

NORTHUMBRIAN WATER LIMITED

2016 REVIEW OF THE NON-HOUSEHOLD RETAIL PRICE CONTROL

DD REPRESENTATION

28 OCTOBER 2016

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NWL REPRESENTATION ON THE PR16 DRAFT DETERMINATION

1 INTRODUCTION

At PR14 the non-household retail price control was set for the 2015-20 time period, but was to be revisited after two years to give companies the opportunity to update their price control in light of any new information that came to light during this time period.

The scope of the 2016 review of the non-household retail price control (PR16) was set out by Ofwat in their method statement published on 19 May 2016. We submitted our PR16 proposals in July 2016, and Ofwat published their Draft Determinations (DD) on 15 September 2016.

In their DD, Ofwat did not accept the NWL PR16 proposals submitted in July 2016 and we acknowledge that our proposals included an error, were unclear in several respects and did not meet the evidential thresholds required. This document includes a corrected version of our proposals, laying out the principles underlying our submission, and providing additional clarity and evidence in relation to them. In addition it also contains our representations with respect to the DD, specifically with regard to the impacts on customers.

In principle, the DD as provided would be acceptable to NWL; however we believe that there are a number of areas, as set out in section 2.2, where our original submission provides a better outcome for customers. On this basis we are re-presenting our PR16 submission, corrected and with the associated bill impacts for Ofwat's consideration.

Our PR16 DD Representation includes:

- The PR16 DD Representation (this document);
- Table R4A spreadsheet resubmitted; and
- Our PR14 Commentary, which sets out the detail on our cost allocation methodology.

In this PR16 DD representation document we cover:

- our corrected PR16 submission;
- additional evidence to show the impact our PR16 submission, covered in the section on the effect of the movement between PR14 and PR16;
- discussion on our approach to assurance; and
- our analysis of the impact on customers should the DD be carried forward.

2 NWL PR16 REPRESENTATION

2.1 OUR AIMS AND APPROACH TO PR16

Our intention in PR16 was to minimise bill impacts for our customers as far as possible, while achieving the simplification goals set out in the final method statement. In order to ensure that we fully understand the impact on customers, we have refreshed our database of non-household customers to reflect actual 2015/16 data. We have then analysed this data through our existing cost allocation model, with only minor amendments for cost reflectivity and the new volume bandings.

Our goal was to avoid rebalancing between the >5ML and <5ML thresholds – however due to the loss of some very large customers in the interim, there is some rebalancing.

2.2 CORRECTED PR16 SUBMISSION

We have resubmitted our PR16 July 2016 data, with the errors noted in the DD corrected. The table below summarises the corrected PR16 submission.

Customer type	Number of premises	Average Retail Cost per premises			Net margin	% Gross margin
		2017-18	2018-19	2019-20		
01 Unmeasured Water	7,988	17.08	17.07	17.06	6.68%	16.04%
02 Measured Water 0-5Ml/pa	83,475	28.11	28.09	28.06	4.00%	10.44%
03 Measured Water 5-50Ml/pa	1,506	308.89	308.56	308.24	1.50%	3.76%
04 Measured Water 50+Ml/pa	134	1,395.82	1,394.12	1,392.42	1.40%	2.08%
05 Unmeasured Sew	10,508	18.00	17.98	17.97	4.36%	9.52%
06 Measured Sew 0-5Ml/pa	43,521	30.16	30.13	30.10	2.56%	5.49%
07 Measured Sew 5-50Ml/pa	878	246.89	246.62	246.35	1.47%	2.93%
08 Measured Sew 50+Ml/pa	91	861.03	860.01	858.99	1.40%	2.10%
Total	148,101				2.49%	5.61%

Table 1 – PR16 data, October 2016

The correction has moved sewerage customers between customer types as a number had been mistakenly allocated to the 50+Ml category. This has rebalanced retail cost and net margin between customer types, including between water and sewerage. This is because it is necessary to allocate between water and sewerage charges any costs that cover both services. For example, a water and sewerage customer will only receive a single bill for both services and so the cost of billing these customers is allocated between water and sewerage. By moving the balance of customers on sewerage it has also impacted in the balance of water allocations.

