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NES JULY SUBMISSION TABLE COMMENTARIES

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Our tables and models have been assured as set out in our Annual Assurance plan.

INTRODUCTION

We applied for and received from Ofwat an extension of the deadline for the early submission tables to 27th July 2018 (email dated 5/2/18).

The appendix contains commentary appropriate to the data tables and is in accordance with the data table guidance. The following data tables are commented upon.

Data table(s)	**Contents**	**Additional Commentary provided**
App5	PR14 reconciliation – performance commitments	Yes
App6	PR14 reconciliation – sub-measures	Not applicable to NWL
App9	Adjustments to RCV from disposals of interest in land	Yes
App23	Inflation measures	Yes
App25	PR14 reconciliation adjustments summary	Yes
App27	PR14 reconciliation – financial outcome delivery incentives summary	Yes
App31	Past performance	Yes
WS13 and WWS13	PR14 wholesale revenue forecast incentive mechanism for the water and wastewater services	Yes including WRFIM model
WS15 and WWS15	PR14 wholesale total expenditure outperformance sharing for the water and wastewater services	Yes including PR14 reconciliation model
WS17	PR14 water trading incentive reconciliation	Yes including water trading model
Dmmy10	PR14 wholesale total expenditure outperformance sharing for the dummy price control	Not applicable to NWL
R9	PR14 reconciliation of household retail revenue	Yes including HH Retail reconciliation model
R10	PR14 service incentive mechanism	Yes
PR14 Models		
Model	Totex menu PR14 reconciliation	See WS15,WWS15 commentary
Model	WRFIM PR14 reconciliation	See WS13, WWS13 commentary
Model	Residential retail PR14 reconciliation	See R9 commentary
Model	RCV adjustments feeder model	Yes
Model	Revenue adjustments feeder model	Yes
Model	Water trading incentive model	See WS17 commentary

APPOINTEE TABLES

TABLE APP5 – PR14 RECONCILIATION ~ PERFORMANCE COMMITMENTS

Performance forecasts have been provided for all PCs W-A1 through to R-F1. Where applicable forecast outperformance / underperformance payments accrued have been supplied. These payments in columns 26 and 32 are calculated in 2012-13 prices and are net of tax as requested. Tax rate is based on App 26 and is 17%. We have used a tax rate of 17% as this is the tax rate at the time any rewards are generated.

Across our PCs we forecast to meet all of our targets, of which some of attract incentives. Those PCs that are subject to a reward or penalty across 2018-19 and 2019-20 are detailed below, including the calculation of incentives. As per the guidance, we indicate that the outperformance rewards detailed below will be claimed.

W-B3 Discoloured water complaints

We forecast within the forthcoming years 2018-19 and 2019-20 that we will outperform our PC and achieve a reward. The details of the rewards across the two years are as follows:

Forecast year	**2018-19**	**2019-20**
Performance Commitment (PC) level	3,108	2,908
Forecast Performance level	2,500	2,500
PC level met	Yes	Yes
Outperformance payment deadband	2,908	2,908
Outperformance payment cap	2,705	2,705
Outperformance payment cap units	203	203
Outperformance payment incentive rate	£2,000	£2,000
Outperformance payment	= if (203 (outperformance cap units) < (2,908 (outperformance deadband) – 2,500 (forecast performance), then use outperformance cap units (203) if not use 2,908 (outperformance deadband) – 2,500 (forecast performance)) * incentive rate we use = 203 (outperformance cap units) * £2000 (incentive rate) = £406,000	= if (203 (outperformance cap units) < (2,908 (outperformance deadband) – 2,500 (forecast performance), then use outperformance cap units (203) if not use 2,908 (outperformance deadband) – 2,500 (forecast performance)) * incentive rate we use = 203 (outperformance cap units) * £2000 (incentive rate) = £406,000
Outperformance payment net of tax	Incentive * (1-Tax rate) =£0.406m * (1 – 17%) = £0.3370	Incentive * (1-Tax rate) =£0.406m * (1 – 17%) = £0.3370

Discoloured water complaints has both an outperformance deadband and cap. As we are predicting to perform better than our outperformance cap of 2,705, we have used the reward cap to calculate the reward

valuation. We have used the 203 units of reward multiplied by the incentive rate of £2,000 to obtain a gross reward of £0.406m each year. App5 figures are net of tax and to calculate this we have used the 17% tax rate displayed at the end of the period 2019-20 (App26).

We have been working to improve discoloured water complaints for more than ten years now and the current good performance is due to a culmination of this work.

Our North East area has the largest number of discolouration contacts and we have been working to improve performance with great results. In 2017 we achieved another improvement in our companywide performance, the best yet of 2,532 contacts. We are continuing to manage the entire water supply system to bring further benefits to our customers.

Last year we explained how pioneering research into conditioning water networks can manage the accumulation of discolouration material and bring other service benefits, such as resilience to quality problems when burst pipes occur.

We are continuing to invest in this active network management both now and into the 2020-25 period. Our Suffolk area has levels of discoloured water proportionally similar to the North East when performance is normalised per 1,000 population. Following our successes in the North East we are now turning our attention to this area and have been actively flushing District Meter Areas over the last two years. Our Essex area continues to have excellent very good levels of performance and our plans are to include sustaining this for our customers, while improving in the other two regions.

S-B1 Properties flooded externally

We have forecasted to outperform our external flooding (public) PC in the years 2018-19 and 2019-20. The forecasted performance is set to be better than our deadband (1,139) but will not achieve the reward cap (639). We have used the number of incidents we have outperformed our deadband (239) and multiplied this by the per incident outperformance payment incentive rate of £2,000 to give a gross value of £0.478m per year.

Forecast year	**2018-19**	**2019-20**
Performance Commitment (PC) level	1,318	1,318
Forecast Performance level	900	900
PC level met	Yes	Yes
Outperformance payment deadband	1,139	1,139
Outperformance payment cap	639	639
Outperformance payment cap units	500	500
Outperformance payment incentive rate	£2,000	£2,000
Outperformance payment	= if (500 (outperformance cap units) < (1,139 (outperformance deadband) – 900 (forecast performance), then use outperformance cap units (500) if not use 1,139 (outperformance deadband) – 900 (forecast performance)) * incentive rate we use = 1,139 (reward deadband) – 900 (forecast performance) * £2000 (incentive rate) = £478,000	= if (500 (outperformance cap units) < (1,139 (outperformance deadband) – 900 (forecast performance), then use outperformance cap units (500) if not use 1,139 (outperformance deadband) – 900 (forecast performance)) * incentive rate we use = 1,139 (reward deadband) – 900 (forecast performance) * £2000 (incentive rate) = £478,000
Outperformance payment net of tax	Incentive * (1-Tax rate) =£0.478m * (1 – 17%) = £0.3967	Incentive * (1-Tax rate) =£0.478m * (1 – 17%) = £0.3967

App5 figures are net of tax and to calculate this we have used the 17% tax rate displayed at the end of the period 2019-20 (App26).

Across the three sewage PCs of internal, external and repeat flooding we are forecasting to outperform our targets due to a number of initiatives over the AMP. We highlight below a number of the reasons why we have set the forecasted levels of performance across internal, external and repeat sewer flooding.

We have introduced a new repeat blockage process which now includes a CCTV survey at the first point of contact. This allows our operational teams to identify defects whilst on site and to fix issues at the point of identification. This aligns with our first time fix ethos. In 2015 we placed significant investment in our new integrated CCTV and sewer cleaning crews to increase our capacity to deliver a first time fix to our customers. Alongside this we have created new contract partner frameworks to deliver an improved customer focussed service, which incorporates our first time fix ethos.

We have increased the scrutiny on the management of repeat internal flooders to ensure we understand the reason for flooding and to prevent further incidents. We also believe we are realising the benefits of our AMP6 mitigating policy for sewer flooding.

We work with multiple environmental partners across our operating area to help us deliver water and wastewater services which meet the needs of current and future generations. We recognise that working in partnership can help us to deliver multiple outcomes in a more affordable way, achieving more benefits together than we could have achieved alone.

In 2017/18 we continued to develop and improve our industry leading approach to partnership working. The Northumbria Integrated Drainage Partnership (NIDP) that we formed with the thirteen Lead Local Flood Authorities in our operating area and the EA, continues to strengthen and grow. In 2017/18 a post of Integrated Flood Programme Coordinator was jointly funded by the EA, NW and Local Levy. This allowed a ten year programme of potential flood risk reduction projects to be created.

We have been trialling our Rainwise initiative that supports delivering excellent customer service by reducing customers' flood risk before they ever experience flooding. It included our own proactive flood risk reduction projects as well as our strategic studies which identify catchment wide flooding mechanisms that can be addressed in partnership. We also raised awareness amongst our customers about how managing rainwater around their own homes can affect their own risk of flooding. Leading by example, we made small scale interventions around our own operational sites to manage and harvest rainwater. By changing both landscapes and behaviours, we are building more resilient communities.

Our 'Love Your Drain' campaign continues to grow, educating customers about the causes of blockages using the messages 'only paper, pee and poo go down the loo' and 'putting fats and oil in your sink will make it stink.'

The campaign was shortlisted for eight awards in 2017 and won four of them - Marketing Society

Excellence award, CIPR Northern Pride Award, The International Summit Creative award and the Masters of Marketing Award, where we beat Virgin Media and BT.

2017 saw us supplying 10,000 do's and don'ts leaflets to social housing providers and 4,000 blockage packs to new home builders to be left in homes for new owners. Our commercial kitchen information packs were translated into nine different languages and sent out 2,700 to business across the region.

We also worked with Chinese community leaders and Newcastle Council's Environmental Health team to educate restaurant owners in Chinatown, Newcastle about the correct disposal of Fats Oils and Grease (FOG). Every restaurant apart from one now has a four star or above food hygiene standard rating.

The Dwaine pantomime – You've Been Flushed – ran for seven weeks, visiting 62 schools across the region and playing to just under 4,000 children. The Dwaine dash app smartphone/iPad game has been downloaded more than 7,000 times to date – including 989 times in China, 824 in America and 487 in Japan. Blockages have been reduced by up to 40% in some of our hot spot areas as a result of the campaign.

All of these initiatives, alongside our operational activity such as our flooding other causes, hotspot analysis project and our sewer flooding action group have contributed to reducing our sewer flooding and we expect them to reflect the reduction in 2018-19 and 2019-20.

S-B2 Properties flooded internally

We have forecasted to outperform our internal flooding (public) PC in the years 2018-19 and 2019-20. The forecasted performance is set to be better than our deadband (186) but will not achieve the reward cap (89). We have used the number of incidents we have outperformed our deadband (66) and multiplied this by the per incident outperformance payment incentive rate of £13,000 to give a gross value of £0.858m per year.

