

August 2021

Notice of Ofwat's proposal to impose a financial penalty on Thames Water Utilities Limited

Ofwat

About this document

This document constitutes a notice under section 22A(4) of the Water Industry Act 1991. It sets out our proposed decision to impose a financial penalty on Thames Water as a result of its contraventions of Conditions F, P and R2 of its Licence.

The document summarises the evidence that we have gathered and sets out our findings in relation to the issues under investigation, including why we believe that Thames Water has contravened the terms of its Licence. It also sets out our intention to accept formal undertakings from Thames Water under section 19 WIA91 as a means of bringing an end to its contraventions and mitigating the level of penalty we intend to impose.

Interested parties are invited to comment on our proposed decision and we will take representations received into account before making a final decision on whether to impose a penalty and the level of that penalty.

Executive summary

This document sets out the findings of our Water Industry Act 1991 (**WIA91**) investigation into Thames Water Utilities Limited (**Thames Water**) and the breaches of its regulatory obligations that we have found. It includes a notice of Ofwat's intention to issue Thames Water with a nominal financial penalty of £1 under section 22A(1) WIA91 in light of Thames Water's offer of undertakings to address its contraventions, including a compensation package totalling £11.1 million.

We found Thames Water to have contravened the following conditions of its instrument of appointment (**Licence**):

- Condition R2, in relation to its failure to take the necessary steps to ensure that it was ready for the opening of the business retail market; and
- Paragraph 6A.1 of Condition F and paragraph 4.1 of Condition P in relation to the adequacy of Thames Water's resources and systems of planning and internal control.¹

We describe the contraventions and how they occurred. We also summarise Thames Water's contraventions of the wholesale retail code (**WRC**), which have not been included in our penalty assessment.

Thames Water's failings relate to the transfer of non-household (**NHH**) customer information into the central market operating system (**CMOS**)² prior to the opening of the business retail market and maintenance of accurate information since.

Thames Water failed to ensure that accurate data regarding its NHH customers was transferred into CMOS ahead of market opening. It failed to take reasonable steps to validate the accuracy of data on its customers obtained from companies billing them on its behalf, failed to manage key interdependencies between the data it was uploading and data in its own systems and failed to identify all the data that needed updating. As a consequence, data items used to calculate the invoices for nearly 13,800 **SPIDs**³ were incorrect.

Having uploaded inaccurate data into CMOS, Thames Water then failed to act promptly to investigate and address complaints raised with it about data accuracy. When it did

¹ These provisions formed paragraph 6A.1 of Condition F of Thames Water's Licence until 21 November 2018, when licence modifications were made. Requirements regarding the adequacy of resources and systems of planning and internal control were removed from Condition F and broadly similar provisions were inserted in paragraph 4.1 of Condition P of Thames Water's Licence (see paragraph 2.13 below).

² CMOS holds data about all the NHH 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.

³ Supply Point Identifiers. Each water supply point has a unique identification number in CMOS.

investigate complaints and take action to address the problems it found, Thames Water regularly exceeded the timescales for correcting data set out in the WRC.

We have also concluded that Thames Water did not have in place adequate management resources and systems of planning and internal control. It failed to appropriately manage its outsourcing arrangement for billing customers, failed to manage the processes for updating data in CMOS prior to market opening and failed to put in place adequate processes to assure itself that the data it had uploaded into CMOS was accurate. After market opening, Thames Water failed to ensure it had in place adequate processes to enable it to meet its WRC obligations to maintain market data and deal with complaints in a timely manner.

The errors mean that some NHH customers have been overcharged for their water and/or sewerage services, while other customers have been undercharged for these services. The errors have also had impacts on retail licensees (**retailers**), affecting the margins they generate on customer bills and increasing their costs of managing their customers. These difficulties for customers and retailers contributed to frictions in the business retail market.

It was only as a consequence of our investigation that Thames Water identified the majority of the data errors and has taken action to remedy these errors and reimburse those customers who have been negatively impacted as a consequence of the errors.

Thames Water has provided us with formal undertakings under section 19 WIA91 that we consider will secure compliance with paragraph 4.1 of Condition P of its Licence and its obligations under the WRC. These include commitments that Thames Water will review and revise the way in which it handles complaints, manages its data and undertakes large projects to ensure that similar issues do not arise in future. The undertakings also provide measures to remedy harm caused by the errors. This includes an £11.1 million compensation package that will refund NHH customers for any overcharging and compensate retailers for the harm caused by the data errors.

Ofwat considers that the contraventions that have taken place are sufficiently serious to warrant us imposing a penalty on Thames Water. In the absence of the package of undertakings it has proposed, we would have been minded to impose a sizeable penalty on Thames Water to reflect the harm caused to market participants and the need for deterrence. However, as that the undertakings will offer greater benefits to customers than a large penalty, we are minded to accept the undertakings and impose a nominal penalty of £1.

As required by section 22A(4) WIA91, Ofwat is publishing this notice to allow representations to be made on our proposed penalty. We will make our final decision on this having considered any representations we receive.

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1. Introduction

- 1.1 The Water Services Regulation Authority (**Ofwat**) is notifying Thames Water by this document that it proposes to impose a penalty on it under section 22A(1) WIA91.
- 1.2 The proposed penalty relates to Thames Water's contraventions of Conditions F, P and R2 of its Licence by transferring inaccurate information about its NHH customers into CMOS ahead of the opening of the water sector's business retail market in April 2017 and failing to appropriately address these inaccuracies after market opening, in particular:
- Paragraph 1.1 of Condition R2 of its Licence (which was in force between 27 May 2016 and 1 April 2017), by failing to take reasonable steps to ensure that accurate data was entered into CMOS, with the result that certain NHH customers have been incorrectly charged for water and sewerage services; and
 - Paragraph 6A.1 of Condition F (prior to 21 November 2018) and paragraph 4.1 of Condition P (since 21 November 2018) of its Licence in relation to the adequacy of its resources and systems of planning and internal control to enable it to properly carry out its regulated activities, particularly its WRC obligations to maintain the accuracy of data in CMOS.
- 1.3 Our investigation has also identified contraventions of the WRC in relation to obligations to maintain the accuracy of data and to correct errors in a timely manner. These contraventions have not been included within the penalty assessment as the procedure within the WIA91 means that a penalty can only be imposed for a contravention of the WRC if a direction has first been issued. We do not propose to issue a direction in this case as Thames Water has either brought these contraventions to an end or has offered undertakings to do so soon.⁴
- 1.4 As required by section 22A(4) WIA91, we provide more details of the proposed penalty, together with details of the contraventions to which it relates, in Sections 2 to 6 of this notice. This notice is structured as follows:
- **Section 2** sets out relevant background about the opening of the business retail market and the obligations faced by water companies to enable the set-up of the market;
 - **Section 3** explains the nature of our investigation and summarises the evidence we have collected;
 - **Section 4** sets out our findings and the acts and omissions which we consider to constitute a contravention of the provisions listed in paragraphs 1.2 and 1.3 above;

⁴ See sections 66DA and 117F WIA91.

- **Section 5** discusses the undertakings that Thames Water has provided under section 19 WIA91 and explains why we consider that no further enforcement action is required as a result; and
- **Section 6** details the facts which we consider justify the imposition of a penalty, and the amount of that penalty.

1.5 Under section 22A(4)(d) WIA91, this notice must allow at least 21 days for representations on or objections to our proposal to be made. We explain how to make representations about or objections to this notice in **Section 7**.

2. Relevant background

Introduction

- 2.1 In March 2019, we received a complaint alleging that Thames Water was abusing its dominant position to harm competition in the business retail market (**the Complaint**).
- 2.2 Following an initial assessment of the Complaint and after obtaining agreement from the Competition and Markets Authority (**CMA**) that we were best placed to investigate the Complaint, we wrote to Thames Water on 8 July 2019 to inform it that we had opened an investigation. We explained that we had reasonable grounds for suspecting an infringement of the Chapter II prohibition of the Competition Act 1998 (**CA98**) by Thames Water.
- 2.3 One of the Complaint's allegations was that at the time the business retail market opened Thames Water had “systematically removed abatements and allowances from customers” when transferring data into CMOS. It was further alleged that Thames Water had applied “large uplifts” to the estimated water usage at premises that were billed on a Business Assessed basis – these were premises where meters were absent, broken, damaged or unreadable.
- 2.4 To support its assertions, the complainant provided correspondence received from eleven customers that had had their allowances or abatements removed at market opening. The complainant also provided a spreadsheet containing details of 120 customers whose data for estimated water usage had increased significantly at market opening (it had shared this with Thames Water on 6 February 2019).
- 2.5 On 24 November 2020 we concluded that as we had in place specific sectoral regulatory requirements governing the preparation and uploading of market data ahead of market opening, and as those requirements would allow us to address the full range of issues that we had identified, it would be more appropriate to deal with this aspect of the Complaint using our sectoral powers, rather than our CA98 powers. We informed the CMA, Thames Water and the complainant that we would proceed on that basis.
- 2.6 In the remainder of this section, we provide background information about Thames Water and the services that are the subject of the Complaint. We also set out details of the opening of the business retail market and the regulatory obligations relating to market data which were placed on water companies ahead of and since market opening to ensure the market functions effectively.

Thames Water

- 2.7 Thames Water, company number 02366661, is part of the Thames Water Group which itself is part of the Kemble Water Holdings Group. Thames Water had an annual turnover of around £2.1 billion in 2020–21. This included £152.2 million from the provision of water services to NHH customers and £147.0 million from the provision of sewerage services to NHH customers.⁵
- 2.8 Thames Water was appointed by the Secretary of State for the Environment as a water and sewerage undertaker under the Water Act 1989 in August 1989.⁶ Alongside various provisions in legislation, the conditions in its Licence set out obligations Thames Water has as a statutory undertaker.⁷
- 2.9 The water supply and sewerage service areas set out in Thames Water's Licence areas do not fully overlap (see Figure 2.1 below), which means that while for some customers it provides both water and sewerage services, for other customers it either provides water-only services or sewerage-only services. For these latter groups of customers, their other sewerage and water services will be provided by the undertaker whose sewerage or water Licence covers the relevant customer's premises. This results in some premises being served by more than one undertaker because their water services are provided by one undertaker and their sewerage services by another. For these customers, whether they receive a single combined bill or separate water and sewerage bills will depend on whether the water and sewerage companies have agreed shared billing arrangements.
- 2.10 Thames Water's water Licence area covers around 3.6 million household customers and 147,000 NHH customers and its sewerage Licence area covers 5.5 million household customers and 209,000 NHH customers.⁸ Our investigation focuses only on NHH customers as it is these that form the business retail market in England.

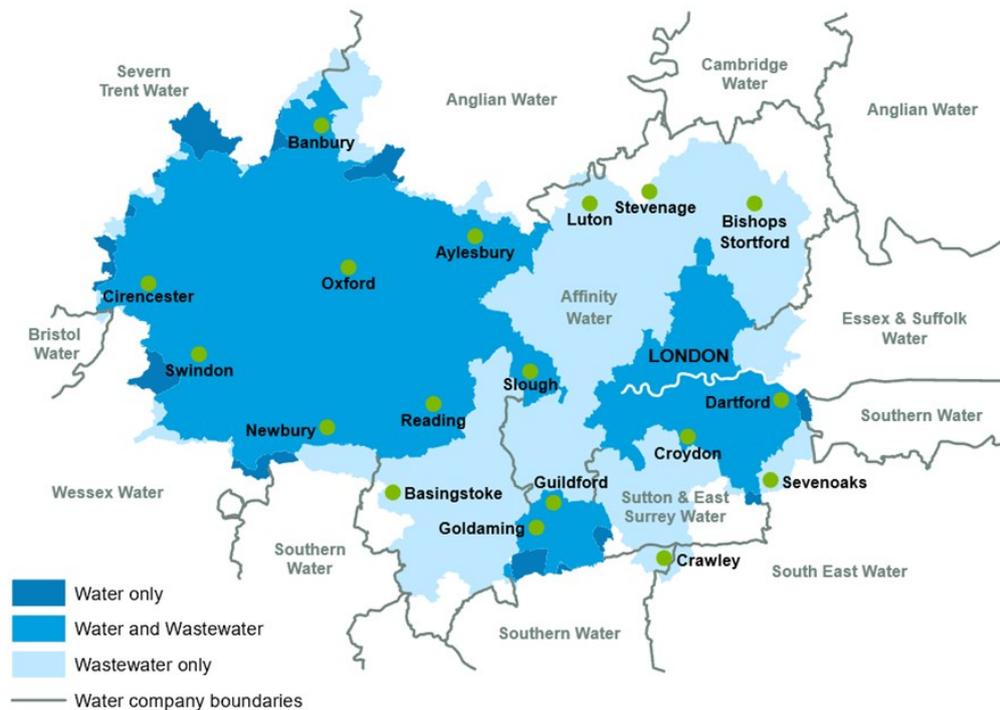
⁵ [Thames Water. Delivering life's essential service: Annual Report and Sustainability Report 2020–21](#), page 136.

⁶ [Thames Water's Licence](#) is available on Ofwat's website (accurate as at 7 April 2021).

⁷ Thames Water Commercial Services Limited, another company in the Kemble Water Holdings Group, was granted a water supply licence and a sewerage licence by Ofwat on 13 October 2016. These licences authorise the licensee to provide retail water and sewerage services to NHH customers.

⁸ [Thames Water. Annual Performance Report 2020–21](#), page 90.

Figure 2.1: Areas covered by Thames Water's Licences



Source: [Thames Water](#).⁹

2.11 Prior to market opening, Thames Water was responsible for billing NHH customers located in the service areas covered by its Licence. Thames Water billed most of these customers directly but for some of its sewerage-only customers it made arrangements with their water supplier for the water-only company (**WOC**) to bill for sewerage services on its behalf so that these customers could receive a single bill covering both their water and sewerage services.¹⁰ Thames Water did not retain data in relation to those sewerage customers that it did not bill directly. These customers' records were held and maintained by the relevant WOC.¹¹

2.12 At market opening, Thames Water chose to exit the retail market and no longer provide retail services directly to NHH customers.¹² Therefore, Thames Water supplied wholesale water and sewerage to retailers in its Licence service areas (billing them for these wholesale services) and responsibility for billing NHH customers for water and sewerage services passed to retailers.

⁹ A full description of the areas covered by Thames Water's water and sewerage appointments can be found in the Appendix to its Licence.

¹⁰ This occurred for Thames Water sewerage customers who were provided with water services by South East Water, Essex and Suffolk Water and Sutton and East Surrey Water, and some who were provided with services by Affinity Water and Anglian Water (Thames Water's response to the 1st section 26 Notice, paragraphs 176 and 180).

¹¹ Thames Water's response to the 1st section 26 Notice, paragraphs 176 and 180.

¹² See paragraphs 2.23 and 2.50 to 2.52 below.

2.13 In order to make sure that it is able to carry out its appointed water and sewerage activities properly, Thames Water is required by its Licence to ensure that it has in place at all times adequate financial resources, management resources and systems of planning and control. This requirement is currently found in Condition P of its Licence but for part of the period of the investigation it was included in Condition F.¹³ We set out below the terms of Conditions F and P that are relevant to our investigation.¹⁴

Condition F: Accounts and accounting information

6A.1 The Appointee shall at all times act in the manner best calculated to ensure that it has adequate:

- (a) financial resources and facilities;
- (b) management resources; and
- (c) systems of planning and internal control

to enable it to secure the carrying out of the Regulated Activities including the investment programme necessary to fulfil its obligations under the Appointment(s). The above requirements must not be dependent upon the discharge by any other person of any obligation under, or arising from, any agreement or arrangement under which that other person has agreed to provide any services to the Appointee in its capacity as a Relevant Undertaker.

Condition P: Regulatory ring-fence

4 Assets, rights and resources

4.1 The Appointee must, at all times, act in a manner which is best calculated to ensure that it has in place adequate:

- (a) financial resources and facilities;
- (b) management resources; and

¹³ The wording in paragraph 6A.1 was removed from Condition F of Thames Water's Licence with effect from 21 November 2018 and was incorporated in the new Condition P by way of a [modification of its Licence](#).

¹⁴ The term 'Regulated Activities' is defined in Thames Water's Licence as meaning "the functions of a water undertaker or, as the case may be, a sewerage undertaker, which are not IP Licensed Activities and, for the avoidance of doubt, references to the functions of a water undertaker, or as the case may be, a sewerage undertaker shall include references to the duties imposed on a water undertaker or, as the case may be, a sewerage undertaker". IP Licensed Activities refers to the functions and duties related to the Thames Tideway Tunnel Project.

(c) systems of planning and internal control,

to enable it to carry out the Regulated Activities. The above requirements must not be dependent upon the discharge by any other person of any obligation under, or arising from, any agreement or arrangement under which that other person has agreed to provide any services to the Appointee in its capacity as a Relevant Undertaker.

Abatements and allowances offered by Thames Water

2.14 The Complaint raised concerns about the data provided by Thames Water that is used to calculate its charges for wholesale water and sewerage services, and in turn retailers' charges to NHH customers. In particular, the Complaint set out that the data Thames Water submitted to CMOS had the effect of:

- removing allowances and abatements from the accounts of customers that had previously received a discount on their sewerage service charges; and
- incorrectly calculating water usage at unmetered premises that were charged on the basis of Business Assessed charges.

2.15 For the purpose of calculating charges Thames Water offers two main types of ongoing discounts in relation to sewerage customers: (i) Return to Sewer (**RTS**) allowances, and (ii) Surface Water Drainage (**SWD**) abatements.¹⁵ These discounts were applied when Thames Water billed NHH customers directly, and since market opening are used to calculate its wholesale charges to retailers, and in turn retailers' bills to NHH customers.

2.16 Thames Water applies RTS allowances to the wholesale element of customers' sewerage charges where those customers (via their retailer) can demonstrate that over 10% of the water that they use does not return to Thames Water's sewers for treatment.¹⁶ RTS allowances are applied at an individual meter level and can apply to the fixed elements of the sewerage charges.

2.17 Thames Water applies SWD abatements to the sewerage charges of customers who can demonstrate that no rainwater from their premises drains directly or indirectly into a public sewer. SWD abatements are applied at a premises level to the fixed element of the sewerage charges.

¹⁵ Thames Water also offers ad hoc volumetric adjustments in the form of leak allowances and firefighting allowances. These are ordinarily provided on request in response to an event, for example, where a customer has demonstrated that they have fixed a leak on their pipework or where water has been taken for firefighting in an emergency situation.

¹⁶ Thames Water informed us that the reason that the threshold is set at over 10% is that it assumes as a base position that 10% of water at all premises is not returned to its sewers and factors this into its tariffs.

Business Assessed charges

- 2.18 Where Thames Water has determined that it is impractical or infeasible to meter a NHH premises, the wholesale water and sewerage charges for these premises are calculated on a Business Assessed basis.
- 2.19 This involves Thames Water using information about the type of business carried out and the number of employees working at that premises to allocate it to one of five bands of assessed charges. Each of the first four bands has an allocated usage per full time employee working at the premises (**FTE**), ranging from 15m³ per year (Band 1) to 200m³ per year (Band 4). The fifth band has an assessed usage determined following a site inspection.¹⁷
- 2.20 The volumetric charges for the premises are then calculated by multiplying the usage per FTE by the number of FTEs at the premises, and then multiplying this by the annual volume charge for water and sewerage.¹⁸ An additional fixed annual charge for sewerage services is applied, based on the assessed pipe size.¹⁹

The business retail market

Preparing for market opening

- 2.21 Before April 2017, there was little competition in the provision of retail water and sewerage services. Businesses using five million litres of water a year or more²⁰ could opt to take their retail water and sewerage services from a supplier other than the incumbent provider(s) for their local area (the wholesale services continued to be provided by the incumbent water or sewerage undertaker). Other customers were required to take all of their services from the incumbent provider.
- 2.22 In 2012, the Government established a group to help prepare for a new business retail market (expanded to all NHH customers in England) and other market reforms in the water sector. This group included the Department for Environment, Food and Rural Affairs (**Defra**), Ofwat and market participants. The group established the 'Open Water' programme to deliver this work. The legislation needed to open the market was set out in the Water Act 2014 (**WA14**).

¹⁷ [Thames Water Wholesale Tariff Document 2020-21](#), version 1.3, Section B.2.6 Business Assessed. Thames Water used the same bands pre- and post- market opening and continues to use these charge bands.

