Group over the lifetime of the Programme (section 5) it became clear that post-live reliability checks are effectively an extension of the checks that should be performed in the run up to go-live. They will also depend on the implementation of actual interfaces and will need to be revisited as part of the Programme Coordinator's role. We have listed many of these assurance activities in Section 3 – Project Strengths & Implications. We also made the following recommendations: • Recommendation 9 - In-flight switches – non-functional requirements • Recommendation 11 - Delta Load Performance

Appendix 1 – cross reference to terms of reference

Key question	Outline Approach	Key considerations in drawing a conclusion	Outputs	How this question has been addressed
Are existing service providers and wider market participants aware of their responsibilities and airing concerns that could impact on their data readiness?	Through survey and selected interviews assess the understanding of responsibilities of existing system providers and a sample of wider market participants, considering: Commitment to data quality Awareness of intended project timing and milestones. The impact of other systems/applications they use to support the switching process The way in which existing data issues are being handled through gas or electricity forums and the extent to which these forums are communicating and addressing challenges that could impact faster switching – in particular address and related data The nature of data issues, for example, whether they relate to understanding or technical clarifications. Attendance at the inaugural Data Working Group and observation of discussions and actions taken.	There is awareness of the potential data issues, understanding of the impact that it will have on the participant's organisation. Participants are in the process of assessing their data quality and developing an approach for data cleansing and improvement, as well as communicating issues that require wider industry collaboration to resolve.	***Heat map (with RAG status) of industry understanding and identification of key themes that the Data Working Group, PMO, System Integrator and assurance providers should monitor*** ***Recommendations to Ofgem on how issues could be addressed collectively or by individual parties***	Interviews with Xoserve, Electralink, DCC and attendance at ESPF meetings. Planned attendance at FSEG, but meeting was cancelled due to the chairman being ill. Review of minutes from Near Term Improvements Group. Based on the output of this, our view was that a wider survey was not appropriate, nor the preparation of a heatmap, and it would be better for us to focus time on how the Data Working Group (supported by other activities could address risks) – see Section 5. Specific recommendations in this area were: • Recommendation 2 - Data cleansing requirements and data quality standards • Recommendation 12 - Data Working Group – terms of reference • Recommendation 13 - Impact on MOPS of MPAS becoming the reference system for address and asset data

Appendix 1 – cross reference to terms of reference

Key question	Outline Approach	Key considerations in drawing a conclusion	Outputs	How this question has been addressed
Have existing service providers made sufficient progress so far?	Review outputs and progress tracking from industries bodies (FSEG, UNC) to assess the extent to which they understand and are progressing their data responsibilities. Through survey and selected interviews, in particular with existing providers who have had limited engagement, assess the progress that has been made. In particular consider the following: Extent to which they have performed their own data impact assessment to understand the breadth of their own data cleansing activities How they will generate the new data fields required by CSS Volume and performance constraints around data migration and transmission and the impact on their existing landscape and messaging services Clarification of the reasons behind any delays by the EMTs Attend Existing System Providers Forum as observers and assess progress and readiness from the topics of discussion and level of engagement.	The CSS Data model should be understood and the implications on their existing systems landscapes assessed. They should have an indicative plan on how they meet the CSS timetable and have identified risks to that timetable.	***Heat map of industry understanding and identification of key themes that the Data Working Group, PMO, System Integrator and assurance providers should monitor.*** ***Recommendations on how Ofgem should address any risks we identify that could threaten the overall time table for Faster Switching.***	Interviews with Xoserve, Electralink, DCC and attendance at ESPF meetings. Attendance at Change Request meeting. Conclusion – the CSS Data Model is understood and Existing System Providers are aware of it and actively engaging through change requests and Near Term Improvements. These activities need to be monitored; recommended assurance activities have been listed in section 3 – Project Strengths and Implications. In addition there is one relevant recommendation: • Recommendation 3 - Data transformation rules

