

December 2019

PR19 final determinations

**Notification of the PR19 final determination
of Price Controls for Northumbrian Water**

ofwat

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Heidi Mottram
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16 December 2019

Dear Heidi

Final determination of price controls

I enclose the formal notification of the determination by the Water Services Regulation Authority (Ofwat) of Price Controls for the period from 1 April 2020 to 31 March 2025. This sets out:

- the designation of Water Resources Activities and Bioresources Activities;
- the Price Controls for Network Plus Activities;
- the Price Control for Water Resources Activities;
- the Price Control for Bioresources Activities;
- the Price Control for Retail Activities;
- (in annex 1) the Notified Item and Land sales assumptions;
- (in annex 2) the Performance Commitments in relation to which Price Controls may be adjusted in-period; and
- (in annex 3) the Revenue Forecasting Incentive formula.

This final determination letter has been published on our website. We are also publishing details on the outcomes and performance commitments for the company to deliver, together with information on our general approach and the reasons for our decisions.

We will publish information about the annual regulatory reporting, assurance requirements and our approach to PR19 reconciliations early in 2020.

You have two months to decide whether to refer the determination to the Competition and Markets Authority. If you wish Ofwat to refer the determination you must let us know in writing no later than 15 February 2020.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'D Black', written in a cursive style.

David Black

Senior Director, Water 2020

Notification by the Water Services Regulation Authority of its determination of Price Controls for Northumbrian Water Limited (“the Determination”)

This is the Determination by the Water Services Regulation Authority (“Ofwat”) of the Price Controls for Retail Activities, Network Plus Water Activities, Network Plus Wastewater Activities, Water Resources Activities and Bioresources Activities. It is made by Ofwat in accordance with Part III of Condition B (Charges) of the company’s Appointments as a water and sewerage undertaker:

- after having had regard to all the circumstances which are relevant in the light of the principles which apply by virtue of Part I of the Water Industry Act 1991 in relation to Ofwat’s determinations, including, without limitation, any change in circumstance which has occurred since the last Periodic Review or which is to occur; and
- in accordance with the statement setting out strategic priorities and objectives for Ofwat published by the Secretary of State for Environment, Food and Rural Affairs.

The Price Controls will all apply for the five consecutive Charging Years starting on 1 April 2020.

You must levy charges in a way best calculated to comply with the Price Controls.

Unless the contrary intention appears, words and expressions used in the Determination and the accompanying annexes, shall have the same meaning as in the Conditions of the Appointments. Common terms used in the formulae in the Determination and the annexes are defined in the Glossary set out in Annex 4.

1. Designation of activities

The sets of activities that will be covered by the relevant Price Controls are set out below.

1.1 Network Plus Activities

All activities carried out by the Appointee in performance of its functions as a water undertaker that are not designated as Water Resources Activities or Retail Activities will be Network Plus Water Activities.

All activities carried out by the Appointee in performance of its functions as a sewerage undertaker that are not designated as Bioresources Activities or Retail Activities will be Network Plus Wastewater Activities.

1.2 Water Resources Activities

Ofwat designates as Water Resources Activities under sub-paragraph 9.9 of Condition B the activities carried out as part of the Appointed Business that fall within the definitions of the following services in [RAG 4.08 – Guideline for the table definitions in the annual performance report](#) (March 2019):

- Water resources – Abstraction licences; and
- Water resources – Raw water abstraction.

1.3 Bioresources Activities

Ofwat designates as Bioresources Activities under sub-paragraph 9.9 of Condition B the activities carried out as part of the Appointed Business that fall within the definitions of the following services in [RAG 4.08 – Guideline for the table definitions in the annual performance report](#) (March 2019):

- Sludge transport;
- Sludge treatment; and
- Sludge disposal.

1.4 Retail Activities

Ofwat is not changing the activities that are currently designated as Retail Activities (these activities were designated as part of the 2014 Periodic Review).