¹⁸ The water and wastewater volume charges for 2020-21 were 138.18 pence per m³ for water and 89.63 pence per m³ for wastewater. [Thames Water Wholesale Tariff Document 2020-21](#), Table B.2.6-10.

¹⁹ In theory a fixed charge also applies for wholesale water services, but this has been set at zero since market opening. [Thames Water Wholesale Tariff Document 2020-21](#), Table B.2.6-11.

²⁰ 50 million litres of water per year for water companies operating wholly or mainly in Wales.

- 2.23 The WA14 gave powers to the Secretary of State for Environment, Food and Rural Affairs to make regulations to provide for retail exit from the business retail market²¹ – this would allow an incumbent undertaker to apply for permission to transfer its NHH customers to a licensed retailer, and thereby exit the NHH retail market itself. NHH customers could be transferred to a retailer associated with the incumbent water undertaker, or to an unrelated retailer.
- 2.24 The Open Water programme set up to deliver the opening of the retail market included the development of a series of:
- **market codes**, to specify the obligations of those operating in the market;
 - **licences**, to approve and regulate retailers operating in the retail market; and
 - **market systems**, to facilitate key market interactions between customers, retailers and wholesalers and hold certain information necessary for the market to operate, for example to enable customers to switch supplier and for the calculation of financial settlement between retailers and wholesalers.
- 2.25 There were three main phases to the Open Water programme – the design and build phase (up to April 2016); the testing phase (April to October 2016); and the shadow market operation phase (October 2016 to March 2017).²² The business retail market opened on 1 April 2017, enabling retailers to compete to offer services to all NHH customers in England, and NHH customers to choose who provides them with water and sewerage retail services.²³

Market codes

- 2.26 The business retail market operates through a series of rules and arrangements set out in the form of market codes. The content of the codes ranges from the terms that apply to the provision of wholesale services by wholesalers to retailers, to the forms that should be used when ordering services or reporting problems.
- 2.27 The market codes were put in place prior to market opening but only took effect from the date of market opening. Two key market codes are:
- **The Market Arrangements Code (MAC)**: a non-statutory code established by conditions in the operating licences of wholesalers and retailers.²⁴

²¹ [The Water and Sewerage Undertakers \(Exit from Non-household Retail Market\) Regulations 2016, SI 2016/744](#) were made on 14 July 2016 and came into force on 3 October 2016.

²² The shadow market operations phase was a period used to test market systems ahead of market opening.

²³ While the new business retail market arrangements applied in both England and Wales, the changes to customer eligibility criteria only applied to customers in England.

²⁴ The [MAC](#) is published on MOSL's website.

- **The WRC:** a statutory code brought into force by sections 66DA and 117F WIA91 and is enforceable by us under those provisions.²⁵ The WRC comprises:
 - the Wholesale Contract – a standard agreement between each wholesaler and every retailer that takes wholesale services from it.
 - Business Terms – which establish the rights and obligations of the parties to the Wholesale Contract.
 - Operational Terms – which describe how the wholesaler and retailer coordinate operational activities necessary for the provision of water and/or sewerage services.
 - Market Terms – which cover the arrangements for the registration and transfer of NHH customers and the calculation by Market Operator Services Limited (**MOSL**) of the primary charges due under the Wholesale Contract.

2.28 All wholesalers and retailers operating in the business retail market must comply with the requirements of the MAC and WRC.

Licence obligations for market opening

2.29 To enable retailers to participate in the business retail market, new water supply and sewerage supply licences (**WSSL**) were developed. These have one or more authorisations to supply water and/or sewerage services to NHH premises using the public water and/or sewerage networks operated by undertakers in England.²⁶

2.30 The licences of the water and/or sewerage undertakers were also amended to facilitate the opening of the business retail market, including the introduction of a new market readiness condition with effect from 27 May 2016.²⁷ The new condition (Condition R2 in Thames Water's Licence) placed obligations on undertakers to take the steps necessary to ensure that they were ready for market opening. These included requirements to gather and prepare data in relation to all eligible NHH premises and supply points in their supply area ready for transfer to the market's central systems.

CONDITION R2: RETAIL MARKET OPENING

1.1 General Obligations

²⁵ The [WRC](#) is published on MOSL's website.

²⁶ Authorisations could also be obtained to provide retail water services to NHH premises in Wales consuming at least 50 Megalitres of water a year.

²⁷ Ofwat, [Modification of companies' Instruments of Appointment to include the market readiness condition](#), 27 May 2016.

The Appointee shall take such steps and do such things as are within its power and which are or may be necessary or expedient to ensure that it is ready for the opening of the Competitive Market on and from the Go Live Date including, without limitation:-

- (a) developing company specific market assurance and readiness plans;
- (b) identifying and gathering relevant data in relation to all Eligible Premises and supply points in its area, ensuring this data is sufficiently accurate to enable the effective functioning of the Competitive Market and ensuring it is in a form capable of being transferred to any central systems and/or any market operator established to operate the Competitive Market; and
- (c) testing and trialling any systems and processes to be put in place for the Competitive Market.

2.31 In effect, the market readiness licence condition required each undertaker to take reasonable steps to:

- identify all eligible NHH premises and supply points in its areas of appointment for water and/or sewerage services;
- for each of these premises and supply points, gather accurate data to enable it to populate the fields contained within CMOS;
- ensure that the data was in a form that was capable of being transferred into CMOS; and
- accurately transfer the data into CMOS so that the market systems and processes could be trialled and tested ahead of market opening and to ensure that the market could operate from the date of market opening.

2.32 In raising the prospect of a new market readiness licence condition in June 2015,²⁸ Ofwat noted that preparations by individual market participants would be of “fundamental importance” to market opening. This included preparing accurate datasets on eligible premises and supply points and developing systems and processes to interface with the new market systems.²⁹

2.33 Our consultation on the introduction of the market readiness condition³⁰ noted that although the WRC was not due to become live until April 2017, it was critical that companies were taking steps to ensure that they could comply with the code when it was issued – in particular “ensuring that their customer data and systems/operational

²⁸ [Licensing and policy issues in relation to the opening of the non-household retail market – a consultation](#), June 2015 (the June 2015 consultation).

²⁹ June 2015 consultation, page 53.

³⁰ [Consultation on Ofwat's section 55 proposal to modify Instruments of Appointment and Water Supply Licences – market readiness](#), March 2016 (the March 2016 consultation).

processes will be consistent with the wholesale retail code and are suitable for market opening”.³¹

- 2.34 We further noted that one of the objectives of the market readiness condition was to ensure that each undertaker determined itself what was required in order for it to meet its obligations, rather than waiting to be told what to do. By way of an example, we explained that the work required on data or systems may differ between companies depending on the quality of their current data. It was for this reason that the condition focused on the outcomes that were to be achieved, with each undertaker needing to assess what this meant for its own preparations.³²
- 2.35 We recognised that the achievement of 100% data accuracy may not be a realistic goal but specified that data should be “sufficiently accurate to enable the effective functioning of the competitive market”.³³ We further noted that when deciding whether to take enforcement action, the level of action and effort taken by the undertaker to achieve compliance would be a relevant consideration.³⁴
- 2.36 The market readiness condition ceased to be in effect on 1 April 2017 as the market codes containing obligations requiring market participants to maintain the accuracy of data within CMOS on an on-going basis then came into force.³⁵

Market systems

- 2.37 CMOS is run by MOSL and is the core IT system used to facilitate the operation of the business retail market. It manages the electronic transactions involved in switching NHH customers between retailers and provides usage and settlement data used in the wholesaler-retailer billing process.
- 2.38 CMOS was procured prior to market opening and all market participants were required via the obligations of Condition R2 to ensure that their own systems were compatible and able to communicate with it. Prior to market opening, undertakers were required to populate CMOS with details of all eligible premises and supply points that would form the business retail market.
- 2.39 The exact data required for each premises, its format and the type of transactions it was to be used for were set out in the data catalogue that forms part of the WRC. Details of the way in which wholesale charges were calculated and any discounts offered

³¹ March 2016 consultation, Section 4.1

³² March 2016 consultation, page 9.

³³ March 2016 consultation, page 8.

³⁴ March 2016 consultation, page 9.

³⁵ See paragraphs 2.53 to 2.59 below.

(including allowances and abatements) formed part of the data that undertakers were required to gather and upload into CMOS.

- 2.40 The transfer of market data from undertakers' systems into CMOS was carried out via the “**Initial Data Upload**” and took place in four tranches between April 2016 and September 2016, with progressively more data being uploaded each time. After each tranche was uploaded, MOSL reviewed the data and provided feedback to the undertakers on any formatting and compatibility errors that it had found. MOSL did not comment on and had no means of checking the accuracy of the actual data itself.
- 2.41 Following the Initial Data Upload process, if market participants wanted to upload additional data or amend data provided in the Initial Data Upload ahead of market opening, they needed to use market transactions in the shadow market to do so.³⁶

Retail Market Opening Assurance Process

- 2.42 To ensure that the market framework was sufficiently developed, and companies sufficiently prepared to enable the business retail market to open and operate, an assurance process was set up that required each undertaker to report to Ofwat and Defra on its progress in achieving the requirements set out in Condition R2.
- 2.43 This assurance process took the form of the Board of Directors of each undertaker providing a series of assurance letters covering key aspects of the work they needed to undertake to prepare for market opening. Undertakers were required to report progress towards achieving key milestones, identify risks and to set out plans to address these. The assurance letters were required in:
- February 2016 during the design and build phase;
 - October 2016, to coincide with the start of shadow operations; and
 - 3 February 2017, shortly before the market opened.
- 2.44 In their first assurance letters, undertakers were required to certify that they had in place a comprehensive plan for ensuring that they would be ready for market opening, supported by a set of key interim milestones forming a critical path towards the specific assurances required by the final assurance letter. Undertakers were also required to certify that they had in place an effective governance structure and sufficient resources for successful delivery.
- 2.45 In their second assurance letters, undertakers were required to report progress against the interim milestones set out in their first assurance letter.

³⁶ MOSL (January 2016), Preparing for completion in the non-household water market in England by April 2017 – Initial Data Upload Requirements, paragraph 1.1.4.

- 2.46 The final assurance letters contained a series of assurance statements specified by Defra on 14 December 2016 that undertakers were required to report against. This included that the undertaker had completed, or was on track to complete, its programme to prepare for implementation of the retail market; that it had completed all market entry requirements (including acceding to market codes); and that it was not aware of any issues that would prevent its successful participation in the market.
- 2.47 The final assurance letter contained 24 assurance statements against which undertakers were required to report progress. Of particular relevance to this investigation are the statements requiring undertakers to confirm that:
- they understood their responsibilities to maintain complete and accurate data within MOSL systems;
 - data cleansing and acquisition as set out in the data catalogue had been fully and accurately completed;
 - residual risks to successful market opening that might result from data inaccuracy were understood and that plans were in place to address and mitigate these;
 - data held on MOSL systems met the requirements of Licence Condition R2; and
 - a data quality improvement plan had been put in place and implemented.
- 2.48 Thames Water confirmed in its "**Final Assurance Letter**" that it was on track to meet each of these requirements.³⁷
- 2.49 It was on the basis of the final assurance letters that Ofwat was able to satisfy itself that preparations were on track and to recommend to the Secretary of State that market opening take place on 1 April 2017.

Thames Water's exit from the business retail market

- 2.50 As set out in paragraph 2.23 above, legislative arrangements for the business retail market enabled incumbent water companies to choose to exit the business retail market and transfer their NHH customers to retailers. Thames Water applied for and was granted permission by the Secretary of State to exit the business retail market from 1 April 2017.³⁸
- 2.51 Thames Water chose to sell its retail NHH customer base to Castle Water. On 18 July 2016, Thames Water and Castle Water signed two agreements, the "**Transfer Agreement**" and the "**Operating Agreement**", which set out the details of the transfer and defined the rights, obligations and functions to be performed by each of the parties (i) in the transition period between 18 July 2016 and the opening of the

³⁷ Statement of Assurance from Thames Water Utilities Limited relating to the implementation of the non-household retail water and sewerage market, 3 February 2017.

³⁸ Defra, [Companies with approval to withdraw from the non-household retail market for water](#).

business retail market (1 April 2017); and (ii) after the opening of the business retail market on 1 April 2017.

2.52 As part of the Operating Agreement, Thames Water appointed Castle Water as its billing and debt collection agent in respect of water and/or sewerage services supplied by Thames Water to its NHH customers prior to 1 April 2017. Castle Water's role as billing and debt collection agent came into effect from the date that the customers transferred from Thames Water to Castle Water. Castle Water's obligations to bill and collect debt from NHH customers, in relation to services supplied by Thames Water prior to market opening, continued after market opening. Castle Water used the market data that had been uploaded into CMOS by Thames Water and the data that had been transferred directly by Thames Water to Castle Water during the transition period to provide its billing and collection services.³⁹

Data obligations after market opening

2.53 The market codes came into force at market opening. The WRC, and in particular its Market Terms, contain the requirements of market participants relating to data accuracy. Part C of the Market Terms sets out the roles and duties of Contracting Wholesalers.⁴⁰ It places a general obligation on Contracting Wholesalers, when carrying out duties under the Market Terms, "to exercise all due skill, care and attention recognising that accurate and up to date data is key to the proper functioning of the Competitive Market" and to "act promptly when taking any action it is required to take".⁴¹

2.54 The Market Terms require Contracting Wholesalers to provide MOSL with all relevant data and information relating to the supply points in their areas, in accordance with Part D of the Market Terms and the Code Subsidiary Documents (**CSDs**), and to keep this up to date. We set out below relevant provisions in the Market Terms that relate to the provision of data and maintenance of data accuracy.

Wholesale Retail Code – Market Terms

3.1.2 Scope

In carrying out its duties under the Market Terms, the Contracting Wholesaler shall:

³⁹ Thames Water's response to Questions 24 and 25 of the 3rd Thames Water section 26 Notice.

⁴⁰ The term 'Contracting Wholesaler' is defined in the WRC as meaning "the Wholesaler that is a party to a given Wholesale Contract". Thames Water is a Contracting Wholesaler in relation to the retailers that purchase wholesale services from it.

⁴¹ Market Terms, paragraph 3.1.2(b) and (c).

- (a) co-operate with the Contracting Retailer and any other Trading Party in order to facilitate the orderly functioning of the Competitive Market;
- (b) exercise all due skill, care and attention recognising that accurate and up to date data is key to the proper functioning of the Competitive Market; and
- (c) in the absence of any specified time period (which shall take priority) act promptly when taking any action it is required to take.

3.2.8 Provision and maintenance of Data Items

In relation to those Data Items for which the Contracting Wholesaler is responsible, the Contracting Wholesaler shall maintain such Data Items and keep them up to date at all times in accordance with the Market Terms and Code Subsidiary Documents.

4.5.1 Updating the SPID data

For every Supply Point, the Contracting Wholesaler and the Contracting Retailer agree that each Data Owner is responsible for certain items of the SPID Data associated with the SPID in the Supply Point Register and shall be responsible for maintaining and keeping such information complete and up to date in accordance with CSD 0104 (Maintain SPID Data) and CSD 0206 (Trade Effluent Processes).

4.5.2 Errors in SPID data

The Contracting Wholesaler and the Contracting Retailer acknowledge and agree the following in relation to errors in SPID Data.

- (a) If the Market Operator or the Contracting Wholesaler or the Contracting Retailer identifies an error in any SPID Data for which it is not the Data Owner, it shall request the submission of modified SPID Data from the relevant Data Owner in accordance with CSD 0105 (Error Rectification and Retrospective Amendments). If any Data Owner identifies an error in any of its SPID Data it shall correct the SPID Data in accordance with CSD 0105 (Error Rectification and Retrospective Amendments) as soon as it becomes aware of such error. To avoid doubt, the Data Owner refers to the owner of the SPID Data for the time period over which the erroneous SPID Data is effective in the Central Systems.
- (b) If the Contracting Wholesaler or the Sewerage Retailer of a paired Sewerage Services Supply Point (where the Sewerage Retailer is different from the Water Retailer) determines that an Eligible Premises to which a Supply Point is Registered is incorrectly marked as being occupied, it may submit a Vacancy Change Application to the Market Operator in accordance with CSD 0105 (Error Rectification and Retrospective Amendments). If such application is

subsequently confirmed by the applying party, the SPID Data will be modified, in accordance with that CSD. Clarification of the determination of the occupancy status and vacancy status of Supply Points is contained in CSD 0104 (Maintain SPID Data).

2.55 Under Part D of the Market Terms, contracting wholesalers and retailers agree that each is responsible for maintaining those data items attributed to each of them in accordance with CSD 0301 (Data catalogue).⁴²

2.56 CSD 0301 sets out the data catalogue. It contains the definitions for all the data items exchanged between contracting wholesalers and retailers and definitions for all data transactions used to exchange data items between contracting wholesalers and retailers and MOSL. The following data items, used to calculate Business Assessed charges and those relevant to RTS allowances and SWD abatements, are included in the data catalogue. For each of these data items, the Contracting Wholesaler is identified as being the person responsible for maintaining and updating the data item.

- Assessed chargeable meter size (D2068)
- Assessed sewerage band (D7354)
- Assessed sewerage fixed charge (D7351)
- Assessed sewerage meter fixed charges (D7352)
- Assessed sewerage volumetric charge (D7353)
- Assessed tariff code (D2066)
- Assessed volumetric rate (D2049)
- Assessed water band charge (D7204)
- Assessed water fixed charge (D7201)
- Assessed water meter fixed charges (D7202)
- Assessed water volumetric charge (D7203)
- Default return to sewer (D7051)
- Return to sewer (D3007)
- Surface water drainage charge adjustment factor (D2072)

2.57 CSD 0104 (Maintain SPID data) describes the processes that should be followed when updating SPID data to reflect a change in circumstances. Paragraph 2.2.1(a) places a requirement on Contracting Wholesalers to submit to MOSL updated SPID data that affects charges within two business days of identifying a need for change. Updates to service component data⁴³ must be made within five business days (section 13).

⁴² Market Terms, paragraph 4.2.4. The CSDs are published on [MOSL's website](#).

⁴³ Service components are defined in [Part 1 of Schedule 1 to the WRC](#). For water services these are: metered potable water, metered non-potable water, assessed water, unmeasured water and charge adjustments. For sewerage services these are: metered foul sewerage, assessed sewerage, unmeasured sewerage, surface water drainage services, highway drainage services, trade effluent services and charge adjustments. Service component data is the data applicable to each service component at the supply point.

- 2.58 CSD 0105 (Error rectification and retrospective amendments), in turn, describes the process for data corrections – which are defined as updates to data items that have not been provided within the timescales required by the Market Terms or corrections to data items already in CMOS.⁴⁴ CSD 0105 identifies two types of data corrections: (i) error rectifications, which are corrections to data items that do not have an impact on the calculation of primary charges; and (ii) retrospective amendments, which do have an impact on the calculation of primary charges.⁴⁵ Corrections to the data items covered by this investigation are retrospective amendments, as allowances, abatements and Business Assessed charging items are used to calculate water and sewerage charges (which are primary charges).
- 2.59 The precise processes to be followed to correct data items, and the timescales within which these should be carried out, are set out in CSD 0105 and depend on a number of factors, including the nature of the data item, the effective date of the proposed change and the date that the incorrect value became effective.⁴⁶ In most cases, data corrections must be submitted within two business days of the Contracting Wholesaler determining the correct value for the data item (or having discussed and agreed it with other relevant trading parties in some cases).

Improving market data quality

- 2.60 The importance of data quality and the risks that inaccurate data pose to the effective functioning of the business retail market has been recognised by Ofwat and MOSL both before and since market opening.
- 2.61 Data quality was viewed as critical to ensuring that the business retail market was able to operate effectively. This was made clear by Ofwat through the market readiness condition that it introduced; by Defra through the assurance letters that it required market participants to complete; and by MOSL through its development of the new market processes.
- 2.62 MOSL had noted that “Experience in Scotland and in other markets suggests that poor data can have a substantial and pervasive impact on market outcomes including the accuracy of settlement and the ability and propensity of customers to switch...[experience] also suggests that data quality issues only truly become apparent when the data is being used in the live market”.⁴⁷ There was also an expectation that data quality issues would endure for a number of years and that the extent of these would only really be known after market opening.

⁴⁴ CSD 0105, paragraph 1.2.3.

