# Data Management Status Report

December 2022

# Contents

# Foreword

Maintaining and providing accurate data to the non-household retail market is essential for efficient market operations, positive customer experiences and reduced frictions for market participants. Poor data quality is an industry-wide concern and there is considerable focus from both Ofwat and MOSL on the need to improve data quality across the market.[1]

In that context we are publishing this annual report providing an overview of our progress in this important area, enabling you to follow our progress in the key areas we have identified. Our aims are to reduce friction in the market and improve the quality of our services for customers and retailers. We hope the updated report will continue to provide a focal point and catalyst for conversations with customers and stakeholders to further drive improvements.

Our first Data Management Status Report was published in December 2021. This is our first annual update following that original publication. Over the past 12 months, we have made significant improvements. These include achieving upper quartile performance in MOSL's data quality metrics, and turnarounds in the perception and reporting of our meter asset data.

There are three key themes running through this report:

- **We said, we did** – We have delivered on every single improvement we committed to last year.
- **We have improved** - Our focus on data quality has been reflected in MOSL metrics and improved market rankings for the targeted data items (GIS, UPRN and Meter Manufacturer).
- **We still have more to do** – We still have significant challenges, in common with the rest of the market. Whilst we continue to deliver on the specific targets we have set in consultation with the market and retailers, we are focussed on working with MOSL on market wide approaches. These include: the central data cleanse, market data consistency audit and first-time registration. We support these initiatives and the opportunities they may provide to drive enduring data quality improvements across the whole market.

We will continue to seek feedback from our customers, retailers and MOSL about how we can improve data quality through our operational channels, ongoing engagement and industry discussions.

We look forward to continuing to work with all market participants to drive improvements in customer and operational data to support the healthy functioning of the non-household (NHH) market.

Stuart Smith
Director of Wholesale Services

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[1] The poor quality of data has been highlighted as being one of the main sources of market friction by both Ofwat and MOSL. Ofwat (August 2020), State of the market 2019-20: Review of the third year of the business retail water market - Ofwat

# Introduction

This report is the second in a series of annual reports[2] which provide an overview of our approach to non-household (NHH) data health, our current performance, and our plans to improve data quality performance.

This report is broken down into 5 sections:

- Section 1 summarises our Data Management Framework and the six pillars which support it.

- Section 2 discusses recent improvements made to strengthen our Data Management Framework and to improve performance on specific data issues.

- Section 3 summarises and comments on our current performance to the end of 2022. This section looks at data from a range of sources including MOSL's Data Quality Dashboard, Market Performance Standard (MPS) SLAs, the data quality component of the Retailer Measure of Experience (R-MeX) survey, complaints and escalations and our internal measures.

- Section 4 sets out our planned improvements to our Data Management Framework and specific data issues.

- Section 5 provides concluding remarks and contact details for any reader who wishes to engage around data issues.
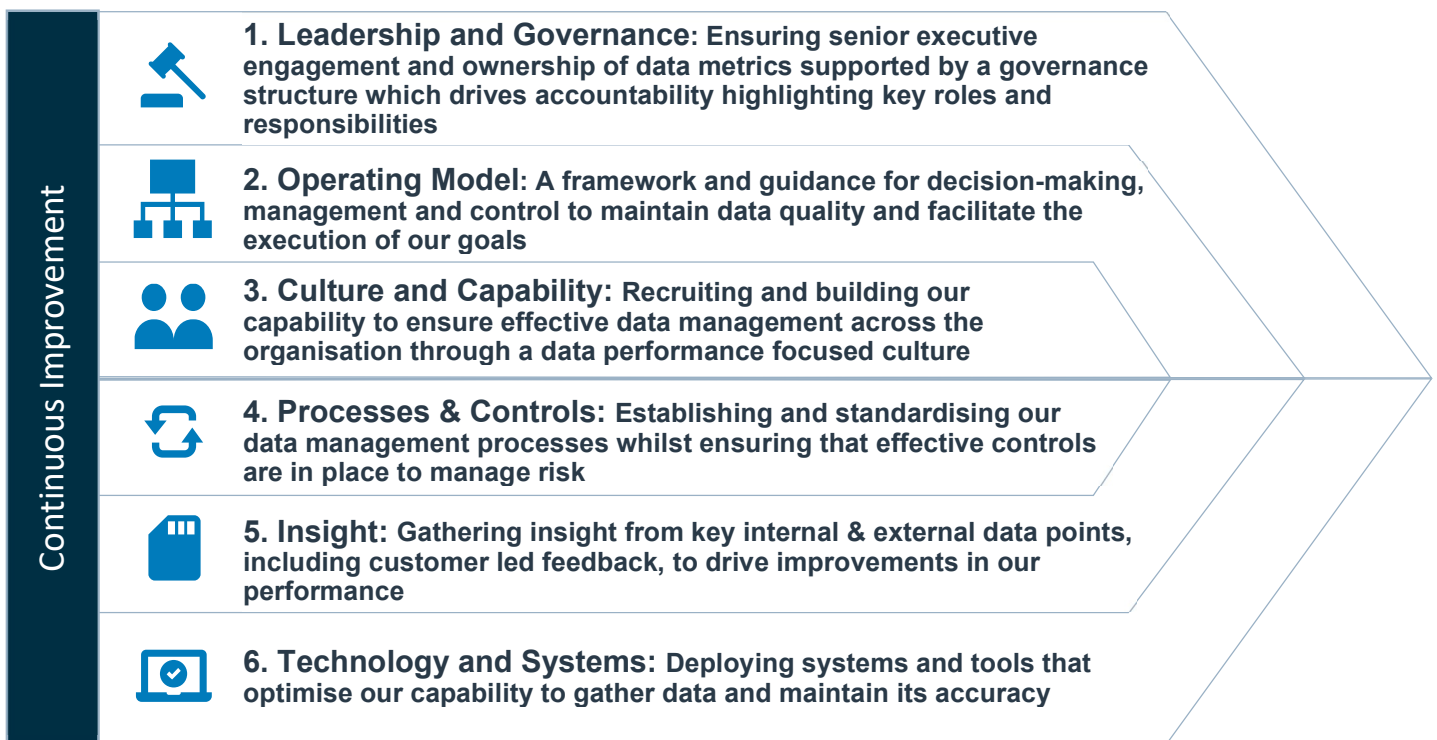
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[2] Our 2021 DMSR report is published on our website at https://www.thameswater.co.uk/media-library/home/wholesale/document-library/data-management-status-reports/data-management-status-report.pdf

# 1. Our approach to Data Management

Addressing market data issues and opportunities is a core part of our service performance and service quality approach. Data issues are an intrinsic and embedded part of our property and metering related processes and services supporting the registration of eligible premises in CMOS.[3] We won't achieve lasting improvements without seeking to constantly improve the day-to-day management and performance of their delivery.