We have included at Appendix B some commentary on the changes shown in the “Outputs Summary” tab of the Table R4A spreadsheet.

For information we have included at Appendix C some information showing the difference between our July 2016 submission and the corrected PR16 data supplied at part of this representation.

2.3 EFFECT OF THE PR16 PROPOSALS COMPARED TO PR14

2.3.1 General

There are a number of areas which may be impacted by a change at PR16 from PR14, these are:

- Effect on tariff structures
- Method of allocating between <5Ml and >5Ml customers
- Bill impacts
- Rebalancing revenue between <5Ml and >5Ml customers

2.3.2 Effect on tariff structures

The PR16 customer types merge our Northumbrian Water (NW) and Essex & Suffolk (ESW) customers into a single category to simplify the price control categories.

We do not plan to merge the NW and ESW tariffs and consequently do not expect the move to merged PR16 customer types to have a significant impact on customer bills. We will apply, when setting tariffs each year, an appropriate level of retail cost and net margin for each region, such that the total combined price control for each merged customer type is met.

As our standard tariffs currently apply from 0-20MI/yr, we are looking at whether it will be required to create separate tariffs for 0-5MI/yr and 5-20MI/yr groups of customers in order to enable clear delineation in line with the price control.

2.3.3 Allocating retail costs and net margin between the <5MI/yr group of customers and the >5MI/yr group of customers

In NWL's PR14 the "Meas Water N std", "Meas Water S std", and "Meas Sew – std" customer groups contained customers using both more and less than 5MI/yr.

To split these groups for PR16, to comply with the new customer groups required by Ofwat as set out in the May 2016 method statement, we used our non-household retail allocation model.

In our allocation model every customer is identified individually and so is allocated to a customer type individually. The information about the customers in each group is then aggregated and used to determine the retail costs and net margin allocations. This means that the same allocation methodology is used regardless of which customer types are applied. It is only the customers and the information about them, such as number of meter reads per year, that move between categories.

The table below shows how the number of customers map to each category (using forecast 2017/18 customer numbers).

PR14 Customer types		PR16 Customer types	
01 Unmeas Water N	7,988	17 Unmeasured Water	6,298
02 Unmeas Water S		17 Unmeasured Water	1,690
03 Meas Water N std	50,359	18 Measured Water 0-5MI/yr	49,534
		19 Measured Water 5-50MI/yr	822
		20 Measured Water 50+MI/yr	3
04 Meas Water N f20	115	18 Measured Water 0-5MI/yr	1
		19 Measured Water 5-50MI/yr	106
		20 Measured Water 50+MI/yr	8
05 Meas Water N fx	45	18 Measured Water 0-5MI/yr	0
		19 Measured Water 5-50MI/yr	2
		20 Measured Water 50+MI/yr	43
06 Meas Water N f+	25	18 Measured Water 0-5MI/yr	0
		19 Measured Water 5-50MI/yr	0
		20 Measured Water 50+MI/yr	25
07 Meas Water S std	34,458	18 Measured Water 0-5MI/yr	33,940
		19 Measured Water 5-50MI/yr	514
		20 Measured Water 50+MI/yr	4
08 Meas Water S f20	65	18 Measured Water 0-5MI/yr	1
		19 Measured Water 5-50MI/yr	59
		20 Measured Water 50+MI/yr	5
09 Meas Water S fx	28	18 Measured Water 0-5MI/yr	1
		19 Measured Water 5-50MI/yr	1
		20 Measured Water 50+MI/yr	26
10 Meas Water S f+	8	18 Measured Water 0-5MI/yr	0
		19 Measured Water 5-50MI/yr	0
		20 Measured Water 50+MI/yr	8
11 Unmeas Sew	10,508	21 Unmeasured Sew	10,508
12 Meas Sew - std	44,082	22 Measured Sew 0-5MI/yr	43,308
		23 Measured Sew 5-50MI/yr	748
		24 Measured Sew 50+MI/yr	26