⁴⁵ CSD 0105, paragraphs 2.3.1 to 2.3.3.

⁴⁶ CSD 0105, sections 2–8.

⁴⁷ MOSL, Market and Company Readiness Plan, 17 December 2015, page 37.

- 2.63 In light of the likely scale of data issues that would arise and take time and effort pre- and post-market opening to address, MOSL considered that “the data readiness approach is as much about loading compliant data into the system to enable the market to open and ensuring that participants have suitable plans, processes, controls and resources in place to ensure that customer issues are identified and resolved at the earliest practicable opportunity”.⁴⁸
- 2.64 The ongoing importance of improving market data quality has been an ongoing focus for Ofwat and MOSL since the market opened. Ofwat’s annual state of the market reports have highlighted problems with data quality and the frictions that this has caused in the market and we have made clear to market participants the importance of improving the quality of market data.⁴⁹
- 2.65 MOSL has also continued to push market participants to improve the quality of data that they are putting into the market and it has been a common theme in MOSL's annual Market Performance Operating Plans. For example, two of the three key workstreams in MOSL’s Market Performance Operating Plan for 2020–21 related to improving data, recognising the importance of this to improving customer outcomes in the market.⁵⁰ Similarly, four of the five improvement areas identified in its proposed 2021–22 Market Performance Operating Plan (data quality, metering issues, vacancy and accuracy of estimation in settlement) are linked to improving data.⁵¹

⁴⁸ MOSL, Market and Company Readiness Plan, 17 December 2015, page 37.

⁴⁹ Ofwat (July 2018), [Open for business: Reviewing the first year of the business retail water market](#).

Ofwat (July 2019), [State of the market 2018-19: Review of the second year of the business retail water market](#).

Ofwat (August 2020), [State of the market 2019-20: Review of the third year of the business retail water market](#).

⁵⁰ MOSL, [Market Performance Operating Plan 2020-21: Driving market improvement for better customer outcomes](#), 30 June 2020.

⁵¹ MOSL, [Market Performance Operating Plan \(MPOP\) 2021-22 Consultation](#), 23 June 2021, page 4.

3. Our investigation

Information we gathered

3.1 To investigate the Complaint, we obtained information from Thames Water, the complainant and retailers serving customers in Thames Water's Licence area in order to build a picture of how Thames Water managed its market data and legal obligations relating to it ahead of and since market opening, and any resulting effects for NHH customers, retailers and the business retail market.⁵²

Thames Water's management of market data quality before and after market opening

3.2 We discuss below how Thames Water has managed its obligations in relation to market data quality. We split this into three sub-sections:

- A. details of Thames Water's preparation of market data ahead of market opening, including transitioning to what became business as usual arrangements after market opening;
- B. details of data quality issues that have emerged since market opening; and
- C. details of how these issues came to light and how Thames Water has responded to them.

A: Preparation for market opening

3.3 To prepare for market opening Thames Water established its Competition 2017 (Readiness) Programme (**C17 Programme**) to help it ensure that it met market opening requirements and to enable its Board to provide the assurance letters required to demonstrate market readiness to Ofwat and Defra.⁵³

3.4 As part of its C17 Programme, Thames Water put in place internal quality processes that sought to ensure it met all market opening requirements, including that its data was sufficiently accurate and in a format that enabled it to be transferred into CMOS. The processes included:

⁵² Much of this information was gathered using our powers under section 26 of the CA98, while the issues that are the subject of this decision formed part of our CA98 investigation into Thames Water. However, as discussed in paragraph 2.5 above, we concluded in November 2020 that it was more appropriate to use our sectoral powers under the WIA91 to investigate these issues. We have sought and obtained agreement from the relevant parties that we can use the information we gathered under the CA98 for the purposes of our WIA91 investigation.

⁵³ Thames Water response to the 2nd Thames Water section 26 Notice, paragraphs 2.131 and 2.132.

- establishing a dedicated Data Workstream, which reported to and was overseen by a sub-committee of the company's executive management team, the Audit, Risk and Reporting Committee⁵⁴ and Thames Water's Board;⁵⁵
- establishing a Data Quality Framework;
- operating a data cleansing exercise;
- transferring data ownership and maintenance into business-as-usual arrangements after market opening;
- establishing a robust governance process, which included the committees established to oversee the Data Workstream; and
- obtaining independent external assurance that delivery components had been appropriately checked and were fit for purpose.

The Data Workstream

3.5 Set up in December 2015, the C17 Programme's Data Workstream set out the following vision in its Programme Definition Document [our emphasis added]:

"The creation of a Competitive retail market for Non-Household (NHH) customers required Thames Water to share customer, financial and asset data with third parties. **Prior to this market, this data was the sole responsibility of Thames Water to create, maintain, update and replace. The quality and rigor to which we undertook these tasks appears not to have been well documented or undertaken consistently.**

In NHH Market this data is now visible to third parties who are reliant upon it and data quality, data completeness and **approaches to managing data will be increasingly scrutinised. Failure to understand and proactively manage data quality could also lead to Regulatory enforcement** (Ofwat, MOSL, Information Commissioner, and Competition Markets Authority).

The vision of the C17 Data Programme is to ensure that Thames Water's data for Non-Household Retail and Wholesale is compliant ready for market opening as well as **ensuring that the enduring BAU governance and processes are in place for continuous data quality management and improvements.** Thames aims to be the benchmark for complete, accurate and continuously improving Wholesale data within the English RNHH market."⁵⁶

3.6 The Data Workstream's responsibilities included:

- analysing the data requirements from MOSL;

⁵⁴ A sub-committee of Thames Water's Board, consisting of Non-Executive Directors.

⁵⁵ Thames Water response to the 2nd Thames Water section 26 Notice, paragraphs 2.131 and 2.132.

⁵⁶ Thames Water, C17 Programme Closedown Report: Data Programme – Shadow Operations Phase, 30 June 2017, Section 3.

- developing transformation rules to map data into the specified MOSL format; and
- developing data quality standards for upload.⁵⁷

3.7 The Data Workstream was responsible for delivering four of the key milestones within the C17 Programme, for which a number of activities (with associated milestones) were identified.

Table 3.1: Key milestones within the Data Workstream

Milestone name	Description	Acceptance criteria	Completion date
Initial Data Upload commenced	All files are in the correct format and are fully populated for the agreed premises, with the MOSL target being 300 premises and the Thames Water objective being circa 24,000	Confirmation / sign-off that data files for the agreed premises have been populated in accordance with the data validation rules defined by MOSL	29/04/2016
Complete pairing of shared premises with other water companies	All eligible cross boundary premises paired with other Water and Wastewater companies (this excludes new premises that enter the market after 1 April 2016 which will be paired at a later date)	Email confirmation that all data has been received from WOCs and sewerage SPIDs have been paired	22/04/2016
Initial Data Upload complete	Thames Water has uploaded its final set of data to CMOS where all exceptions found throughout uploads 1-3 have been resolved	Report received from MOSL to confirm that the Thames Water data upload has been received	30/09/2016
Thames Water data ready for market opening	Thames Water data is ready for live operation and is compliant with the Wholesale Retail Code	<ul style="list-style-type: none"> • Capability to upload has been delivered • Systems and processes are in place to change and maintain data 	31/03/2017

Source: Thames Water C17 Programme Closedown Report, Data Programme – Shadow Operations Phase, 30 June 2017

3.8 The Data Workstream comprised 12 sub-workstreams.

Table 3.2: Summary of Data Workstream sub-workstreams and their scope

Sub-workstream	Summary of scope
Data quality and analysis	Continuous monitoring and analyses of Thames Water's data in CMOS against specified quality criteria; investigation and identification of data issues and formulation of a resolution approach; and undertaking data analyses and data checks/assurance to support all workstreams.
Chargeable Meter Size Discrepancies	Quantify discrepancies between chargeable meter size and physical meter size that could result in potential challenges from Retailers/Customers; and develop/progress activities to rectify these discrepancies in CMOS (via Thames Water's Wholesale Billing System).

⁵⁷ Thames Water response to the 2nd Thames Water section 26 Notice, paragraph 2.133.

Sub-workstream	Summary of scope
Resolution of extraction issues from Initial Data Upload (IDU)	Resolve data issues in CMOS arising from data extraction, mapping or transformation errors during Thames Water's Initial Data Upload.
Metering Data Cleanse	Resolution of a finite/specified list of metering data issues in Thames Water's Customer Information System (CIS) and in CMOS that were identified during or after the Initial Data Upload and that had been agreed for resolution before market opening.
Repatriation of WOC Premises to CIS	Repatriation of Sewerage Accounts previously billed by WOCs to CIS and ensuring that those repatriated premises are linked to the appropriate SPID in CMOS (via Thames Water's Data Management System (DMS)).
Trade Effluent Data Cleanse	Resolution of a specified list of Trade Effluent data issues in CIS, TERMIS (Thames Water's trade effluent management system) and CMOS that were identified during Initial Data Upload or since the Initial Data Upload, that had been agreed for resolution before market opening.
Resolution of revenue impacting data items from IDU	Resolution of a specified list of data issues in CMOS that may impact Wholesale Revenue that had been identified during or after the Initial Data Upload, that have been agreed for resolution before market opening. Issues included water abatement percentage discrepancies, service component discrepancies related to WOC data and return to sewer allowance data missing from some SPIDs.
Settlement Validation	Validation and assessment of Wholesale settlement outcomes from CMOS, identifying issues and providing assurances that the settlement outcomes align with Thames Water's expectations.
Tombstoning ⁵⁸ Assurance	Providing assurances that where CIS is the source system for a market data attribute, that Thames Water Wholesale will be able to update/maintain that data attribute after tombstoning.
Reclassification of Household to NHH (& vice versa) and upload to CMOS	The reclassification of premises in CIS from household to NHH and NHH to household and loading the new NHH premises into CMOS with the appropriate market data.
Upload of Vacant premises to CMOS	Rationalisation of 14,835 premises flagged as 'inactive' in CIS and loading the genuine 'Vacant' premises to CMOS with the appropriate market data.
Programme Management and Data Governance	Management, planning and coordination of programme activities, and putting robust Data Governance and improvement in place to ensure that Thames Water BAU is set up to manage on-going data quality.

Source: Thames Water response to Question 9 of the 3rd section 26 Notice.

The Data Quality Framework

3.9 As part of the Data Workstream, Thames Water established a data quality framework. This was a structured approach for assessing all data attributes defined in MOSL's guidance for the Initial Data Upload. Each data item was assessed in terms of whether it was possible to apply a data quality measure to it. The consequences of each data item being incorrect were then considered to enable remediation to be prioritised, with factors such as whether the data item impacted on customers, revenue, Thames Water's reputation and compliance being taken into account.

⁵⁸ Tombstoning was the term used by Thames Water to describe the closing off of NHH accounts in its CIS as they were migrated across to Castle Water. NHH customer accounts were "tombstoned" in CIS to prevent Thames Water from invoicing those customers that had been migrated to Castle Water for billing purposes, in order to avoid both Thames Water and Castle Water billing the same customer.

- 3.10 154 unique data items were identified in relation to each record (representing an individual supply point),⁵⁹ of which Thames Water determined 126 data items could have a target quality tolerance applied (which set the criteria against which Thames Water could assess each data item). This left 28 data items that could not have a quality tolerance applied, for example because the data item was a free text field.⁶⁰
- 3.11 For each of the data items to which it considered a quality tolerance could be applied, Thames Water established three tiers of validation aimed at improving data quality. Beyond these broad indications of the level of evidence required to achieve each tier, the criteria for each were specific to each individual data item:
- **Tier 1** quality essentially ensured that data would be uploaded into CMOS in the correct format. All 126 data items capable of having a quality tolerance applied achieved Tier 1 quality. Thames Water noted that it achieved a 99.9% validation rate during its final upload to CMOS prior to the shadow market operations.⁶¹
 - **Tier 2** quality involved checking data for consistency against Thames Water's existing data records in CIS. 89 of the 126 items achieved Tier 2 quality.⁶²
 - **Tier 3** quality meant checking the data against alternative data sources, external to Thames Water. Only 24 of the 126 data items achieved Tier 3 quality.⁶³
- 3.12 Thames Water had a target that 100% of all data affecting revenue and switching must be at a Tier 2 level. Although it was recognised that achieving Tier 3 quality was optimal, Thames Water required a clearly articulated business case to justify any extra effort to include a Tier 3 level for a data item.
- 3.13 Six of the 154 data items are used to calculate RTS allowances, SWD abatements and Business Assessed charges. Thames Water considered that a tolerance could be applied to these six data items. Five of these data items achieved both Tier 1 and Tier 2 quality standards, with the sixth achieving just Tier 1 standard.⁶⁴ None of the six items were able to achieve Tier 3 quality standards as Thames Water did not have suitable alternative data sets to compare them against and did not consider that there was a business case for obtaining or generating them.⁶⁵ Table 3.3 sets out the tier criteria for each of these six data items.

⁵⁹ This meant that, in total, Thames Water needed to assess the accuracy of and transfer into CMOS around 74 million data items. Our investigation only covers those data items relating to RTS allowances, SWD abatements and Business Assessed charges.

⁶⁰ Thames Water response to the 2nd Thames Water section 26 Notice, paragraphs 2.134 and 2.135.

⁶¹ Thames Water response to the 2nd Thames Water section 26 Notice, paragraph 2.136 and Figure 4.

⁶² Thames Water response to the 2nd Thames Water section 26 Notice, paragraph 2.137 and Figure 4.

⁶³ Thames Water response to the 2nd Thames Water section 26 Notice, paragraph 2.137 and Figure 4.

⁶⁴ Thames Water response to the 3rd Thames Water section 26 Notice, paragraph 2.11 and Table 2.2.

⁶⁵ Thames Water response to the 3rd Thames Water section 26 Notice, paragraph 2.16.

Table 3.3: Validation tests performed by Thames Water

Data Item Number	Data Item Name	Tier 1 criteria (performance target)	Tier 2 criteria (performance target)	Tier 3 criteria (performance target)
D3007	Return to Sewer	RTS must not be zero or negative (100%)	Correct data must be extracted from CIS ⁶⁶ based on the rules provided by subject matter experts (100%)	Data in CIS must be reliable. The criteria was not evaluated as the business case was not established (N/A)
D6012	Percentage Allowance	Must meet MOSL criteria (100%)	Correct data must be extracted from CIS based on the rules provided by subject matter experts (100%)	Data in CIS must be reliable. The criteria was not evaluated as the business case was not established (N/A)
D6013	Fixed Allowance	Default value 0 must be populated for all Discharge Point Identifiers (100%)	N/A	N/A
D2049	Assessed Volumetric Rate	The data item must be populated only if the service component has an assessed tariff (100%)	Volumetric rate must match the data available in CIS (95%)	Data in CIS must be reliable. The criteria was not evaluated as the business case was not established (N/A)
D2066	Assessed Tariff Code	Service component must be assigned a valid tariff code from the annual tariff file (100%)	The tariff code must match the data available in CIS (100%)	Data in CIS must be reliable. The criteria was not evaluated as the business case was not established (N/A)
D2068	Assessed Chargeable Meter Size	Must be populated only if the SPID is associated with an assessed service component (100%)	Chargeable size must match the data available in CIS (100%)	Data in CIS must be reliable. The criteria was not evaluated as the business case was not established (N/A)

Source: Table 2.3 of Thames Water's response to the 3rd Thames Water section 26 Notice

3.14 Thames Water already held the supply point data for those sewerage customers that it billed directly in its internal billing and customer management systems, including data relating to the allowances, abatements and Business Assessed charges applicable to these customers. Thames Water did not hold full supply point data for those customers for which it had billing arrangements with WOCs.⁶⁷ Thames Water repatriated the sewerage supply point data from the WOCs for these customers to enable it to upload it into CMOS.

3.15 Thames Water informed us that it was reliant on the WOCs to provide accurate data about its sewerage customers prior to market opening, claiming that, as it did not have access to the WOCs' systems, it was not able to check the data provided at an account

⁶⁶ Thames Water's Customer Information System.

⁶⁷ See paragraph 2.11 above for details of these billing arrangements and which customers were affected.

level.⁶⁸ Thames Water provided the following timeline of checks that it carried out in relation to the WOC data:

Table 3.4: Table of activities in relation to onboarding WOC data

Step	Activity	Date
1	Thames Water requests WOC data	January 2016
2	Sector workshop with WOCs and MOSL, hosted by Thames Water, to see how parties could work together and explore challenges and opportunities	January 2016
3	Initial files from WOCs received by Thames Water	January – March 2016
4	Thames Water validates WOC files (i.e. receipt and format)	From January 2016
5	Initial Data Upload – processes tested at each data upload	April – May 2016
6	Complete pairing of sewerage supply point data with water supply point data at WOC premises	May 2016
7	Final data files from WOCs received by Thames Water	August 2016
8	Thames Water validates final files received from WOCs	From August 2016
9	Shadow Operations Data Upload – process tested at each data upload	September 2016
10	Trade Effluent data mapped to consent data held by Thames Water	By February 2017

Source: Thames Water's response to Question 13 of the 3rd Thames Water section 26 Notice

Uploading data into CMOS

3.16 In line with the timescales for the Initial Data Upload set out by MOSL, Thames Water uploaded its first three tranches of customer data into CMOS in May 2016, July 2016 and in August 2016. It uploaded its fourth and final tranche of data for the Initial Data Upload on 28 September 2016. This represented the bulk of the data for Thames Water's NHH customers.

3.17 Thames Water uploaded additional data into CMOS between October 2016 and March 2017 as further eligible premises were identified and data was provided by the WOCs. Thames Water also uploaded data refreshes to CMOS in February and March 2017 to reflect changes that had been made to customer data in its own customer data systems during the shadow market period, in an attempt to ensure that the data in CMOS was accurate at the time of market opening.⁶⁹

3.18 In theory, therefore, by 31 March 2017, sufficiently accurate data relating to water and sewerage supply points in Thames Water's Licence areas was meant to have been

⁶⁸ Thames Water's response to Question 13 of the 3rd section 26 Notice.

⁶⁹ Although NHH customer data was uploaded into CMOS in September 2016, Thames Water continued to use its own internal systems for customer management and billing purposes during the shadow market operation phase. Any changes made to customer information by Thames Water during this period (for those accounts it had not yet transferred to Castle Water as its billing agent) therefore needed to also be uploaded into CMOS to ensure that the customer data used from market opening was correct.

uploaded into CMOS and be ready for market opening on 1 April 2017. As discussed below, evidence we have gathered indicates that this was not the case.

Oversight and assurance

3.19 As discussed in Section 2, Thames Water was required to provide us with a series of three assurance letters to demonstrate that it would be ready for market opening.⁷⁰ Each assurance letter contained a series of statements that Thames Water's Board was required to report on, demonstrating the company's progress towards being ready for market opening and its awareness of the risks to this.

Table 3.5: Summary of Thames Water's assurance letters

Letter (date)	Content	Risks identified
First Assurance Letter (28 January 2016)	Confirmed it had in place programme identifying all milestones and interdependencies for deliverable activities in advance of market opening, and that sufficient resources assigned to deliver this. Also confirmed it had an effective governance structure, with clear responsibilities and accountabilities for programme delivery, and a process for managing risks, issues and dependencies.	<ul style="list-style-type: none"> • Scale of data requirements – concern at high volume of data to be uploaded and complexity involved in subsequently maintaining this data. • Complexities relating to premises served by different water and sewerage companies – subject to the timescales and data quality of the WOCs. • Uncertainty as to which customers were eligible to participate in the business retail market and therefore data needed for upload.
Second Assurance Letter (7 October 2016)	Confirmed it had reviewed progress against programme plans and milestones and had not identified any matters that would affect ability to be ready for market opening. Set out key milestones completed since First Assurance Letter, including Initial Data Upload and pairing of shared premises. Listed outstanding key milestones; including to ensure data was ready for market opening. Milestone considered to be "At risk" due to need to complete additional planning and confirm how it will receive assurance that dataset held in CMOS had been accurately maintained. ⁷¹	May be unable to sign-off settlement validation and therefore accede to the MAC and so transition accountability for settlement calculation to MOSL. It considered that the risk might materialise due to a number of different factors, including that incorrect calculations might arise as a result of inaccurate market data – caused either through errors in CMOS or an inability of Thames Water and/or Castle Water to accurately maintain data from start of shadow operations.
Final Assurance Letter (3 February 2017)	Certified it had completed, or was on track to complete, C17 Programme to prepare for market opening in all material respects and that all interim milestones had either been completed or were on track to be completed by time of market opening. ⁷²	Identified that its 'Thames Water's data is ready for market opening' milestone remained at risk against its due date of 31 March 2017 due to need to complete further data quality checks and confirm it meets data quality tier standards. Assessed as low risk for market readiness.