Our approach to data management comprises six 'pillars' of our Data Management Framework, as illustrated in figure 1 below. Ultimately, we need to succeed in each of these pillars to drive continuous improvement in our management of data and data quality so that we can be a more effective provider and partner to our customers, retailers and other market participants.

Figure 1: Thames Water's Data Management Framework



**Continuous Improvement**

**1. Leadership and Governance:** Ensuring senior executive engagement and ownership of data metrics supported by a governance structure which drives accountability highlighting key roles and responsibilities

**2. Operating Model:** A framework and guidance for decision-making, management and control to maintain data quality and facilitate the execution of our goals

**3. Culture and Capability:** Recruiting and building our capability to ensure effective data management across the organisation through a data performance focused culture

**4. Processes & Controls:** Establishing and standardising our data management processes whilst ensuring that effective controls are in place to manage risk

**5. Insight:** Gathering insight from key internal & external data points, including customer led feedback, to drive improvements in our performance

**6. Technology and Systems:** Deploying systems and tools that optimise our capability to gather data and maintain its accuracy

The six pillars are summarised below, for further details please see our 2021 report[4] where our approach is fully described.

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[3] CMOS stands for the Central Market Operating System and is the core IT system for the non-household market. CMOS holds data about all the business customers in the business retail market and is used to enable switching between retailers and for the calculation of the financial settlement between wholesalers and their retailers.
[4] Our 2021 DMSR report is published on our website at https://www.thameswater.co.uk/media-library/home/wholesale/document-library/data-management-status-reports/data-management-status-report.pdf

## 1.1 Leadership and Governance

To achieve sustained success on our data improvement journey we need senior sponsorship and engagement backed up by effective governance. This ensures sufficient oversight when making key decisions and provides a focus on data concerns when prioritising our investments, operations and project portfolio.

Our Retail Director has executive responsibility for NHH market data quality and there are key teams and roles identified within the organisation which have responsibility for leading the drive to continuously improve data quality across the business.

## 1.2 Operating Model

We have organised ourselves in a way that ensures that data quality can become an increasingly critical focus of day-to-day operational service delivery, while also ensuring that we have dedicated data management expertise focused on identifying data challenges and opportunities across our business to drive the continuous improvement of our processes.

Operational service delivery teams are supported by:
- Data Integrity and Operational Excellence teams who work to strengthen our processes and ensure that we have the appropriate controls in place to deliver data and broader service requirements.
- Customer insight functions (for example our account management and complaints teams) help us understand what our customers tell us is working and, more importantly, what is not. We seek to engage with our customers to address specific data issues as well as to understand their broader priorities and the impacts of poor data on their organisations.

In this way our teams support each other to continuously improve the quality of our data and related processes and services, as illustrated in figure 2 below.

Figure 2: Collaboration Model to improve data quality



Teams Generating Customer Insight
- Provide insight on current performance and alert the Data Integrity team of potential data issues

Operational Excellence Team
- Support service delivery teams by identifying where processes and controls need to be strengthened to deliver data requirements

Service Delivery Teams
- Submit the right data at the right time to support the market
- Accountable for delivering services effectively and efficiently including data quality outcomes

Data Integrity Team
- Resolve data quality symptoms, identify the root cause and coordinate with the process team
- Ensure data quality best practice is available on a consistent basis

## 1.3 Culture and Capability

We continue to develop a data focused culture, which promotes a focus on data quality and service improvement.

Generating engagement and building understanding so that individuals are focused on data quality, and their role in impacting it, is a continuous focus for our business. There is more to be done in each of these areas, but we are confident that through implementing our initiatives in our roadmap detailed in section 4, and by equipping our teams with the right information, skills and support, we are on our way to establishing an improved and sustained data quality culture.

## 1.4 Processes & Controls

Continuously improving our processes and controls for effective data management is an ongoing priority. As well as managing the risks of poor data quality our control framework can help deliver efficiency, improved data correction service level performance and better customer outcomes.

The improvements we have made in data quality performance during 2022 have highlighted the importance of a strategic focus on 1st time registration quality. We are developing internal dashboards to allow us to proactively monitor this; to provide insight into issues and enable root causes to be identified and addressed to deliver enduring improvements in 1st time registration data quality.

We have engaged with MOSL on this topic and are pleased to see a project funded via the Market Improvement kicking off in this space in 2022 as part of the New Connections working group.

## 1.5 Insight

We continue to monitor, analyse and compare both internal and external data sources to build a comprehensive picture of our current data performance and identify specific data issues.

These insights act as triggers to initiate data investigations via our 'Data Issue Lifecycle'. This approach helps us to identify and resolve data issues in a consistent and controlled manner. A data issue is often a symptom of a deeper-rooted issue within a business process or evidence of a gap within current processes.

The steps within our 'Data Issue Lifecycle' help us to see beyond data symptoms to root causes so that we can resolve, or establish, these underlying processes to deliver sustainable improvements. More information on the 'Data Issue Lifecycle' and how it helps us move from insight to action can be found in our 2021 report[5].

## 1.6 Technology and Systems

A central part of our approach involves deploying systems and tools which optimise our capability to gather and maintain accurate data, whilst being sufficiently configurable to allow us to respond quickly to market feedback.

To improve system reliability and flexibility to change, Thames continues to invest in replacing legacy systems. At the end of 2021 we replaced our internal master system for Premises and Meter data, and during 2023 we will replace our system which interfaces with CMOS to synchronise our master property, meter and tariff data with the NHH market.

This represents a major update; reducing and updating multiple layers of technology, reducing complexity in the processes to improve data flows and increase resilience and transparency.

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[5] 2021 report can be found at https://www.thameswater.co.uk/media-library/home/wholesale/document-library/data-management-status-reports/data-management-status-report.pdf

# 2. Overview of recent improvements

This section provides an overview of a range of recent performance improvements which we have implemented during 2022.

- In Section 2.1 we summarise changes which have strengthened our grip on overall data management performance.
- In Section 2.2 we summarise changes made to specific data items.