Forecast year	**2018-19**	**2019-20**
Performance Commitment (PC) level	186	186
Forecast Performance level	120	120
PC level met	Yes	Yes
Outperformance payment deadband	186	186
Outperformance payment cap	89	89
Outperformance payment cap units	97	97
Outperformance payment incentive rate	£13,000	£13,000
Outperformance payment	= if (97 (outperformance cap units) < 186 (outperformance deadband) – 120 (forecast performance), then use outperformance cap units (97) if not use 186 (outperformance deadband) – 120 (forecast performance)) * incentive rate we use = 186 (outperformance deadband) – 120 (forecast performance)* £13,000 (incentive rate) = 66 * £13,000 = £858,000	= if (97 (outperformance cap units) < 186 (outperformance deadband) – 120 (forecast performance), then use outperformance cap units (97) if not use 186 (outperformance deadband) – 120 (forecast performance)) * incentive rate we use = 186 (outperformance deadband) – 120 (forecast performance)* £13,000 (incentive rate) = 66 * £13,000 = £858,000
Outperformance payment net of tax	Incentive * (1-Tax rate) =£0.858m * (1 – 17%) = £0.7121	Incentive * (1-Tax rate) =£0.858m * (1 – 17%) = £0.7121

App5 figures are net of tax and to calculate this we have used the 17% tax rate displayed at the end of the period 2019-20 (App26).

Commentary on performance is the same as that provided for **S-B1 Properties flooded externally.**

S-B3 Repeat Sewer Flooding

We forecast within the forthcoming years 2018-19 and 2019-20 that we will outperform our PC for repeat sewer flooding and achieve a reward. The details of the rewards across the two years are as follows:

Forecast year	**2018-19**	**2019-20**
Performance Commitment (PC) level	496	496
Forecast Performance level	60	60
PC level met	Yes	Yes
Outperformance payment deadband	237	237
Outperformance payment cap	140	140
Outperformance payment cap units	97	97
Outperformance payment incentive rate	£13,000	£13,000
Outperformance payment	= if (97 (outperformance cap units) < 237 (outperformance deadband) – 60 (forecast performance), then use outperformance cap units (97) if not use 237 (outperformance deadband) – 60 (forecast performance)) * incentive rate we use = 97 (outperformance cap units)* £13,000 (incentive rate) = 97 * £13,000 = £1.261m	= if (97 (outperformance cap units) < 237 (outperformance deadband) – 60 (forecast performance), then use outperformance cap units (97) if not use 237 (outperformance deadband) – 60 (forecast performance)) * incentive rate we use = 97 (outperformance cap units)* £13,000 (incentive rate) = 97 * £13,000 = £1.261m
Outperformance payment net of tax	Incentive * (1-Tax rate) =£1.2610m * (1 – 17%) = £1.0466	Incentive * (1-Tax rate) =£1.2610m * (1 – 17%) = £1.0466

App5 figures are net of tax and to calculate this we have used the 17% tax rate displayed at the end of the period 2019-20 (App26).

Commentary on performance is the same as that provided for **S-B1 Properties flooded externally.**

S-C2 Pollution Incidents (category 3)

We are forecasting to outperform our pollutions (category 3) PC within the forthcoming year of 2019-20 and achieve a reward. The details of the rewards across the two years are as follows:

Forecast year	**2018-19**	**2019-20**
Performance Commitment (PC) level	115	115
Forecast Performance level	75	75
Forecast Performance level – Three year average	78.3	69.3
PC level met	Yes	Yes
Outperformance payment deadband	77	77
Outperformance payment cap	57	57
Outperformance payment cap units	20	20
Outperformance payment incentive rate	£16,000	£16,000
Outperformance payment	No reward – Three year average forecast performance is above the outperformance payment deadband.	= if (20 (outperformance cap units) < 77 (outperformance deadband) – 69.3 (Forecast Performance level – Three year average), then use outperformance cap units (20) if not use 77 (outperformance deadband) – 69.3 (three year average (forecast) performance))) * incentive rate we use = 77 - 69.3 (outperformance cap units)* 16,000 (incentive rate) =
Outperformance payment net of tax	£0	Incentive * (1-Tax rate) =£0.1227 * (1 – 17%) = £0.1018

The outperformance against this PC is calculated on three year averages. As we do not reach the outperformance cap, we have calculated rewards by multiplying the incentive rate by the number of units of three year average outperformance. App5 figures are net of tax and to calculate this we have used the 17% tax rate displayed at the end of the period 2019-20 (App26).

We are working hard with the EA, our operational teams and through our Pollution Best Practice Group, to make sure lessons are learnt and serious incidents are reduced further. Our aim remains is to have zero serious pollution incidents by 2020.

We have entered into two agreements with the EA called ‘Enforcement Undertakings (EU)’ to compensate for any environmental damage caused. The first one was for an incident in February 2015 relating to our sewage pumping station at West Wylam with a contribution of £385,000 going to a number of local environmental charities. We hope to sign this EU off with the EA soon having also successfully undertaken a number of activities, such as investigating outfalls at our other sewage pumping stations.

The second agreed EU was in connection with a pollution incident at Leap Mill Burn at Burnopfield in November 2015 where a compensation sum of £105,000 has been accepted.

We continue to work with the EA on a number of EUs for their consideration, totalling a significant value, as an alternative route to prosecution for serious incidents. Civil sanctions through EUs offer a redress for the environmental damage caused, benefitting the environment and local communities.

The EA has an expectation that we will pro-actively or 'self-report' at least 75% of pollution incidents to them rather than rely on others to point out a problem. Our self-reporting performance in 2017 increased to 78% from 68% in 2016 meeting the EA's requirements having been industry leading at 82% in 2015.

Our multifaceted pollution management programme that we developed and continue to extend has resulted in far fewer category 3 incidents since 2015. This focused approach has looked at every incremental improvement that can be made in performance across all our assets. Activities have included water industry benchmarking, our Water Rangers programme, enhanced data analytics, community engagement, improved evidence collection and dynamic planned maintenance.

Innovation continues to play a strong role in preventing pollution with creative ideas being taken forward and successfully implemented.

R-F1 Delivering a consolidated Customer Information and Billing (CIB) system

This ODI is linked to the cost and delivery of our customer information and billing system. There are two penalties linked to the measure;

1. Scheme funding of the Customer Information and Billing (CIB) system.

Within App5 there is an available line to complete the details of a penalty should the outturn costs of our CIB system be less than those allowed for in the price limits. Should the outturn costs be lower, we were to return half of any funding for this scheme (via payments for depreciation) to customers. However the outturn costs have exceeded those than allowed in the price limits. We have therefore interpreted this as no penalty in App5.

2. The non-delivery of the system on a specific defined date of 31st March 2018.

We delivered the system on the 8th May 2018. Therefore we were 38 days later than the deliverable date set in our plan. The penalty rate for non-delivery was £1.25m per year of non-delivery (calculated pro-rata). We have set the calculation of our penalty below. However within the App5 table there is no line available to enter this penalty. (This penalty is shown in App27).

Incentive Type	Penalty 2
Incentive Rate	£1.25m per year of non-delivery (calculated pro-rate according to the number of days of non-delivery)
Measurement	Delivery is measured by 80% of Northumbrian Water's directly billed customers being handled through the new consolidated CIB system
Due Date	31/03/2018
Live Date	08/05/2018
Days Late	38
Penalty due	= £1.25m (Incentive rate) divided by 365 (the number of days in the year) * 38 days (days late) = (£1.25m / 365) * 38 =£0.130m As this is a penalty, underperformance payment shown as negative, -£0.130m Out / Under Performance Payment * (1 – Tax Rate) = -£0.130 * (1 – 17%) =-£0.108m

TABLE APP6 – PR14 RECONCILIATION ~ SUB-MEASURES

NWL have no submeasures

TABLE APP9 - ADJUSTMENTS TO RCV FROM DISPOSALS OF INTEREST IN LAND

This table reports profits on the sale of property and from disposal of interests in land by the appointed business.

The forecasts for 2014/15 in lines 1 and 12 are taken from Ofwat's PR14 RCV midnight adjustment model.

The actual sales in years 2014/15 to 2017/18 are as reported in our Regulatory Accounts / APR for those years.

The forecasts for 2018/19 and 2019/20 have been calculated as the average of sales in the years 2015/16 to 2017/18.

The NPV effect of 50% of proceeds from disposals of interest in land in lines 11 and 22 is taken from the RCV adjustments feeder model.

All other fields are either calculated or pre-populated.

TABLE APP23 - INFLATION MEASURES

App23 covers the forecasts of RPI and CPIH from 2018/19 onwards.

We have included the actual RPI and CPIH indices up to June 2018.

From that point onwards, we have forecast inflation at 3% pa for RPI and 2% pa for CPIH.

This is in line with Ofwat's Final Methodology assumption for long term CPIH and RPI (page 172).

Thus, in the tables, Block A is consistent with Line 37 and Block B is consistent with Line 38.

For Line 27, Indexation rate for index linked debt percentage increase, we have used the RPI forecasts, as our indexed linked debt is RPI only.

TABLE APP25 - PR14 RECONCILIATION ADJUSTMENTS SUMMARY

We have supplied our populated Revenue Adjustments Model and RCV Adjustment Model as part of our submission.

Block A

Lines 1-6 are pre populated by Ofwat. We have checked and agreed those values.

Lines 7-12 are the only inputs for this table. They are derived from the values in lines 1-6, input into the RCV and Revenue adjustment models, converted into 2017-18 FYA CPIH values then exported back to the Business Plan Tables.

As the guidance states, lines 7, 9, 11 and 12 are taken from the RCV adjustments model.

Lines 8 and 10 are from the revenue adjustments model.

Blocks B – H

All this data is copied from other tables. We have confirmed it is consistent with the Revenue and RCV adjustment models.

Full commentary on data taken from other tables is provided alongside those tables.

TABLE APP27 - PR14 RECONCILIATION - FINANCIAL OUTCOME DELIVERY INCENTIVES SUMMARY

All lines relevant to the PR14 financial outcome delivery incentives have been completed. These include rows B8 and E26 (penalty), and C11, C12, F30, F31 (rewards). The entries in B, C, E, F are all in 2012-13 prices and are net of tax (to ensure consistency with App5).

The tax rate used to net our incentive payment is found in App 26 and is 17%. We have provided the values in App27 net of taxes as the guidance at the bottom of the excel spreadsheet indicates this table should be consistent with App5. In App5 it is clearly marked that prices should be net of tax. App27 also uses the term "Net performance payment / penalty". In the Ofwat PR14 reconciliation rulebook uses the term in reference to the amount of payment / penalty net of tax (as tax adjustment is done separately).