PR14 Customer types		PR16 Customer types	
13 Meas Sew - LU	27	22 Measured Sew 0-5MI/yr	1
		23 Measured Sew 5-50MI/yr	1
		24 Measured Sew 50+MI/yr	25
14 Trade Effluent - std	376	22 Measured Sew 0-5MI/yr	212
		23 Measured Sew 5-50MI/yr	128
		24 Measured Sew 50+MI/yr	36
15 Ind Water	12	18 Measured Water 0-5MI/yr	1
		19 Measured Water 5-50MI/yr	1
		20 Measured Water 50+MI/yr	10
16 Trade Effluent - Special Agreement	5	22 Measured Sew 0-5MI/yr	0
		23 Measured Sew 5-50MI/yr	1
		24 Measured Sew 50+MI/yr	4

Table 2 – Relationship between PR14 and PR16 customer types

We have included with this DD Representation our PR14 submission commentary. Sections 5.4 and 5.5 in the PR14 submission commentary provide a complete description of our allocation methodology.

2.3.4 Bill impacts

The table below shows how the bill impacts for customers in each customer type of the intended PR16 submission. As can be seen, the impact on customer bills is below 1% except for the ESW <5MI customers. This is a result of the allocations showing a rebalancing between ESW and NW water costs. The PR16 customer types have aggregated the NW and ESW customer types and the total impact of this group is well below 1% (and £1.50 per customer). As previously stated, we do not intend merging the NW and ESW tariffs, and so we will have to consider how to apply the aggregate price control between NW and ESW customers such that there is no material impact on customers, but also considering the appropriate cost balance between the two groups. If we decide there is any rebalancing required, this would be managed to limit the impact on ESW customer bills.

Customer types	2017/18 Data					
	Number of customers	Forecast average wholesale bill	Forecast average customer bill		Change in average bill	
			PR14 FD	PR16 submission (corrected)	£	%
<u>NW</u>						
Water Unmeasured	6,298	178	208.78	208.70	-0.08	0.0%
Water 0-5MI	49,536	435	485.35	482.39	-2.96	-0.6%
Water 5-50MI	931	12,526	13,100.11	13,002.17	-97.94	-0.7%
Water 50+MI	89	234,317	238,930.24	239,237.57	307.33	0.1%
Total NW Water	56,854	971	1,034.55	1,030.84	-3.71	-0.4%
<u>ESW</u>						
Water Unmeasured	1,690	294	331.62	333.39	1.78	0.5%
Water 0-5MI	33,942	492	534.03	542.03	8.00	1.5%
Water 5-50MI	574	15,729	16,223.61	16,326.48	102.87	0.6%
Water 50+MI	43	165,278	169,599.09	168,749.03	-850.06	-0.5%
Total ESW Water	36,249	920	973.59	981.79	8.19	0.8%
<u>Total Water</u>						
Water Unmeasured	7,988	202	234.77	235.08	0.31	0.1%
Water 0-5MI	83,478	458	505.15	506.64	1.49	0.3%
Water 5-50MI	1,505	13,748	14,291.40	14,270.05	-21.35	-0.1%
Water 50+MI	132	211,827	216,345.09	216,275.39	-69.70	0.0%
Total Water	93,103	951	1,010.82	1,011.74	0.92	0.1%
<u>Sewerage</u>						
Sewerage Unmeasured	10,508	377	417.81	412.85	-4.96	-1.2%
Sewerage 0-5MI	43,521	1,069	1,126.81	1,128.89	2.08	0.2%
Sewerage 5-50MI	878	17,235	17,681.61	17,752.53	70.91	0.4%
Sewerage 50+MI	91	127,151	129,552.40	129,820.73	268.34	0.2%
Total Sewerage	54,998	1,404	1,468.13	1,470.40	2.28	0.2%

Table 3 – Average bill impacts for the PR16 customer types.