## 2.1. Recent improvements to our overall data management approach

Details of the initiatives and their benefits are articulated in table 1 below:

Table 1 – Completed Improvement Initiatives



| Initiative | Description | Reason for focus | Framework Pillar |
|---|---|---|---|
| Support and engage with MOSL data sharing initiatives | We were instrumental in ensuring that MOSL's draft data sharing agreement was fit for purpose. We worked with MOSL to establish a clearer and more robust set of terms for wider use by the market.<br><br>We followed this up by providing hourly read data for 30k NHH smart meters covering a one-month period. This volume of data enabled MOSL and 3rd parties to begin a richer analysis of the opportunities afforded by availability of smart meter data. We are the first company to share data of this scale and granularity. | We believe we are in a unique position to have led this initiative on behalf of all trading parties given the growing penetration of our NHH smart meter base and the depth and breadth of consumption insights this gives.<br><br>We continue to be ready to support further market initiatives in this area to enable more granular analysis of water usage and wider market opportunities including water efficiency, demand forecasting and other opportunities. | |
| Support and engage with MOSL central data cleanse initiatives | In support of MOSL's aspiration to develop a centralised data cleanse and enrichment service we led the Wholesaler input to the Project TIDE[6] proof of concept (POC) during 2022.<br><br>We analysed sample results and provided detailed feedback and suggested improvements to help shape development of a future solution and were the only Wholesaler to actively participate in this POC. | We see potential benefits from economies of scale, avoidance of duplication and access to a wider range of external datasets and agreement on common validation rules if this function is performed centrally through a centre of excellence rather than distributed across multiple individual Trading Parties. | |

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[6] Project TIDE stands for Transformation In Data Enrichment, and more details can be found on the MOSL website at https://mosl.co.uk/news-and-events/news/mosl-begins-work-to-define-case-for-change-for-a-central-cleanse-and-enrichment-service

| Initiative | Description | Reason for focus | Framework Pillar |
|---|---|---|---|
| Support and engage with MOSL to refine data quality reporting validation rules | We supported MOSL's drive to further refine data quality reporting, engaging in the development of the "assured" process.<br><br>This provides a mechanism to avoid "false positives" by allowing Trading Parties to assure that their data for a particular data item has been checked and is correct when it would otherwise fail the standard MOSL data quality validation. | This improves the accuracy of both Holistic Reporting and the Data Quality Dashboard, eliminating "false positives" from the reports and thus allowing Trading Parties to focus on real issues.<br><br>For example, if a Meter has GIS co-ordinates which are more than 1km away from the centre of the postcode area for the Premises then this is flagged as a failure by the standard MOSL validation rules.<br><br>However, in rural areas, the postcode can often cover a large area. So, the meter can legitimately be over 1km from the centre of the postcode area.<br><br>The "assured" process allows the Wholesaler to confirm they have checked and confirmed that the GIS co-ordinates are correct and that the false positive should be excluded from the validation failures list. | |
| Support and engage with MOSL market data audit | We engaged with MOSL in piloting the process of auditing the consistency of Premises and Meter data between the data held in CMOS and the data held in our own core systems.<br><br>This audit was on an unprecedented scale, covering a significant number of data items for around 450k Supply Points and around 190k Meters.<br><br>The MOSL feedback was that no large unexplained issues were identified. We actively engaged in discussing the results with MOSL and suggesting how the process could be refined and enhanced for rollout to other Wholesalers, beyond the pilot. | Auditing the consistency of data between internal systems and the central market system helps to provide confidence in the resilience and robustness of processes moving data to and from the market and which is essential for the effective functioning of the market.<br><br>Analysing discrepancies helps to identify gaps in processes and procedures to aid continuous improvement. | |
| Migrate all property and meter related processes to a new workflow | Aligning with MOSL's scheduled rollout of processes to the Bilateral Hub 90% of Retailer led workflows are now processed through the new Bilateral Hub and SWIM-Pool workflows. | This provides an increased capability for Retailers to comment on and respond to, data quality issues in the execution of these processes.<br><br>We believe that this will help to drive an enduring improvement in 1st time registration data quality. | |
| Deliver our regulatory undertakings | During 2022 we successfully delivered on all of our data focussed regulatory undertakings which had been agreed with Ofwat following our failures at market opening.<br><br>See for example the step changes in GIS and UPRN performance covered in section 2.2 of this report. | It is essential that we are compliant with the undertakings that we have agreed to implement to improve our data quality performance. | |

| Initiative | Description | Reason for focus | Framework Pillar |
|---|---|---|---|
| External audits of our data management approach | As part of our Ofwat undertakings in 2021 we agreed to two external audits to help identify further opportunities to improve our management of data issues in day-to-day operations and major change projects.<br><br>We received the final findings in December 2021 and completed all resulting actions during 2022.<br><br>For example, we reviewed and strengthened quality and financial control arrangements for key high-risk data impacting processes including meter exchanges. | The external audits identified several targeted improvements to our processes and controls which were reviewed and implemented as part of our improvement plan.<br><br>The key improvements from the audit of our management of data issues were listed in section 4.1 of our 2021 report. | |
| Establish a new organisational structure reporting into the Head of Data Insights | During 2022 we established the new organisational structure reporting into the Head of Data Insights.<br><br>We are currently recruiting further staff to bring this function up to full strength to further expand our capabilities. For example, to better support NHH demand forecasting and water efficiency opportunities and initiatives. | This reorganisation is providing greater strength in depth for data quality insights, having brought together insights from a variety of areas to establish our centre of excellence.<br><br>This structure has been further enhanced in 2022 with linkage to the Smart Metering Strategy to provide long-term resilience and development of the Smart Metering data drive.<br><br>These teams are critical to continuously improving how we identify and resolve data issues across our HH and NHH operations and have driven the results discussed later in this report. | |

## 2.2 Improvements to specific data issues

For the specific data issues listed below in table 2 we have:

- Successfully implemented a range of specific data resolutions along with process changes to address root causes; and
- Established rigorous monitoring for those areas which are awaiting a permanent root cause resolution fix. This allows us to track and efficiently address any subsequent data issues that arise whilst we continue to resolve the true root cause.

Table 2 – Recent Improvements to specific data issues[7]