To net the incentive payment we used the following formula:

Incentive Payment * (1 – Tax Rate at the time of payment actualisation)

The individual calculations are:

Net performance payment / (penalty) applied to RCV for end of period ODI adjustments ~ Wholesale water (£m)

To calculate the total payment within this price control we have summed the incentives from the following measures:

- Overall drinking water compliance
- Discoloured water complaints
- Properties experiencing poor pressure
- Water mains bursts
- Interruptions to supply for greater than 3 hours
- Leakage NW
- Leakage ESW
- Satisfaction with taste and smell of tap water

Year	Out / Under Performance Payment	Payment net of tax
2015-16	Sum of measures generating incentives = £3.7800 (Interruptions to supply > 3 hours) £3.7800m	= Out / Under Performance Payment * (1 – Tax Rate) =£3.7800m * (1 – 17%) =£3.137m
2016-17	Sum of measures generating incentives = £3.5640 (Interruptions to supply > 3 hours) + (-£0.1265 (Leakage ESW)) £3.4375m	= Out / Under Performance Payment * (1 – Tax Rate) =£3.4375m * (1 – 17%) =£2.853m
2017-18	Sum of measures generating incentives = £0.5940 (Interruptions to supply > 3 hours) + £0.2633 (Discoloured Water Complaints) + £0.0990 (Satisfaction with taste and odour of tap water) £0.9563m	= Out / Under Performance Payment * (1 – Tax Rate) =£0.9563m * (1 – 17%) =£0.794m
2018-19	Sum of measures generating incentives = £0.4060 (Discoloured Water Complaints) £0.4060m	= Out / Under Performance Payment * (1 – Tax Rate) =£0.4060m * (1 – 17%) =£0.337m
2019-20	Sum of measures generating incentives = £0.4060 (Discoloured Water Complaints) £0.4060m	= Out / Under Performance Payment * (1 – Tax Rate) =£0.4060m * (1 – 17%) =£0.337m
Total to be applied at PR19	=sum of years 2015-16 to 2019-20 =£3.7800m + £3.4375m + £0.9563m + £0.4060m + £0.4060m =£8.9858m	=sum of years 2015-16 to 2019-20 =£3.137m + £2.853m + £0.794m + £0.337m + £0.337m =£7.458m (check with Out / Under Performance payment total * (1 tax rate) =£8.9858m * (1 – 17%) =£7.458m

Net performance payment / (penalty) applied to RCV for end of period ODI adjustments ~ Wholesale wastewater

To calculate the total payment within this price control we have summed the incentives from the following measures:

- Internal flooding (public and TDS)
- External flooding (public and TDS)
- Bathing Water Compliance

- Repeat Sewer Flooding
- Sewer collapses
- Sewage treatment works discharge compliance
- Pollution incidents (category 3)

Year	Out / Under Performance Payment	Payment net of tax
2015-16	Sum of measures generating incentives = £0.5590 (Internal Sewer Flooding Public) + £0.1560 (External Sewer Flooding Public) £0.7150m	= Out / Under Performance Payment * (1 – Tax Rate) =£0.7150 * (1 – 17%) =£0.593m
2016-17	Sum of measures generating incentives = £0.8710 (Internal Sewer Flooding Public) + £0.6000 (External Sewer Flooding Public) £1.4710	= Out / Under Performance Payment * (1 – Tax Rate) =£1.4710m * (1 – 17%) =£1.221m
2017-18	Sum of measures generating incentives = £1.1700 (Internal Sewer Flooding Public) + £0.3900 (External Sewer Flooding Public) + £1.2610 (Repeat Sewer Flooding) £2.8210m	= Out / Under Performance Payment * (1 – Tax Rate) =£2.8210m * (1 – 17%) =£2.341m
2018-19	Sum of measures generating incentives = £0.8580 (Internal Sewer Flooding Public) + £0.4780 (External Sewer Flooding Public) + £1.2610 (Repeat Sewer Flooding) £2.5970m	= Out / Under Performance Payment * (1 – Tax Rate) =£2.5970m * (1 – 17%) =£2.156m
2019-20	Sum of measures generating incentives = £0.8580 (Internal Sewer Flooding Public) + £0.4780 (External Sewer Flooding Public) + £1.2610 (Repeat Sewer Flooding) + £0.1227 (Pollution incidents (category 3) £2.7197m	= Out / Under Performance Payment * (1 – Tax Rate) =£2.7197m * (1 – 17%) =£2.257m
Total to be applied at PR19	=sum of years 2015-16 to 2019-20 =£0.7150 + £1.4710m + £2.8210m + £2.5970m + £2.7197m =£10.3237m	=sum of years 2015-16 to 2019-20 =£0.593m + £1.221m + £2.341m + £2.156m + £2.257m =£8.569m (check with Out / Under Performance payment total * (1 tax rate)

		=£10.3237m * (1 – 17%) =£8.569m

Net performance payment / (penalty) applied to revenue for end of period ODI adjustments ~ Retail (household)

Within this price control we only have one PC which related to the delivery of our new CC&B customer system. The due date for this system was the 31st March 20018. However as we delayed the go-live date until the 8th May 2018 we incurred a penalty, which is calculated below:

Incentive Type	Penalty 2
Incentive Rate	£1.25m per year of non-delivery (calculated pro-rate according to the number of days of non-delivery)
Measurement	Delivery is measured by 80% of Northumbrian Water's directly billed customers being handled through the new consolidated CIB system
Due Date	31/03/2018
Live Date	08/05/2018
Days Late	38
Penalty due	= £1.25m (Incentive rate) divided by 365 (the number of days in the year) * 38 days (days late) = (£1.25m / 365) * 38 =£0.130m As this is a penalty, underperformance payment shown as negative, -£0.130m Out / Under Performance Payment * (1 – Tax Rate) = -£0.130 * (1 – 17%) =-£0.108m

BLOCKS H & I

We have exported the totals in Blocks E & F to the revenue and RCV feeder models respectively. The outputs from those models (17-18 prices CPIH deflated) has been input into Blocks H & I.

TABLE APP31 - PAST PERFORMANCE

Lines 1 - 4: Complaints from residential and business customers

No additional commentary for these lines.

Line 5: Complaints investigated by Ofwat or WATRS

Complaints investigated by Ofwat or WATRS 2015-16

22/06/2015 Meter location (Ref:15ES3616C0)

Outcome – Customer has submitted a claim for compensation due to a private leak between their property and their meter. WATRS investigation found no evidence of any wrongdoing and no further action is necessary.

02/07/2015 Flooding mitigation (Ref:15NO36C59F)

Outcome – Customer experienced issues with sewer flooding which they reported to their local authority and made a claim for compensation. WATRS investigation found that we weren't liable for the customers issues and therefore no further action was necessary.

04/09/2015 Meter Application (Ref:15ES389C90)

Outcome – WATRS investigation concludes that the levels of service provided by us have met reasonable expectations and that no further action is necessary.

02/11/2015 Dispute over damage caused from a water leak (Ref:15ES35B0B9)

Outcome – The customers claim for compensation fell outside the remit our complaints procedure and therefore it was found to not be applicable for investigation by WATRS.

14/12/2015 Irrigation losses rebate (Ref:15NO36044D)

Outcome – Customer had claimed for an elapsed non-return allowance to be applied retrospectively. WATRS found in our favour that non-return allowances are applied at our discretion and that we had taken reasonable steps to alert the customer to the fact that their allowance had ended previously.

22/12/2015 Leakage allowance (Ref:15NO3808DD)

Outcome – The customer claimed compensation for leakage. WATRS found no compensation was due in respect of leakage however they recognised we failed to provide the customer with a copy of our complaints procedure and that £50 compensation was due in light of this.

Learning – We have updated our complaints process to ensure we provide all customers with details of our online complaints procedure.

Complaints investigated by Ofwat or WATRS 2016-17

07/04/2016 Cross meter connection (Ref:16ES3CAB70)

Outcome – Customers issues are resolved outside of the alternative dispute resolution scheme and the customer retracted their WATRS request resulting in no further investigation.

10/05/2016 Common supply leakage (Ref:14ES319C08)

Outcome – The customer claimed compensation for a private leak. The WATRS investigation found that, as we had acted in accordance with our policies and procedures, no compensation for due for this, however we had misinformed informed the customer about our private pipework repair policy on one occasion and therefore £50 compensation was due.

Learning – we need to ensure our people are fully trained and knowledgeable in our processes, policies, and procedures to ensure that correct information is imparted to customers at all times.

06/06/2016 Void property charges (Ref:16NO3D6F0E)

Outcome – Customer had moved out of their property but hadn't notified us until after the fact. We had partly cancelled charges but others remained outstanding as we had not received adequate notice. WATRS investigation find partly in favour of the customer resulting in cancellation of the remaining charges from the date after they had left the property.

14/09/2016 Common supply leakage (Ref:15ES3B0F3D)

Outcome – Customer claimed for private side leakage. WATRS investigation found that there was insufficient information provided by the customer for their claim to progress.

01/11/2016 Dispute over reinstatement (Ref:15ES3784DA)

Outcome – Customer alleges we caused depression in the ground. WATRS investigation found no evidence of any wrongdoing and no further action is necessary.

30/11/2016 Disputed water bill (Ref:15NO35A870)

Outcome – Earlier court proceedings had already found in our favour therefore the WATRS investigation was cancelled.

15/02/2017 Blockage after meter fitting (Ref:16ES41D075)

Outcome – Customer claimed we had installed an internal water meter on a leaking pipe. WATRS found in favour of the customer. The customer rejects WATRS compensation amount but they later came back to us asking for it to be paid which we subsequently did, despite not being obliged to do so.

Complaints investigated by Ofwat or WATRS 2017-18

10/05/2017 Disputed damage from a leak on a water meter (Ref:16NO418D22)

Outcome – Customer alleges we caused damage to their property. WATRS investigation found no evidence of any wrongdoing and no further action is necessary.

19/05/2017 Rateable value vs Metering pricing policy (Ref:16ES408AFA)

Outcome – Customer is looking for compensation for a period of time when they were charged by their local authority before later having a meter installed. WATRS found no issue with our charging policy and no further action was required.

14/06/2017 Trace person handling (Ref:16NO41051E)

Outcome – We sent debt recovery letters to an incorrect customer. Our billing system at the time continued to issue letters even once we were made aware. WATRS found we should provide compensation to the customer.

Learning – We have replaced our billing system and now have the appropriate controls to prevent automated letters from being issued incorrectly.

16/06/2017 Water and Sewerage - Development Enquiry (Ref:16NO3CF042)

Outcome – Customer turned a business premise into four domestic properties and we subsequently for the associated infrastructure costs. WATRS investigation found that the basis of their claim fell outside of WATRS jurisdiction and could not be taken forward. The customer had requested a named field technician attend and appointment to conduct an investigation at their property. As we did not send the customers preferred field technician and the visit was abortive, WATRS identified a service failure leading to inconvenience and that £100 compensation was to be paid.

Learning – We need to ensure we fulfil any promises we make to send specific field technicians to attend customer appointments.

25/10/2017 Leakage Common Supplies (Ref:17ES465834)

Outcome – Customer has submitted a claim for compensation due to a private leak. WATRS investigation agreed with our assessment that the customer is liable for their private pipework and therefore no further action was necessary.

21/02/2018 Accounts (Ref:16NO44221D)

Outcome – Customer opened multiple accounts for their service leading to incorrect charging and subsequent refund. WATRS found we should give the customer further compensation for the additional effort they incurred from opening these accounts.

Learning – online self-service and billing systems should be designed to identify where customers have inadvertently attempted to create duplicate accounts.

13/02/2018 Disputed damage to a water softener (Ref:17ES4DC807)

Outcome - Customer alleges we caused damage to their property. WATRS investigation found no evidence of any wrongdoing and no further action is necessary.

19/03/2018 Ownership of water main dispute (Ref:13ES293184)

Outcome – Customer alleged that a main running outside their property is a public water main and is therefore our responsibility and not private. WATRS investigation concluded that the customer had sufficiently established that it was a public water main and that we are therefore responsible for all associated future maintenance and costs.

Learning – This is a complex and rare case. We have no records whatsoever of inheriting this specific asset and the customer was not able to provide sufficient evidence to prove that it had been transferred decades before. WATRS ruling was based on the balance of probability. We would adopt a similar position in future cases.