Notes:

1. The data shown in this table is all based on 2017/18 information.
2. The number of customers and forecast average wholesale bill are shown for information only.
3. Note that the average wholesale bill will be affected by both the level of tariff and the average of the group of customers.
4. ESW wholesale tariffs are higher than NW, but in the 50+ category average consumption is higher in the NW area than ESW, so the average bill is higher.
5. The table above shows the NW and ESW customers separately as well as combined. The PR16 customer types as per the price control are the figures for the "Total Water" groups. The allocation shown here between NW and ESW is unlikely to be applied as per the pure cost allocation shown here as the impact in customer bills needs to be considered. See commentary.

2.3.5 Movement in retail allowed revenues between the <5MI/yr group of customers and the >5MI/yr group of customers

The table below compares how much retail revenue would be allowed for each group of customers under the PR14 FD and our PR16 DD Representation data. The table shows a small rebalancing of the proportion of revenue allowed between <5MI/yr and >5MI/y customers.

PR16 Customer Types	Total Allowed Retail + Wholesale Revenue (17/18)		Proportion of revenue from each customer type		Change
	PR14 ⁶	PR16	PR14	PR16	%
Unmeasured Water	1,875,349	1,877,421	1.07%	1.07%	0.00%
Measured Water 0-5MI	42,168,749	42,293,535	24.12%	24.17%	0.05%
Measured Water 5-50MI	21,508,417	21,468,007	12.30%	12.27%	-0.03%
Measured Water 50+MI	28,557,552	28,542,759	16.33%	16.31%	-0.02%
Total Water	94,110,067	94,181,722	53.82%	53.81%	-0.01%
Unmeasured Sewerage	4,390,356	4,336,380	2.51%	2.48%	-0.03%
Measured Sewerage 0-5MI	49,039,962	49,110,468	28.05%	28.06%	0.01%
Measured Sewerage 5-50MI	15,524,458	15,576,127	8.88%	8.90%	0.02%
Measured Sewerage 50+MI	11,789,268	11,813,687	6.74%	6.75%	0.01%
Total Sewerage	80,744,043	80,836,662	46.18%	46.19%	0.01%
Total Water + Sewerage	174,854,110	175,018,384	100.00%	100.00%	0.00%

Table 4 – Comparison of PR14 and PR16 allowed revenues (2017/18 data)

There has been a very small swing in the proportion of allowed retail revenue towards the <5MI customers because since PR14 there have been some closures of larger customers and demand from larger customers has reduced. This rebalances retail costs from larger customers towards smaller customers.

We note that overall PR16 revenue is higher than the revised PR14 as a result of lower wholesale revenues and numbers of customers than were forecast at PR14. When allocating the revenue for PR16 we have allocated the amount allowed at PR14 as set out in the Final Determination model published on the Ofwat website.

3 ASSURANCE

Following the identification of an error in our original PR16 submission, we have reviewed the assurance processes and procedures which were undertaken prior to the submission and are considering what lessons need to be learnt to inform the processes for future price reviews in both NWL and the new retail business.

The assurance process undertaken for PR16 was scaled down from that undertaken for a normal price review exercise. This was because the models being used were largely unchanged from PR14 and because our approach was intended to result in limited changes to customer bills. The steps which were undertaken included:

- Key principles agreement at the NWL Charges Steering Group, which includes two NWL Executive Directors;
- Agreement of key principles for submission by the NWL Assurance Committee;
- Key principles presented to Customer Challenge Groups;
- Independent, external, review of the retail cost and net margin allocation model calculations by NERA;
- Review of the submission by the NWL Charges Steering Group,

Weaknesses identified to date in our original PR16 July submission include:

⁶ The PR14 revenues are calculated using the current forecast of 2017/18 property numbers and wholesale revenue, rather than the original PR14 values. This shows what the revenue will be under PR14 for next year, and is consistent with the PR16 calculation. The revenue shown is therefore different to those shown in 2014 when the PR14 price control was set.