| Description | Issue Description | Actions taken to address root cause |
|---|---|---|
| Meter XY coordinate (GIS) validation | During 2022 we had a step change in our GIS data quality. We increased the proportion of our meters passing MOSL's GIS validation from 76% (Dec-2021) to 97.5% (Sep-2022).<br><br>This improvement not only helped Retailers with meter read/billing accuracy, but it also exceeded our Ofwat commitment.<br><br>GIS is one of the MOSL Data Quality measures covered in more detail in section 3.1 of this report. | • We undertook a comprehensive review of all available data sources to identify missing GIS details and to resolve other validation failures such as meters too far from postcode centre and too many meters stacked at exactly the same location.<br>• We resolved GIS issues for over 41k individual meters during this project to achieve this step change in our performance. |
| Unique Property Reference Number (UPRN) validation | We increased the proportion of premises passing MOSL's UPRN validation from 64% (Dec-2021) to 92.3% (Sep-2022).<br><br>This was another step change in data quality, again exceeding our commitment to Ofwat.<br><br>UPRN is one of the MOSL Data Quality measures covered in more detail in section 3.1 of this report. | • We carried out a series of exercises to match our property address details against Address Base Premium (an Ordnance Survey product) to fill in missing UPRNs and to establish the correct UPRN for each property to resolve duplicate UPRN and postcode mismatch issues.<br>• We resolved UPRN issues for over 62k individual premises during this project, transforming our performance against this measure as well. |
| Frequency of Meter readings incorrectly setup in the market | Some meter read frequencies were incorrectly reflected in the market - appearing as bi-annual instead of monthly and vice versa.<br><br>This was resulting in some meters being read less or more frequently than required. | • Fixes were applied in February 2022 to ensure that correct meter read frequency is now sent to the market.<br>• Legacy data issues were corrected for around 900 meters.<br>• Regular monitoring in place confirms that issue has been resolved and an average of 3-4 meters are now being corrected each day before being sent to market. |
| Inaccurate Internal / external meter locations in CMOS. | The flag to identify if a meter is installed internally or externally was sometimes captured inaccurately.<br><br>This affected approx. 17k meters which were flagged as being external rather than internal meters. | • An error was identified in an internal code conversion routine.<br>• Code fix has been applied to prevent new mismatches being generated.<br>• Data fixes for mismatches already in the market have been identified and will be applied by the end of January 2023 |
| Improved Codes for Remote Read Types | As part of analysis/planning for the CMOS R12 upgrade we identified approx. 60k meters which would need updating post R12 implementation as they did not fit with the default code conversions which MOSL would apply at implementation time. | • All 60k meters were updated in CMOS through the Medium Volume Interface (MVI) process.<br>• Updates were split into 5k batches to minimise system impact. |

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[7] Whilst some of this activity occurred prior to 2022, the data cleanses or root cause resolution for the items listed here all continued into 2022

# 3. Our current performance

This section contains commentary on our current performance against a range of internal and external measures including:

- Section 3.1 - MOSL Data Quality Measures
- Section 3.2 - Retailer Measure of Experience (R-MeX) data scores
- Section 3.3 - Market Performance Standards (MPS)
- Section 3.4 - Complaints and Escalations

## 3.1 MOSL Data Quality Measures[8]

Graph 1 below summarises Thames' absolute performance against MOSL data quality measures as of November 2022 vs November 2021, illustrating the progress we have made during 2022.

Graph 1 – MOSL Data Quality Measures – percentage of each data item passing all validation checks
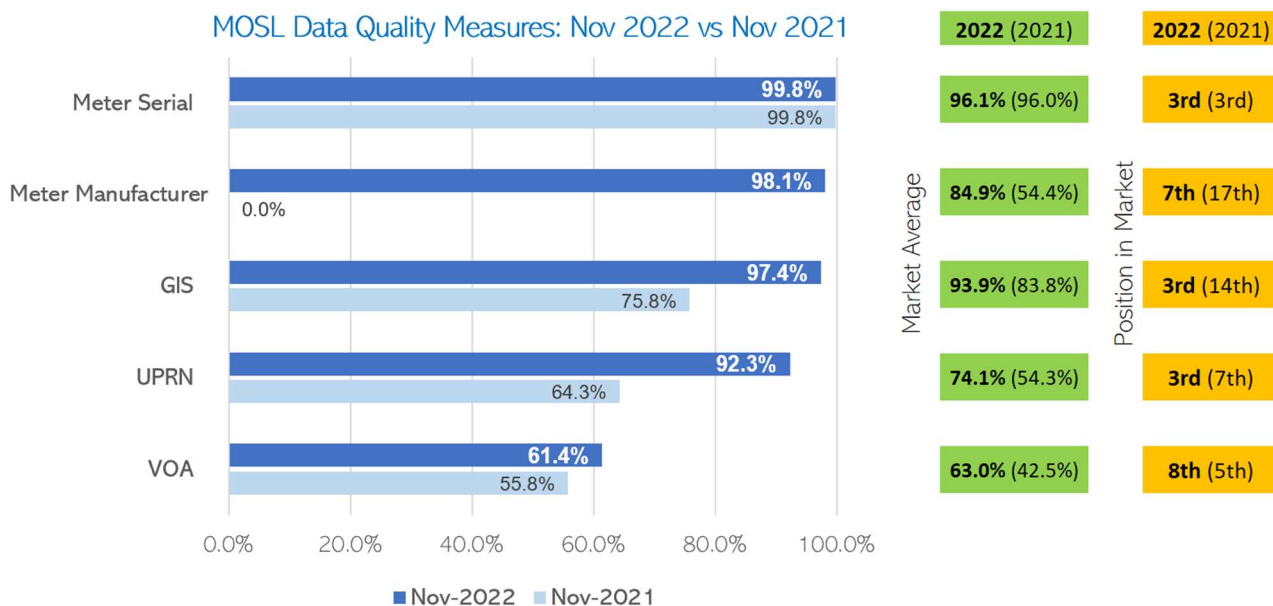


The above graph clearly demonstrates the progress we have made over the past year, with the proportion of data passing all validation improving in every measure (except Meter Serial, where we maintained our already high score). We are scoring above average on all measures except VOA where we are now marginally below average. We have also improved or maintained our market ranking for all measures except VOA. We are committed to a step change in VOA data quality during 2023, improving from 61.4% to 90.0% passing MOSL validation. This is more fully described in sections 3.1e and 4.2.

## 3.1a Meter Serial data quality

We currently rank 3rd on the Meter Serial data item, with a data quality score of 99.8%. This is unchanged from 2021 and remains above the market average of 96.1%.

Our continued high performance on this data item is the result of routine activity to internally measure the accuracy of our meter asset data by comparing CMOS data against data from the meter manufacturer and rectifying the data when needed.[9]  The case study below demonstrates how our performance in these measures is underpinned by internal metrics and controls.

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Case Study 1

Our strong performance in meter serial data is underpinned by internal metrics and controls.
Every month we review the data quality of our meter base against an internal grading system to gain an understanding of the health of our meter base, displayed below in graph 2.