Summary of lines 1 to 5

From 2015 to 2018 we have seen improvements in our complaints performance particularly at first stage. The launch of our unrivalled customer experience strategy has helped improve customer service. Coupling this with focus on proactive, personalised and less technical communications has increased customer understanding which has contributed to improved performance. For the 2020-25 period we have an ambition to reduce customer complaints by 50%, this is supported by an innovative bespoke measure to reduce customer complaint response times. This recognises the customer expectation of faster responses to complaints and we are aiming to achieve leading performance in this area. The Business Plan submission section 3.1 Unrivalled customer experience contains further detail to further improve our service offering.

Line 6: Total number of major incidents

There have been no DWI major water quality events in the period 2015-16 to 2017-18.

There were no category 1 incidents in 2015-16. There were two category one incidents in 2016-17 and in 2017-18. Further detail is provided along with the commentary for Line 7.

Line 7: Category 1 and 2 serious pollution incidents data is derived from MD109 table 3a pollution incidents by type.

2015 Category 2 incidents:

NIRS 1314540 17-02-2015 West Wylam SPS – An operational issue at West Wylam sewage pumping station resulted in a discharge of sewage to the Park Burn. The discharge duration is unknown.

NIRS 1330042 18-04-2015 Chapel Beck, Guisbrough – A blockage within the combined sewer caused sewage to discharge to Chapel Beck. The blockage was caused by fats oils and grease, the discharge duration is unknown.

NIRS 1354183 11-07-2015 Barberry Close SPS – A blockage within the sewage pumping station resulted in a discharge of sewage to Bassleton Beck. The blockage was caused by rags and the discharge duration is estimated to be 1hr 45mins.

NIRS 1370809 05-09-2015 Longbeck Road CSO, Marske. A blockage within the combined sewer overflow resulted in a discharge of sewage to Long Beck. The blockage was caused by a piece of concrete in the combined sewer overflow. The discharge duration was approximately 32hrs.

NIRS 1390336 26-11-2015 Leap Mill Burn, Burnhopefield, Durham. A blockage within the combined sewer caused sewage to discharge to Leap Mill Burn. The discharge duration is unknown.

2016 Category 1 incidents:

NIRS 1441490 07-06-2016 West Cornforth SPS – A blockage at the works CSO caused sewage to discharge to Coxhoe beck. The blockage was caused by fats oils and grease, the discharge duration is unknown.

NIRS 1445809 21-06-2018 Ullswater Crescent CSO – A partial blockage within the CSO caused sewage to discharge into Crook Beck. Approximately 100 dead fish were noted in the watercourse downstream of the CSO.

2016 Category 2 incidents:

NIRS 1430290 26-04-2016 Wapping Burn SPS rising main – A fractured rising main resulted in sewage entering Wapping Burn.

NIRS 1443885 14-06-2016 Seaton Carew SPS – Proactive works undertaken to clear blockages from the inlet pipework resulted in a discharge of sewage to the North Sea. The duration of the discharge was approximately 5hrs 30min.

NIRS 1454131 18-07-2016 Aykley Heads Durham – A fractured combined sewer pipe bridge resulted in sewage entering an unnamed tributary of the River Wear. The discharge duration is unknown.

NIRS 1458353 01-08-2016 Durham Botanic Gardens Saltwell Gill – A blockage within a duel sewer system caused sewage to enter the surface water system and discharge to the Saltwell Gill. The discharge duration is unknown.

NIRS 1463377 18-08-2016 Broomley STW – A blockage within the inlet sewer to the sewage treatment works resulted in a discharge of sewage to the smithy Burn. The discharge duration is unknown.

NIRS 1485707 20-11-2016 Chilton Lane CSO 1 – A blockage within the CSO caused sewage to discharge to an unnamed tributary of the River Skerne. The discharge duration is unknown.

NIRS 1487271 25-11-2016 Aykley Heads Durham – A blockage within a combined sewer caused sewage to discharge to an unnamed tributary of the River Wear. The discharge duration is unknown.

2017 Category 1 incidents:

NIRS 1507862 14-03-2017 Coundon Burn, Bishop Auckland – A blocked combined sewer caused sewage to back up and surcharge from a manhole. The discharge duration is estimated at approximately 5hrs 30min and entered the Coundon Burn.

NIRS 1524879 22-05-2017 Heads Hope Dene, Seaham – A blocked combined sewer caused sewage to back up and surcharge from a manhole. The discharge duration is unknown and entered the Heads Hope Dene.

Summary

Pollution incidents remains our focus and we recognise that this is a challenging area for us. We have benefitted from some recent drier years with fewer intense storms. We continue to work hard with the EA, our operational teams and through our Pollution Best Practice Group, to make sure lessons are learnt, innovative solutions are implemented and serious incidents are reduced towards zero.

Line 8: Category 3 pollution incidents pollution incidents data is derived from MD109 table 3a pollution incidents by type.

The 2015 -2017 cat 3 pollution data shows a reduction in pollution incident numbers across all asset types.

Line 9: Discharge permit compliance

Performance in 2015-16 was 99.4% this represents one failing works. In 2016-17 the Discharge permit compliance method changed to include Water Treatment Works compliance. In 2016-17 performance was 97.8% with one STW and three failing WTWs. In 2017-18 there were five failing WTW and two failing STWs.

Our intention is to achieve 100% compliance with this measure in line with the Environment Agency's WISER requirements.

Line 10: Satisfactory sludge use / disposal

The definition of 'Satisfactory sludge use/disposal' is agreed between the Environment Agency and the WaSCs via WaterUK:

"Satisfactory Sludge Use/Disposal – includes; compliance with the Sludge (Use in Agriculture) Regulations, EPR Regulations in so far as they apply to the recycling &/or disposal of sewage sludge containing products and residual wastes, and compliance with the Safe Sludge Matrix."

Reporting is on the basis of tonnes dry solids (tds) sent to any outlets in a compliant manner, when under the control of the sludge producer, reported as both:

1. Total compliant tds, utilised via any route.

2. Percentage of overall tds production utilised in a compliant manner (= 1- unsatisfactory use/disposal tds utilised/total raw tds production).

Notes

a) In terms of non-agricultural outlets; material will be deemed compliant with the measure, if at the point of entry to the non-agricultural outlet, an appropriate permit, exemption or regulatory position existed, allowing the sludge to be utilised in this manner.

b) Solids added during the sludge treatment process, will be excluded from the reporting e.g. lime added during the treatment process will be excluded.

c) Grit & screenings & water treatment sludge will also be excluded.

d) Treatment related breaches that do not result in non-compliant sludges or residual products going to any outlets are not included. This is to avoid double counting.

e) Incineration is considered an 'outlet' for these purposes rather than a treatment.

f) The reporting year will be 1st January – 31st December each year.

g) 1 above will be reported to the nearest tds, whereas 2 will be reported to two decimal places.

Target

100% satisfactory sludge disposal.

The Environment Agency also carries out an annual audit prior to allocating one of the following measures:

Thresholds

Green - 100% satisfactory sludge disposal.

Amber - Less than 100% but greater than 98% satisfactory sludge disposal.

Red - Equal to or less than 98% satisfactory sludge disposal.

Since the first reporting requirement in 2015-16, Northumbrian Water has achieved a green 100% rating.

All of Northumbrian Water's sludge is treated by Advanced Anaerobic Digestion at either of two Sludge Treatment Centres at Bran Sands (on Teesside) and Howdon (on Tyneside) and achieves an Enhanced Treated Status according to the Safe Sludge Matrix. This is achieved through applying a rigorous HACCP procedure; all microbiological samples since 2013 have passed for <1000cfu/g E.Coli and an absence of Salmonella. The Enhanced Treated product is then recycled to agricultural land by contractor under the Sludge (Use in Agriculture) Regulations and adherence to the Safe Sludge Matrix. All the regulations, Code of Practice requirements, guidance and best practices were brought together under the UKAS accredited Biosolids Assurance Scheme in 2015. Northumbrian Water was one of the first companies to achieve 100% certification in 2016. In 2018 the certification was renewed with zero non-conformities. The forecast is that NW will continue to achieve 100% Satisfactory sludge disposal/use through use of AAD.

Line 11: Prosecutions for breach of relevant environmental requirements enforced by EA/NRW

There have been no prosecutions for breach of relevant environmental requirements enforced by Environment Agency in the period 2015-16 to 2017-18

Line 12: Enforcement undertakings for breach of relevant environmental requirements from EA/NRW

Enforcement Undertakings may be submitted following a pollution incident for consideration by the Environment Agency. Two Enforcement Undertakings have been accepted. One in 2016-17 for an incident at West Wylam, in Tyneside and one in 2017-18 for an incident at Leap Mill Burn in Durham.

Line 13: Formal cautions for breach of relevant environmental requirements from EA/NRW

The Environment Agency have not issued any formal cautions in 2016-17 or 2017-18. In 2015-16 one caution was accepted for a breach of flow consent at Bowburn sewage works from 2014.

Lines 14 and 15: Formal cautions for breach of drinking water quality requirements and Completed prosecutions for breach of drinking water quality requirements

There have been no formal cautions or prosecutions in the period 2015-16 to 2017-18.

Lines 16 and 17: Completed enforcement action taken under the Water Industry Act 1991 and the licence and Completed enforcement action taken under competition law

Any enforcement action taken by Ofwat would be notified to the Board. Our company secretary has confirmed that no such actions have taken place. We confirmed this with Ofwat in an email exchange in April 2018.

WATER SERVICE TABLES

TABLES WS13 AND WWS13 - PR14 WHOLESALE REVENUE FORECAST INCENTIVE MECHANISM FOR THE WATER AND WASTEWATER SERVICES

These tables are heavily pre-populated by Ofwat. The inputs represent the split of revenue recovered across our different customer types. The actual revenue split up to 2017/18 is agreed to the regulatory accounts table 2I. The two remaining forecast years total revenue is derived from the WRFIM calculated allowed revenue.

The total revenue recovered agrees back to the WRFIM model.

Any penalties calculated in the WRFIM model are also input in Block G of this table.

WRFIM PR14 reconciliation model

This model forms part of the PR14 Reconciliation Rulebook.

There are two input worksheets in this model:

- Data
- RPI

Data worksheet

Yellow highlighted cells are input cells.