⁷⁰ See paragraphs 2.42 to 2.48 above.

⁷¹ Appendix 2 (Summary of high level milestones) to Thames Water's Second Assurance Letter.

⁷² Final Assurance Letter, page 2.

3.20 Deloitte was engaged by Thames Water to provide external assurance to its C17 Programme, alongside internal assurance from self-assurance, management sign-off, regulatory review, peer reviews and internal audit. The assurance plan for the C17 Programme (which covered multiple workstreams, of which data was one) was developed by Thames Water and approved by its Audit, Risk and Reporting Committee, with a series of assessments undertaken over a period of 15 months to inform the production of the three assurance letters.

3.21 Thames Water carried out a risk-based assessment of each of the 24 statements required within the Final Assurance Letter.⁷³ The level of assurance required for each statement was determined by the level of risk Thames Water perceived it would have to successful market opening.⁷⁴ For low level risks, assurance was provided by way of management review by the C17 programme director. For medium level risks, assurance was provided by means of Thames Water's Internal Audit and Assurance function. For high level risks, assurance was provided by means of review by an independent third party, in this case external consultants Deloitte. The **Deloitte Report**⁷⁵ was provided to support Thames Water's production of its Final Assurance Letter in February 2017, at which time the C17 Programme was still in progress with significant activity remaining during the final three months prior to market opening.

3.22 Thames Water's Board Final Assurance Letter confirmed that it:⁷⁶

- had fully and accurately completed data cleansing and acquisition, as set out in the data catalogue;
- understood any residual risks to successful market opening that might result from data inaccuracy and that it had in place a plan to address and mitigate these risks;
- had met the requirements to ensure data held on MOSL systems complied with Ofwat's company readiness licence condition regarding data quality and accuracy;
- understood its responsibility to maintain complete and accurate data within MOSL systems; and
- had put in place and implemented a data quality improvement plan.

⁷³ The Open Water Assurance Framework set out that a risk-based approach should be adopted and provided guidance as to the method of assurance to be used. However, the selection of which type of assurance to use in relation to each statement was left to the undertaker to decide.

⁷⁴ Final Assurance Letter, page 7.

⁷⁵ Deloitte, Assurance Support for the Final Letter, 24 January 2017. The Deloitte Report was prepared for Thames Water for the purpose of informing the preparation of the Final Assurance Letter. Deloitte agreed that a copy of the Deloitte Report may be provided on a confidential basis to Ofwat and MOSL in connection with this purpose for their information only. Deloitte has provided consent to Ofwat for it to include extracts from the Deloitte Report in this document, but only on the basis that Deloitte accepts no duty, liability or responsibility to Ofwat, MOSL or any other party in relation to the extracts, the Deloitte Report or engagement.

⁷⁶ Final Assurance Letter, page 5.

3.23 Each of these statements was assessed by Thames Water as being high risk and were therefore subject to external assurance.⁷⁷ Deloitte considered that Thames Water was “largely on track to be ready for market opening, but needs to closely monitor several activities to ensure they deliver on time”.⁷⁸ Deloitte commented on each of the high-risk statements.

3.24 Table 3.6 below summarises the main actions points and risks that Deloitte identified in relation to each of the assurance statements.

Table 3.6: Main risks and action points identified in the Deloitte Report

Assurance Statement	Risks and action points identified
Data cleansing and acquisition	Data cleansing and acquisition on track to be fully completed by market opening, but subject to delays arising from need to repatriate data from WOCs.
Residual risk of data inaccuracy	<p>Five open programme risks identified at time of report, including resourcing budget (Amber), impacts arising from updating data in source systems (Amber) and availability of retail resources to support data quality improvement plan (Red). Deloitte noted that approaches documented by Thames Water to manage these risks were “fairly brief and [did] not provide any significant detail behind exactly how the risk will be mitigated or reduced”.⁷⁹</p> <p>Key residual risk identified was how Thames Water would deal with change in status of premises. Around 4,000 premises due to be reclassified, none of which had been included in Initial Data Upload due to need for verification checks.⁸⁰ Deloitte considered it important that Thames Water allocate sufficient resources to these verification checks so data could be uploaded before market opening. Deloitte recommended that Thames Water continue to monitor resource required for data processing and develop a clear investigation process for dealing with queries about classification of premises.</p>
Complying with licence condition requirement on data quality and accuracy	Deloitte noted that the data quality tolerance framework was still being developed and was incomplete. Recommended Thames Water finalise the framework and use it to develop a regular review process to highlight emerging data quality issues and prioritise areas for improvement.
Responsibility to maintain data in MOSL systems	<p>Two critical actions identified:</p> <ul style="list-style-type: none"> • finalise the transition plan⁸¹ and ensure clear handover to teams taking responsibility for data quality after market opening; and • regularly review reconciliation outputs to identify "data drift" and address all discrepancies promptly.

⁷⁷ Thames Water additionally confirmed in its Final Assurance Letter that it had effective management and control of its C17 programme. It deemed this to be a medium risk statement, so assurance was provided by Thames Water's Internal Audit and Assurance function.

⁷⁸ Deloitte Report, page 1.

⁷⁹ Deloitte Report, page 19.

⁸⁰ 3,358 premises were due to be reclassified from household to NHH and 620 premises were due to be reclassified from NHH to household.

⁸¹ The transition plan was due to be created by 31 January 2017. Deloitte noted that two transitions were planned: a transition from shadow operation to live market operations in April 2017, followed by a transition from live market operations to business as usual in July 2017.

Assurance Statement	Risks and action points identified
Implementation of data quality improvement plan	<p>Further work required to demonstrate that Thames Water had put in place and implemented a data quality improvement plan. Two critical actions identified:</p> <ul style="list-style-type: none"> • finalise the transition plan to BAU and identify future ownership of key data areas such as data quality management, ongoing data cleansing and improvement and data governance transition strategy; and • ensure a clear handover to teams taking responsibility for data quality after market opening.

Actions taken by Thames Water in response to the Deloitte Report

3.25 In addition to the recommendations that it made for Thames Water to consider in order to satisfy the assurance statements, Deloitte also identified four actions in its report that it considered to be critical to Thames Water's capacity to deliver the C17 Programme on time and to the requisite standards. Two of the critical actions, and the steps that Thames Water took to address these, are relevant to our investigation.

Table 3.7: Critical actions identified in Deloitte Report and steps Thames Water took to address them

Critical actions identified by Deloitte	Steps taken by Thames Water
Finalise the data transition plan to BAU and identify the future ownership of a number of key data areas such as Data Quality management, ongoing data cleansing and improvement, and the data governance transition strategy.	<p>The C17 Programme responded by taking three actions which were all tracked to conclusion by the Internal Audit (IA) team:</p> <ul style="list-style-type: none"> • Presenting a paper to the 20 February 2017 Wholesale Steering Group to confirm data owners and stewards (closed by IA on 28 February 2017); • Portfolio manager agreed baseline BAU capability map (closed by IA on 28 February 2017); and • Wholesale transition plan baselined (closed by IA on 27 March 2017).
Ensure that there is a clear handover to the teams taking responsibility for data quality post market opening.	<p>The C17 Programme responded by taking two actions:</p> <ul style="list-style-type: none"> • Portfolio Board agreed the transition of data quality reporting to the equivalent BAU Board (March 2017 Portfolio Board); and • Agreed the finalised budget for Data Back Office in Wholesale Market Services with Head of Wholesale Water. <p>These were all tracked to conclusion by IA and closed by 27 March 2017.</p>

Source: Thames Water response to Question 12 of the 3rd Thames Water section 26 Notice

3.26 Thames Water informed us that the critical actions were tracked by its C17 Programme. Thames Water's internal audit function was engaged to obtain audit evidence and confirm closure of the critical actions.⁸² Thames Water's Audit, Risk and Reporting Committee additionally set an expectation that all critical actions would be addressed prior to market opening.

⁸² Thames Water response to Question 12 of the 3rd Thames Water section 26 Notice.

Transition to business as usual

- 3.27 Thames Water set up the C17 Programme and its Data Workstream to oversee and manage the activities that needed to for it to be able to comply with Condition R2 and to participate fully in the business retail market. Staff for the programme was sourced from existing Thames Water departments and from external contractors. Many of the activities were one-offs and it was not intended that the workstreams would continue after market opening; any ongoing activities would transition into business as usual with Thames Water's Wholesale Market Services team.
- 3.28 Thames Water developed a three-stage data governance plan, whereby responsibility for dealing with data management and accuracy would transition from those involved in the Data Workstream first to an intermediate model, and then to business as usual. Under the intermediate model, staff from Thames Water's Wholesale Market Services team would take on responsibility for dealing with data issues but with support available from those involved in the C17 Programme. The intention was to provide support for dealing with any issues arising immediately after market opening and enable the completion of data cleanse activities outstanding at the time of market opening.⁸³
- 3.29 The Data Workstream was closed down at the end of June 2017. The four remaining open actions on its action log were transferred to Thames Water's Wholesale Market Services Data Governance process and formed part of its operational day to day management activities.⁸⁴ The Data Workstream closure report in June 2017 identified no outstanding risks.⁸⁵
- 3.30 In the closedown report for the Data Workstream, Thames Water reviewed its performance against the success criteria, milestones and objectives set out in its original C17 Programme Definition Document:
- Completion of the key milestone 'Thames Data Ready for Market Opening' at 31 March 2017.
 - Providing the Thames Water Board with adequate assurances that Thames Water data would be ready for Market Opening as part of the final Board Letter of Assurance.

⁸³ Having met what it considered to be the requirements of the Data Catalogue through the Initial Data Upload, Thames Water undertook focused data cleansing during the shadow market phase. Thames Water identified that not all of these data cleanse activities would be completed by 1 April 2017 and reflected this in its data governance transition plans. The outstanding data cleanse activities related mainly to the trade effluent programme, rather than to the services that we are considering as part of this investigation.

⁸⁴ The open actions at closure of the Data Workstream related to (i) 39 sewerage accounts that were not in CIS and which needed to be discussed with Thames Water's registration team, (ii) issues relating to untradeable SPIDs and incorrect tariff codes, (iii) how Local Authority and Housing Association premises should be dealt with going forward, and (iv) updates to Thames Water's Wholesale Billing System to replace blanks with a zero. The latter of these was subsequently resolved.

⁸⁵ Thames Water's response to Question 9 of the 3rd section 26 Notice.

- All relevant departments providing the necessary leadership and resources to implement the activities allocated to them in accordance with the plan.
- Collaborative working across all parties (Thames Water employees and contractor resources).

3.31 Thames Water concluded that all four success criteria had been met but noted on the third that “the full scope of work evolved as data cleansing commenced. The full scope and impact on resources may not have been best understood by all departments. We were able to achieve success by de-prioritising some lower value tasks in order to achieve the priority tasks by the dates required. We also added resource centrally in order to support certain departments who had resource constraints.”⁸⁶

3.32 Thames Water concluded that all six of the objectives for the Data Workstream had been achieved.⁸⁷ In particular, Thames Water concluded that it had successfully uploaded the necessary data into CMOS; that the data met the designated data quality standard set out in its Data Quality Framework (discussed in more detail above from paragraph 3.9 onwards); and that it was putting in place transition arrangements to address residual issues via business-as-usual data governance.

Data accuracy assurance processes and procedures after market opening

3.33 Thames Water currently has in place a dedicated data analysis team whose role is to monitor, analyse and intervene to maintain the accuracy of its market data.⁸⁸ To support its data team, Thames Water has developed a data warehouse tool (MARS – Market Analytics and Reporting System), which enables it to utilise the Market Data Set reports and compare them with data from its own internal systems. Thames Water also uses data from other sources, including meter, supply point and property information, to establish a range of reporting and assurance processes. Exceptions are reported on a daily basis and fed back to operational teams for action. Reports are also generated to monitor rejected transactions from CMOS, which prevent maintenance of Thames Water’s data, enabling corrective actions to be submitted.⁸⁹

3.34 Thames Water is able to monitor specific transaction volumes to look for exceptional movements and reconcile these with specific data items in CMOS or data change audit trails. Examples of its day-to-day monitoring include:

⁸⁶ Thames Water, C17 Programme Closedown Report: Data Programme – Shadow Operations Phase, 30 June 2017, Section 4.1.

⁸⁷ Thames Water, C17 Programme Closedown Report: Data Programme – Shadow Operations Phase, 30 June 2017, Section 4.4.

⁸⁸ Thames Water’s response of 25 September 2019 to the 3rd Thames Water section 26 Notice, paragraph 2.110.

⁸⁹ Thames Water’s response of 25 September 2019 to the 3rd Thames Water section 26 Notice, paragraphs 2.112 to 2.115.

- monitoring that the details of new meters registered in the market have accurately registered read frequency, physical and chargeable sizes, serials, dials and makes;
- reconciling meter and property data to external sources to determine accuracy, including meter manufacturing data and post office address data; and
- monitoring volumes of transactions to identify anomalies and investigating when there are exceptional volumes or a changing trend to ensure these are appropriate business-led activities.

3.35 Thames Water also has a dedicated team responsible for ensuring that its internal systems deliver the required flow of data between its systems and CMOS.⁹⁰

3.36 Thames Water told us that where it identifies data issues, or they are highlighted to it by retailers or MOSL, its data team reviews and prioritises required actions and initiates projects where appropriate. According to Thames Water, these projects led to more than 20,000 data corrections in 2019-20 and a further 14,000 data corrections in 2020-21 (up to August 2020).⁹¹ The data projects included:

- Regular reviews of chargeable meter size against the physical size to identify any discrepancies – resulting in changes to 9,873 meters records.
- Annual reconciliation of meter asset information between source systems and manufacturer data – resulting in changes to 3,625 meters records.⁹²

3.37 This team was not, however, called upon to:

- review the complaint and change request data showing that large numbers of NHH customers had problems with their allowances, abatements and/or Business Assessed charges; or
- follow-up on the work done in relation to a complaint from a business representative body complaining on behalf of its members to identify whether wider problems existed in relation to allowance data than those identified through Thames Water's initial investigations.⁹³

3.38 While this team had not been established at the time of market opening, it is unclear why another team within Thames Water was not asked to investigate the issues raised by Castle Water in March 2017 that allowances had been removed from a number of NHH customers.

⁹⁰ Thames Water's response of 25 September 2019 to the 3rd Thames Water section 26 Notice, paragraph 2.110.

⁹¹ Thames Water's response of 25 September 2019 to the 3rd Thames Water section 26 Notice, paragraph 2.117.

⁹² Thames Water's response of 25 September 2019 to the 3rd Thames Water section 26 Notice, Table 2.38.

⁹³ See paragraphs 3.61 to 3.64 below for details.

B: Data errors identified since market opening

3.39 Based on evidence from Thames Water, a total of **13,786 SPIDs** with data errors that were uploaded into CMOS prior to or after market opening, as detailed below.

3.40 **391 SPIDs** were subsequently found to be cattle troughs and should never have been registered in the market. A further **1,222 SPIDs** associated with directly billed sewerage customers⁹⁴ had their RTS allowances incorrectly removed. This amounted to over three quarters of the supply points associated with directly billed customers that were receiving RTS allowances prior to the Initial Data Upload.⁹⁵

- The allowance data for 505 SPIDs was overwritten with incorrect data during the data refresh discussed in paragraph 3.17 above, having initially been correctly uploaded in September 2016. This happened because of the way in which Thames Water had begun to close down accounts in its billing system in preparation for the transfer of NHH customers to Castle Water.⁹⁶
- 188 SPIDs had allowances removed when faulty meters were replaced.⁹⁷

3.41 **24 SPIDs** incorrectly had their SWD abatements removed at market opening.⁹⁸

3.42 As Thames Water did not hold data for those sewerage customers that it did not directly bill, it had to obtain historic allowance and abatement information from the relevant WOCs to supply us with evidence in relation to these customers.

- **10,656 SPIDs** to which Thames Water provided sewerage services in the water supply areas of Essex and Suffolk Water, Sutton and East Surrey Water, Affinity Water, Anglian Water and South East Water had the wrong level of allowance or abatement given to them at the time of market opening. A significant number of these, around 9,000 SPIDs, were incorrectly given a 5% allowance when they were not entitled to any allowance. The remainder were incorrectly given a 5% or zero allowance when they should have been given a higher allowance.
- **139 SPIDs** incorrectly had their SWD abatements removed.

3.43 In May 2017, 29,448 properties were charged for on a Business Assessed basis. The CMOS records for **1,354 SPIDs** at these properties contained different data about the annual assessed volumes (that is, the business type, employee numbers and/or pipe

⁹⁴ See paragraph 2.11 above.

⁹⁵ 1,842 SPIDs received RTS allowances in April 2016.

⁹⁶ Thames Water's response to the 1st section 26 Notice, paragraphs 198 to 202.

⁹⁷ See paragraphs 3.66 to 3.68 below for further details.

⁹⁸ Thames Water's response to the 1st section 26 Notice, paragraphs 213 to 215.

sizes) compared to what was used by Thames Water to bill those properties in February 2017.⁹⁹ Thames Water identified two possible underlying reasons for the differences:¹⁰⁰

- A failure by Thames Water to update the information in CMOS between the Initial Data Upload in September 2016 and the time of market opening. Thames Water continued to make changes to Business Assessed customer records in its own legacy billing systems after the Initial Data Upload to reflect contact that it had with customers, for example where customers updated information or Thames Water identified that a customer needed to be billed on a Business Assessed basis. However, Thames Water failed to update CMOS to reflect all these changes ahead of market opening.
- Data transformation errors at the time of the Initial Data Upload. Within Thames Water's legacy billing system, volume data was calculated at invoice production from stored inputs for FTEs and business type, rather than being identified as a separate value in its own right. When data was migrated across to CMOS, volume was a required input to be entered into CMOS as a separate data item. Thames Water identified that during the Initial Data Upload phase, "different values were created" when it transformed data from the format held in its legacy billing systems into the new formats required by CMOS.

3.44 In total, Thames Water uploaded into CMOS inaccurate RTS allowance data in relation to 11,690 SPIDs¹⁰¹ and inaccurate SWD abatement data in relation to 163 SPIDs. This meant that the CMOS records for around 4% of all of Thames Water's 277,917 NHH sewerage supply points at the time of market opening contained incorrect data in relation to allowances and/or abatements. In the case of 1,520 of this total of 11,853 SPIDs, Thames Water removed or reduced the RTS allowances and/or SWD abatements. As a consequence, these customers were overcharged around £2.8 million for sewerage services.¹⁰²

3.45 Over 1,300 SPIDs had incorrect Business Assessed charging data entered into CMOS, amounting to 3% of premises charged on this basis. These errors increased the Business Assessed charges at 444 properties for water and/or sewerage, resulting in overcharging of nearly £447,000.¹⁰³

⁹⁹ Thames Water was unable to compare all the individual assessed elements between February 2017 and May 2017 as details of FTE numbers and property bandings are not stored in CMOS. However, any difference in the annual assessed volumes between the two dates would have resulted from a difference in one of these two elements or the pipe size.

¹⁰⁰ Thames Water's response to the 2nd Thames Water section 26 Notice, paragraph 2.175.

¹⁰¹ 1,222 SPIDs associated with directly billed customers plus 10,656 SPIDs that were billed on Thames Water's behalf by WOCs, minus the 188 SPIDs referred to in paragraph 3.40 for which allowance errors arose after market opening.

¹⁰² NHH customers served by the remaining 10,333 SPIDs were undercharged around £1 million as a result of the allowance and abatement errors.

¹⁰³ The total undercharging resulting from Business Assessed data errors amounted to £1 million.

3.46 We sought information from a number of retailers¹⁰⁴ as to whether they had experienced similar problems in relation to missing allowances and abatements in other wholesale areas in which they provided retail sewerage services.¹⁰⁵ None of these retailers had identified similar problems in other wholesale areas and we have not received specific complaints from other retailers about the quality of data uploaded by their wholesale providers.