Graph 2 – Internal Review of Meter Asset Data Quality

**Meter Asset data quality: October 2022**
**Count of meters 187k**



4.10%
2.48%
0.16%
13.99%
79.27%

■ A ■ B ■ C1 ■ C2 ■ D
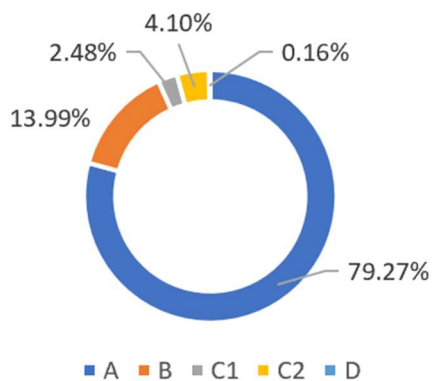
**Continuous improvement in data quality**

As shown in the table below we have continued to make steady progress in increasing the proportion of meters classed as Grade A (no data issues), and reducing the proportion of meters classed as Grades B-D (varying levels of data issues)

|  | Grade A | Grades B-D |
|---|---|---|
| 2019 (Dec) | 76.0% | 24.0% |
| 2020 (Dec) | 77.5% | 22.5% |
| 2021 (Dec) | 78.5% | 21.5% |
| 2022 (Oct)[10] | 79.3% | 20.7% |

Each NHH meter in CMOS is checked and rated using the following internal grading system:

| Grade | Meaning | Meter Standing Data Confidence Grade |
|---|---|---|
| A | The serial number in CMOS can be matched to a serial number provided by our suppliers and other asset details match. | Data is viewed to be correct based on this assurance, and no faults have been found. |
| B | The data formats for serial number, model, size and dials in CMOS match a known list of valid formats. | Data is probably correct but there is no direct check possible against supplier details. This is mostly applicable to older meter details |
| C1 | The serial number in CMOS matches a supplier record but some other element (make, size, dials) does not match. | The implication is that there is definitely an error for at least one meter asset attribute in the CMOS data. |
| C2 | The serial number in CMOS does not match supplier data and also does not match a known data format | There is probably an error in the CMOS data or the meters is very old or of an unknown format. |
| D | The meter serial number duplicates at more than one SPID | Genuine duplicate meter serial numbers are very rare. The implication is that one or both of the serial numbers is incorrect. |

As a result of this activity, we can also:

• Distinguish between data issues arising on new meters updated to CMOS as a result of 'new' processes, i.e., those put in place since Retail Market Opening, from legacy data issues generated by pre-market processes. This allows us to target root causes from data handling in our current market processes as well as tacking legacy meter issues;

• Use improvements in the accuracy of our meter manufacturer and serial data to cross-reference all meter asset data against the original manufacturer's data at purchase. In this way, by fixing issues with one data attribute (meter serial) we can uncover more data issues and fill in previously unknown information about meter sizing or the number of dials.

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[10] Latest information available when this report was being prepared.

## 3.1b Meter Manufacturer data quality

Last year we were reported as having issues with 100% of our meter manufacturer data. We stated that we believed that the true value was closer to 2%. Our reported performance was a consequence of our use of the full-length meter manufacturer name (including the exact make of the meter). For example: **Elster**_Meters_V100 or **Kent**_Meters_Helix_3000_HEL.

These examples failed MOSL's 'close match' validation (as it stood in 2021) in approximately 98% of cases. The validation only looked for the information in **bold** and did not expect the additional data.

We believed the additional data assisted retailers to identify which data loggers are compatible with our meters, allowing them to offer a wider range of services to customers. We engaged with both Retailers and MOSL during 2022 (as we said we would in the last report). The majority of Retailers supported the provision of richer description in the data.

We are pleased that, following this engagement, MOSL have now enhanced the validation for this data item. We would like to record our thanks to MOSL for their engagement and response in enhancing the validation for this measure. As a result 98.1% of our meters are now confirmed as passing this validation, with only 1.9% failing.

This explains the significant jump in our Market Position for this data item – from 17th to 7th – and shows that our performance is well above the market average of 84.9%.

## 3.1c GIS or Meter location co-ordinates

In our 2021 report we confirmed our commitment to achieving a step change in our performance, such that 97% of our meters would pass the GIS validation measure by the end of September 2022.

This commitment was achieved and exceeded, with 97.5% of our meters passing this measure at the end of September 2022. Our market ranking for this data measure has been transformed from 14th place last year to 3rd place this year, and our current score of 97.4% is comfortably above the market average score of 93.9%.

To achieve this level of performance we have resolved GIS issues for 41k meters so far during 2022, and we continue to work to identify resolutions for the remaining 5k meters. The chart below[11] shows how we have relentlessly driven down the proportion of meters failing GIS validation and illustrates how we have transformed our GIS performance throughout the year, converting a market lagging position into a market leading one.



Trading Party Timeline – Meters <u>failing</u> MOSL GIS validation
● Trading Party Rate  ● Market Rate

20.4 %
14.5 %
12.1 %  11.1 %  10.6 %  10.4 %
8.3 %  7.2 %  7.0 %  6.8 %  9.4 %  8.0 %
4.0 %  6.1 %
2.5 %  2.6 %
Jan 2022   Mar 2022   May 2022   Jul 2022   Sep 2022   Nov 2022

> Please note that the MOSL measure is a negative measure, focusing on the percentage of meters <u>failing</u> validation (so a low value is good) while our internal target is a positive target, focusing on the percentage of meters <u>passing</u> validation (so a high value is good).
>
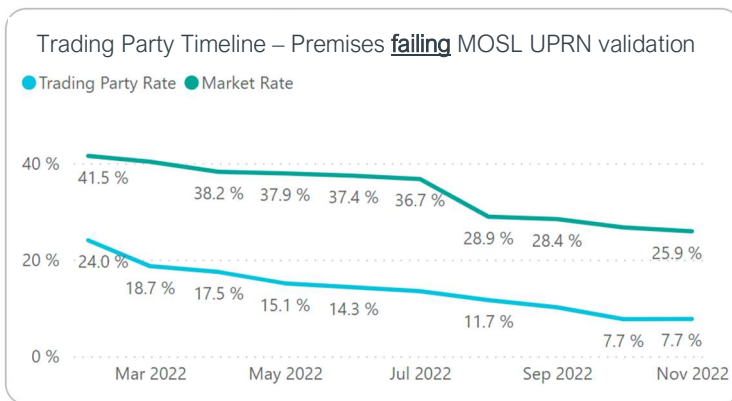> Hence the values in the chart are the inverse of the values in the text above.

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[11] Source – MOSL Data Quality dashboard at https://portal.mosl.co.uk/Portal/

## 3.1d UPRN Data Issues

We have also achieved a step change in our UPRN data quality performance. In our 2021 report we confirmed our commitment to a target of having at least 92% of our Premises passing all UPRN validation by the end of September 2022.

This commitment was achieved and exceeded, with 92.3% of our Premises now passing this measure at the end of September 2022. Our market ranking for this data measure has risen from 7th place last year to 3rd place this year. Our current performance is comfortably above the market average of 74.1%.

To achieve this level of performance we have resolved UPRN issues for over 62.5k Premises so far during 2022, and we continue to work to identify resolutions for the remaining 17k Premises. The chart below[12] illustrates our consistent progress in driving down the proportion of Premises failing UPRN validation throughout the course of the year.