1.5 Wholesale activities not covered by wholesale price controls

The Price Controls in respect of Water Resources Activities, Bioresources Activities, Network Plus Water Activities and Network Plus Wastewater Activities will not apply to those activities for which there are Excluded Charges. Excluded Charges (as defined in Condition B) include:

- charges for a supply of water in bulk to another water undertaker;
- amounts payable in respect of an unmeasured supply of water by means of stand-pipes or water tanks and in respect of the erection or maintenance of stand-pipes or water tanks;
- amounts payable in relation to the alteration or removal of any relevant pipe (as defined in section 158 of the Water Industry Act 1991) or other apparatus that the Appointee is required to carry out under the New Roads and Streets Works Act 1991 or any other statutory provision except a provision of the Water Industry Act 1991;
- charges for a supply of water provided by the Appointee under section 59 (Supplies for other public purposes) of the Water Industry Act 1991;
- charges for the reception and disposal by the Appointee, or other person specified by the Appointee or, as the case may be, the Water Authority, of matter delivered to the Appointee or such other person by a collection authority in pursuance of section 14(9) of the Control of Pollution Act 1974;
- charges for unmeasured supplies of water to cattle troughs;
- charges for unmeasured building water supplies;
- amounts payable in respect of an unmeasured supply of water by means of bowsers or water tankers;
- charges for unmeasured supplies of water to farm taps and other agricultural water points;
- amounts payable under any such agreement as is described in section 20(1)(b) of the Water Resources Act 1991 (including any such agreement entered into by the Water Authority under section 81 of the Water Resources Act 1963 with respect to any of the matters referred to in sections 81(1)(b) and 81(1)(d) of that Act as, by virtue of paragraph 29(1) of Schedule 26, has effect on and after the transfer date as a thing done by the Appointee); and
- charges payable under any agreement for any unmeasured supply of water or unmeasured sewerage services which are calculated by reference to the rateable value of hereditaments, occupied by the person to whom the supply or services are provided, fixed in accordance with section 32, 33 or, as the case may be, 34 of the General Rate Act 1967 or, as the case may be, fixed in accordance with section 54 of the Local Government Finance Act 1988.

2. Price Controls for Network Plus Activities

In respect of the Appointed Business's Network Plus Activities, except those activities for which there are Excluded Charges, there will be:

- one single Price Control in respect of the Appointed Business's Network Plus Water Activities; and
- one single Price Control in respect of the Appointed Business's Network Plus Wastewater Activities.

Each such Price Control will consist of in each Charging Year:

- the percentage change (expressed, in the case of an increase, as a positive number, in the case of a decrease, as a negative number, and, in the case of no change, as zero) in the Consumer Prices Index (H) between that published for the month of November in the Prior Year and that published for the immediately preceding November; and
- a number, "**K**", which may be a positive number or a negative number or zero

which together shall be expressed as a percentage, and which shall limit the change in the revenue allowed to the Appointed Business in each Charging Year in respect of the Network Plus Activities concerned.

For each Charging Year starting on or after 1 April 2021 the revenue allowed to the Appointed Business in respect of the Network Plus Activities concerned will be the product of the following formula:

$$R_t = R_{t-1} \times \left[1 + \left(\frac{CPIH_t + K_t}{100} \right) \right]$$

For the Charging Year starting on 1 April 2020 the revenue allowed to the Appointed Business in respect of the Network Plus Activities concerned is the product of the same formula except that R_{t-1} = the relevant revenue allowance (as set out below). This is because (as the form of Price Controls has since changed) at the last Periodic Review no revenue allowance in respect of Network Plus Activities was set for the Charging Year that started on 1 April 2019.

In respect of the Appointed Business's Network Plus Water Activities, the starting point for the calculation of the change in the revenue allowed to the Appointed

Business in the Charging Year starting on 1 April 2020 (the revenue allowance for Network Plus Water Activities) is **£319.565** million, which shall constitute the value of **R_{t-1}** in respect of that Charging Year.

The “**K**” numbers for each Charging Year are set out in Table 1.