C: Identification of the data errors and Thames Water's response

Data errors identified prior to market opening

3.47 Thames Water's Data Workstream identified and addressed a number of data issues during the shadow market period. As set out in Table 3.2, it had several sub-workstreams looking at errors that had arisen during the Initial Data Upload, and others dealing with cleansing data or specific issues that Thames Water was already aware of. It was able to deal with some of these issues during the shadow market period, but others, such as chargeable meter size discrepancies, took longer to deal with – Thames Water continued to work on this issue in 2020.

3.48 Thames Water had also recognised that its internal systems were not directly linked to CMOS, meaning that CMOS was not automatically updated when changes were made to customers data in Thames Water's own systems.¹⁰⁶ This meant that there was a risk that some of the data in CMOS would be inaccurate by the time of market opening. Thames Water therefore put in place processes to ensure that the data in CMOS was kept up to date through a series of subsequent data uploads during the shadow market.¹⁰⁷

3.49 Thames Water has been unable to provide to us details of what the governance and assurance processes were around these subsequent data uploads, but it is clear that they were far less rigorous than those applied to the Initial Data Upload.

3.50 The governance and assurance processes failed to identify that not all of the updated customer data in Thames Water's systems had been included in the subsequent data uploads to CMOS, and that changes made within Thames Water's systems in readiness for the transfer of NHH customers to Castle Water had resulted in some data being overwritten, meaning that inaccurate data was uploaded into CMOS.¹⁰⁸

¹⁰⁴ Affinity for Business, Business Stream, Castle Water, Everflow, SES Business, Water Plus and Wave.

¹⁰⁵ We recognise that we have not sought the views of all retailers. However, based on MOSL data, the retailers questioned served 73% of NHH customers at the time of market opening and 77% of NHH customers by the end of the first year of the competitive market.

¹⁰⁶ Thames Water (28 April 2021), Investigation into Thames Water under s.18 Competition Act, Appendix 6: Data accuracy, paragraph 1.39.

¹⁰⁷ The main subsequent uploads took place on 14 February 2017 and 22 March 2017.

¹⁰⁸ See paragraphs 3.17 and 3.40 above.

3.51 Some of these data errors were identified as part of Thames Water's examination of a complaint from the business representative body discussed below, but others were only identified via this investigation.

RTS allowance errors identified by Castle Water at market opening

3.52 On 23 March 2017, Castle Water emailed Thames Water with a note of a meeting between Thames Water and Castle Water at which the invoicing strategy for WOC customers had been discussed. The note included a list of critical issues that were affecting operational capabilities, including:

“Return to Sewer Allowance (RSA). CW are experiencing a significant volume of customer contacts due to the RSA allowance data not included with the original migration; this data is also not shown in the market. Information from TW is currently awaited that will enable understanding of the scale of the problem.”¹⁰⁹

3.53 Thames Water has been unclear with us as to whether any action was taken in response to this email. In response to an information request, it told us that it had reviewed by 7 April 2017 the data files repatriated from WOCs and identified 1,876 properties that were affected by the missing RTS allowances issue but that no action was taken.¹¹⁰ Subsequently, Thames Water has told us that no action was taken in relation to the Castle Water email.

3.54 Based on the information provided by Thames Water, it would appear that this intelligence from Castle Water was not passed on to the team responsible for maintaining data accuracy within CMOS and was not escalated to its senior management. As a consequence, no action was taken by Thames Water to correct the data in CMOS after market opening.

Data errors identified by Castle Water operations

3.55 After market opening, Castle Water continued to receive complaints from NHH customers about missing allowances and abatements as a result of the increases that this caused to their sewerage bills.¹¹¹ These issues were raised with Thames Water using the processes set out in the WRC. Although Thames Water addressed these issues individually, collectively the complaints provided intelligence to Thames Water that there was a problem with this data and that further investigatory work was required to

¹⁰⁹ Castle Water use RSA as an abbreviation for 'return to sewer allowance', whereas we use 'RTS allowance'.

¹¹⁰ Thames Water response to Question 13 of the 2nd Thames Water section 26 Notice.

¹¹¹ Castle Water identified at least 287 accounts that had missing allowances or abatements in its response to Question 29 of the 1st Castle Water section 26 Notice.

identify the cause and scale of the problems in order to ensure that accurate data was maintained within CMOS. This was not recognised by Thames Water.

- 3.56 In addition, between April 2017 and October 2018, Castle Water notified Thames Water of a total of 340 customer accounts where it believed that there were errors with the data relating to Business Assessed charges.¹¹²
- 3.57 Dealing with increased levels of customer complaints on these issues and the process of raising them with Thames Water put pressure on Castle Water's operational and financial resources. Castle Water noted that these problems were compounded by the fact that Thames Water insisted that the new forms-based market system be used to request any changes to the allowances, abatements or Business Assessed charges. This required Castle Water to complete a form for each customer whose data needed changing and to obtain any necessary evidence from the customer to support the application.
- 3.58 On average, it took Thames Water around 22.5 days to deal with each complaint or change request and on 80 occasions it took Thames Water more than 90 days to correct the data.¹¹³ This is well in excess of the timescales set out in the WRC.
- 3.59 Castle Water claimed that its customers blamed it for the lost allowances and abatements and that it lost customers as a consequence of Thames Water failing to upload accurate data into CMOS. Castle Water provided evidence of its customer churn rates¹¹⁴ to support its claims. In the first year of the market, 6.6% of Castle Water's customers switched to other retailers. For those customers who had previously benefitted from allowances and abatements, this was 19%.¹¹⁵
- 3.60 Castle Water further noted that this affected the revenue it was able to collect from customers, since customers "generally refuse to pay charges for which they previously had abatement[s] or allowances".¹¹⁶ It experienced similar payment issues where NHH customers faced increased fees as a result of changes made to their Business Assessed charges.¹¹⁷

RTS allowance issues identified by a business representative body

- 3.61 In December 2017, a business representative body wrote to Ofwat to complain about Thames Water incorrectly having removed RTS allowances from a number of its members, resulting in them being charged for services they had not received, and

¹¹² Castle Water response to the 2nd Castle Water section 26 Notice.

¹¹³ Analysis of the data provided by Thames Water in response to Question 11 of the 2nd section 26 Notice.

¹¹⁴ The churn rate is the percentage of a company's customer base that switches to another supplier in a given period.

¹¹⁵ Castle Water's response to Question 32 of the 1st Castle Water section 26 Notice.

¹¹⁶ Castle Water complaint submission, paragraph 131.

¹¹⁷ Castle Water complaint submission, paragraph 142.

incorrectly having registered cattle troughs in the market.¹¹⁸ It was estimated that as many as 900 customer accounts had been affected.

- 3.62 The business representative body also raised concerns about how Thames Water was addressing the situation, noting that rather than correcting the errors, it was insisting that all accounts be reviewed on a case-by-case basis, with customers being required to complete a detailed form before the account could be put on hold while Thames Water assessed it. We asked Thames Water to address these issues.
- 3.63 Thames Water responded to us in January 2018, explaining that having analysed 275,000 meters, it found that it had incorrectly set a number of RTS allowances in March 2017. This had led to sewerage bills being incorrectly increased for approximately 500 customers. Thames Water told us the “allowances will all be corrected by the end of the month, with the majority completed by tomorrow”.¹¹⁹
- 3.64 Thames Water took action to correct the CMOS data and refunded any amounts overcharged.¹²⁰ Thames Water informed us in January 2018 that the level of overcharge amounted to around £100,000 per month since the date of market opening.

Data errors identified as a result of our investigation

- 3.65 Data errors at individual supply points and premises continued to be identified and remedied during 2017 and 2018 as retailers submitted individual change requests to Thames Water when alerted to problems by their customers. Thames Water did not, however, identify the true scope of the data errors and correct and remedy these until we sought information from it as part of this investigation.¹²¹
- 3.66 This included an ongoing data accuracy issue that Thames Water had identified in relation to meter replacements in September 2019¹²² and which originated after market opening, whereby Thames Water was failing to transfer existing allowances and abatements to the CMOS record created when it replaced a meter at a supply point (for example when the meter was faulty or needed upgrading). As a result, the allowances at 188 SPIDs had been inappropriately removed since market opening and consequently retailers and their NHH customers have been overcharged for sewerage services.¹²³

¹¹⁸ Letter dated 14 December 2017, from the business representative body to Ofwat's Chairman.

¹¹⁹ Email dated 11 January 2018 from Thames Water's CEO to Ofwat's Chairman. Provided by Thames Water in response to Q24 of the 1st section 26 Notice.

¹²⁰ Thames Water's response to the 2nd section 26 Notice, paragraph 2.100. Thames Water has yet to reinstate the allowance for one of the meters.

¹²¹ Some of the data errors were identified by Thames Water when preparing its response to our 1st section 26 Notice in August 2019, but others were not uncovered until responding to our 2nd section 26 notice in December 2019.

¹²² Castle Water first raised the issue with Thames Water on 28 August 2019.

¹²³ Thames Water's response to the 2nd section 26 Notice, paragraph 2.94.

- 3.67 Thames Water's business as usual quality and assurance checks on meter exchanges had failed to identify this problem as the checks did not include the RTS allowance data item due to the low volumes of such allowances – Thames Water noted that allowances are present on less than 1.5% of its meter base.
- 3.68 Thames Water put in place an interim solution to the problem in February 2020, but it was not until August 2020 that a final solution was fully deployed. Thames Water did not identify all the SPIDs affected by this issue and fully correct the data in CMOS until December 2019 – three months after the issue was first raised with them.
- 3.69 Since September 2019, Thames Water has corrected the errors identified in CMOS and engaged with the relevant retailers to agree how to ensure that affected NHH customers and retailers are recompensed for all the errors highlighted above.¹²⁴ Table 3.8 details the refunds Thames Water has already made to NHH customers (either directly or via their retailers) or for which payment plans have been agreed.

Table 3.8: Value of refunds agreed by Thames Water

Error Type	Total refunds
Incorrectly registered SPIDs (water troughs)	£56,705
RTS allowances	£2,803,333
SWD abatements	£65,651
Business Assessed charges	£447,672
Total	£3,373,361

¹²⁴ Thames Water's response to the 2nd section 26 Notice, paragraphs 2.90 to 2.93.

4. Findings

Licence Condition R2

- 4.1 Paragraph 1.1 of Condition R2 imposed a general obligation on undertakers to “take such steps and do such things as are within its power and which are or may be necessary or expedient to ensure that it is ready for the opening of the Competitive Market on and from the Go Live Date including, without limitation:
- (a) developing company specific market assurance and readiness plans;
 - (b) identifying and gathering relevant data in relation to all Eligible Premises and supply points in its area, ensuring this data is sufficiently accurate to enable the effective functioning of the Competitive Market and ensuring it is in a form capable of being transferred to any central systems and/or any market operator established to operate the Competitive Market; and
 - (c) testing and trialling any systems and processes to be put in place for the Competitive Market.”
- 4.2 We find that Thames Water contravened this obligation. **Ahead of market opening, Thames Water failed to take steps within its power, necessary to identify and gather data in relation to all eligible premises and supply points in its area and to ensure that data was sufficiently accurate to enable the effective functioning of the business retail market.**
- 4.3 Effective functioning of the retail market reasonably relies on the supply point data in the market systems being complete; the correct format (so the systems can recognise it); and the correct value (so the customer-facing outcomes and financial calculations that rely on it are correct). This is particularly true of data items relied on to calculate charges (to retailers and customers), such as data for allowances, abatements and Business Assessed charges, given the direct financial impact they can have on market participants.
- 4.4 As demonstrated in its own planning documents for market opening,¹²⁵ Thames Water was aware that it had sole responsibility to create, maintain, update and replace market data. It recognised there were questions over the previous quality of its data and the rigor of how it had been managed, and that this would now be under scrutiny as others would rely on its quality and completeness. Thames Water understood that it failing to understand and proactively manage data quality could lead to enforcement action.

¹²⁵ See paragraph 3.5 above.

- 4.5 Thames Water's approach to preparing its data for market opening focused heavily on ensuring it was in a suitable format to be uploaded into CMOS (Tier 1 of its data quality framework) and, where possible, whether it was consistent with data held in Thames Water's existing data records (Tier 2).¹²⁶ **It did not focus sufficiently on ensuring the accuracy of the data values it uploaded to CMOS.** Of the 154 data items associated with each supply point, Thames Water only validated 15% against a source external to the company. None of these related to the data items relevant to the calculation of allowances and abatements or Business Assessed charges, the calculation of which could have material impacts on customer's charges.
- 4.6 For 58% of the data items Thames Water relied on the data values in its existing customer records being accurate. This is despite Thames Water having recognised, at the initiation of its Data Workstream, that there were question marks over the extent to which data quality had been consistently maintained within its systems.
- 4.7 Years before market opening Thames Water had chosen to outsource some of its billing activities to WOCs to enable the joint billing of customers. Thames Water established a specific workstream to repatriate customer data back from WOCs to enable it to fulfil its market readiness obligations. It was aware there were risks entailed in repatriating this data.¹²⁷ Thames Water failed to manage its responsibilities and resulting risks in relation to this data (data about its own customers), before and during the repatriation.
- 4.8 Thames Water had no records of its own for these customers to be able to check the consistency this data (Tier 2 of its data quality framework). Thames Water chose to use the data as provided by the WOCs, applying only its lowest data quality check of format (Tier 1). Despite recognising the accuracy risks for this data, **there is no evidence that Thames Water took reasonable steps to validate the accuracy of the data values provided by the WOCs.** Even a basic check of this data would have shown that there were errors – for example over 9,000 supply points were allocated a 5% allowance, despite Thames Water's allowance policy not granting allowances of less than 10%.
- 4.9 Between the Initial Data Upload in September 2016 and market opening, **Thames Water failed to sufficiently manage key interdependencies between the data it had uploaded into CMOS (on which Castle Water was already relying for billing and collection purposes for Thames Water ahead of market opening), and changes it continued to make in its own customer data systems.**¹²⁸
- 4.10 **Thames Water failed to identify all the customer records that it had updated on its own systems in this intervening period, that would need to be updated on CMOS before market opening.** This resulted in changes Thames Water had made to

¹²⁶ See paragraphs 3.10 to 3.13 above for details.

¹²⁷ See paragraph 3.14 and 3.15 above.

¹²⁸ See paragraphs 3.47 and 3.50 above.

its customer data not being carried through to CMOS (meaning CMOS data was no longer accurate), and later uploads before market opening overriding correct data (meaning Thames Water uploaded inaccurate data).

- 4.11 As a consequence of Thames Water having failed to do things that were within its power to ensure the data it uploaded into CMOS was sufficiently accurate, the market was not able to function effectively and as intended for a set of NHH customers in its area. Retailers and these NHH customers were charged incorrectly for water and sewerage services after market opening, because the data that was relied on to calculate charges was incorrect. This meant that there were individual NHH customers and retailers¹²⁹ who were charged more than they should have been as a result of the errors.
- 4.12 Overall, Thames Water overcharged NHH customers by nearly £3.4 million as a result of the errors in its data discussed in this decision.
- 4.13 Where the data errors led to undercharging, this also had a negative financial impact on retailers. Retailers typically apply a percentage profit margin to the wholesale charges they are charged, when setting their retail prices for NHH customers. Any reduction in the level of wholesale charges will therefore result in a reduction in the amount of revenue being earned by retailers. Castle Water states that the inaccurate customer charges also caused it revenue collection difficulties and an increased risk of bad debt, since customers who had allowances and abatements removed, or increased bills as a result of Business Assessed changes, generally refused to pay the higher invoices.¹³⁰ This meant that Castle Water was receiving reduced revenue but was still having to pay Thames Water for the wholesale services at the undiscounted rate.
- 4.14 The errors caused customer dissatisfaction (in some cases resulting in customer switching away from their retailer¹³¹), and additional, avoidable demands and inconvenience for customers and retailers, as they had to raise and handle complaints and provide evidence to support the reinstatement of previously agreed allowances and abatements.¹³²
- 4.15 This impact fell disproportionately on Castle Water because it had acquired Thames Water's NHH customers at market opening. The first time NHH customers would have become aware of the errors was when they received an invoice from Castle Water as their new retailer, based on the incorrect data. The number of complaints received by Castle Water significantly increased around the time it first invoiced NHH customers after market opening.

¹²⁹ Retailers lose out where NHH customers are undercharged for services as the retailers make less margin than they would otherwise have done.

¹³⁰ See paragraph 3.60 above.

¹³¹ See paragraph 3.59 above.

¹³² See paragraph 3.57 below.

- 4.16 To request Thames Water to correct the inaccurate data, retailers had to submit a form for each customer and to obtain evidence from that customer to support the change request. Thames Water received 2,507 requests relating to 1,234 supply points for allowances and abatements between 1 April 2017 and December 2019, 2,072 of which were from Castle Water.¹³³ Thames Water granted 607 of the total requests for allowances and abatements, of which 176 had an abatement and/or allowance in the financial year prior to market opening.¹³⁴
- 4.17 The inaccurate data also potentially obscured the true prices customers could secure in the market and caused customers not to make the best decision in terms of which retailer to take service from. Customers who identified that they had been overcharged may have changed provider on the basis that they could get a lower price, even though that price may ultimately have been higher than that which they should have been charged by their original retailer. The opposite is true for customers that were undercharged – some may have remained with their original provider because the deal they were receiving appeared better than what other retailers in the market were offering even though this might not have been the case if the correct amounts had been charged.
- 4.18 In general data errors have an impact on confidence in the market. Ofwat's first state of the market report in July 2018 identified a number of market frictions, including a lack of complete, accurate and timely market data and poor interaction between wholesalers and retailers.¹³⁵ Our second state of the market report found significant data quality issues and that many customers were continuing to experience problems with inaccurate billing.¹³⁶ The data errors we have identified in this investigation contributed to the wider market concerns about data accuracy.

Market Terms of the WRC

- 4.19 As discussed above, the Market Terms also set out a series of general and specific duties that require Contracting Wholesalers to maintain, update and correct the data items for which they are responsible.¹³⁷
- 4.20 We find that since the business retail market opened in April 2017 Thames Water has contravened and is still contravening its general obligation set out in Part C of the Market Terms of the WRC to exercise all due skill, care and attention, recognising the importance of data accuracy, when carrying out its duties under the Market Terms as well as the specific requirements set out in paragraphs 3.2.8, 4.5.1 and 4.5.2 of the

¹³³ Paragraphs 2.66 and 2.68 of Thames Water's response to the 2nd Thames Water section 26 Notice.

¹³⁴ Paragraph 2.69 of Thames Water's response to the 2nd Thames Water section 26 Notice.

¹³⁵ Ofwat, [Open for business: Reviewing the first year of the business retail water market](#), July 2018, page 5.

¹³⁶ Ofwat, [State of the market 2018-19: reviewing the second year of the business retail water market](#), July 2019, page 37.

¹³⁷ See paragraphs 2.53 to 2.59 above.

Market Terms. Given that some of the data errors have yet to be corrected, we find that Thames Water remains in contravention of the WRC.

- 4.21 Thames Water was made aware of errors in data items it was responsible for (concerning abatements, allowances and business assessed charges) both immediately prior to market opening, and in the months afterwards.¹³⁸ Having failed to ensure this data was correct ahead of market opening, **Thames Water subsequently failed to act promptly to investigate and address individual errors raised with it by others**. This resulted in Thames Water failing in its WRC obligations¹³⁹ to maintain accurate data and investigate and correct errors in a timely manner, with negative impacts for other parties.¹⁴⁰
- 4.22 For example, Thames Water was aware of errors in data items relating to Business Assessed charges by at least December 2019.¹⁴¹ These data errors were not corrected in CMOS until June 2021, some 18 months after first having been identified. We recognise that some of this delay was caused by retailers requesting that some of the changes be delayed in order to manage customer relationships, Thames Water should nevertheless have been quicker to correct the data items. **The time taken to correct the data items is significantly in excess of the timescales permitted by paragraph 4.5.2 of the Market Terms** and does not comply with the overarching obligation in paragraph 3.1.2(c) to act promptly when required to take action.
- 4.23 Thames Water failed to recognise the various errors' relevance to its on-going obligations under the Market Terms to maintain up to date data and correct errors. Despite the growing number of data errors being raised with it by others, Thames Water dealt with these on an individual basis and failed to recognise or further investigate their cause and scale to establish if they were part of a wider problem. Had it recognised this it could have identified and corrected the wider set of supply points affected, mitigating the negative impacts it was having. This subsequently only happened as a result of information requests we issued to Thames Water for this investigation.
- 4.24 Since market opening Thames Water has had a specific team dedicated to reviewing and maintaining Thames Water's market data.¹⁴² Thames Water has told us the focus of this team is to ensure that any changes made to CMOS data are accurate and do not introduce new errors into the system, as well as on projects to investigate and address known data problem areas.