Trading Party Timeline – Premises **failing** MOSL UPRN validation

● Trading Party Rate ● Market Rate

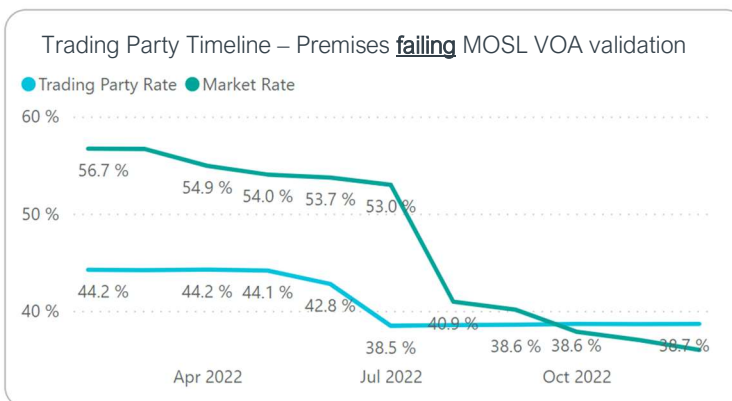| | | | | |
|---|---|---|---|---|
| 40 % | 41.5 % | 38.2 % 37.9 % 37.4 % 36.7 % | 28.9 % 28.4 % | 25.9 % |
| 20 % | 24.0 % | 18.7 % 17.5 % 15.1 % 14.3 % | 11.7 % | 7.7 % 7.7 % |
| 0 % | Mar 2022 | May 2022 Jul 2022 | Sep 2022 | Nov 2022 |

Please note that the MOSL measure is a negative measure, focusing on the percentage of premises failing validation (so a low value is good) while our internal target is a positive target, focusing on the percentage of premises passing validation (so a high value is good).

Hence the values in the chart are the inverse of the values in the text above.

## 3.1e VOA[13] Data Issues

During 2022 we have made some progress with VOA data quality, resolving issues for over 9.5k Premises and improving our score on this measure from 55.8% to 61.4%.

However, against the wider market our position has slipped from 5th to 8th as there has been significant improvement in VOA data amongst other Wholesalers. This is demonstrated by the market average rate jumping from 42.5% in 2021 to 63.0% in 2022. As a result, our position has slipped from being comfortably above the market average to being just below it, as the chart below demonstrates.

Trading Party Timeline – Premises **failing** MOSL VOA validation

● Trading Party Rate ● Market Rate

| | | | | |
|---|---|---|---|---|
| 60 % | | | | |
| | 56.7 % | 54.9 % 54.0 % 53.7 % 53.0 % | | |
| 50 % | | | | |
| 40 % | 44.2 % 44.2 % 44.1 % | 42.8 % | 40.9 % | 38.7 % |
| | | 38.5 % | 38.6 % 38.6 % | |
| | Apr 2022 | Jul 2022 | Oct 2022 | |

Please note that the MOSL measure is a negative measure, focusing on the percentage of premises failing validation (so a low value is good) while our internal target is a positive target, focusing on the percentage of premises passing validation (so a high value is good).

Hence the values in the chart are the inverse of the values in the text above.

Last year we made a conscious decision to focus on making significant improvements to our UPRN data first, then leverage the improved UPRN data to improve our VOA data. Having achieved our target for improving our UPRN data in 2022 we will now focus on achieving a similar step change in VOA data quality performance during 2023; aiming to lift the validation pass rate from 61.4% to 90.0% and our market ranking from 8th to 3rd.

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[12] Source – MOSL Data Quality dashboard at https://portal.mosl.co.uk/Portal/
[13] VOA stands for the Valuation Office Agency and the reference stored in CMOS for a Premises is the Billing Authority Reference (also known as VOA BA Reference)

## 3.2 Retailer Measure of Experience (R-MeX)

Our retailer customers provide feedback on their experience of our performance on a routine basis by scoring us out of 10 in a range of key categories including on the 'quality of data maintenance and improvements'. This section will specifically address our data quality scores listed in table 3 below:

Table 3 – Summary of R-MeX scores 'Quality of Data' [14]

| Area | February 2022 | August 2022 | Difference | Market Average August 2022 |
|---|---|---|---|---|
| Quality of data maintenance and improvement | 6.27 | 6.57 | +0.3 | 7.27 |
| Ranking (out of 15) | 14th | 14th | +0 | |

Whilst we are pleased to report an improvement of 0.3 to our data quality score, we still have much further to go. This is underlined by our score of 6.57 being below the market average of 7.27 and the wide range of scores we received (between 4 and 10). We do however believe this movement provides visible confirmation that we are moving in the right direction. This is reinforced by the fact that 4 retailers scored us higher on this measure than in the previous survey, although 2 retailers scored us lower than before.

We are pleased to see a higher level of retailer engagement with 14 retailers providing us a score in this survey versus 11 previously, and we will use the feedback to follow up on specific concerns.

There is also a qualitative aspect to R-MeX which we receive as part of the survey itself in response to a series of questions and flesh out with follow up account management calls with our retailer customers. The most recent feedback highlighted the following points should be focused upon:

1. The speed of processing wholesale led de-registrations.
2. Process time of transactions into market - in particular metering transactions
3. Continued focus on the accuracy of our market updates
   a. The quality of our meter manufacturer data which one retailer classed as poor
   b. Meter physical and chargeable sizes
   c. Meter coordinates
   d. Meter serial and supply addresses
4. The speed of resolution of any queries relating to data quality

We are taking steps to address all the above concerns many details of which are listed in this report.

## 3.3 Market Performance Standards (MPS)

Several retailers have highlighted via R-MeX feedback and other routes a need for us to continue to improve the speed of our market data updates. In this section, we comment on our MPS performance which measures the speed of market data updates for several key operational service outcomes. Whilst these do not cover all market updates, they cover many key areas including deregistration, meter installations and meter exchanges. Our MPS performance also contributes to our performance against CMOS data update SLAs in accordance with CSD 104.