Table 1: Price Control for Network Plus Water Activities “K” numbers

Charging Year beginning 1 April	2020	2021	2022	2023	2024
K number	0.00	0.39	0.28	-0.61	-0.54

In respect of the Appointed Business’s Network Plus Wastewater Activities, the starting point for the calculation of the change in the revenue allowed to the Appointed Business in the Charging Year starting on 1 April 2020 (the revenue allowance for Network Plus Wastewater Activities) is **£227.354** million, which shall constitute the value of **R_{t-1}** in respect of that Charging Year.

The “**K**” numbers for each Charging Year are set out in Table 2.

Table 2: Price Control for Network Plus Wastewater Activities “K” numbers

Charging Year beginning 1 April	2020	2021	2022	2023	2024
K number	0.00	0.41	0.44	1.10	1.18

3. Price Control for Water Resources Activities

The Price Control shall consist of, in each Charging Year:

- the percentage change (expressed, in the case of an increase, as a positive number, in the case of a decrease, as a negative number, and, in the case of no change, as zero) in the Consumer Prices Index (H) between that published for the month of November in the Prior Year and that published for the immediately preceding November; and
- a number, “**K**”, which may be a positive number or a negative number or zero

which together shall be expressed as a percentage, and which shall limit the change in the revenue allowed to the Appointed Business in each Charging Year.

For each Charging Year starting on or after 1 April 2021 the revenue allowed to the Appointed Business in respect of the Water Resources Activities concerned will be the product of the following formula:

$$R_t = R_{t-1} \times \left[1 + \left(\frac{CPIH_t + K_t}{100} \right) \right]$$

For the Charging Year starting on 1 April 2020 the revenue allowed to the Appointed Business in respect of Water Resources Activities is the product of the same formula except that R_{t-1} = the relevant revenue allowance (as set out below). This is because (as the form of Price Controls has since changed) at the last Periodic Review no revenue allowance in respect of Water Resources Activities was set for the Charging Year that started on 1 April 2019.

In respect of the Appointed Business's Water Resources Activities, the starting point for the calculation of the change in the revenue allowed to the Appointed Business in the Charging Year starting on 1 April 2020 (the revenue allowance for Water Resources Activities) is **£81.100** million, which shall constitute the value of R_{t-1} in respect of that Charging Year.

The "K" numbers for each Charging Year are set out in Table 3.

Table 3: Price Control for Water Resources Activities "K" numbers

Charging Year beginning 1 April	2020	2021	2022	2023	2024
K number	0.00	-1.31	-1.63	-2.10	-2.03

4. Price Control for Bioresources Activities

The Price Control shall consist of, in each Charging Year:

- a total amount of revenue which is modified to reflect differences between outturn sludge production and forecast sludge production;
- an adjustment to reflect any over- or under-recovery of revenue in previous Charging Years; and

- an adjustment to reflect any profit made by the Appointed Business where assets belonging to the Appointed Business are used by any other person (or by any business or activity of the Appointee other than the Appointed Business)

and shall limit the revenue allowed to the Appointed Business in each Charging Year starting on or after 1 April 2020. The Price Control shall be calculated by the following formula:

$$R_t = MR_t - ABR_t - \left[T_{t-2} \times \left(1 + \frac{CPIH_{t-1}}{100} \right) \times \left(1 + \frac{CPIH_t}{100} \right) \right]$$

Where:

$$MR_t = \left[UR_t + (ATDS_t - FTDS_t) \times VR \right] \times \text{CPIH adjustment factor}_t$$

$$ABR_t = (RR_{t-2} - R_{t-2}) \times \left(1 + \frac{D}{100} \right)^2 \times \left(1 + \frac{CPIH_{t-1}}{100} \right) \times \left(1 + \frac{CPIH_t}{100} \right)$$

UR_t Unadjusted revenue. This is the total revenue allowed to the Appointed Business in each Charging Year starting on or after 1 April 2020 based on the forecast amount of sludge produced. It is set out in Table 5 below.