- Lack of clarity of ownership of the submission between NWL and the new non-household retail team due to the one-off nature of this exercise, and timing of the review happening at the time of changes in personnel and responsibility;
- We missed the necessity to clearly illustrate bill impacts for customers, and that this needed to be clearly shown in the submission commentary; and
- We could have better framed the validation questions we asked ourselves to check the logic of the submission held up. For example, a logic check on the numbers of large customers would have identified the error, which was an error in one cell and would have been difficult to identify from individual checks, but could have been picked up by comparing expected outcomes to the actual outcomes.

For future reviews we feel that the following two activities are key steps to minimise future similar events:

- Review of bill impacts by Charges Steering Group as standard step, including information on what the expected outcome is compared to the actual outcome; and
- Specific validation questions set out as a tool to check that the results of analysis correlate with known information.

To specifically assure this DD representation the following control and checks have been undertaken:

- Peer review of the core models, including cross checking the number of premises in each version of the modelling (PR14, corrected PR16 and DD);
- Reconciliation of differences to known movements to explain all significant variances;
- Cross check of the R4A against this representation document; and
- Detailed review and challenge by senior management.

4 IMPACT OF THE DD

While the DD does not raise any financial issues, it would have some unintended consequences for customers and the complexity of tariffs. In particular, applying the DD would raise three issues:

- There would be a single customer in the “Ind Water” category, using allocated data for a much larger group of customers. This would require a separate tariff to be introduced for this customer in order to comply with the price control for this customer type;
- There would be no customers in the “Trade Effluent Special Agreements” customer type as all these customers use more than 5Ml/yr; and
- We would have to introduce a second trade effluent tariff to comply with the “Trade Effluent (std)” customer type requirements.

The first two points would result in price controls where there are very few customers. The third point about the trade effluent would require more complexity in trade effluent tariffs, which we do not see as being any benefit to customers. Both these issues would not simply tariffs or the price control.

For information, the table below shows the numbers of customers in each customer type defined by the DD.

DD Customer types	2017/18 number of premises
Unmeas Water N	6,298
Unmeas Water S	1,690
Meas Water N std	49,533
Meas Water S std	33,942
Unmeas Sew	10,508
Meas Sew - std	43,521
Trade Effluent - std	212
Ind Water	1
Trade Effluent - Special Agreement	0
Measured Water 5-50Ml/yr	1,506
Measured Water 50+Ml/yr	134
Measured Sew 5-50Ml/yr	878
Measured Sew 50+Ml/yr	91
Total	148,314

Table 5 – Number of customers for each customer type set out in the DD

Note: the total number of customers is higher than the PR16 customer types because the Trade Effluent and Industrial Water customers using <5Ml per year are counted twice in this set of customer types.

Appendix A Ofwat Draft Determination comments the NWL July 2016 Proposal

Ofwat summarised its conclusions about our proposals as follows⁷:

Northumbrian Water's proposal appears to involve a rebalancing of retail costs and wholesale charges between its default tariff caps and has also merged and split a number of default tariff caps to combine its Northern and Southern regions and to adopt the simplified structure.

It has also highlighted concerns about the overall level of retail cost allowances. These matters are addressed in section 2.1. We have a number of concerns with Northumbrian Water's rebalancing proposals and the quality of data it has submitted.

- *Allocation of costs and margins: only limited information has been provided to support the changes in cost allocations and we remain unclear as to how it has allocated its costs and margins to customers in the 0 to 5MI and 5 to 50MI bands.*
- *Expected bill impact: further information is required on the expected impact of Northumbrian Water's proposals on customer bills. The information we have suggests increases to small unmeasured customers in its Southern region and it is not clear whether these are supported by customer engagement.*
- *Quality of evidence submitted: There appears to be a quality assurance issue with the data tables provided by Northumbrian – including in relation to wastewater where it seems to be suggesting a relatively large number of very large customers.*

Ofwat's commentary about its DD decision for NWL is:

Summary of company proposal

Northumbrian Water does not support the introduction of uniform gross margin caps and has expressed reservations with respect to the supplementary 1% cap. It has followed our simplification guidance and in its proposals it has reduced the number of default tariff caps from 16 to 8.