A comparison of our MPS performance across all measures is listed in table 4 below:

Table 4 – April – September 2021-22 comparison[15]

| Area | April – Sept 2021 Performance | April – Sept 2022 Performance | Difference | Market Average April – Sept 2022 |
|---|---|---|---|---|
| Performance | 87.1% | 76.2% | -10.9% | 79.5% |
| Rank (out of 9) | 5th | 9th | -4 places | N/A |

[14] MOSL (August 2022) Retailer Measure of Experience (R-MeX) Outputs  file (mosl.co.uk), pg2
[15] These timescales have been used as a comparison to measure progress as they were chosen by MOSL for the peer comparison league tables for 2021-22 & 2022-23 respectively
MOSL Peer Comparison League Tables (mosl.co.uk)
MOSL 2020-21 Peer Comparison League Tables (mosl.co.uk)

Our MPS performance has declined over this period decreasing by nearly 11% since the corresponding period last year. We remain behind the market average by 3.3% and the highest performer by 21.9%. The single largest contributor to our performance decrease is MPS 7, where this performance decrease has been mirrored. We are no longer the subject of an IPRP[16] for MPS 3 which measures our speed of new connections. This plan was in place from August 2021 to January 2022 and saw our MPS3 performance improve to 86.1% and since continued to improve, ending the Financial Year 2021/22 at 93.6%.

### 3.3a Metering specific performance

MPS 7 (initial and final meter reads) is a measure of our ability to meet service levels set out in CSD104 for data updates following the physical change of a meter asset and continued to be a focus during 2022. MPS 7 currently accounts for 82% of all MPS eligible market updates in Half 1 Financial Year 2022/23 and is the biggest performance challenge highlight by R-MeX feedback and other retailer engagement.

Performance against MPS7 in Financial Year 2022/23 has been trending downwards since June 2022, dropping as low as 70.8% in August 2022, but has seen a slight improvement to 82% in December 2022. This has seen us drop to 7th from 9 WASCs[17], down from 6th at the end of the last Financial Year.

The dip in performance has been driven by three main factors where we have chosen to prioritise data improvements and customer service over MPS7 performance:
- Firstly, our adherence to a deregistration standstill agreement[18], where we process a deregistration with the last available read as determined by the requesting Retailer. This has always impacted our MPS 7 performance but is currently highlighted due to an increased volume of deregistration bilateral requests as we increase the rate at which we identify and remove these from the market.
- Secondly, proactive project work to resolve long unread meters. The prolonged process currently impacts our ability to upload meter reads within the current five business day SLA as we seek to prioritise retailer/customer led workloads. We expect this project of bulk work to continue through to May 2023.
- Thirdly, increased volumes of deregistered, unchargeable or demolished properties. As we drive to clean up our data we are removing increasing numbers of demolished properties from the market for which a SPERR transaction may be inappropriate, and for which we are unable to take contemporary reads.

### 3.4 Complaints and Escalations

We take complaints very seriously and strive to resolve these as quickly and effectively as possible. In the unfortunate circumstance that we receive a complaint we see it as a valuable source of insight to alert us to potential patterns of data quality issues. We have therefore embedded complaints data analysis in our overall data management approach, as a key trigger and priority for investigation and resolution processes.

All complaints are handled and investigated by a dedicated NHH complaints team, with a view to prioritise resolution of the specific customer issue. They also class each complaint by its root cause enabling us to focus on data specific issues.

The Data Integrity Manager routinely reviews all received and actioned complaints alongside the Complaints Manager to ensure that root cause learnings are shared, and that appropriate action is taken. This process is part of our newly introduced standard investigation methodology which ensures that our investigation of these data related complaints is carried out in a rigorous and consistent manner.

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[16] An IPRP stands for an initial performance rectification plan

[17] WASC stands for Water and Sewerage Company

[18] This agreement administers some de-registrations as EXIT transaction rather than as SPERR transactions to minimise refunds and repayments by customers who have been incorrectly registered as NHHs. Absent this agreement we would need to refund the retailer and the customer 5 years of charges only for that customer to repay as a HH customer.

We have provided a case study below which looks at the volume and key themes from recent complaints.

Case Study 2 – Analysis of data related complaints

The proportion of data related complaints from NHH customers/retailers has increased over the last 12 months from 5% to 12%.

Graph 3 – Proportion of Data related Complaints vs Total

**Data related Complaints vs Other Complaint Types**



Legend: Incorrect updates in CMOS / Total Received
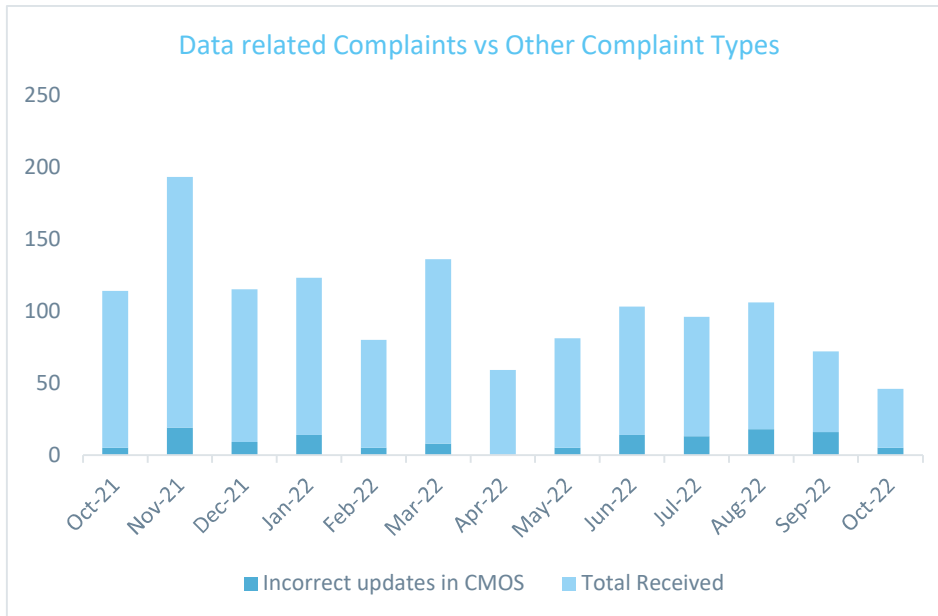
Whilst the complaint volumes have reduced, we have seen an increase to the volume of data related complaint over the last 5 months. With the average over these months being 19%.

Our analysis of the data complaints received during 2021/2022 shows that these data complaints relate to issues which we are already aware of, and currently addressing via quality monitoring of market updates. These include the following:

- Incorrect Data in CMOS
- Meter/ Repair, Replace and Removal
- Tariff Review

The findings show a need for a sustained focus on our metering processes to ensure that all data attributes are handled with care and appropriately validated.

# 4. Planned Improvements – Overall Roadmap

This section provides an overview of a range of performance improvements planned for 2023.

- In Section 4.1, we summarise changes planned which seek to strengthen our grip on overall performance through improvements to our management framework.
- In section 4.2, we summarise changes planned to specific data items. These are not exhaustive lists of all changes planned but highlight key planned improvements.