MR_t Modified revenue. This is the unadjusted revenue allowed to the Appointed Business which is modified to reflect differences between outturn sludge production and forecast sludge production.

ABR_t Bioresources revenue adjustment. This is the difference between the Appointee's allowed revenue and the revenue actually recovered in a Charging Year two years before Charging Year t in respect of Bioresources Activities. Inflation and financing adjustments for two years is applied to this difference. In the Charging Years starting 1 April 2020 and 1 April 2021, this term shall have the value of zero.

T_{t-2} Profit from bioresources trading expressed in outturn prices in £ millions in year t-2. When appointed assets are used for sludge imports (non-appointed activities), the company will determine a transfer price. This should include at least the incremental cost of treating the imported sludge plus a proportion of the margin from the trade. The Appointee should act consistent with the [Regulatory accounting guidelines \(RAG\) 5.07](#) when setting their transfer price. The T_{t-2} profits from bioresources trading will be the margin element of the transfer prices earned for trades that occur in year t-2. In the Charging Years starting 1 April 2020 and 1 April 2021, this term shall have the value of zero.

ATDS_t Actual volume of sludge (TDS). This is the total amount of sludge produced in terms of tonnes of dried solid (TDS) during the Charging Year produced by the whole service. This will be known after the end of the Charging Year. When setting charges for the Charging Year, companies should use the best available estimate of what **ATDS_t** would be.

FTDS_t Forecast volume of sludge (TDS) produced in year t as set out in Table 5 below.

VR Variable revenue. The adjustment to allowed revenue reflecting differences between outturn sludge production and forecast sludge production. It is expressed in £ per tonnes of dried solid sludge (TDS) as set out in Table 5.

Table 5: Price Control for Bioresources Activities numbers

Charging year beginning 1 April	2020	2021	2022	2023	2024	Total for all five charging years
Unadjusted revenue, UR_t (£ million, 2017-18 FYA CPIH deflated prices)	20.514	20.739	20.937	21.163	21.360	104.713
Forecast volume of sludge, FTDS_t (TDS)	72,700	73,500	74,200	75,000	75,700	371,100
Variable revenue, VR (£/TDS, 2017-18 FYA CPIH deflated prices)	N/A	N/A	N/A	N/A	N/A	46.548

Note:

There is no Table 4 in this determination. This is a deliberate omission that is intended to ensure consistency in Table numbers between different companies.

5. Price Control for Residential Retail Activities

In respect of the Appointed Businesses' Retail Activities, there shall be one single Price Control for the Appointed Business's Retail Activities relating to the supply of water and the provision of sewerage services to household premises (as defined in section 17C of the Water Industry Act 1991) ("**Residential Retail Activities**").

The Price Control for Residential Retail Activities:

- shall consist of a limit on the total revenue allowed to the Appointed Business in each Charging Year in respect of the Retail Activities concerned; and

- is set for a period of five consecutive Charging Years starting on 1 April 2020.

The total unadjusted revenue, **TR**, allowed to the Appointed Business in each Charging Year in respect of Residential Retail Activities shall be the relevant amount set out in Table 6 as modified in accordance with the following formula:

$$R_t = TR_t + (AC_t - FC_t) \times M_t \times 1000$$

Where:

TR_t Total Revenue The total unadjusted allowed revenue expressed in outturn prices as set out in table 6;

AC_t Actual Customers Actual customer numbers (meaning the average number of individual household premises (as defined in section 17C of the Water Industry Act 1991) supplied or served by the Appointed Business in a Charging Year) expressed in thousands;

FC_t Forecast Customers. Forecast customer numbers in thousands set out in table 6;

M_t Modification Factor. The modification factors expressed in outturn prices set out in table 6.