WRFIM inputs

	Year			2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	20
1	Calendar year			2012	2013	2014	2015	2016	2017	2018	2019	2020	
	Year number						1	2	3	4	5	6	
	Model inputs												
Text	Company Name		NES										
Text	Company Type		WaSC										
True/False	Company has accepted WRFIM licence modification		TRUE	True/False									
	WRFIM Parameters												
	Penalty rate scaling												
% 2dp	Minimum threshold (+/-)		2.00%	*Threshold.Min*									
% 2dp	Maximum threshold (+/-)		3.00%	*Threshold.Max*									
% 2dp	Penalty rate (+/-)		3.00%	*Penalty.Rate.General*									
% 2dp	Specified discount rate		3.60%	*Discount.Rate*									
% 2dp	Threshold for additional variance analyses (+/-)		6.00%	*Additional.Analysis*									
	Revenue												
	Allowed revenue												
£m 3dp	Allowed revenue - water	14/15 price base				405.534							
£m 3dp	Allowed revenue - wastewater	14/15 price base				289.036							
	K												
Nr	K - water						-	0.84	0.35	0.06	0.06		
Nr	K - waste						-	0.89	0.40	0.11	0.11		
	Recovered revenue												
	To be completed at the end of PR14>>												
£m 3dp	Recovered revenue - water	Outturn price base					418.509	427.592	435.056	442.076	453.226		
£m 3dp	Recovered revenue - wastewater	Outturn price base					294.326	299.337	310.582	321.892	328.473		
	Blind year adjustments												
	RCM adjustment												
£m 3dp	Blind year adjustment 14/15 - water	12/13 price base				(5.384)	*EBlindYear.1415.Adj.Water*						
£m 3dp	Blind year adjustment 14/15 - waste	12/13 price base				(2.198)	*EBlindYear.1415.Adj.Waste*						
% 1dp	Percentage of blind year adjustment by year - water	All values must be >=0; sum of values must be <=1.							0.0%	0.0%	0.0%	0%	
% 1dp	Percentage of blind year adjustment by year - waste	All values must be >=0; sum of values must be <=1.							0.0%	0.0%	0.0%	0%	
	Accelerated return of over-recovered revenue												
	Over-recovered revenue returned to customers after one year												
£m 3dp	Over-recovered 17/18 revenue returned - water	Outturn price base								-			
£m 3dp	Over-recovered 17/18 revenue returned - wastewater	Outturn price base								-			
£m 3dp	Over-recovered 18/19 revenue returned - water	Outturn price base									-		
£m 3dp	Over-recovered 18/19 revenue returned - wastewater	Outturn price base									-		
End													

Model inputs

In this section we input the company name, type and we confirm that our licence has been modified to allow the operation of WRFIM.

WRFIM Parameters

These cells were pre-populated. The minimum and maximum thresholds and penalty rate are as specified by Ofwat. The specified discount rate is as notified by Ofwat in the FD and represents our WACC.

Revenue

Allowed revenues and ‘K’ are as notified by Ofwat in our PR14 FD letter.

Recovered revenue

For the periods up to an including 2017/18 the recovered revenue is as reported in table 2I of the APR. The forecast numbers for 2018/19 and 2019/20 represents the adjusted allowed revenue amount which has been calculated on the relevant WRFIM Water or Sewerage tab (which applies the 3% RPI assumption and ‘K’ to the allowed revenue). We are assuming therefore that there is no over/under recovery of allowed revenue in the final two years.

Blind year adjustments

The RCM adjustment is in accordance with Ofwat 2010-15 final reconciliation. Ofwat have pre-populated these numbers in the model.

We have elected and notified Ofwat that we opt to have the RCM revenue adjustment apply in PR19 so we have not allocated a percentage for the three option years. This is also pre-populated in the model.

Accelerated return of over-recovered revenue

We have not made any returns to customers after one year.

RPI Worksheet

Actual RPI is input up to June 2018.

Future RPI has been assumed at 3%, consistent with table App 23.

Actual RPI: Basket year - % override – This is not used.

The allowed revenue calculated on the output worksheets in this model is agreed to the WS13 and WWS13 tables. Any penalties calculated in this model will flow to these tables.

WS15 AND WWS15 - PR14 WHOLESALE TOTAL EXPENDITURE OUTPERFORMANCE SHARING FOR THE WATER AND WASTEWATER SERVICES

The Northumbrian Water Totex Menu PR14 Reconciliation Model and PR14 wholesale total expenditure outperformance sharing

Summary of our approach

In line with the PR19 methodology, and confirmed in PR19 query number 80, Ofwat have confirmed that the Totex Menu PR14 reconciliation model should be submitted in July.

We can confirm that we have completed the model in full and in line with the Ofwat PR14 rulebook.

We have used the following versions of the model and rulebook:

Model
https://www.ofwat.gov.uk/wp-content/uploads/2016/10/Totex-Menu-2016-05-17-change-log-removed.xlsx

Rulebook
https://www.ofwat.gov.uk/wp-content/uploads/2016/10/PR14-reconciliation-rulebook-Dec-17.pdf

Whilst most of the inputs are taken from the Ofwat PR14 final determination, there are some key ones relating to actual expenditure relating to Actual Totex & Totex exclusions

We have used the PR14 Final Determination inputs as supplied in the Company Specific Pre populated tables published by Ofwat. We have checked and agreed the pre populated data for Tables WS15 and WWS15. All our PR14 Final Determination inputs into the totex model reconcile to the data Ofwat supplied.

For Actual totex the values are taken from the assured APR data for 2015/16 to 2017/18, with projections for the years 2018/19 and 2019/20.

These projections are based on our financial forecasts, which are consistent with our totex forecasts for 2020/21 onwards.

1 **The Totex Menu Input Sheet**

Input description	NWL data source
Is company enhanced?	NWL was not enhanced in PR14
Financing Rate	We have used the PR14 3.6% Wholesale Cost of Capital
Implied menu choice	Values taken from PR14 FD Table A2.3 and A3.4
FD pension deficit recovery costs allowance	Values taken from Ofwat pre populated data, and agreed to PR14 FD
Final menu choice	Vales are taken from http://www.ofwat.gov.uk/publications/menu-choices/
Baseline totex	Values taken from Ofwat pre populated data, and agreed to PR14 FD
FD allowed totex inclusive of	Values taken from Ofwat pre populated data, and agreed to PR14 FD

menu cost exclusions, less PDRC allowance	
Actual totex	See later
Totex exclusions	See later
Totex inclusions – transition expenditure	Values taken from Ofwat pre populated data, and agreed to PR14 FD
PAYG ratio	Values taken from Ofwat pre populated data, and agreed to PR14 FD
Business Rates IDOK	As NWL has not make an IDOK claim, under the rulebook guidance (page 25), we have not completed this section.
TTT control	Not relevant for NWL

2 Actual totex & adjustments to actual totex

As per the rulebook, we have used the costs from Table 4B to complete these lines from the 2017/18 APR. The actual values used are highlighted in orange.

4B - Wholesale totex analysis

For the 12 months ended 31 March 2018

Line description		Units	DPs	Current year	
				Water	Wastewater
A	Actual totex				
4B.1	Actual totex	£m	3	**344.341**	**174.432**
B	Items excluded from the menu				
4B.2	Third party costs	£m	3	**8.132**	**0.302**
4B.3	Pension deficit recovery payments	£m	3	**6.213**	**2.713**
4B.4	Other 'Rule book' adjustments	£m	3	**0.288**	**2.894**
4B.5	Total items excluded from the menu	£m	3	14.633	5.909
C	Transition expenditure				
4B.6	Transition expenditure	£m	3	0.000	0.000
D	Adjusted Actual totex				
4B.7	Adjusted Actual totex	£m	3	329.708	168.523
4B.8	Adjusted Actual totex base year prices	£m	3	293.448	149.988
E	Allowed totex				
4B.9	Allowed totex based on final menu choice – base year prices	£m	3	281.381	212.242

Actual totex forecasts for 2018/19 and 2019/20

We have set out our forecast totex for 2018/19 and 2019/20, based on our financial forecasts. The 2018/19 values will need updating after the 2019 APR. The totex for these years is consistent with the starting point for our totex projections in our business plan.

Line 25: Disallowables – Water Service 2015/16

We have included a £0.223m of disallowed expenditure for the water service in 2015/16 that was not identified in the original APR. The disallowable costs for the years 2015/16 to 2017/18 are consistent with the cumulative 'other Rule book adjustments' reported in table 4B of our 2017/18 APR.

3 Pre populated data queried with Ofwat (June 2018)

In our response to the pre populated data, we queried some of the totex menu data. We believe these are resolved and are now correct in the final NES Business Plan tables.

4 Outputs and next steps

From the totex model, we arrive at the following adjustments to revenue and RCV:

1 Revenue adjustments		
Water: revenue adjustment	12/13 price base	6.777
Sewerage: revenue adjustment	12/13 price base	(4.583)
Total revenue adjustment	12/13 price base	**2.194**
2 RCV adjustments		
Water: RCV adjustment	12/13 price base	17.988
Sewerage: RCV adjustment	12/13 price base	(115.065)
Total RCV adjustment	12/13 price base	**(97.078)**

The totex adjustments reflect our significant outperformance of the sewerage determination and a projected overspend for the water service, driven mainly by a large increase in our water business rates.

Our totex model feeds the results into the input tabs of the RCV and Revenue adjustment models. They in turn feed the Business Plan Tables: App8, App25, WS15 and WWS15.

As per the PR19 guidance, we have applied the full totex menu revenue adjustments to the Network Plus controls.

The RCV adjustments will be made proportionately to the water resources and water network plus controls and to the wastewater network plus control.

WS17 - PR14 WATER TRADING INCENTIVE RECONCILIATION AND WATER TRADING INCENTIVE MODEL

In this table and the associated water trading incentive model, we are making one export incentive claim and no import incentive claims. As our export incentive claim relates to the largest water trade since privatisation, we have set it out in full in this commentary.

Commentary on the Essex - Thames (ESW-TMS) Water Trade from 2015 to 2035

Purpose of Report

This report is to support the application for a PR19 incentive for a major long term water trade signed in September 2014 between Northumbrian Water and Thames Water. It is part of the PR19 Business Plan, and supports Table WS17 of the plan.

It provides assurance that the trade provides benefits to customers and shares the gains from such a trade. It shows the outputs from the Ofwat Water Trading model that we have supplied separately.

The NWL-TMS trade of 20ML/d (7,300,000m3 per year) is the largest trade agreed since privatisation. We estimate it will create over £50m of value over the contract for both companies through the avoided costs for Thames, shared between Thames and Northumbrian Water.

Background

Northumbrian Water completed the raising of its Essex Water Resource Zone Abberton reservoir late in 2013. The raising increased the dry year availability of water to the Essex WRZ by 64Ml/d. This increase in deployable output satisfied the supply deficit that existed and gave a significant surplus above the dry year demand plus target headroom. This is to be expected in large scale water resource schemes as the economics of construction favour creation of a future headroom in the supply demand balance. As future demand increases then this headroom gradually becomes utilised.

In the Essex WRZ about 20% of the deployable output comes from a source known as the Chigwell supply. This water, 91Ml/d, comes in to an Essex WTW from the Thames Water Lea Valley reservoirs. This scheme, including the reservoirs and associated transfer infrastructure, were jointly developed in the early 1960s between the South Essex Water Company (now NWL) and the Metropolitan Water Board (now Thames

Water Utilities, TWU). Costs were shared according to the proportion of water each company would receive although ownership of the assets resided with TWU.

The WRMP forecasts for PR14 showed that the Essex WRZ would have a significant surplus through the 25 year planning horizon and that we could support supplying TWU with 20Ml/d of raw water for 20 years. The reality is that the supply would be effected by reducing the Chigwell raw water take from TWU by 20Ml/d. TWU only required the supply when their supplies were becoming stretched therefore a trading agreement was negotiated with them that required an annual reservation charge (whether water was taken or not) plus a volumetric charge when the water was needed. An additional 5Ml/d was added to the agreement from 1/3/2017 until 31/3/2018.

Benefits to Customers

Essex and Suffolk customers have benefited from the Thames trade through lower bills since 2015. Appendix 5 shows how our business plan and Ofwat's determination included a projection of £1.6m pa of income from the trade. This additional income was used to reduce Essex and Suffolk customer bills by £1 per year across 2015-20.