Clearly, not all data improvement activities for the forthcoming year can be planned at this stage as new issues will be identified during the year. Our approach to assessing and prioritising issues is described in detail in our 2021 report.[19]

## 4.1 Planned improvements to our overall data management approach

Each improvement we plan to undertake in 2023 is highlighted against the pillar(s) of our overall approach in table 5 below:

Table 5 – Planned Initiatives to be completed in 2023



| Initiative | Description | Reason for focus | Framework Pillar |
|---|---|---|---|
| **Legacy interface system replacement** | Thames currently uses a bespoke system to interface between our core operational systems and CMOS.<br><br>It is responsible for translating values; converting to transactions in agreed formats; and sending/receiving market updates.<br><br>This bespoke system is due to be replaced during 2023 using additional modules in our core SAP system. | Integrating this functionality within SAP will remove several layers of technical architecture and will greatly simplify and standardise the processes involved in synchronising data between our internal core systems and the market.<br><br>Reducing the number of layers of software involved in this process will reduce the risk of data updates "falling in the cracks" between layers, reducing complexity in the processes to improve data flows and increasing resilience and transparency. | |
| **Strategic focus on quality of first-time registration** | We are developing internal dashboards to allow us to proactively monitor the quality of data from registration of new properties and meters; providing enhanced insight into issues and enabling root causes to be identified and resolved. | The data quality of property and meter registrations is key to ensuring market data is accurate. Accurate data ensures correct meter reading and billing is possible.<br><br>Once bad data gets into the market it replicates, and the longer it is in the market the more issues it causes and the more complicated and time-consuming the resolution becomes. Hence our strategic focus on getting it right first time. | |

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[19] Our 2021 DMSR report is published on our website at https://www.thameswater.co.uk/media-library/home/wholesale/document-library/data-management-status-reports/data-management-status-report.pdf

| | | | |
|---|---|---|---|
| Support and engage with MOSL central data cleanse initiatives | We remain supportive of MOSL's aspirations to provide a centralised data cleanse and enrichment service for Premises data (address, UPRN, VOA, status, etc).<br><br>Having actively participated in Project TIDE[20] proof of concept during 2022 we will continue to engage in 2023, to help to define and refine the proposed direction of travel for a central data cleanse service. | We anticipate potential benefits from economies of scale, avoidance of duplication and access to a wider range of external validation datasets if this function is performed centrally through a centre of excellence rather than distributed across multiple individual Wholesalers and Retailers.<br><br>However, as detailed in our response to the recent MOSL consultation[21], we feel that more work is required to clarify the business case and detail of the benefits of a centralised approach over current regional approaches.<br><br>We believe that one benefit of a centralised data approach comes from the opportunity for MOSL to establish a set of transparent validation criteria for key data items and work with trading parties to refine and improve this over time. At this time there are no clearly defined validation rules for 'good' or 'not good' address data and external address benchmarks for the same property can all give different addresses/postcodes without any impact to retailer billing, meter reading or other operations. | |
| MOSL audit of market data consistency | The MOSL pilot audit was on an unprecedented scale, covering a significant number of data items for around 450k Supply Points and around 190k Meters.<br><br>The MOSL feedback was that no large unexplained issues were identified.<br><br>Resolution plans to address the points raised in the audit are currently being prepared. All actions arising from the audit are expected to be completed during 2023. | Auditing the consistency of data between internal systems and the central market system helps to ensure and improve the accuracy of the data in the market, which is essential for the effective functioning of the market.<br><br>Analysing discrepancies helps to identify gaps in processes and procedures to aid continuous improvement.<br><br>Although most discrepancies flagged by the audit were known issues there were also a couple of issues we had not previously identified. This proves the value of the external audit process, and we thank MOSL for undertaking this initiative. | |

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[20] Project TIDE stands for Transformation In Data Enrichment, and more details can be found on the MOSL website at https://mosl.co.uk/news-and-events/news/mosl-begins-work-to-define-case-for-change-for-a-central-cleanse-and-enrichment-service
[21] https://mosl.co.uk/services/market-improvement/programmes-and-projects/central-data-cleanse

## 4.2 Planned improvements - Specific Data Issues
During 2023, we plan to specifically address the data issues listed below as a priority.

## 4.2a VOA Premises References[22]
As mentioned in section 3.1e, although we have made a start on improving VOA data quality in 2022 we still have further to go. We have committed to a step change in the quality of our VOA data, similar in scale to the improvement in UPRN quality achieved in 2022.

Currently just 61.4% of our Premises pass MOSL data quality validation (mainly due to missing data). Our target is to improve VOA data coverage and quality such that 90% of our Premises pass this validation by the end of December 2023. This is a significant challenge which will involve identifying and confirming valid VOA details for around 63k individual Premises; this should lift our market ranking from 8th to 3rd as a result (based on current dashboard data).

To achieve this target we will need to both address legacy data issues, and to improve the quality of current processes updating new property data to CMOS.

As part of our approach, we will need to:
- Understand all property data administration processes which introduce or update VOA data
- Identify the risks and failure points associated with each process and introduce enhanced quality monitoring
- Identify, understand and validate source data
- Address any system constraints preventing flows or updates of accurate data

We will leverage the knowledge, experience and improved data resulting from the UPRN project (see section 3.1d) to aid the process of matching Premises with VOA references. For example, we will use our improved level of UPRN coverage to link through Address Base Premium[23] to help identify matching VOA data wherever possible.

## 4.2b Return to Sewer Allowance (RTS)
Currently we apply an assumed 90% RTS allowance, with this already built into our tariffs. We are planning to use the direct method (in line with other wholesalers) where our default assumption will change to 95% RTS.

Changes with effect from 01/04/2023:
- We will move to the direct charging method
  - our Tariffs will show full price without any assumed allowance
- We will apply default 95% RTS to all SPIDs that don't have a bespoke RTS allowance
  - update RTS from 100% to 95% for c220k SPIDs in CMOS
- We will recalculate RTS for all customers with bespoke allowances
  - update RTS bespoke values for c2.5k SPIDs in CMOS
- We will simplify/remove the RTS fixed charge element as part of this update

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[22] VOA stands for the Valuation Office Agency and the reference stored in CMOS for a Premises is the Billing Authority Reference (also known as VOA BA Reference)
[23] Address Base Premium is an Ordnance Survey product which Thames use as the master source for UPRN and address data

# 5. Concluding Remarks

This report aims to provide transparency of our current performance in relation to data quality and the plans we have in place to continue to achieve improved performance.

We have delivered some step changes in 2022 but we are not complacent about the remaining challenges, including those that Project Tide has highlighted.

We expect to continue to drive forward our own changes, at the same time working alongside MOSL and other trading parties to make a centralised market data quality insight function a success approach which complements and enhances work we already have underway.

If you wish to provide any feedback on this report or to engage over any of the issues highlighted, please contact us below

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