In addition to proposing these changes it has raised concerns about its overall retail costs allowance highlighting the risks to inflation arising from the United Kingdom's vote to leave the European Union and that there is additional new evidence on the costs of operating separate retail business arising from the water supply and/or sewerage licences application process. These have been considered as part of our sector wide assessment of cost claims in section 3.1.

Summary of evidence

Northumbrian Water has provided Board assurance of their proposals. There has been no customer engagement as it does not consider that its proposals will have a material impact.

Assessment of proposal

Northumbrian Water has proposed a rebalancing of its PR14 retail cost and margin allocations using 2015-16 data. It has provided limited explanation of its allocation of costs and margins between the 0 to 5MI and 5 to 50MI bands. There also appear to be issues with the data tables for wastewater customers using more than 50MI and inconsistencies between the data tables and narrative in respect of gross margins.

The company expects customer numbers to be 1.6% lower than anticipated at PR14 for a number of reasons including eligibility. It has not made a corresponding reduction to the aggregate business retail costs allowed at PR14 to reflect costs that may now be recovered through the residential retail control.

In terms of price disturbance, it appears that measured water customers in the Southern region would experience a bill increase of 1.6% associated with retail costs increases. However, there is a lack of transparency on bill impacts for smaller customers with volumes below 5 MI and no evidence of customer engagement.

Taken together, concerns about potential price rises associated with the rebalancing of costs and margins, a lack of customer engagement, and doubts about the accuracy and reliability of its data tables suggests that Northumbrian Water needs to reconsider and/or provide additional information and evidence in support of its PR16 proposals.

Decision

We are unable to accept Northumbrian's proposals for its PR16 default tariff caps and will retain those set at PR14 for these draft determinations for customers using less than 5MI. We will apply our uniform gross margin controls for those customers using more than 5MI.⁸

⁷ Business retail price review 2016 (PR16): draft determinations, Ofwat, 15 September 2016, p28

⁸ Business retail price review 2016 (PR16): draft determinations, Ofwat, 15 September 2016, p71

Appendix B Commentary on the R4A Tables

In the summary sheet the movements in figures are for the following reasons:

Output summary line	Movement from PR14
Number of customers	Consolidation of customer types and updated forecast of the number of premises
Retail net margin	When looked at in pounds, the retail net margin is lower than at PR14 because the wholesale revenues are lower.
Retail costs	The small change in total cost is due to roundings for the average cost per customer.
Retail gross margin	Wholesale revenues have reduced since PR14, but retail costs have not, so this makes the gross margin look larger as it is dependent on the wholesale revenue
Retail margin as % of total retail revenue	No change, data has been allocated to give an aggregate 2.5% net margin
Retail gross margin as % of wholesale charge	Wholesale revenues have reduced since PR14, but retail costs have not, so this makes the gross margin look larger as it is dependent on the wholesale revenue. This shows up particularly when looking at the unmeasured customer types, as the wholesale charges for these customer moved from an RV basis to an assessed basis in 2016/17, whihc changed the levels of wholesale revenues.
Retail cost per customer	Increased because the costs have remained the same, but the number of customers have reduced since the PR14 forecast of property numbers
Wholesale charge per customer	Wholesale charges have reduced through a combinations of factors – a different balance of household and non-household revenue has been applied in 2017/18 than in 2014/15 tariffs on which PR14 wholesale revenues were determine, there have been some significant customer closures which have reduced the non-household wholesale revenue and the amount of water or sewerage used by non-household customers have also changed.

Commentary on changes to customer types information

Customer numbers – the only change is the movement of misallocated sewerage customers to the correct customer types

Wholesale revenue – the changes are only on sewerage and are due to the movement of the previously misallocated sewerage customers, including an impact on how trade effluent revenues were forecasted in each customer type.

Net margin, Gross margin, Average retail costs – these have changed following a reallocation of costs due to the movement in the information about the two areas set out above.