For PR19, NWL will include the projected £1.3m pa income from the water trade in Table Wr3, line 12, within the price control. This means that the required income from water resources tariffs for customers is reduced by this amount. In this way, customers will benefit from lower bills throughout the length of the trade.

Ofwat's Water Trading Model is designed to provide an incentive for water companies to create such trades and to share their benefits 50:50 with customers. Appendix 3 has more details on how this works.

Impact on bills

Per below, the trade to 2035 has overall net present value of £20.5m for ESW. The company 50% incentive share is £10.2m. The model splits this incentive between £7.1m for PR19 and £3.2m for PR24. In the table below, there is a small cost to customers in 2020-25. This represents a 0.3% increase in bills. This is more than offset by the large bill reductions in 2020/21 due to the lower cost of capital and totex efficiency savings, so there is no incidence effect for water bills generally or the water resources charge specifically. We have taken the incentive as an npv neutral smoothed revenue allowance over 2020-25, using the revenue adjustment feeder model facility, as customers have confirmed that they prefer bill stability.

We believe this small increase is acceptable given the larger gains already given entirely to customers over 2015 to 2020.

Table 1: Sharing the gains from trading

17-18 prices, npv	2015-20	2020-25	2025-30	2030-35	Whole scheme
Gain for customers	7.1	-1.8	1.3	3.7	**10.2**
NWL incentive	0.0	7.1	3.2	0.0	**10.2**
Trade value	**7.1**	**5.3**	**4.4**	**3.7**	**20.5**

Interaction with the Business Plan process

'Table WS17 - PR14 water trading incentive reconciliation' in the business plan will have the calculations of the trade and the resulting incentive calculation.

The guidance states: We expect companies to supply populated models and accompanying reports on compliance with trading and procurement codes with the regulatory accounts reporting in July 2018.

Evidence of Customer support

Page 213 of the Ofwat Final Methodology states

1. How well has the company given evidence for its proposed reconciliations for the 2015-20 period, and has it proposed adjustments by following the PR14 reconciliation rulebook methodology.

In this assessment, we would expect to see:

The customer engagement/support – evidence of customers' support, and the strength of that support, for its proposed adjustments to the 2020-25 price controls.

We have carried out customer engagement on the principle of sharing of profits. Our evidence concluded that customers agree with the concept of profit sharing. Appendix 7 has evidence that customers support sharing gains with us, with a 50% sharing rate the most popular.

Whilst the calculations of the incentive are set out in Ofwat's model, it is important to demonstrate the customer benefits of the trade. We have done so in this report and we have shared this with our Customer Forum.

Appendix 1 Complying with the Ofwat Guidance for Water Trading Incentives

PR14 Appendix 3: https://www.ofwat.gov.uk/wp-content/uploads/2015/12/pap_pos201307finalapproachapp3.pdf

A3.4.1. Requirements

The trading and procurement code should include the following mandatory requirements for an export or import to qualify for an incentive payment.

As per Appendix 2, NWL has a published an approved trading and procurement code.

The trade must be agreed in July 2013 or later

Exports and imports agreed before the methodology statement was published in July 2013 will not be eligible for the new incentives, but those agreed in July 2013 or later will be eligible. By 'agreed', we mean that the parties have signed a contract in relation to a water trading arrangement.

As per Appendix 6, the NWL – Thames agreement was signed on September 2014.

The trade must be operating between April 2015 and March 2020

The import or export must be operating in practice and generating revenues during the next price control period: 1 April 2015 to 31 March 2020. The export incentive will not reward revenues accrued before 1 April 2015. The import incentive applies to expenditure during the price control period only. The treatment of water trading arrangements which begin operating after 1 April 2020 will be determined at the 2019 price review.

As per Appendix 4, the revenues used in the incentive claim start from 1st April 2015. The full contract is for 20 years.

Trades to be between unrelated parties

To be consistent with trading and procurement codes then trading must be between unrelated parties. This is because barriers to water trading appear to be between unrelated entities, not within the same group of companies.

NWL and Thames Water are unrelated parties

Appendix 2 The Northumbrian Water Trading & Procurement Code

Northumbrian Water has published our approved water trading and procurement code.

It is on the NWL website:

https://www.eswater.co.uk/_assets/documents/Northumbrian-Water-trading-and-procurement-code.pdf

It is also on the Ofwat website:

https://www.ofwat.gov.uk/wp-content/uploads/2018/02/Northumbrian-Water-trading-and-procurement-code.pdf

The code was approved by Ofwat in January 2018, after a 10 week consultation

Appendix 3 Calculating the incentive: PR19 Water Trading Model

Extract from Page 66 of the PR14 reconciliation rulebook policy document:

For the reasons set out in the consultation and summarised above, and taking into account the support from responses to our proposed approach, we confirm that **we will adopt Option 2b for PR14 reconciliation – that is, the export incentive payment at PR19 will be equal to 50% of the full discounted economic profit for the forecast life of the export with a cap of 100% of the economic profit for the years the export operates in 2015-20.**

https://www.ofwat.gov.uk/wp-content/uploads/2015/09/pap_pos201507pr14reconciliation.pdf

We have used the **Water Trading Model** issued by Ofwat to calculate the incentive:

https://www.ofwat.gov.uk/publication/water-trading-reconciliation-spreadsheet/

Note, we only have one export we are claiming an incentive for, so we have had to delete some of the formula for Exports 2 & 3 that were mistakenly picking up values from Export 1. We have no imports in our submission.

All figures are in £m

Trading Model Results (all 12/13 data is taken from Export Incentives tab of the water trading model)	12/13 prices	17/18 prices CPIH deflated
NPV of economic profit (profits above the normal return on capital) for export 1	17.8	20.5
50% of NPV of economic profit (profits above the normal return on capital) for export 1	8.9	10.2
Export incentive for export 1 to be paid at PR19 (WS17 line 31, 56)	6.2	7.1
Export incentive for export 1 to be paid after PR19 (WS17 line 33, 58)	2.7	3.2

Appendix 4 Invoiced income from 2015-16

The water trade can be seen in our bulk supply register, with the descriptor NESBWE14. Table 1B of the bulk supply register has the full details for the export trade (NESBWE14) Thames Water.

All invoices are in outturn prices. Note, in 2015-16, NWL made a volumetric charge alongside the reservation charge.

In March 2017, Thames requested an increase in the contractual volume reserved from 20Ml/d to 25 Ml/d. This was temporary and it reverts to 20ML/d from 2019/20 onwards.

Year	**Invoice Ref**	**Description**	**Value (net of VAT)**
2018-19	91424238	ESW Abberton Bulk Supply Agreement 2018-19	£1,358,787.00
2018-19	91426338	ESW Abberton Bulk Supply Agreement 2018-19	£339,697.00
2017-18	91398113	ESW Abberton Bulk Supply Agreement 2017-18	£ 1,635,052.00
2016-17	91398110	ESW Abberton Bulk Supply Agreement 2016-17 - Amendment to current agreement to include March 2017	£ 26,666.00
2016-17	91371867	Thames Water/ESW Abberton Bulk Water Supply Agreement 2016-17	£ 1,279,959.00
2015-16	91343737	Thames / ESW Abberton Bulk Water Supply Agreement - 2015-16	£ 1,266,657.00
2015-16	91359202	Thames Water & ESW - Abberton Bulk Supply Agreement -**Volumetric** Charge	£ 113,853.60

Appendix 5 Extracts from the 2013 NWL Business Plan

The NES – TMS trade was included in our 2013 Business Plan:

Extracts from Table W9 - Wholesale revenue projections for water service

Line description		Item reference	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
A	**Revenues - wholesale water**		£m	£m	£m	£m	£m	£m
1	**Wholesale control (excluding connection & infrastructure charges)**	W9001	382.6	378.3	379.6	380.9	382.5	384.2
5	Bulk supplies - contract not qualifying for water trading incentives (or signed before 1 April 2015)	W9005	0.653	0.659	0.657	0.662	0.680	0.681
6	Bulk supplies - contract qualifying for water trading incentives (to be signed on or after 1 April 2015)	W9006		1.618	1.618	1.618	1.618	1.618
10	**Total forecast revenue - wholesale water**	W9010	388.4	385.7	387.1	388.3	390.0	391.7

Line W9006 was copied by Ofwat into the Final Determination, without amendment

Line 959 from PR14 Financial Model Final Determination – F Inputs page:

W9006	Bulk supplies - contract qualifying for water trading incentives (to be signed on or after 1 April 2015)	£m	Periodic Review 2014	1.618	1.618	1.618	1.618	1.618

In this way, the projected income from the NES-TMS trade was included in the Determination and thus contributed towards reducing customer bills over 2015-20.

Section 7.4.5 of the 2013 Business Plan

Following our capital investment to expand Abberton reservoir, we have reached an agreement with Thames Water for new water trade for 20 Ml/d of raw water. This trade in water rights means that for a fixed period we will take less water from Thames through our bulk supply arrangement. This result is a more efficient allocation of water resources as Thames is able to share the benefit of the temporary resource surplus created by our expansion of Abberton reservoir. Customers of Thames Water benefit from a cost effective means to help close its supply / demand deficit and our customers in Essex benefit by lower bills as a result of the trade.

There are two elements to the charge under the agreement; a reservation fee to cover a share of the capital investment in expanding the reservoir and a variable charge to cover the increase in our operating costs of £0.467m per annum from 2015-16.

The associated revenue has been included in our business plan, which reduces customer bills. We believe this new water trade should attract an incentive payment at PR19 under Ofwat's methodology.

Page 36 of the NWL Business Plan - Water trade with Thames Water

In October 2013 following our acceptability research, it became clear that we would be able to agree a significant water trade with Thames Water. This makes use of the temporary surplus water from the expansion of Abberton Reservoir and, as such, it provides a sustainable, competitively priced supply for Thames (a win-win situation). We have used the income to be generated from the transfer to reduce ESW bills for the base package because ESW customers paid for the Abberton Reservoir raising scheme.

This results in ESW bills changing slightly less than inflation for the chosen base package.

Page 35 – Business Plan Overview

The £1 bill reduction for ESW Water Bills from 2015-16 onwards is due to the Thames trade.

Extract from the 2018 Business Plan – evidence that the revenue from the trade will continue to be shared with customers

By including the ongoing revenue from the trade in our PR19 plan, customers will continue to receive the benefits of the trade through bills being lower than they would have been otherwise.

Table Wr3

C	Wholesale water resources ~ non-price control income (third party services)	2020-21	2021-22	2022-23	2023-24	2024-25
14	Bulk supplies ~ contract not qualifying for water trading incentives (signed before 1 April 2020) ~ water resources	1.394	1.408	1.421	1.435	1.449

Appendix 6: Extracts from the NWL - Thames Bulk Supply Agreement

THIS AGREEMENT is made the 7st day of September 2014

BETWEEN NORTHUMBRIAN WATER LIMITED ("NWL") whose registered office is at Northumbria House, Abbey Road, Pity Me, Durham, DH1 5FJ ("NWL"); and

THAMES WATER UTILITIES LIMITED ("TWUL") whose registered office is at Clearwater Court, Vastern Road, Reading RG1 8DB

WHEREAS:

A This Agreement is made under Section 40 of the Water Industry Act 1991 ("the Act").