¹³⁸ See paragraphs 3.47-3.60 above.

¹³⁹ Specifically, those within paragraphs 3.2.8, 4.5.1 and 4.5.2 of the Market Terms and CSD 0105.

¹⁴⁰ See paragraphs 3.57 to 3.60 above.

¹⁴¹ The Business Assessed charging errors were identified by Thames Water when responding to our 2nd section 26 Notice in December 2019.

¹⁴² See paragraphs 3.33 to 3.38 above.

- 4.25 We have not seen evidence that this team undertook work to continue to consider the data risks that Thames Water had been aware of before market opening. For example, no further work appears to have been done to check the accuracy of data repatriated from the WOCs, or to ensure consistency of data between CMOS and Thames Water's systems in the period after market opening.¹⁴³ Nor does this team appear to have been alerted or asked to consider the volume and pattern of data errors that customers and retailers were raising with Thames Water.¹⁴⁴
- 4.26 This **lack of comprehensive data management processes, both to address residual data risks known before market opening and to thoroughly consider and address errors being raised with it once market data was being used in practice**, meant that Thames Water failed to identify and correct errors with its data items in CMOS until mid-way through our investigation – around three years after the obligations in the WRC came into force.
- 4.27 In addition to not correcting errors from market opening, **Thames Water allowed further incorrect data to be uploaded to CMOS after market opening**, by failing to manage relevant interdependencies from meter replacements, resulting in allowances being wrongly removed.¹⁴⁵ By allowing inaccurate data to be uploaded into CMOS, Thames Water failed to comply with its obligation under paragraph 3.2.8 of the Market Terms of the WRC to maintain accurate data.

Licence Conditions F and P

- 4.28 Undertakers' licence conditions include an obligation that they shall "at all times act in the manner best calculated to ensure that it has adequate:
- a) financial resources and facilities;
 - b) management resources; and
 - c) systems of planning and internal control

to enable it to secure the carrying out of the Regulated Activities..."¹⁴⁶

¹⁴³ These were areas highlighted in the Deloitte Report (see Table 3.6 above) and Thames Water's assurance letters (see Table 3.5 above) as being potentially problematic.

¹⁴⁴ It would appear that the recent work of this team has been focussed on projects to improve meter data, for example, the recent project to review meter size data. While this was another of the areas in which Thames Water had identified potential data issues ahead of market opening, it would appear that more resource was put into looking into this issue than others raised.

¹⁴⁵ See paragraphs 3.66 to 3.68 above.

¹⁴⁶ The term 'Regulated Activities' is defined in Thames Water's Licence as meaning "the functions of a water undertaker or, as the case may be, a sewerage undertaker, which are not IP Licensed Activities and, for the avoidance of doubt, references to the functions of a water undertaker, or as the case may be, a sewerage undertaker shall include references to the duties imposed on a water undertaker or, as the case may be, a sewerage undertaker".

- 4.29 This obligation was paragraph 6A.1 of Condition F of Thames Water's Licence until 21 November 2018 when a licence modification replaced that provision with the similarly worded paragraph 4.1 of Condition P. We find that Thames Water contravened paragraph 6A.1 of Condition F and paragraph 4.1 (from before market opening until 21 November 2018) and continues to be contravening paragraph 4.1 of Condition P (since 21 November 2018) because it failed to ensure it had adequate management resources and systems of planning and internal control to manage its compliance with Condition R2, carry out its functions as a wholesaler within the business retail market under Chapter 2A of Part III WIA, and to comply with paragraphs 3.1.2, 3.2.8, 4.5.1 and 4.5.2 of the WRC Market Terms (and so be in a position to comply with any direction from Ofwat to act as required by the WRC).
- 4.30 The reasons Thames Water failed to comply with Condition R2 and the Market Terms¹⁴⁷ should reasonably have been within its awareness and control, having been identified as risks early in the company's preparation for the opening of the business retail market, and/or having been identified to it by others since. Despite this, both ahead of and following market opening, Thames Water failed to put in place sufficient resources and systems of planning and control to identify, investigate and address poor quality and incorrect data items for which it was responsible. It did not sufficiently consider or address the impact this would have on customers, retailers and experiences and perceptions of the market itself.
- 4.31 **Thames Water failed to appropriately manage its outsourcing arrangements with WOCs** ahead of market opening, losing full sight of the basis on which its own customers were being billed. The contractual arrangements Thames Water may have had in place with WOCs for joint billing, did not replace its regulatory obligations with respect to these customers, including with respect to charging. Thames Water states that it had monthly review discussions and independent audit reviews of the WOCs' billing performance. These reviews did not consider whether the allowances and abatement levels customers were receiving were correct, rather they appear to have focussed more on ensuring that Thames Water received the levels of revenue that it was expecting from the sewerage customers being billed by the WOCs.¹⁴⁸
- 4.32 This meant Thames Water had no factual or other reasonable means on which to validate the accuracy of the customer data it had to repatriate from the WOCs for market opening. Thames Water has not been able to demonstrate how it satisfied itself that it had collected complete and accurate data about NHH customers supplied by WOCs before it uploaded this data into CMOS. It failed to put in place suitable internal controls to ensure this data was accurate, despite being aware of the risks entailed in this data set.¹⁴⁹ It would be reasonable to expect that having identified this risk, Thames Water would have put in additional checks to assure itself that the WOC data was

¹⁴⁷ Set out in paragraphs 4.1 to 4.27 above.

¹⁴⁸ Thames Water's response to Question 13 of the 3rd Thames Water section 26 Notice.

¹⁴⁹ See paragraph 3.5 above.

accurate. Instead, Thames Water decided to only apply the lowest tier of its Data Quality Framework to this data.

- 4.33 Following the Initial Data Upload, **Thames Water failed to properly manage its subsequent data uploads such that they reflected parallel, relevant activities Thames Water was undertaking in its own business.** It is reasonable to expect that Thames Water should have recognised that any changes it was making to NHH accounts in any part of its organisation during the shadow market period, would be relevant to the data it was uploading to CMOS. Thames Water failed to put in place appropriate governance and assurance processes to manage these key interdependencies and make sure that its CMOS data was accurate at the point of market opening.¹⁵⁰
- 4.34 Thames Water's C17 Programme recognised that data in CMOS would need updating to reflect changes made in its systems during the shadow market period.¹⁵¹ The Deloitte Report identified a risk of divergence between the data held in CIS and that uploaded to CMOS, and recommended that Thames Water review the reconciliation outputs from the two systems and take prompt action to address all discrepancies.¹⁵² We are very concerned that Thames Water has been unable to provide us with details of the arrangements it had in place at the time to control or assure the adequacy of updates made to CMOS, nor explain why some records were updated and others were not. This in itself exposes material flaws in Thames Water's commissioning and assurance processes for its data reconciliation exercise. A reasonable operator would be expected to manage such clear interdependencies, and to be able to describe how it had done so.
- 4.35 Overall, **Thames Water put in place an inadequate approach to assuring itself and others that the data it uploaded to CMOS was sufficiently accurate to enable the effective functioning of the market. It did not adequately manage the risks of the approach it took,** despite these being noted in its Final Assurance Letter and in the Deloitte Report.¹⁵³ We had made clear throughout the market development process, including when introducing Condition R2, that we considered data accuracy to be a key factor in ensuring that the market would be able to function effectively.¹⁵⁴
- 4.36 The data quality framework Thames Water chose to use to prepare its data focused on format and consistency with its own systems; it did not sufficiently consider if the values being submitted were actually correct.¹⁵⁵ This was despite Thames Water's management team being aware that its previous approach to data was not robust.¹⁵⁶ **We have not seen evidence that Thames Water sufficiently considered and**

¹⁵⁰ See paragraphs 4.9 to 4.18 above.

¹⁵¹ See paragraph 3.17 above.

¹⁵² See Table 3.6 above.

¹⁵³ See Tables 3.5 and 3.6 above.

¹⁵⁴ See paragraphs 2.32 to 2.35 above.

¹⁵⁵ See paragraphs 3.9 to 3.15 above.

¹⁵⁶ See paragraph 3.5 above.

prioritised the accuracy of all key data items that would directly, and immediately impact on customers or retailers if found to be incorrect, or that could reasonably be recognised to pose greater risk of error (such as the WOC data and the transformation of some of its Business Assessed charging data¹⁵⁷).

- 4.37 Thames Water's failure to put in place adequate data validation processes for its own data meant that it was not in a position to identify that some of the data that it held and uploaded into CMOS was inaccurate and subsequently contributed to delays in remedying the situation.¹⁵⁸
- 4.38 Following market opening **Thames Water failed to put in place and implement adequate planning and systems of internal control to meet its obligations under the WRC with respect to maintaining and correcting errors in market data**. There appears to have been an insufficient handover and transition of data issues and risks that Thames Water was aware of before market opening, to the business-as-usual teams that would be responsible for the company's market data after market opening. The Deloitte Report identified a risk relating to the absence of a detailed and actionable ongoing data quality improvement plan, which was still being developed by Thames Water in February 2017.
- 4.39 In addition, **Thames Water failed to have in place adequate systems that would enable it to capture and respond in a timely manner to insight it was receiving from others about the accuracy of its data through its complaints systems and engagement with retailers**. It dealt with error-related complaints on a reactive, piecemeal basis.¹⁵⁹ We consider that a reasonable operator would have recognised and escalated these as growing issues and proactively investigated the underlying causes to understand if further customers were affected (as it later did find as a result of our investigation).
- 4.40 Even where Thames Water did investigate complaints, it regularly failed to meet its WRC obligations to resolve data issues in a timely manner, taking on average 22.5 days to correct data within CMOS.¹⁶⁰ This had a negative impact on Castle Water, with NHH customers blaming it for the higher invoices that resulted and the timeframe that it took to resolve these.¹⁶¹
- 4.41 Having in place adequate systems would have enabled Thames Water to remedy the effects on customers, retailers and the market in a timelier manner, and would have supported its compliance with its WRC obligations with respect to this data. Instead,

¹⁵⁷ See paragraph 3.43 above.

¹⁵⁸ See paragraph 3.40. Thames Water's processes failed to identify that some of the SPIDs in its systems were cattle troughs and that these should not be uploaded into the market.

¹⁵⁹ See paragraphs 3.55 to 3.58 above.

¹⁶⁰ See paragraph 3.58 above.

¹⁶¹ See paragraph 3.59 and 3.60 above.

Thames Water failed to act on the basis of some complaints and took an unreasonable amount of time to resolve others.¹⁶²

¹⁶² See paragraphs 3.55 to 3.60 above.

5. Section 19 Undertakings offered by Thames Water

- 5.1 In Section 4 we have set out our findings that Thames Water has contravened Condition R2 of its Licence, the Market Terms of the WRC and Conditions F and P of its Licence. We also set out our view that the contraventions of the WRC and Condition P appear to be ongoing.
- 5.2 Ofwat has a duty under section 18(1) WIA91 to issue an enforcement order where it is satisfied that an undertaker is contravening any condition of its Licence for which Ofwat is the enforcement authority. The enforcement order must set out the steps that we believe the undertaker should take to become compliant.
- 5.3 Section 19 WIA91 sets out exceptions to Ofwat's duty to enforce a contravention under section 18. One of the exceptions is where we are satisfied that the undertaker has given, and is complying with, an undertaking to take all such steps as appear to us to be appropriate for the purpose of securing or facilitating compliance with the Licence condition in question.
- 5.4 The WRC was issued by Ofwat under sections 66DA and 117F WIA91 and sets out the respective rights and obligations of Contracting Wholesalers and Contracting Retailers in relation to the provision of wholesale water and sewerage services. Section 66DA(4) (in relation to water undertakers) and section 117F(4) (in relation to sewerage undertakers) give us the power (but do not require us) to issue a direction where we identify that an undertaker is not acting as required by the WRC. The direction can require the undertaker to take specified action or to cease the action specified in the direction. Undertakers have a duty to comply with these directions, which are enforceable under section 18 WIA91 by means of an enforcement order.
- 5.5 We have therefore considered whether it is necessary and/or appropriate for us to issue Thames Water with an enforcement order and/or a direction in relation to the contraventions that we have identified in Section 4. In Section 6 we separately consider whether the failures we have identified warrant us imposing a financial penalty on Thames Water.

Section 19 undertakings offered by Thames Water

- 5.6 In November 2020, we wrote to Thames Water to outline our concerns and provide it with an opportunity to set out how it might address them. We were concerned that Thames Water failed and/or was failing to:
- ensure that the data which it collected and uploaded into CMOS ahead of market opening was sufficiently accurate;

- maintain accurate data and correct known data errors within CMOS; and
- ensure that it had in place adequate management resources and systems of planning and internal control to enable it to carry out its Regulated Activities.

5.7 These correspond to the contraventions explained in Section 4 of this notice. In response Thames Water has put forward a package of financial and non-financial undertakings which it considers address the ongoing Licence and WRC contraventions we have identified,¹⁶³ and provides redress to NHH customers, retailers and the market for the harm caused by those contraventions. We summarise the proposed undertakings below (they are included in full in Appendix 1) and set out our assessment of these, including why we consider that they mean it is unnecessary for us to issue a Direction or enforcement order in relation to the ongoing contraventions.

Undertaking 1: incorrect charging of customers

5.8 Thames Water will ensure that it identifies all market opening data errors relating to allowances, abatements and Business Assessed charging elements, corrects this data in CMOS and that it refunds overcharged retailers and provides affected retailers with redress. This will include:

- concluding its investigations, correcting the inaccurate data in CMOS and refunding retailers nearly £3.4 million for amounts overcharged. We expect retailers to use this to refund their NHH customers for any consequent overcharging. This should have been completed by the end of July 2021;
- undertaking a final consolidated reconciliation check to re-review each bill account migrated to Castle Water before market opening by 31 July 2021, report its findings to Ofwat and correct any identified errors and make related refunds;¹⁶⁴ and
- make financial recompense to affected retailers totalling over £7.7 million for other harm they have suffered as a result of the contraventions, calculated on the basis of the number of affected SPIDs associated with each retailer.

¹⁶³ Condition R2 was in force between 27 May 2016 and 1 April 2017. Therefore, it is no longer possible to issue an enforcement order nor accept undertakings to secure Thames Water's compliance. Likewise, Condition F ceased to be in effect in November 2018, replaced by Condition P.

¹⁶⁴ These first two elements will be reviewed and confirmed closed by Thames Water's Market Steering Group (**MSG**). The MSG's purpose is to review and provide oversight of Thames Water's customer insight, performance, compliance and operation in the business retail, developer services and NAV markets and the provision of metering data services markets.

Undertaking 2: failure to properly investigate complaints and issues

- 5.9 Thames Water will strengthen and formalise its internal governance arrangements in respect of the investigation, escalation and management of complaints. This will include:
- introducing a standardised investigative methodology for complaints arising from NHH data quality issues that details the minimum requirement for investigations, including a requirement for the identification of affected customers, and sets out the principles as to how it will determine the appropriate solution for all customers; and
 - making Thames Water's Head of Wholesale Market Services responsible for ensuring that all investigations and actions are carried out in line with the documented approach.
- 5.10 The methodology will be subject to change control and approval by the MSG and will initially be published by 31 August 2021.
- 5.11 In addition to this undertaking, Thames Water has also committed to do more to formalise and strengthen the way it gathers, reviews and acts upon feedback from NHH market participants. This includes formalising the escalation route for issues identified in the feedback to the MSG for consideration and to determine appropriate action.

Undertaking 3: processes and controls over data quality and over potential projects of similar scale or type

- 5.12 Thames Water will ensure the robustness of its planning, processes and controls in respect of the issues directly identified as part of the investigation with respect to managing data quality and delivery of projects. It will also review its framework for control of future systems and data-based projects that could involve large data migrations or have an impact on customers and markets and implement any improvements identified. This will include commissioning two external audits.
- 5.13 The first will be an external audit of its data management approach in the business retail market.¹⁶⁵ This will assess the controls Thames Water has in place for ongoing data quality, for future business/system changes and data migrations. The audit will identify for delivery targeted improvements to processes and controls, including:

¹⁶⁵ The audit will be completed by 31 December 2021 and its findings will be presented to the MSG and Thames Water's Executive for consideration and approval for implementation. Actions will be implemented by 31 December 2022. Members of the Executive will be responsible for ensuring that relevant learnings are shared and implemented in Thames Water's household business.

- the scope and effectiveness of proactive monitoring preventing issues from reaching CMOS;
- the processes and approach for responding to reactive escalations and complaints when issues arise, ensuring that all data is changed in line with the applicable WRC requirements;
- the management, risk assessment and prioritisation of data investigations and fixes; and
- the effectiveness and ownership of enduring root cause solutions.

5.14 The second will be an external audit of Thames Water's project governance arrangements, including how it plans delivery and captures decisions made on its (non-asset / infrastructure) major projects and how it controls future business or system change and data migrations, to identify specific actions for improvement.¹⁶⁶ The areas to be assessed include:

- digital change governance procedures and whether they are fit for purpose;
- Thames Water's Enterprise Delivery Framework and whether it reflects sufficient senior level oversights and governance to ensure major change programmes are delivered effectively;
- the processes and controls over governance and assurance processes, including clear terms of reference, appropriate escalation and record-keeping for key decisions;
- the approach to and planning for managing business or system changes that require bulk market data migrations; and
- the extent of controls in place where business or system change projects include data held or provided by third parties, and the need for further enhancement.

Undertaking 4: improving NHH market effectiveness

5.15 Thames Water will provide transparency to the business retail market over how it maintains data accuracy and will improve its performance against metrics within MOSL's Core Market Data Improvement Dashboard. This will include:

- publishing an annual data management status report to highlight and update the market on its data management processes and approach, with the first version published by 31 December 2021. The report will include details of Thames Water's operational approach to data management, including how retailer escalations and complaints are handled, as well as its prioritisation principles and the factors considered when allocating resources to address identified issues and risks; and

¹⁶⁶ This audit will be carried out by 31 December 2021 and the changes identified will be presented to Thames Water's Executive for consideration and approval for implementation. The ARRC provides oversight over all external audits and associated action delivery.

- improving certain meter location information metrics within the MOSL data quality performance indicators' framework. It will increase the number of meter location co-ordinates that meet MOSL's meter location validation checks to at least 92% by the end of March 2022 and to at least 97% by the end of September 2022 and will increase the proportion of its property base which meet MOSL unique property reference number (**UPRN**) validation checks to at least 82% by the end of March 2022 and to at least 92% by the end of September 2022.¹⁶⁷

5.16 The deadline for Thames Water to complete all the steps set out in the undertakings is 31 December 2022, with the timescale for completion of individual undertakings set out in Table 1 in Appendix 1. The undertakings will remain in place until we are satisfied that they have been fully completed.

5.17 In order for us to effectively monitor Thames Water's compliance with the undertakings, Thames Water proposes that it will provide us with:

- monitoring reports on 31 March 2022, 30 September 2022 and any future dates agreed with Ofwat if the Undertakings have not been fully implemented by then, in which it will demonstrate its ongoing compliance with the undertakings and their successful implementation; and
- any supporting information and documents which we reasonably request in relation to the undertakings.

Our assessment of the undertakings

5.18 We have considered the undertakings proposed by Thames Water and assessed them against its Licence and WRC contraventions. We are satisfied that, if complied with and fulfilled, they will bring an end to the ongoing contraventions and that it is therefore unnecessary for us to issue an enforcement order or direction in relation to these contraventions.

Compliance with WRC data accuracy requirements

5.19 Since 1 April 2017, Thames Water has been required by the WRC to maintain the accuracy of data in CMOS and to correct data errors in a timely manner. All identified data errors in CMOS arising from Thames Water's contravention of Condition R2, as well as any subsequent data errors entered into CMOS after market opening, must therefore be corrected in order for Thames Water to become compliant with the WRC.

¹⁶⁷ Currently, 77% of Thames Water's meter location co-ordinates meet MOSL's meter location validation checks and 68% of its property base meet MOSL's UPRN validation checks.