Table 6: Price Control for Residential Retail Activities numbers

Charging year beginning 1 April	2020	2021	2022	2023	2024	2020-25
TR (£million, outturn)	55.249	55.981	56.711	57.407	58.098	N/A
M (£, outturn)	28.27	28.37	28.48	28.57	28.67	N/A
FC (thousands)	1,954.149	1,973.034	1,991.353	2,009.031	2,026.657	N/A

6. Demonstrating Compliance with the Price Controls

The Appointee shall provide such information as Ofwat may reasonably require in relation to annual regulatory reporting to demonstrate how the Appointee is complying, or has complied, with its obligation to levy charges in a way best calculated to comply with each Price Control applicable to it.

Annex 1: Notified Items and Land Sales

Notified Items

Ofwat is not notifying the Appointee of any item that has not been allowed for (either in full or at all) when making the final determination of Price Controls.

Land sales

For the purposes of the Determination, Ofwat gives notice that for each of the five consecutive Charging Years starting on or after 1 April 2020:

- the value attributable to Relevant Disposals of Land allowed for in making the determination is zero; and
- variations in value received or expected to be received from Relevant Disposals of Land shall constitute a Relevant Change of Circumstance.

Annex 2: In-period Outcome Delivery Incentives (ODIs)

Ofwat notifies the Appointee in accordance with Part 3A of Condition B that the Price Controls determined in respect of the Appointee's Retail Activities, Water Resources Activities, Network Plus Water Activities and Network Plus Wastewater Activities may be adjusted to reflect the Appointee's performance in relation to the following Performance Commitments:

Table A2.1: In-period financial performance commitments - Common PCs

Name of Common Performance Commitment	Type of Outcome Delivery Incentive (ODI)	Price controls ODIs will apply to
Water quality compliance (CRI) [PR19NES_COM03]	Financial - Under; In-period	Water network plus
Water supply interruptions [PR19NES_COM04]	Financial - Out & under; In-period	Water network plus
Leakage (NW region) [PR19NES_COM05]	Financial - Out & under; In-period	Water network plus
Leakage (ESW region) [PR19NES_COM06]	Financial - Out & under; In-period	Water network plus
Per capita consumption [PR19NES_COM07]	Financial - Out & under; In-period	Water network plus
Mains repairs [PR19NES_COM12]	Financial - Out & under; In-period	Water network plus
Unplanned outage [PR19NES_COM13]	Financial - Under; In-period	Water network plus
Internal sewer flooding [PR19NES_COM08]	Financial - Out & under; In-period	Wastewater network plus
Pollution incidents [PR19NES_COM09]	Financial - Out & under; In-period	Wastewater network plus

Sewer collapses [PR19NES_COM14]	Financial - Under; In-period	Wastewater network plus
Treatment works compliance [PR19NES_COM15]	Financial - Under; In-period	Water network plus; Wastewater network plus
C-MeX: Customer measure of experience [PR19NES_COM01]	Financial - Out & under; In-period	Residential retail
D-MeX: Developer services measure of experience [PR19NES_COM02]	Financial - Out & under; In-period	Water network plus; Wastewater network plus

Note:

The listed Performance Commitments are set out in the document named **PR19 final determinations: Northumbrian Water – Outcomes performance commitment appendix.**

Table A2.2: In-period financial performance commitments - Bespoke PCs

Name of Bespoke Performance Commitment	Type of Outcome Delivery Incentive (ODI)	Price controls ODIs will apply to
Visible leak repair time [PR19NES_BES04]	Financial - Out & under; In-period	Water network plus
Voids [PR19NES_BES08]	Financial - Out & under; In-period	Residential retail
Interruptions to supply greater than 12 hours [PR19NES_BES09]	Financial - Out & under; In-period	Water network plus
Discoloured water contacts [PR19NES_BES11]	Financial - Out & under; In-period	Water network plus
Taste and smell contacts [PR19NES_BES12]	Financial - Out & under; In-period	Water network plus