B NWL and TWUL are both appointed as water undertakers under what is now Section 6 of the Act.

C NWL currently has a surplus of water available in its Essex supply area as a consequence of their enlargement of Abberton Reservoir.

D TWUL has an operational requirement for some of NWL's surplus and has therefore requested a supply of water in bulk from NWL for a twenty year period.

EXECUTED as a DEED and delivered by the parties on the date first above written.

EXECUTED as a DEED by THAMES WATER UTILITIES LIMITED acting by:

Director

~~Director~~ / Secretary

EXECUTED as a DEED by NORTHUMBRIAN WATER LIMITED acting by:

Director

~~Director~~ / Secretary

Appendix 7

Evidence that customers support us sharing gains with us, with 50% sharing the most favoured rate

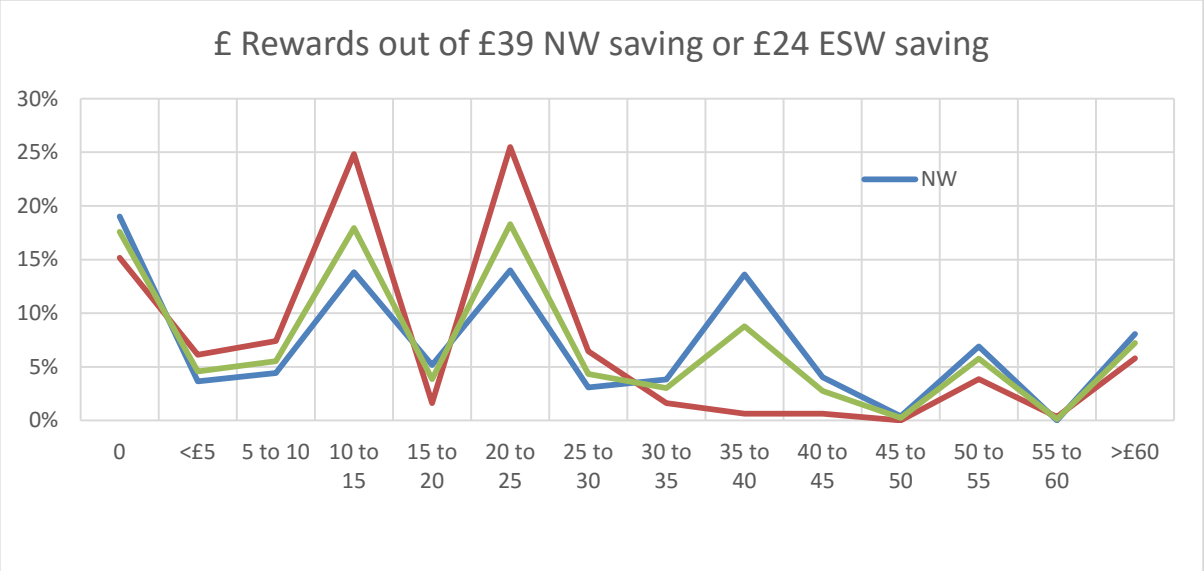
Additional ODI Research, 2018

This research was to test whether NWG bill payers would reward us more if a ceiling amount for rewards was not included in the text of our Service Valuation survey.

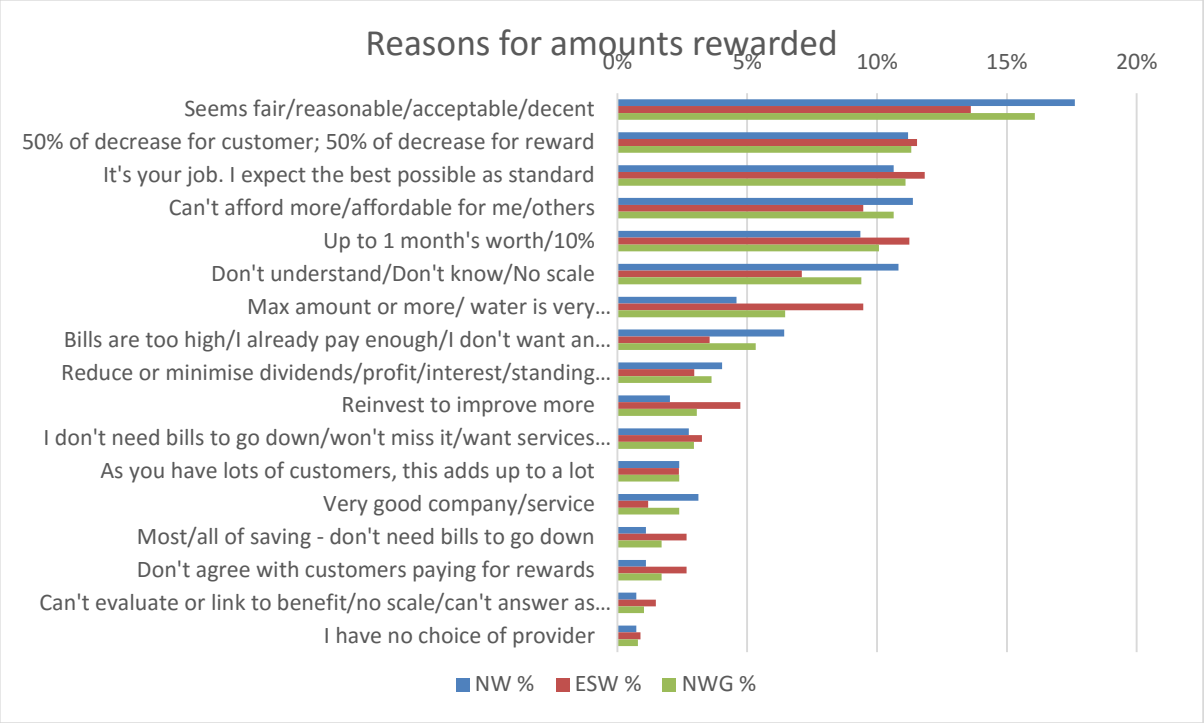
This online research so conducted by NWG internally with its customers during March 2018. An email invitation with a link to the survey was sent to all customers who took part in our previous Service Valuation research in Autumn 2017 for whom we had email addresses for and who were open to receiving marketing communications from us. The questionnaire included part of our online survey service valuation tool relating to ODIs and also asked for reasons why amounts were rewarded. It also compared customers' views by vulnerability indicators (including financial ones), region, age, gender, SEG, whether customers had recent contact with NW/ESW and whether they had experienced any issues with their water or wastewater services in the last year.

Customers with lower incomes appear to be under-represented in this survey. This is important because it means that the rewards customers are prepared to pay may be higher than in a truly representative sample.

There are peaks of rewards around £0, 50% of the average annual saving and 100% of the average annual saving. There also seems to be a trend of going for nice round numbers like £10, £20, £50 etc.



The main reasons for awarding higher amounts were fairness and sharing the benefits of bill reductions and better services. However, just as many customers cited affordability and expecting the best as standard as their reasons for awarding low amounts. A minority cited worries that the reward would go straight to shareholders rather than be reinvested in the business.



Only 43 respondents out of 777 ticked the box to say that they sometimes struggle to pay their bills. This was towards the end of the survey. However, only five of these opted to not reward us at all, the mean value awarded was £19.54 (even including zero values) and the median and mode were both £10. This suggests that even customers on low incomes value better water services enough to reward top performance.

Customers in higher socio-economic groups (which can be used as an approximate proxy for income) tend to award us a higher reward. The values tend to steadily decrease by group until they jump upwards suddenly for group E, for both means and medians. This is likely to be because customers classified themselves as E because they were retired, rather than using the group for their previous occupation. This means that those in higher SEGs will have classified themselves as E, who as we have learned, tend to award higher rewards.

Approximately a fifth (19%) of all respondents selected zero reward. Slightly more did so in the NW region (21%) than in the ESW region (16%).

The propensity for customers to select zero value rewards demonstrates no clear pattern by SEG. If anything, those on higher incomes are more likely to choose a zero reward than those on lower incomes.

WASTEWATER SERVICE TABLES

TABLE WWS13 - PR14 WHOLESALE REVENUE FORECAST INCENTIVE MECHANISM FOR THE WASTEWATER SERVICE

The commentary is located with WS13 - PR14 wholesale revenue forecast incentive mechanism for the water service

TABLE WWS15 - PR14 WHOLESALE TOTAL EXPENDITURE OUTPERFORMANCE SHARING FOR THE WASTEWATER SERVICE

The commentary is located with WS15 - PR14 wholesale total expenditure outperformance sharing for the water service

DUMMY CONTROL TABLES

TABLE DMMY10 - PR14 WHOLESALE TOTAL EXPENDITURE OUTPERFORMANCE SHARING FOR THE DUMMY PRICE CONTROL

Not applicable to NWL

RETAIL TABLES

TABLE R9 - PR14 RECONCILIATION OF HOUSEHOLD RETAIL REVENUE

Block A: Forecast customer numbers

This section includes data directly derived from the FD and is pre-populated by Ofwat.

Block B: Reforecast customer numbers

This represents the customer numbers used in our tariff setting model and is up to and including 2018/19. For the final period this represents the actual customer number as no tariff model has been set yet.

Block C: Actual customer numbers

These numbers are derived from the APR table 2F up to 17/18. The forecasts for 2018/19 and 2019/20 are linked to the WRMP data which is included in tables WS3 and WWS3.

Block D: Actual revenue collected

These numbers are derived from the APR table 2F up to 17/18. The forecast period uses the calculated revenue for the actual customer numbers multiplied by the appropriate modification factor.

Block E: Revenue sacrifice

We have not sacrificed any revenue – this section will be a nil return.

Block F: Actual revenue net

This is a calculation only section.

Block G: Modification factor

These are pre-populated by Ofwat and are derived from the FD.

Block H: Materiality threshold

Ofwat have pre-populated the materiality at 2.0%. The discount factor is consistent for all PR19 returns at 3.6%

Block I: Total reward/(penalty) at the end of AMP6

These boxes are populated once all numbers have been fed in to the revenue reconciliation model – they feed from the 'Calcs' worksheet row 94.

Household Retail revenue reconciliation model

This model has the same inputs as the R9 table.

Forecast customer numbers

This section includes data directly derived from the FD and is pre-populated by Ofwat in the R9 table, these are then copied in to the model.

Reforecast customer numbers

This represents the customer numbers used in our tariff setting model and is up to and including 2018/19. For the final period this represents the actual customer number as no tariff model has been set yet.

Actual customer numbers

These numbers are derived from the APR table 2F up to 2017/18. The forecasts for 2018/19 and 2019/20 are linked to the WRMP data which is included in tables WS3 and WWS3.

Actual revenue collected

These numbers are derived from the APR table 2F up to 17/18. The forecast period uses the calculated revenue for the actual customer numbers multiplied by the appropriate modification factor.

Revenue sacrifice

We have not sacrificed any revenue – this section will be a nil return.

Actual revenue net

This is a calculation only section.

Modification factor

These are pre-populated by Ofwat in the R9 table then replicated in the model. They are derived from the FD letter.

Materiality threshold

Ofwat have pre-populated the materiality at 2.0% in table R9 this is replicated in the model. The discount factor is consistent for all PR19 returns at 3.6%.