- 5.20 We recognise that during the course of our investigation, Thames Water has taken a number of steps to identify and correct the data errors that have come to light. We are satisfied that Thames Water is aware of all the data errors identified as part of this investigation and has either already corrected these within CMOS or has a plan (undertaking 1) to correct them in the near future. We are also satisfied that Thames Water has already taken or will take reasonable steps to identify whether other data errors arose prior to market opening.
- 5.21 We therefore do not consider that it is necessary to issue Thames Water with a direction to bring itself into compliance with the WRC as we are satisfied that the actions it has undertaken to carry out will ensure this.

Compliance with Condition P requirements

- 5.22 Having considered the undertakings provided by Thames Water, it appears to us that when fully completed they will address our outstanding concerns in relation to Thames Water's management resources and systems of planning and internal control and bring it back into compliance with Condition P.
- 5.23 The data management and project governance audits to be commissioned by Thames Water as part of undertaking 3 should help prevent data accuracy issues arising in the first place and enable it to better manage the risks to data accuracy within its projects. Both audits will also look at the lines of reporting and management accountability to ensure that it is clear who is ultimately responsible for ensuring that data and projects are properly managed.
- 5.24 The project governance audit in undertaking 3 will look at the controls that Thames Water has in place where projects involve data held or provided by third parties. It will consider whether enhancements are needed to the governance arrangements and recommend for implementation any necessary changes. This should ensure that Thames Water better manages situations where it is reliant on data provided by others and that it puts in place more robust assurance arrangements to mitigate the risk of inaccurate data being provided.
- 5.25 The audit of Thames Water's approach to, and preparations for, managing business or system change and of the processes and controls over its governance arrangements for major projects in undertaking 3 should avoid a repetition of the problems that arose prior to market opening. The audit and follow-up action should ensure that clear lines of accountability are put in place for these projects, with appropriate escalation routes for the project teams to report when issues are arising. Better preparation at the outset should enable Thames Water to identify situations where the work of one project team might create a risk to the accuracy of data being relied on by another project team.

- 5.26 Even if the new data management and project governance arrangements fail to prevent all data errors from entering CMOS, the revisions that Thames Water is making to its data management and complaint handling processes should ensure that these errors are identified and corrected at an early stage and appropriate solutions identified for all customers.
- 5.27 The audit of Thames Water's data management arrangements will strengthen its processes around both everyday data management and larger projects akin to the market opening, to provide assurance that problems stemming from lack of compliance with Condition P will not be repeated in other parts of the business.
- 5.28 The improvements that Thames Water will make to its complaint handling and data investigations through undertaking 2 should ensure that it is quicker to identify data accuracy problems and to take action to address them. They should see Thames Water making better use of the intelligence available to it from all parts of its business to identify where there may be data accuracy issues.
- 5.29 As such, we are satisfied that, once fulfilled and reported on, the undertakings will address our concerns in relation to Thames Water's processes of planning and internal control and will bring to an end its contravention of Condition P in this regard. Therefore, we are of the view that there is no need for us to issue an enforcement order.

6. Proposal to impose a financial penalty and the proposed level of that penalty

- 6.1 Under sections 22A(1)(a) and 22A(2)(a) WIA91, Ofwat may impose on a water or sewerage undertaker a penalty of such amount (not exceeding 10% of the regulated company's turnover in a relevant year¹⁶⁸) as is reasonable in all the circumstances of the case, where it is satisfied that the undertaker has contravened or is contravening any condition of its Licence, or has contravened or is contravening any statutory requirement for which we are the enforcement authority. Section 22A WIA91 does not set any minimum penalty.
- 6.2 Section 22A(9) WIA91 provides that penalties imposed under section 22A WIA91 are paid into the Consolidated Fund.
- 6.3 Ofwat is satisfied that the contraventions for which a penalty is being applied fall within the permitted time period for imposing a penalty under section 22C(1) WIA91.¹⁶⁹
- 6.4 Pursuant to section 22B(2) WIA91, Ofwat must have regard to its most recently published [statement of policy](#) with respect to penalties (**the Penalty Statement**) when deciding whether to impose a penalty, and its amount.
- 6.5 Thames Water's last business year ran from 1 April 2020 to 31 March 2021. Thames Water's applicable turnover derived from its activities as a water undertaker (the provision of wholesale water services in the business retail market) in the 2020–21 business year was £152.2 million and its applicable turnover derived from its activities as a sewerage undertaker (the provision of wholesale sewerage services in the business retail market) in the 2020–21 business year was £147.0 million.

Competition Act 1998

- 6.6 Before making an enforcement order or confirming a provisional enforcement order, Ofwat must consider whether it would be more appropriate to proceed under the CA98.¹⁷⁰

¹⁶⁸ Section 22A(11) WIA91, no penalty imposed by Ofwat under section 22A may exceed 10% of the turnover of the undertaker, determined in accordance with the Water Industry (Determination of Turnover for Penalties) Order 2005. Article 3 of that Order provides that for the purposes of section 22A(11) WIA91, the turnover of an undertaker is the applicable turnover for the preceding business year (that is, the last business year preceding the date on which Ofwat gives notice under section 22A(4) WIA91).

¹⁶⁹ Under section 22C(1) WIA91 Ofwat may only impose a penalty for contraventions which occurred within five years of the penalty being imposed, unless, before the end of that period, a notice under section 203 WIA91 is issued or a provisional or final enforcement order is issued.

¹⁷⁰ WIA91, section 22A(13).

- 6.7 The issues to which this notice relates were originally the subject of an [investigation under the CA98](#). On 24 November 2020, Ofwat concluded that it would be more appropriate to deal with the issues under the WIA91 rather than the CA98. We considered that the issues could be more completely and effectively addressed using our powers under sections 18–22A, 66DA and 117F WIA91, relating to compliance with Thames Water’s Licence and the WRC. We informed the CMA of this decision.
- 6.8 Ofwat is therefore satisfied that, for the purposes of section 22A(13) WIA91, the CA98 is not the appropriate way of proceeding.

Reasons for proposal to impose a penalty and the proposed broad level of that penalty

- 6.9 Under section 22A(4) WIA91, we must specify the “other facts” which we consider justify imposing a penalty for a relevant contravention, and the amount proposed.
- 6.10 As set out in Section 4, we are satisfied that Thames Water has contravened Condition R2 (paragraph 1.1), Condition F (paragraph 6A.1) and Condition P (paragraph 4.1) of its Licence.¹⁷¹ In determining whether to impose a penalty for these contraventions and if so at what level, we have had regard to the Penalty Statement and in particular the following factors:
- the seriousness and duration of the contraventions or failure;
 - if the contravention or failure has damaged the interests of customers, the degree of harm caused and also any increased costs incurred by customers;
 - if the application of a penalty would be likely to create an incentive to comply and deter future contraventions or failures;
 - any gains made by the undertaker (financial or otherwise);
 - any damage to other market participants;
 - any damage caused to the environment;
 - whether the contraventions or failure was or is of a trivial nature;
 - whether the contravention or possibility of a contravention would have been apparent to a diligent company; and
 - precedents set under equivalent provisions for other utilities.

The seriousness and duration of the contraventions

- 6.11 The opening of the business retail market was an important, legislative step in introducing competition in the provision of water and sewerage services. For the

¹⁷¹ We are unable to issue impose a financial penalty in relation to the WRC contraventions as the procedures set out in the WIA91 require that we first issue a Direction. As discussed in paragraphs 5.20 and 5.21 above, we do not consider that it would be appropriate to issue a Direction in this case.

business retail market to function effectively, it is critical that the information used by market participants is accurate. Data accuracy, alongside other market preparation activities, were considered sufficiently serious that Ofwat introduced a new obligation (Condition R2) into the licences of all incumbent water and sewerage undertakers prior to market opening to ensure these activities were completed appropriately.

- 6.12 It is also why since market opening there have been ongoing statutory obligations in the WRC on both Contracting Wholesalers and contracting retailers to ensure that they keep their data accurate. We and MOSL have found data quality issues to be a major friction in the business retail market.¹⁷² Thames Water data accuracy issues have contributed to these market frictions.
- 6.13 Condition P (and previously Condition F) is an essential requirement of an efficient and effectively operated undertaker to enable it to fulfil its Regulated Activities. We therefore consider a contravention of both of these provisions to be serious.
- 6.14 The evidence we have seen shows that since at least December 2015, when its C17 Programme was set up, until market opening, Thames Water failed to put in place adequate resources and systems of planning and internal control to ensure that its data was sufficiently accurate to enable the effective functioning of the business retail market. Its failures with respect to its customer data held by the WOCs likely existed even prior to that. Since market opening it has also failed to ensure that it has in place adequate management resources and systems of planning and control to maintain its data and address identified errors brought to its attention in a timely manner. As a consequence, many of these data errors were still in place several years after market opening.

If the contravention or failure has damaged the interests of customers, the degree of harm caused, and any increased costs incurred by customers

- 6.15 Thames Water's failure to upload accurate data into CMOS has resulted in over 2,300 NHH customers¹⁷³ being overcharged for water and sewerage services. The total amount of overcharge arising from these data errors was nearly £3.4 million.
- 6.16 In addition to having to pay more for their water and sewerage services than they should, those customers that realised they had been overcharged also suffered the inconvenience of having to raise the issue with their retailers (who were unaware of the

¹⁷² See paragraphs 2.64 and 2.65 above.

¹⁷³ 1,520 SPIDs were overcharged as a result of allowance and abatement data errors, 391 SPIDs were troughs and should not have been included in the market and charged for and 444 SPIDs were overcharged as a result of Business Assessed charging data errors. See paragraphs 3.44 and 3.45 above.

problem) and provide evidence to demonstrate why they were entitled to allowances and abatements.

- 6.17 In some cases, the overcharging appears to have led to a breakdown in the relationship between the customer and the retailer and, given the greater rate of customer churn amongst allowance customers, appears to have resulted in the customer choosing to switch retailer on the basis that it appeared that the new retailer was able to offer a better deal for the customer.¹⁷⁴ This may have led some customers to make sub-optimal decisions as to which was the best retailer for them.

If the application of a penalty would be likely to create an incentive to comply and deter future contraventions or failures

- 6.18 We consider that a financial penalty issued under section 22A WIA91 would act as an incentive to deter future contraventions or failures. Accurate data is essential for the effective functioning of the business retail market and has been recognised as existing friction in the business retail market. Strong incentives to encourage market participants to ensure the data they are responsible for is and remains accurate are therefore essential.

Any gains made by the undertaker (financial or otherwise) from the contraventions

- 6.19 From the evidence we have gathered, it is clear that while the data errors led to more SPIDs being undercharged (11,2443) than overcharged (2,543), the impact of the errors was more significant on those being overcharged. The total amount of overcharging was nearly £3.4 million, compared to the total amount of undercharging of £2 million. Thames Water will not, however, gain as a result of this because the £3.4 million will be refunded to retailers and their NHH customers as part of the undertakings. Thames Water will not be recovering the £2 million of undercharging.
- 6.20 Thames Water has, however, avoided the costs of investing to ensure its data was accurate and putting in place adequate processes of planning and control, and management resources to oversee these, to ensure that accurate data was collected,

¹⁷⁴ A prospective new retailer would quickly identify that the customer was entitled to allowances and abatements when discussing what it could offer the customer and would quote for services on this basis. If the customer and original retailer did not realise that missing allowances and/or abatements were the cause for the higher bills, then the offer of the new retailer would appear cheaper, even though it may actually be no cheaper (or in some cases, be more expensive) than would have been the case if the original retailer's bill had reflected the allowances and abatements.

uploaded and maintained. This is evidenced by the high risk-ratings Deloitte identified in relation to resourcing at the time of producing its audit for market opening.¹⁷⁵

Any damage to other market participants

- 6.21 Thames Water's contraventions of its Licence conditions have had material negative financial and reputational impacts on retailers, who overcharged customer blamed for the errors and who in some cases refused to pay and/or switched away from their retailer. Retailers faced extra inconvenience and demands on their limited resources to try to resolve the errors for their customers, and material inefficient costs in seeking to resolve these avoidable errors through unnecessarily protracted interactions with Thames Water. Thames Water's contraventions will have also impacted on the overall perception of and confidence in the market.
- 6.22 Where the contraventions resulted in undercharging, retailers' margins were also negatively affected. As retailers' margins as based on a mark-up on the wholesale water and sewerage charges, any reduction in the level of this will have resulted in a reduction in the margin earned.

Any damage caused to the environment

- 6.23 We have not identified any damage to the environment arising from Thames Water's contraventions.

Whether the contravention or failure was or is of a trivial nature

- 6.24 We have outlined above the serious nature of these contraventions and their duration. The number of customers impacted by the errors was however a fairly limited proportion of the 475,000 supply points in Thames Water's area – although nearly 13,800 SPIDs (2.9% of total) were affected by data errors, only around 2,500 (0.5%) of these resulted in overcharging.

Whether the contraventions would have been apparent to a diligent undertaker

- 6.25 We consider that the contraventions should have been apparent to a diligent undertaker. The issues that led to the contraventions arising had been identified as

¹⁷⁵ See Table 3.6 above.

risks during the Thames Water's preparations for market opening and/or have been identified by others since. The identified risks included:¹⁷⁶

- the lack of robustness of Thames Water's historical approach to managing data;
- reliance on the accuracy of WOC data;
- the possibility of divergence between data held on its own systems and that in CMOS; and
- delays in putting in place a detailed and actionable ongoing data quality improvement plan.

6.26 We would have expected a diligent company to have put in place processes and procedures to properly manage the risks identified and to enable it to quickly rectify any problems that did arise from the risks eventuating. Thames Water failed to do this.

6.27 It should also have been apparent to Thames Water that the time it took for it to address the data accuracy problems was longer than that permitted by the WRC and that this meant it was contravening the WRC in this regard as well.

Precedents set under equivalent provisions for other utilities

6.28 Although we have been unable to identify any directly equivalent provisions for other utilities, we have identified some cases where penalties were imposed by other regulators for the provision or use of inaccurate information.

6.29 In August 2011, Ofcom fined TalkTalk and Tiscali UK around £1.5 million each and ordered them to make payments totalling £2.5 million to 62,000 customers that they had incorrectly billed. The effect of Thames Water's data errors was that it incorrectly billed around 13,000 customers.

6.30 In November 2011, Ofgem fined British Gas £1 million for misreporting electricity supply data over a seven-year period. Thames Water uploaded inaccurate information and used this to bill customers over a three-year period.

6.31 Having taken all these factors into consideration, we consider that the seriousness of the contraventions and the impacts that they have had on customers and other market participants mean that the imposition of a penalty is justified in this case.

Broad level of the penalty

6.32 Section 22A(11)(a) WIA91 limits a financial penalty Ofwat can impose to a maximum of 10% of the appropriate turnover of the regulated undertaker per contravention. For

¹⁷⁶ See Tables 3.5 and 3.6 above.

these purposes, Ofwat considers the appropriate turnover to be that related to the provision of wholesale water and sewerage services.

- 6.33 Ofwat may impose separate penalties for different contraventions. In this case, we have found that Thames Water contravened two conditions of its Licence.¹⁷⁷ These contraventions are interrelated as the failures with respect to management resources and systems of planning and internal control were a key reason for the data inaccuracies that caused a breach of Condition R2. Thus, although we are minded to issue a single penalty for the contraventions, rather than two separate penalties, that is we have taken the cumulative effect of these two contraventions into account in setting the broad penalty level.
- 6.34 Having regard to the above, the evidence gathered and to the factors set out in our Penalty Statement, Ofwat judges that the broad level of penalty should be calculated by reference to a starting point of 1% of the relevant turnover (£299.2 million), based on 2020–21 wholesale water and sewerage revenue.
- 6.35 This is a lower percentage than that considered appropriate in our previous enforcement action against [Thames Water](#) in respect of leakage failures in 2018 (3%) or that imposed on [Southern Water](#) in 2019 in relation to misreporting data about the performance of its sewerage treatment works (6%). This reflects that fact that the conduct is less serious than in those cases, as is the scale and level of harm caused to customers and other market participants. It is the same percentage that was considered appropriate in our 2008 [Veolia Water](#) case, which also related to data errors.
- 6.36 As set out in our Penalty Statement, once the broad level of the penalty has been considered, other factors such as aggravating and mitigating factors may be taken into consideration. These may include, but would not necessarily be limited to:
- repeated contraventions or failures;
 - the continuation of a contravention or failure;
 - any involvement of senior management;
 - the level of co-operation with any investigation carried out;
 - any attempts to conceal the contravention or failure;
 - the proactive reporting of the contravention or failure to the enforcement authority;
 - taking appropriate action to acknowledge and rectify the contravention or failure; and
 - activities to provide restitution and compensation.

¹⁷⁷ Although we have identified three different Licence conditions that Thames Water contravened (Conditions R2, F and P), as we have explained above the relevant provisions of Condition F became part of Condition P during the period of Thames Water's contravention. We therefore consider this to be a single ongoing contravention of the same obligation.

Aggravating factors

Repeated contraventions or failures

6.37 We have previously taken enforcement action against Thames Water on five occasions, three of which appear relevant to the issues under consideration here.¹⁷⁸

- In [April 2008](#), we considered that a penalty of £8.3 million (0.6% of relevant turnover) would be appropriate in relation to data that it misreported to us about its Guaranteed Service Standards. We found that this was as a result of inadequate systems of internal control to ensure the quality of data reported to Ofwat.
- In [July 2014](#) we considered that a penalty of £6.2 million (0.7% of relevant turnover) would be appropriate in relation to the submission of unreliable and inaccurate information about sewer flooding. This was reduced to £1 after Thames Water committed to a package of measures for customers that was of greater benefit than the penalty we were minded to impose.
- In [August 2018](#) we considered that a penalty of £25.3 million (3% of relevant turnover) would be appropriate in relation to failures in its leakage reduction performance and its management of its leakage reduction operations. Again, this was reduced to £1 after Thames Water committed to a package of measures that we considered to be of greater benefit to customers than imposing the larger financial penalty.

6.38 This therefore represents the third time that we have had to take enforcement action against Thames Water in relation to the provision of inaccurate information (albeit that they were different data requirements) and second time regarding the need to ensure that adequate management resources and systems of planning and control were in place (though the lack of such systems of control was identified as a factor in the April 2008 case highlighted above).

The continuation of a contravention or failure

6.39 We consider that the contraventions of Conditions F and P that we have identified in this investigation do not amount to a continuation of a previous contravention.

Any involvement of senior management

6.40 By means of its C17 Programme, Thames Water's senior management and Board had oversight of the company's approach to gathering and uploading information and failed

¹⁷⁸ The other two cases related to the failure of Thames Water to meet [leakage targets](#) and [Guaranteed Service Standards](#).

to ensure that sufficient focus was given to ensuring that the data was accurate rather than just compatible with the format required by CMOS. The Board was required to sign-off the assurance letters that TMS provided to us to confirm that it was ready for market opening – including that it had the adequate systems and processes in place to manage its data and that the data that it had uploaded to CMOS was accurate.

- 6.41 As part of Condition F / P of its Licence, Thames Water is required to submit an annual Ring-fencing Certificate that is signed by all directors of the company or approved by its Board.¹⁷⁹ As part of the certificate, Thames Water's Board is required to confirm that in its opinion, the company will have available to it sufficient management resources and systems of planning and internal control to enable it to carry out its regulated activities for at least the next 12 months. Its Board has provided Ring-fencing Certificates for the period covered by this investigation.
- 6.42 Thames Water's management was also involved in responding to some of the complaints relating to data accuracy but failed to ensure that these were properly investigated, and all root causes identified, which meant that it took far longer to identify and address all the issues with the accuracy of its data.

Any attempts to conceal the contravention or failure

- 6.43 During the course of the investigation, we have not identified any attempt on Thames Water's part to conceal the contraventions.

Mitigating factors

The level of co-operation with any investigation carried out

- 6.44 During the course of our investigation, Thames Water has provided us with a large amount of information in response to our requests for information and has readily engaged with us, meeting our expectations of what a reasonable company should do.

The proactive reporting of the contravention or failure to the enforcement authority

- 6.45 Our investigation stemmed from receipt of a complaint from a retailer rather than Thames Water reporting its failure to us.

¹⁷⁹ Paragraph P31 of Thames Water's Licence.