Name of Bespoke Performance Commitment	Type of Outcome Delivery Incentive (ODI)	Price controls ODIs will apply to
Event Risk Index [PR19NES_BES13]	Financial - Under; In-period	Water network plus
Interruptions to supply between one and three hours [PR19NES_BES14]	Financial - Out & under; In-period	Water network plus
Sewer blockages [PR19NES_BES15]	Financial - Out & under; In-period	Wastewater network plus
External sewer flooding [PR19NES_BES16]	Financial - Out & under; In-period	Wastewater network plus
Repeat sewer flooding [PR19NES_BES17]	Financial - Out & under; In-period	Wastewater network plus
Abstraction incentive mechanism (AIM) [PR19NES_BES18]	Financial - Out & under; In-period	Water resources
Bathing water compliance [PR19NES_BES19]	Financial - Out & under; In-period	Wastewater network plus
Water environment improvements [PR19NES_BES20]	Financial - Out & under; In-period	Water resources; Water network plus; Wastewater network plus
Greenhouse Gas Emissions [PR19NES_BES21]	Financial - Out & under; In-period	Water resources; Water network plus; Wastewater network plus; Bioresources (sludge); Residential retail
Delivery of cyber resilience enhancement programme [PR19NES_BES28]	Financial - Under; In-period	Water network plus; Wastewater network plus

Name of Bespoke Performance Commitment	Type of Outcome Delivery Incentive (ODI)	Price controls ODIs will apply to
Water Industry National Environment Programme [PR19NES_BES31]	Financial - Under; In-period	Water resources; Wastewater network plus

Note:

The listed Performance Commitments are set out in the document named **PR19 final determinations: Northumbrian Water – Outcomes performance commitment appendix**.

Reconciliation for 2019-20 financial performance commitments

Ofwat further notifies the Appointee in accordance with Part 3A of Condition B that the Price Controls determined in respect of the Appointee’s Retail Activities, Network Plus Water Activities, Network Plus Wastewater Activities and Bioresources Activities may be adjusted to reflect the Appointee’s performance in the Charging Year beginning on 1 April 2019 (“2019-20 Charging Year”) in relation to all the Performance Commitments set out in the company-specific appendix (read together with any corrigenda published by Ofwat) to the determination of Price Controls by Ofwat pursuant to the 2014 Periodic Review. The adjustment to the relevant Price Control in relation to each such Performance Commitment would be the difference between:

(a) either:

- (i) the adjustment(s) to the revenue allowed to the Appointed Business that Ofwat made to reflect the Appointee’s forecast performance in the 2019-20 Charging Year in relation to that Performance Commitment when determining, pursuant to the 2019 Periodic Review, the Price Controls for the five consecutive Charging Years beginning on 1 April 2020; or
- (ii) if there was no such adjustment, zero;

AND

- (b) the adjustment(s) to revenue that Ofwat would have made when determining Price Controls pursuant to the 2019 Periodic Review if the Appointee’s actual performance in the 2019-20 Charging Year in relation to that Performance Commitment had been known.

Annex 3: Revenue Forecasting Incentive formula

Ofwat notifies the Appointee for the purposes of sub-paragraph 9.1A of Condition B that sub-paragraph 9.1 of Condition B will not prevent the Appointee from levying charges to recover a Relevant Shortfall in the Charging Years beginning 1 April 2021, 1 April 2022, 1 April 2023 and 1 April 2024 (each of which will be a “Relevant Charging Year” for these purposes) where the “Relevant Shortfall” means any positive amount calculated for a Relevant Charging Year in accordance with the following formula:

Revenue Forecasting Incentive: Price Control for Network Plus Wastewater Activities

The RFI for network plus wastewater activities will be determined according to the following formula:

$$RFI_t = - (RR_{t-2} - AR_{t-2}) \times \left(1 + \frac{D}{100}\right)^2 \times (1 + CPIH_{t-1}) \times (1 + CPIH_t) \\ - \frac{PR}{100} \times |RR_{t-2} - AR_{t-2}| \times \left(1 + \frac{D}{100}\right) \times (1 + CPIH_{t-1}) \times (1 + CPIH_t)$$