The model then calculates any reward and penalty at the end of AMP 6 that needs to be entered in to the R9 table. The penalty calculated is £0m but when expanded this shows a small penalty of £0.185m which will be incorporated in to the revenue adjustment model.

TABLE R10 - PR14 SERVICE INCENTIVE MECHANISM

SIM forecast revenue adjustment at 2017-18 CPIH deflated price base:

Data for all Water companies taking part in SIM is collated for the AMP and future scores are forecasted to calculate each company's combined SIM score. The mean and standard deviation for these 18 values are calculated and each company's score is compared against these values to obtain their position within the population. Comparison against a look-up table shows where a company lies between -1% (penalty) and +0.5% (reward) of the next AMP's income for that company.

Source data:

Qualitative SIM

These results are published for each company on the conclusion of every quarterly wave. The actual data used in the calculation comprised of the results from 2015-16 up to Wave 3 of 2017-18. The remainder of the AMP was forecast based on an average of each company's four most recent survey results.

Quantitative SIM

These figures are not officially published. Eleven of the eighteen WOC's and WaSC's (of which NWG is one) share their quantitative figures on a quarterly basis. For the other companies, the quantitative figure is derived from each company's published annual return for the combined SIM figure, taking the known qualitative figure into account. If a company publishes a Combined SIM figure to zero decimal places, the quantitative figure is only accurate to +/-10 points. Any forecasted result is that a company will continue to perform at the same level they managed for the previous year.

The total value of the next AMP needs to be estimated to turn the -1% to +0.5% into a monetary value.

The following table was estimated to fit the outcomes observed from the previous AMP:

Standard Deviation	Penalty / Reward
>+1.00	+0.5%
+1.00	+0.5%
+0.25 to +1.00	Linear translation from 0.0% to 0.5%
+0.25	0.0%
-0.25 to +0.25	0.0%
-0.25	0.0%
-2.00 to -0.25	Linear translation from -1.0% to 0.0%
-2.00	-1.0%
<-2.00	-1.0%

Assumptions:

1. The forecasts for the unknown data are good.
2. Penalty/Reward figures and SIM results from the last AMP were known

Calculation:

The following results for the industry were used to perform the calculation:

Company	Combined	Standard Devs	P/R
Anglian	86.13	+0.78	+0.35%
NWG	85.79	+0.68	+0.29%
Severn Trent	83.61	+0.04	+0.00%
South West	81.44	-0.60	-0.20%
Southern	76.31	-2.11	-1.00%
Thames	77.60	-1.73	-0.85%
United Utilities	84.53	+0.31	+0.04%
Dwr Cymru	83.62	+0.04	+0.00%
Wessex	87.18	+1.09	+0.50%
Yorkshire	83.27	-0.06	+0.00%
Affinity	78.53	-1.46	-0.69%
Bournemouth	86.67	+0.94	+0.46%
Bristol	85.12	+0.48	+0.15%
Dee Valley	84.99	+0.44	+0.13%
Portsmouth	88.15	+1.37	+0.50%
South East	83.99	+0.15	+0.00%
South Staffs	85.78	+0.68	+0.28%
Sutton & ES	79.98	-1.03	-0.45%

These yield an industry mean of 83.48 and a standard deviation of 3.40.

Based on the above calculations, NWG was is the reward bracket at 0.29%.

Line 9: Revenue Adjustment for SIM performance is calculated as:

0.29% * £786m (2017/18 turnover) = £2.28m * 5 years = £11.4m (17/18 prices)

We then feed the £11.4m into the Revenue Adjustment Feeder Model which has an output of £11.672m in the 2017-18 FYA CPIH deflated price base.

THE RCV AND REVENUE FEEDER MODELS

The RCV Feeder Model

All 'time' inputs have been kept with the original model default settings

Inputs	Source
CPIH indexation	Table App23, 2% pa
RPI indexation	Table App23, 3% pa
RCV Inputs	
Wholesale water closing RCV at 31 March 2020 (from PR14 FD)	App8, Ofwat preloaded value
Water ~ Total Adjustment RCV carry forward to PR19	App25, line 1, pre loaded
Water ~ CIS RCV inflation correction	App25, line 5, pre loaded
Net performance payment / (penalty) applied to RCV for end of period ODI adjustments ~ Water resources	App27, line 30
Net performance payment / (penalty) applied to RCV for end of period ODI adjustments ~ Water network plus	App27, line 31
Water: RCV adjustment from totex menu model	WS15, line 25 and totex model outputs
Water ~ Other adjustment to wholesale RCV	-
Water ~ NPV effect of 50% of proceeds from disposals of interest in land	App9, line 10
% of RCV to index by RPI - water services	50%, per default
Water resources % of total wholesale water RCV ~ 31 March 2020	App8, line 15
Water network plus % of total wholesale water RCV ~ 31 March 2020	calculated
Wholesale wastewater closing RCV at 31 March 2020 in 2012-13 prices (PR14 FD)	App8, Ofwat preloaded
Wastewater ~ Total Adjustment RCV carry forward to PR19	App25, line 3, pre loaded
Wastewater ~ CIS RCV inflation correction	App25, line 6, pre loaded
Net performance payment / (penalty) applied to RCV for end of period ODI adjustments ~ Wastewater network plus	App27, line 31
Wastewater: RCV adjustment from totex menu model	WWS15, line 20 and totex model outputs
Wastewater ~ Other adjustment to wholesale RCV	-
Wastewater ~ NPV effect of 50% of proceeds from disposals of interest in land	App9, line 21
% of RCV to index by RPI - wastewater services	50%, per default
Bioresources RCV (prior to midnight adjustments) 31 March 2020	App8, line 51

Outputs	Table output is sent to
Water ~ NPV effect of 50% of proceeds from disposals of interest in land at 2017-18 FYA CPIH deflated price base	App9
Water ~ Total adjustment RCV carry forward to PR19 at 2017-18 FYA CPIH deflated price base	App25
Water ~ CIS RCV inflation correction at 2017-18 FYA CPIH deflated price base	App25
ODI end of period RCV adjustment ~ Water resources at 2017-18 FYA CPIH deflated price base	App27
ODI end of period RCV adjustment ~ Water network plus at 2017-18 FYA CPIH deflated price base	App27
Water: Totex menu RCV adjustment at 2017-18 FYA CPIH deflated price base	WS15
Wastewater ~ NPV effect of 50% of proceeds from disposals of interest in land at 2017-18 FYA CPIH deflated price base	App9
Wastewater ~ Total Adjustment RCV carry forward to PR19 at 2017-18 FYA CPIH deflated price base	App25
Wastewater ~ CIS RCV inflation correction at 2017-18 FYA CPIH deflated price base	App25
ODI end of period RCV adjustment ~ Wastewater network plus at 2017-18 FYA CPIH deflated price base	App27
Wastewater: Totex menu RCV adjustment at 2017-18 FYA CPIH deflated price base	WWS15

Comments by exception:

We have not completed the inputs for IFRS16 adjustments at this stage, we will do this for the September submission.

All data aligns with the totex, WRFIM and residential retail models.

Revenue Feeder Model

All 'time' inputs have been kept with the original model default settings

Inputs	Source
CPIH indexation	Table App23, 2% pa
RPI indexation	Table App23, 3% pa
RCV Inputs	
Net performance payment / (penalty) applied to revenue for in-period ODI adjustments ~ Water resources	-
Net performance payment / (penalty) applied to revenue for end of period ODI adjustments ~ Water resources	-
Total value of export incentive to be paid to water resources at PR19	Water trading model, WS17 inflated to 17/18 p
Total value of import incentive - water resources	-
Further 2010-15 reconciliation total adjustment carry forward to PR19 ~ Water network plus	App25, line 2
Net performance payment / (penalty) applied to revenue for in-period ODI adjustments ~ Water network plus	-
Net performance payment / (penalty) applied to revenue for end of period ODI adjustments ~ Water network plus	-
Water: revenue adjustment from totex menu model	WS15, line 24 and totex model output
Total value of export incentive to be paid to water network plus at PR19	-
Total value of import incentive - water network plus	-
WRFIM total reward / (penalty) at end of AMP6 ~ Water	WS13, line 31
Net performance payment / (penalty) applied to revenue for in-period ODI adjustments ~ Bioresources	-
Net performance payment / (penalty) applied to revenue for end of period ODI adjustments ~ Bioresources	-
Further 2010-15 reconciliation total adjustment carry forward to PR19 ~ Wastewater network plus	App25, line 4
Net performance payment / (penalty) applied to revenue for in-period ODI adjustments ~ Wastewater network plus	-
Net performance payment / (penalty) applied to revenue for end of period ODI adjustments ~ Wastewater network plus	-
Wastewater: revenue adjustment from totex menu model	WWS15, line 19
WRFIM total reward / (penalty) at the end of AMP6 ~ Wastewater	-
Net performance payment / (penalty) applied to revenue for in-period ODI adjustments ~ Residential retail	-
Net performance payment / (penalty) applied to revenue for end of period ODI adjustments ~ Residential retail	App27, line 26
Residential retail revenue adjustment at end of AMP6	R9, line 45
SIM forecast revenue adjustment	R10 calculation, see commentary

Outputs	Table output is sent to
Further 2010-15 reconciliation total adjustment revenue carry forward to PR19 ~ Water network plus at 2017-18 FYA CPIH deflated price base	App25
Further 2010-15 reconciliation total adjustment revenue carry forward to PR19 ~ Wastewater network plus at 2017-18 FYA CPIH deflated price base	App25
ODI end of period revenue adjustment ~ Water resources at 2017-18 FYA CPIH deflated price base	App27
ODI end of period revenue adjustment ~ Water network plus at 2017-18 FYA CPIH deflated price base	App27
ODI end of period revenue adjustment ~ Bioresources at 2017-18 FYA CPIH deflated price base	App27
ODI end of period revenue adjustment ~ Wastewater network plus at 2017-18 FYA CPIH deflated price base	App27
ODI end of period revenue adjustment ~ Residential retail at 2017-18 FYA CPIH deflated price base	App27
WRFIM total reward / (penalty) at the end of AMP6 ~ Water network plus at 2017-18 FYA CPIH deflated price base	WS13
Water: Totex menu revenue adjustment at 2017-18 FYA CPIH deflated price base	WS15
Water trading total value of export incentive ~ Water resources at 2017-18 FYA CPIH deflated price base	WS17
WRFIM total reward / (penalty) at the end of AMP6 ~ Wastewater network plus at 2017-18 FYA CPIH deflated price base	WWS13
Wastewater: Totex menu revenue adjustment at 2017-18 FYA CPIH deflated price base	WWS15
Residential retail revenue adjustment at 2017-18 FYA CPIH deflated price base	R9
SIM forecast revenue adjustment at 2017-18 FYA CPIH deflated price base	R10

Comments by exception:

All data aligns with the totex, WRFIM and residential retail models.

For the water trading export incentive, we have inflated the outputs of the water trading model from 2012/13 prices to 2017/18 FYA prices for input to the model.

For the SIM revenue adjustment, we have calculated a value based on Table R10 results. It is explained in the Table commentary.

We have applied the profiling option for the water resources and residential retail incentives. This helps us apply the smoothing approach to bills and spreads the performance incentives over 2020-25.