Appendix C Impact of the corrected NWL PR16 submission

The three tables below show the impact of the corrected NWL PR16 retail cost and net margin allocations, such that the Hartlepool premises and revenues are correctly allocated.

Gross margin is calculated in all three versions using the formula “sum (retail revenue for 2017/18 to 2019/20) divided by sum (wholesale revenue for 2017/18 to 2019/20)”⁹.

PR16 July 2016 submission							
Customer type	Number of premises 2017/18	Wholesale revenue 2017/18	Average retail cost per premises			Net margin	% Gross margin ¹⁰
			2017-18	2018-19	2019-20		
01 Unmeasured Water	7,988	1,615,574	16.23	16.22	16.20	6.70%	15.62%
02 Measured Water 0-5Ml/pa	83,475	38,255,227	26.47	26.44	26.42	4.00%	10.07%
03 Measured Water 5-50Ml/pa	1,506	20,690,020	237.28	237.08	236.88	1.49%	3.23%
04 Measured Water 50+Ml/pa	134	27,961,210	682.57	682.12	681.67	1.40%	1.74%
05 Unmeasured Sew	10,508	3,958,170	17.17	17.16	17.15	4.37%	9.31%
06 Measured Sew 0-5Ml/pa	42,269	44,576,767	28.18	28.15	28.13	2.58%	5.36%
07 Measured Sew 5-50Ml/pa	878	22,045,669	169.57	169.43	169.29	1.44%	2.14%
08 Measured Sew 50+Ml/pa	1,343	6,621,651	465.15	464.82	464.49	1.70%	11.18%
Total	148,101	165,724,288				2.49%	5.61%

PR16 October 2016 (corrected) submission							
Customer type	Number of premises 2017/18	Wholesale revenue 2017/18	Average retail cost per premises			Net margin	% Gross margin
			2017-18	2018-19	2019-20		
01 Unmeasured Water	7,988	1,615,574	17.08	17.07	17.06	6.68%	16.04%
02 Measured Water 0-5Ml/pa	83,475	38,255,227	28.11	28.09	28.06	4.00%	10.44%
03 Measured Water 5-50Ml/pa	1,506	20,690,020	308.89	308.56	308.24	1.50%	3.76%
04 Measured Water 50+Ml/pa	134	27,961,210	1,395.82	1,394.12	1,392.42	1.40%	2.08%
05 Unmeasured Sew	10,508	3,958,170	18.00	17.98	17.97	4.36%	9.52%
06 Measured Sew 0-5Ml/pa	43,521	46,540,647	30.16	30.13	30.10	2.56%	5.49%
07 Measured Sew 5-50Ml/pa	878	15,132,738	246.89	246.62	246.35	1.47%	2.93%
08 Measured Sew 50+Ml/pa	91	11,570,702	861.03	860.01	858.99	1.40%	2.10%
Total	148,101	165,724,288				2.49%	5.61%

Impact of changes							
Customer type	Number of premises 2017/18	Wholesale revenue 2017/18	Average retail cost per premises			Net margin	% Gross margin
			2017-18	2018-19	2019-20		
01 Unmeasured Water	0	0	0.85	0.85	0.86	-0.02%	0.42%
02 Measured Water 0-5Ml/pa	0	0	1.64	1.65	1.64	0.00%	0.37%
03 Measured Water 5-50Ml/pa	0	0	71.61	71.48	71.36	0.01%	0.53%
04 Measured Water 50+Ml/pa	0	0	713.25	712.00	710.75	0.00%	0.34%
05 Unmeasured Sew	0	0	0.83	0.82	0.82	-0.01%	0.21%
06 Measured Sew 0-5Ml/pa	1,252	1,963,880	1.98	1.98	1.97	-0.02%	0.13%
07 Measured Sew 5-50Ml/pa	0	-6,912,931	77.32	77.19	77.06	0.03%	0.79%
08 Measured Sew 50+Ml/pa	-1,252	4,949,051	395.88	395.19	394.50	-0.30%	-9.08%
Total	0	0				0.00%	0.00%

⁹ This is calculated according to the gross margin formula set out on page 34 of the DD, rearranged.