The RFI for network plus wastewater activities, RFI_t , and any blind year adjustment, BYA_t , is added to allowed revenues for network plus wastewater activities, R_t , to calculate adjusted allowed revenues for network plus wastewater activities, according to the following formula:

$$AR_t = R_t + BYA_t + RFI_t$$

Revenue Forecasting Incentive: Price Control for Network Plus Water Activities

The RFI for network plus water activities will be determined according to the following formula:

$$\begin{aligned} \mathbf{RFI}_t = & - (\mathbf{RR}_{t-2} - \mathbf{AR}_{t-2}) \times \left(\mathbf{1} + \frac{\mathbf{D}}{\mathbf{100}} \right)^2 \times (\mathbf{1} + \mathbf{CPIH}_{t-1}) \times (\mathbf{1} + \mathbf{CPIH}_t) \\ & - \mathbf{PS}_{i,t} \times \frac{\mathbf{PR}}{\mathbf{100}} \times \left| \mathbf{RR}_{t-2}^* - \mathbf{AR}_{t-2}^* \right| \times \left(\mathbf{1} + \frac{\mathbf{D}}{\mathbf{100}} \right) \times (\mathbf{1} + \mathbf{CPIH}_{t-1}) \times (\mathbf{1} + \mathbf{CPIH}_t) \end{aligned}$$

The RFI for network plus water activities, \mathbf{RFI}_t , and any blind year adjustment, \mathbf{BYA}_t , is added to allowed revenues for network plus water activities, \mathbf{R}_t , to calculate adjusted allowed revenues for network plus water activities, according to the following formula:

$$\mathbf{AR}_t = \mathbf{R}_t + \mathbf{BYA}_t + \mathbf{RFI}_t$$

Revenue Forecasting Incentive: Price Control for Water Resources

The RFI for water resources activities will be determined according to the following formula:

$$\begin{aligned} \mathbf{RFI}_t = & - (\mathbf{RR}_{t-2} - \mathbf{AR}_{t-2}) \times \left(\mathbf{1} + \frac{\mathbf{D}}{\mathbf{100}} \right)^2 \times (\mathbf{1} + \mathbf{CPIH}_{t-1}) \times (\mathbf{1} + \mathbf{CPIH}_t) \\ & - \mathbf{PS}_{i,t} \times \frac{\mathbf{PR}}{\mathbf{100}} \times \left| \mathbf{RR}_{t-2}^* - \mathbf{AR}_{t-2}^* \right| \times \left(\mathbf{1} + \frac{\mathbf{D}}{\mathbf{100}} \right) \times (\mathbf{1} + \mathbf{CPIH}_{t-1}) \times (\mathbf{1} + \mathbf{CPIH}_t) \end{aligned}$$

The RFI for water resources, \mathbf{RFI}_t and any blind year adjustment, \mathbf{BYA}_t , is added to allowed revenues for water resources, \mathbf{R}_t , to calculate adjusted allowed revenues for water resources, according to the following formula:

$$\mathbf{AR}_t = \mathbf{R}_t + \mathbf{BYA}_t + \mathbf{RFI}_t$$

Where for each of controls to which the RFI relates:

$$BYA_t = TBYA \times Y_t \times \left(1 + \frac{D}{100}\right)^{T-2019} \times \text{CPIH adjustment factor}_t$$

AR_{t-2} The adjusted allowed revenue stated in £ millions in charging year t-2 with the first year starting on 1 April 2020.

RR_{t-2}* This has the same meaning as **RR_{t-2}**, except in this case this applies to the sum of both the network plus water and water resources controls.

AR_{t-2}* This has the same meaning as **AR_{t-2}**, except in this case this applies to the sum of both the network plus water and water resources controls.

PR The penalty rate. Denoting the forecast error $(RR^{*t-2} - AR^{*t-2}) / AR^{*t-2} = x\%$, the penalty rate is:

- 3% for all variations if $|x\%| > 3\%$;
- $3\% * (|x\%| - 2\%) / (3\% - 2\%)$ if $2\% < |x\%| \leq 3\%$;
- zero if $|x\%| \leq 2\%$.