Appendix 2 – documents reviewed

Document title	Description
d-4.2.1_css_user_requirements_specification_v2.0_3.pdf	User requirements specification – for reference in understanding the relevance of the data model.
d-4.2.2_css_detailed_non-functional_requirements_v2.0.pdf	To assess the extent to which data had been considered in non-functional requirements.
d-4.3.4 e2e transition plan implementation approach - draft Feb 2018.pdf	To understand the progressive approach to data migration and the implications for control, governance, and effectiveness of the migration and transition plan
Ofgem Plot reporting - July18 v1.0.xlsx	IREG document – progress on plot to postal address cleansing
Near Term Data Improvement Remedies Status Update Report 20180221 v1.0.pdf	Progress on the Near Term Improvements Plan – Feb 2018
Near Term Data Improvement Remedies Status Update Report 20180430 v1.0.pdf	Progress on the Near Term Improvements Plan – Apr 2018
d-4.2.6_css_data_migration_plan_v2.0.pdf	Overall data migration plan – core evidence to gain understanding of the proposed approach to data migration in Faster Switching
d-4.3.4_e2e_transition_plan_-_implementation_approach_v1.0_1.pdf	To understand the progressive approach to data migration and the implications for control, governance, and effectiveness of the migration and transition plan
d-4.3.4_e2e_transition_plan_-_in_flight_switches_management_approach_v1.0.pdf	To gain a specific understanding of the planned approach to in-flight transactions, switches for which there will be an open objection window at cutover.
DLS Data Migration Document v1.0.pdf	Overall data migration plan – core evidence to gain understanding of the proposed approach to data migration in Faster Switching
Switching Programme DBT POAP v6.0 - Draft.pptx	Plan on a page, to put into context the planned data migrations and assess the extent to which these are feasible in the context of the data migration plan, transition plan, bulk loads and delta loads.

Appendix 2 – documents reviewed

Document title	Description
Data Model Working Group ToR v0.3.docx	Draft terms of reference for the Data working group, used to compare to the requirements we had identified for data governance based on our document review above.
https://dcc2-pub.avolutionsoftware.com/Switching	Current working version of the Faster Switching Data Model being managed by the DCC. Used for us to assess the overall design of the data model.
https://dcc2-pub.avolutionsoftware.com/Switchingbaseline	Baseline version Faster Switching Data Model being managed by the DCC. Used by us to understand what has been shared by industry.

Appendix 3 – schedule of meetings

Meeting	Purpose	Attendees	Date
Existing Provider Forum	Observation of Existing System Providers and other industry parties and assessment of their levels of awareness of data and related issues.	ESPF attendees >30, Colin Bezant, Onyi Chiejine	7 August 2018
Planning meeting	Discussion of terms of reference and underlying requirements for the Data Landscape Review	Colin Bezant (PwC), Nicola Garland, Jenny Boothe, Harriet Higgins (Ofgem)	7 August 2018
Electralink	Discussion of Near Term Improvements Program and Electralink's role as an existing systems provider.	Colin Bezant, (PwC). Naomi Anderson, Mark Pearce, Mark Olliver (Electralink)	11 September 2018
DCC	In depth discussion of the Data Model and how it was constructed. Initial thoughts on the Data Working Group.	Colin Bezant, Martin Crozier (PwC). Ian McNally (Capita), Phil Bryan (SmartDCC)	12 September 2018
Existing Provider Forum	Observation of Existing System Providers and other industry parties and assessment of their levels of awareness of data and related issues.	ESPF attendees >30, Martin Crozier, Onyi Chiejine	17 September 2018
Ofgem – data architecture	Debrief from Ofgem Data Architect, Colin Mackay, to understand his concerns	Colin Bezant (PwC), Jenny Boothe, Colin Mackay (Ofgem)	25 September 2018
Ofgem – initial validation of observations	Validate initial observations with Ofgem's data architect	Colin Bezant (PwC), Colin Mackay (Ofgem)	26 September 2018
Xoserve	Discussion of Xoserve progress on data cleansing and near term improvements, as well as need for forums such as the Data Management Group for Gas and Data Working Group	Colin Bezant (PwC), Emma Lyndon (Xoserve)	26 September 2018

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