Activities to provide restitution and compensation

6.46 In Sections 4 and 5 of this notice we set out the various actions that Thames Water has already taken to bring itself into compliance with its statutory and Licence obligations and the undertakings that it has provided under section 19 WIA91. The undertakings include the following financial measures:

- repayments totalling nearly £3.4 million (either directly to the NHH customers or to the relevant retailers) to reflect overcharging arising from data errors with allowance, abatement and Business Assessed charging data items. We expect retailers to pass these refunds on to affected NHH customers;
- compensation totalling £7.7 million to retailers for lost revenue due to undercharging and for other harm that they have suffered as a result of the data errors. The compensation is split between the retailers based on the number of affected supply points to which they provide retail services; and
- Thames Water has also undertaken to improve several data metrics within MOSL's data quality performance framework relating to supply point location information in CMOS. It will include commentary on its relative performance and progress with improving these metrics within the data management status report that it will publish annually.

Taking appropriate action to acknowledge and rectify the contravention or failure

6.47 We welcome the steps that Thames Water is now taking to secure compliance by taking steps to correct inaccurate data and introduce and strengthen management resources and systems of planning and internal control in relation to data quality and management of large systems-based projects. Thames Water has provided us with a plan of the steps that it will take to complete the undertakings (see Appendix 1). The measures in this show the steps that it has been and will be taking to rectify the contraventions and failures outlined in this notice.

6.48 Thames Water has acknowledged the problems with the accuracy of its data and has undertaken to ensure that all errors relating to allowances, abatements and Business Assessed charges will be corrected in CMOS and refunds made for any amounts overcharged.¹⁸⁰ Thames Water has also committed to strengthening its internal governance arrangements in respect of the investigation, escalation and management of complaints to help ensure that any other issues that arise are dealt with more quickly and effectively in future.¹⁸¹

¹⁸⁰ See paragraph 5.8 above.

¹⁸¹ See paragraphs 5.9 to 5.11 above.

- 6.49 Thames Water has also undertaken to commission external audits of its data management approach in the business retail market and of its project governance arrangements and to implement the findings of these audits. The audits will look at the robustness of the planning, processes and controls that Thames Water has in place and the appropriateness of governance and assurance processes.¹⁸²
- 6.50 The majority of these are necessary to ensure that it becomes compliant with its regulatory obligations, rather than anything above and beyond that in terms of redress for harm and non-compliance.
- 6.51 Thames Water has, however, undertaken to provide transparency to the business retail market as to how it maintains data accuracy. It will publish an annual data management status report that is specifically designed to highlight and update the market on its data management approach and processes. This will include details of how retailer escalations and complaints are handled and set out the prioritisation principles that Thames Water uses to decide how to allocate resources to address risks and issues identified. This will help improve overall transparency in the market.¹⁸³

The proposed penalty

- 6.52 In considering the amount of any potential penalty, we have taken into account the seriousness, duration and impact of the contraventions and have weighed up the aggravating and mitigating factors set out above. Of particular concern to us is the fact that this is not the first time that we have felt it necessary to take enforcement action against Thames Water in relation to its failure to comply with regulatory obligations relating to both data accuracy and having in place appropriate management resources and systems of planning and internal control, including where it has outsourced activities relating to its obligations to a third party.
- 6.53 We are concerned that Thames Water did not begin seriously to acknowledge and address the full extent of its CMOS data errors until some time into our investigation, despite complaints from the outset of market opening. We have also given weight to the fact that Thames Water's senior management knew, or at least should have been aware of and acted upon, at least some of the data accuracy risks and issues both ahead of and since market opening.
- 6.54 We also take account of the mitigating factors in this case, including:
- the seriousness with which Thames Water is now addressing the complaint handling and data management problems we have identified; and

¹⁸² See paragraphs 5.12 to 5.14 above.

¹⁸³ See paragraph 5.15 above.

- the undertakings that Thames Water has given to provide confidence that it will fully remedy the data errors and provide adequate compensation to customers.

6.55 In the absence of these measures, Ofwat would have been minded to increase the penalty to take account of the harm caused to market participants and the need for deterrence.

6.56 We think that the package of measures set out in Section 5 will offer greater benefits to customers than imposing a significant financial penalty. The undertakings include £7.7 million compensation for retailers in lieu of a larger penalty under this notice. The total refund and compensation package amounts to around £11.1 million (over 3% of Thames Water's relevant turnover).

6.57 Having regard to the overall balance of aggravation and mitigation and all other relevant factors, we now consider it appropriate to impose a nominal penalty of £1 on Thames Water.

7. How to make representations or objections

Pursuant to section 22A(4) WIA91, Ofwat, in publishing a notice of a proposal to impose a penalty under section 22A(1) WIA91, is required to specify a period, of no less than 21 days from the date of publication of the notice, within which representations or objections with respect to the proposed penalty may be made. Accordingly, any such representations or objections should be made so as to be received by Ofwat by **5pm on 17 September 2021**.

Representations should be sent to martin.hill@ofwat.gov.uk or by post to the following address:

Ofwat
21 Bloomsbury Street
Bloomsbury
London WC1B 3HF

We will publish copies of representations and objections we receive in response to this notice on our website, unless the person making them indicates that they would like their response to remain unpublished.

Information provided in response to this consultation, including personal information, may be published or disclosed in accordance with access to information legislation – primarily the Freedom of Information Act 2000 (**FoIA**), the General Data Protection Regulation 2016, the Data Protection Act 2018, and the Environmental Information Regulations 2004. For further information on how we process personal data please see our [privacy policy](#).

If you would like the information that you provide to be treated as confidential, please be aware that under the FoIA there is a statutory [Code of practice](#) which deals, among other things, with obligations of confidence. In view of this, it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that we can maintain confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on Ofwat.

A1 Thames Water's proposed Undertakings

The Undertakings are given by Thames Water Utilities Limited (“**Thames Water**”) to the Water Services Regulation Authority (“**Ofwat**”) pursuant to section 19(1)(b) of the Water Industry Act 1991.

Part 1: Interpretation

The Interpretation Act 1978 shall apply to these Undertakings as it does to Acts of Parliament.

In these Undertakings, the word “including” shall mean including without limitation or prejudice to the generality of any description, definition, term or phrase preceding that word and the word “include” and its derivatives shall be construed accordingly.

For the purpose of these Undertakings, the following terms shall have the meaning given to them below:

Audit, Risk and Reporting Committee (“ARRC”) is a sub-committee of Thames Water’s Board with primary responsibility to exercise oversight of the integrity of Thames Water’s financial and regulatory reporting, engaging with the external auditors and overseeing Thames Water’s control and risk management framework.

Central Market Operating System (“CMOS”) is the core IT system for the non-household market. CMOS manages all the electronic transactions involved in switching customers and provides water usage and settlement data.

Customers in the context of these Undertakings means non-household customers and/or retailers within the non-household market.

Enterprise Delivery Framework is Thames Water’s formal process for managing business change and an overarching governance structure to provide appropriate oversight of decision making.

Market Operator Services Limited (“MOSL”) is the market operator for the non-household retail market in England.

Post-RF refund refers to any value of refund (as a result of retrospective data changes) which is required for periods of time following a final settlement (“**RF**”) run. Retrospective CMOS updates do not automatically trigger refunds via planned settlement. Instead supply points, periods impacted and values need to be separately agreed between impacted parties.

Pre-RF refund refers to any value of refund which is required for periods of time prior to RF runs. Retrospective CMOS updates automatically trigger refunds via planned settlement to impacted parties. A supply point with a retrospective data correction may require a refund covering both pre- and post-RF periods.

SPID is a unique identifier allocated to each Supply Point by the Market Operator (MOSL).

Unique Property Reference Number (“UPRN”) is a unique numeric identifier for every addressable location in Great Britain and was created by the Ordnance Survey.

Wholesale Retail Code (“WRC”) is a statutory code that sets out the relationship between Wholesalers and Retailers, and how the market will operate.

Part 2: Commencement and duration

These Undertakings shall take effect from the date that, having been signed by Thames Water, Ofwat’s acceptance of such Undertakings is notified to Thames Water.

Nothing in this provision will prevent either party from requesting an amendment to, or early termination of, the Undertakings (or requesting new undertakings to substitute for the Undertakings) at any point in time, in light of, for example, changed market circumstances or regulatory or legislative requirements.

Table 1 included within this document includes a schedule of both the Undertaking delivery dates, some of which, subject to Ofwat confirmation, may have already been delivered by the time of the Undertakings being accepted, and the date that Thames Water expects to provide evidence to Ofwat of their completion. Ofwat agreeing that an Undertaking has been satisfactorily implemented and evidenced will result in the closure of that Undertaking, such agreement not to be unreasonably withheld. It will use its best endeavours to meet the expected delivery dates for each undertaking in Table 1. Thames Water will complete all Undertakings and provide Ofwat with evidence which demonstrates that they have been completed by 31 December 2022.

Thames Water commits to delivering both the overarching Undertakings and the specific Undertakings in support of delivering the overarching Undertakings. It will deliver the specific Undertakings consistently with the aim of meeting the overall relevant overarching Undertakings.

Part 3: The Undertakings

Incorrect charging of customers

Overarching undertaking 1

Thames Water will ensure that it completes the actions required to amend identified incorrect customer data in the non-household market and refund retailers and customers who were overcharged. Where customers were incorrectly undercharged, the changes will be made in a timeframe agreed with the retailers as specified in Table 1, but where the change has been made after 1 April 2021, the change will be applied retrospectively from 1 April 2021. Thames Water will take such further steps as are necessary to ensure that it has identified all errors at market opening¹⁸⁴ and will make redress to affected retailers.

Specific Undertakings in support of undertaking 1

Thames Water will:

- a) conclude investigations, corrections, and refunds for those customers who have been incorrectly charged in relation to the data errors according to timelines agreed with affected retailers, with data corrected in CMOS (for pre-RF refunds to be returned in line with market settlement mechanisms) and a proactive enabling of post RF refunds finalised by 31 July 2021; and
- b) undertake a final consolidated reconciliation check to re-review each bill account on the date it was migrated to Castle Water between November 2016 and February 2017, by 31 July 2021. It will report the findings of this review to Ofwat and unless otherwise directed by Ofwat within one month of its receipt of this review, will correct any errors identified and make any related refunds.

Thames Water's Market Steering Group ("**MSG**") will review and confirm completion of actions a) and b) above).

- c) make financial recompense to affected market participants. As set out in a) and b) above this will be made via data amendments and consequential impacts through settlement and will restore customers to where they would have been had the data errors not been made by Thames Water. Additionally, Thames Water recognises that retailers have been inconvenienced and will compensate identified participants. [REDACTED]

¹⁸⁴ The errors relate to missing or incorrect return to sewer allowances, surface water drainage abatements and estimated water and wastewater volumes for some business assessed customers.

¹⁸⁵ Payments will be completed within one month of issuance by Ofwat of its final penalty notice.

Failure to properly investigate complaints and issues

Overarching undertaking 2

Thames Water will ensure that its internal governance arrangements in respect of investigation, escalation and management of complaints is strengthened and formalised. This will ensure that it learns from every complaint that it receives and builds knowledge of the way in which issues can materialise, ensuring that it deals with the root cause and not merely the symptom.

Specific Undertakings in support of overarching undertaking 2

Thames Water will:

- a) introduce a standardised investigative methodology for complaints and issues arising around non-household data quality which:
 - details minimum requirements¹⁸⁶ for data investigations and what triggers a data investigation;
 - includes a requirement for the identification of affected customers;¹⁸⁷
 - sets out the principles of how it will determine the appropriate solution for all customers; and
 - makes the Head of Wholesale Market Services responsible for ensuring all investigations and actions are carried out in line with the documented approach.

The methodology will be subject to change control and approval by the Market Steering Group. Challenges received in the process of consideration and approval, and how they influenced the final methodology, will be recorded.

- b) formalise and strengthen the way it gathers, reviews and acts upon feedback from non-household market participants and will:
 - i. document the mechanisms for capturing and reviewing customer feedback, including those from its complaints and account management activity. These

¹⁸⁵ Redacted for confidentiality purposes.

¹⁸⁶ For example, identification of the underlying process or data migration issue (root cause analysis), a systematic search for all current and historical data issues that may be linked or are a symptom of the root cause, quantification of customer, retail and other trading party impacts, development of solutions, review, testing and governance.

¹⁸⁷ Customers in the context of these Undertakings means non-household customers and/or retailers within the non-household market.

mechanisms will include timeframes for reviewing and escalating feedback. Thames Water will publish and make this document available to non-household participants;

- ii. implement process enhancements to the mechanisms in (b)(i) above and ensure these are aligned with Thames Water's customers' needs and are responsive to needs and other factors, identified through market impact assessments; and
- iii. formalise the escalation route for matters identified from (b)(i) above to Thames Water's MSG for consideration and to determine appropriate action. The MSG will direct improvement plans to ensure Thames Water's processes are aligned with its customers' needs and review customer and market insight on a quarterly basis to determine appropriate actions.

The Retail Director will be responsible for determining what learnings have wider relevance in the household retail market, as the accountable Director for both household and non-household retail activity in Thames Water.

Processes and controls over data quality and over potential projects of similar scale or type

Overarching undertaking 3

Thames Water will take such further steps as are necessary to ensure the robustness of its planning, processes and controls in respect of the issues directly identified as part of the investigation with respect to managing data quality and delivery of projects.

Additionally, Thames Water will review its framework for the control of other prospective systems and data-based projects in the future that could include large data migrations or have an impact on customers and markets - and implement any improvements identified so as to ensure that customers, retailers and markets are not materially adversely affected by errors or failures in the design, assurance or execution of the relevant project.

Specific Undertakings in support of overarching undertaking 3

Thames Water will:

- a) Commission an audit, led by an independent third party auditor of its data management approach in respect of the non-household market. The recommendations from the audit will be presented to the MSG and to the Executive for consideration and approval for implementation. The Executive will ensure that relevant learnings are shared and

implemented in the household business.¹⁸⁸ The ARRC provides oversight over all external audits and associated action delivery.

The primary objective of the audit will be to conduct an assessment of data management controls in respect of ongoing data quality and to identify specific actions for improvement in data management. The areas to be assessed include:

- The scope and effectiveness of proactive monitoring preventing issues reaching CMOS, including managing interdependencies with wider systems within Thames Water or outsourcing arrangements;
- Process and approach for responding to reactive escalations and complaints when issues arise and that all data is changed in line with applicable WRC requirements, ensuring accountability for these requirements is clear;
- Management, risk assessment and prioritisation of data investigations and fixes; and
- Effectiveness and ownership of enduring root cause solutions.

b) Commission an audit, led by an independent third party auditor, of its project governance arrangements, including how it plans delivery, captures the decisions made on major (non-asset / infrastructure) projects across Thames Water and how it controls future business/system change and data migrations in the non-household market. The changes identified as part of this review will be presented to the Executive for consideration and approval for implementation.¹⁸⁹ The ARRC provides oversight over all external audits and associated action delivery.

The areas to be assessed include:

- Digital change governance procedures and whether they are fit for purpose;
- The Enterprise Delivery Framework and whether it reflects sufficient senior level oversight and governance to ensure that major change programmes are delivered effectively and with appropriate handover to business as usual post-implementation;
- The processes and controls over the governance and assurance process, including clear terms of reference, appropriate escalation and record-keeping for key decisions;
- Approach to, and planning for managing business or system changes requiring bulk market data migrations; and
- The extent of additional controls in place where business or system change projects include data held or provided by third parties and specifically the need for further enhancement.

¹⁸⁸ The Retail Director has Executive level responsibility to ensure that learnings are applied in the household business.

¹⁸⁹ The Director of Risk, Audit & Assurance is responsible for ensuring that the implementation of audit actions are tracked.

The objects of the review are to assist Thames Water in ensuring that governance, control and assurance over project planning and delivery is sufficiently robust to meet overarching undertaking 3 and to enable it better and more easily ascertain the root causes of any errors or failures, enabling more efficient rectification and providing a platform for lessons learnt.

Improving non-household market effectiveness

Overarching undertaking 4

Thames Water will provide transparency to the business retail market over how it is maintaining its data accuracy and improve its performance against metrics within MOSL's Core Market Data Improvement Dashboard in accordance with the specific undertakings.

Specific Undertakings in support of overarching undertaking 4

Thames Water will:

- a) Prepare and publish an annual data management status report (DMSR) that is specifically designed to highlight and update the market on its data management processes and approach, the first version due for publication by 31 December 2021;

This report would comprise details of:

- Its operational data management approach, and as part of this, specifically addressing how retailer escalations and complaints are handled;
 - Its prioritisation principles, including the factors it considers when allocating resources to proactive data improvements and to address issues and risks identified;
 - Key data improvement activities planned;
 - Relative position on MOSL Core Market Data Improvement Dashboard metrics with commentary; and
 - The improved processes and controls in place to demonstrate how it meets code requirements in CSD104 and CSD105 (to maintain SPID data and to update incorrect data respectively).
- b) Improve its metrics within the framework of the MOSL data quality performance indicators, specifically:
 - by increasing the number of meter location co-ordinates which meet MOSL meter location validation checks to at least 92% by 31 March 2022 and to at least 97% by 30 September 2022; and

- by increasing the proportion of its property base which meet MOSL UPRN market validation checks to at least 82% by 31 March 2022 and to at least 92% by 30 September 2022.

Thames Water is also committed to working with MOSL and the industry, using the learning derived from delivering its step change in performance set out within these Undertakings, towards achievement of MOSL's Additional Performance Indicators (**APIs**)¹⁹⁰ which target 100% validation across the industry in these two areas.

Reporting and provision of information

To update Ofwat while these Undertakings remain in force and effective, and until Ofwat has agreed they have been satisfactorily implemented and evidenced and can therefore be closed, Thames Water shall:

- provide written monitoring reports to Ofwat,
 - demonstrating the steps that it has taken in complying with these Undertakings; and
 - providing assurance of its ongoing compliance with the Undertakings;
- provide the first of these monitoring reports on 31 March 2022 after the acceptance of the Undertakings by Ofwat and then on 30 September 2022 and future dates to be agreed with Ofwat if it has not agreed the Undertakings have been implemented and closed by this point;
- provide to Ofwat any supporting information and documents which Ofwat reasonably requests in relation to the Undertakings;
- the reports will provide Ofwat with evidence of successful implementation of the Undertakings; and
- the proposed schedule of undertaking delivery and evidence provision to Ofwat is set out below in table 1.

The Retail Director has Executive level responsibility for ownership of these Undertakings.

Thames Water will carry out the actions described above in accordance with the timetable set out below:

Table 1

	Relevant undertaking	Expected delivery date	Evidenced to Ofwat
1	a) conclude all ongoing investigations, corrections and refunds.	31/7/21	31/3/22

¹⁹⁰ [Core Market Data Improvement Plan](#), Version 1, MOSL, 4 March 2021.

	Relevant undertaking	Expected delivery date	Evidenced to Ofwat
	b) undertake a final consolidated reconciliation check to re-review each bill account on the date it was migrated to Castle Water.	31/7/21	31/3/22
	c) make financial recompense to affected market participants.	See note 1	31/3/22
2	a) introduce a standardised investigative methodology, subject to change control and approval by the MSG.	31/8/21	31/3/22
	b) i) document and publish the mechanisms for capturing and reviewing customer feedback.	31/7/21	30/9/21
	b) ii) recommend and implement process enhancements.	30/4/21	30/9/21
	b) iii) formalise escalation route.	30/4/21	30/9/21
3	a) commission an independent audit of its data management approach in respect of the non-household market and for the Executive to consider and approve implementation of its recommendations.	31/12/21 For implementation see note 2	31/3/22
	b) commission an independent audit of its project governance arrangements, over non-asset / infrastructure major projects including how it plans delivery and captures the decisions made, and for the Executive to consider and approve implementation of its recommendations.	31/12/21 For implementation see note 2	31/3/22
4	a) prepare and publish an annual data management status report, designed to highlight and update the market on its data management processes and approach.	31/12/21	31/3/22
	b) improve its metrics within the framework of the MOSL data quality performance indicators, specifically to increase the number of validated meter location co-ordinates to at least 97% and to increase to at least 92% the proportion of its property base with a validated UPRN reference.	30/9/22	30/9/22

Note 1: Payments will be completed within one month of issuance by Ofwat of its final penalty notice.

Note 2: Implementation of recommended actions to be completed by 31/12/22 subject to review, and agreed amendment where necessary, once the external audit has been completed and its findings considered by the Executive.

**Ofwat (The Water Services Regulation Authority)
is a non-ministerial government department.
We regulate the water sector in England and Wales.**

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