The result enters the above formulas as a number. For example, for a penalty rate of 3%, PR enters the formula as number 3.

PS_{i,t} is the share of the penalty that the Appointee chooses to allocate to the control in charging year t,

- where i = network plus water or water resources control; and
- the **PS_i** values must sum to one¹ for each charging year.

BYA_t The blind-year adjustment, stated in £ millions, to the allowed revenue of the relevant network plus or water resources control in each year over the charging years 2021/22 to 2024/25, inclusive.

TBYA = Blind year adjustment stated by Ofwat in 2017-18 year average prices. The blind year adjustment will be announced by Ofwat at a future date.

¹ That is, **PS_{water resources} + PS_{water network plus} = 1**

The adjustment will be based on the difference between the Appointee's forecast and actual performance for the 2019-20 Charging Year in relation to the Wholesale Revenue Forecasting Incentive Mechanism and the Water Trading Incentive applied in relation to the 2015 to 2020 price control period. It will be a correction to the revenue allowed by Ofwat when determining, pursuant to the 2019 Periodic Review, the Price Controls for water resources and network plus activities for the five consecutive Charging Years beginning on 1 April 2020. The adjustment will not include the 2019-20 performance commitments referred to in Annex 2.

Y_t is the share of the blind year adjustment that the company has elected to receive in period t of the AMP. This allows the company to spread the impact of the blind year adjustment over the relevant years. The Y_t values across all of the charging years for each relevant price control must

- sum to one, if the blind year adjustment is negative;
- sum to one or less, if the blind year adjustment is positive; and
- be greater than or equal to zero.

T = the year in which the relevant charging year begins – for example

- for the charging year 2022-23 then $T = 2022$;
- for the charging year 2023-24 then $T = 2023$; and
- for the charging year 2024-25 then $T = 2024$.

Annex 4: Glossary

Common terms used in formulae in the Determination and the annexes are defined below.

Term	Where used	Definition
t	All	A suffix added to a term to indicate the Charging Year.
t-1	All	A suffix added to a term to indicate the Prior Year. For example, R_{t-1} refers to the Charging Year starting one year before the start of relevant Charging Year.
t-2	All	A suffix added to a term to indicate the Charging Year commencing on 1 April immediately prior to the Prior Year. For example, R_{t-2} refers to the Charging Year starting two years before the start of the relevant Charging Year.
R_t	Network plus, water resources, bioresources	Revenue stated in £ millions allowed to the Appointed Business in a Charging Year by a Price Control in respect of the activities concerned
RR_t	Bioresources, RFI	The revenue stated in £ millions recovered by the Appointed Business in a Charging Year in outturn prices. In both the RFI and Price Control for Bioresources Activities, the first year, t, starts on 1 April 2022 so that year t -2 starts on 1 April 2020.
$CPIH_t$	Network plus, water resources,	The percentage change (expressed, in the case of an increase, as a positive number, in the case of a decrease, as a negative number, and, in the case of no

	bioresources, RFI	change, as zero) in the Consumer Prices Index (H) between that published for the month of November in the Prior Year and that published for the immediately preceding November.
FYA CPIH	Water resources, bioresources	The percentage change (expressed, in the case of an increase, as a positive number, in the case of a decrease, as a negative number, and, in the case of no change, as zero) in the average level of the Consumer Prices Index (H) across the twelve months of the Charging Year compared to the average level of the Consumer Prices Index (H) across the twelve months of the Prior Year.
K_t	Network plus, water resources	A specified number for the relevant Charging Year which may be a positive number or a negative number or zero.
D	Water resources, RFI	The specified discount rate, based on the weighted average cost of capital of 2.92
CPIH adjustment factor_t	Water resources, Bioresources, RFI	One plus the percentage change in the Consumer Prices Index (H) between that published for the month of November in the Prior Year and that published for November 2016.

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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