¹⁰ This gross margin is a different figure to that shown in the July 2016 submission as it is calculated using the formula set out here, as opposed to that used at the time of the July 2016 submission.

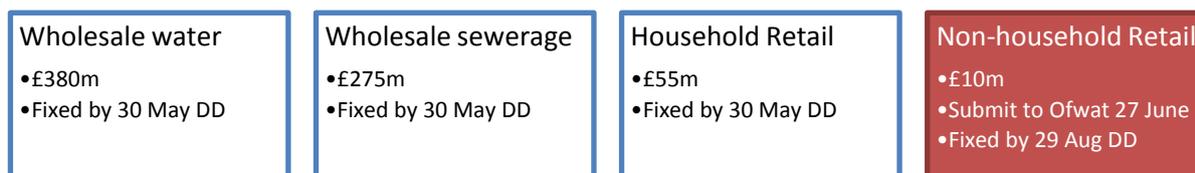
SETTING PRICE CONTROLS FOR 2015-20
NORTHUMBRIAN WATER LIMITED
NON-HOUSEHOLD RETAIL PRICE CONTROL
27 JUNE 2014

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1 INTRODUCTION

Our PR14 Business Plan, submitted in December 2013, covered four price controls: water wholesale; waste water wholesale; retail household; and retail non-household. When Ofwat reviewed these Business Plans, they were not satisfied that the non-household retail price control information submitted by water companies were sufficiently comparable and practical. The non-household retail price control was subsequently removed from the Risk Based Review process, and is now being managed through a separate period review workstream.



2015/16 information in 2012/13 price base (total revenue £720m)

Figure 1 – Summary of NWL allowed revenues under the four PR14 price controls

This document explains the process followed to determine how NWL's non-household price control is structured and covers the following areas:

- Process
- Assurance
- Competition Act
- Customer types
- Retail Cost allocation
- Net margin
- Forecasting from 2013/14 base for 2015-20
- Consideration of potential incidence effects

We have included summaries of the cost information per customer type in Appendix C to Appendix E.

As part of our 27 June PR14 Non-Household Retail Price Control submission we have included a copy of the spreadsheet in which we have performed all the non-household price control modelling. This spreadsheet is an updated version of the spreadsheet we provided to Ofwat on 2 May 2014 as part of its data request relating to the non-household price control. The detailed calculations and assumptions described in this document can be found in the spreadsheet.

2 PRICE CONTROL STRUCTURE

This section summarises our understanding of how the non-household retail price control will work, as derived from available guidance.

We have set the non-household price control according to our understanding of:

- *Final methodology and expectations for companies' business plans*, July 2013
- *Risk and Reward guidance* issued on 27 January 2014;
- *Guidance for companies on producing default tariffs* issued on 4 April 2014;
- Discussions at the industry workshops on default tariffs held on 18 March 2014 and 17 April 2014;
- *Water retail net margins - A report prepared for Ofwat*, published on 14 February 2014;
- Further one to one discussion with Ofwat.

The 4 April guidance set out 23 expectations which should be considered when setting the non-household price control. We have summarised how we meet these expectations in Appendix A. We have also addressed how we applied the risk based review tests as set out in the July 2013 methodology in Appendix B.

From these discussions we understand that the tariffs shown in Table R4 as part of the submission will not be fixed, and have therefore focussed our attention in making sure that a reasonable amount of allowed revenue will be recovered across all properties in each customer type. We have not focussed on how, this allowed revenue will be recovered through default tariffs. These will be addressed through the price setting process for 2015/16 charges.

As set out in the April 4 guidance p6, the allowed retail revenue is calculated from the retail cost plus net margin as follows:

$$NHH \text{ retail price control revenue} = \left[\frac{(\text{retail cost} + \text{wholesale revenue})}{(1 - \text{net margin})} \right] - \text{wholesale revenue}$$

The diagram below illustrates how this formula works using NWL 2015/16 costs, shown in 2012/13 price base.

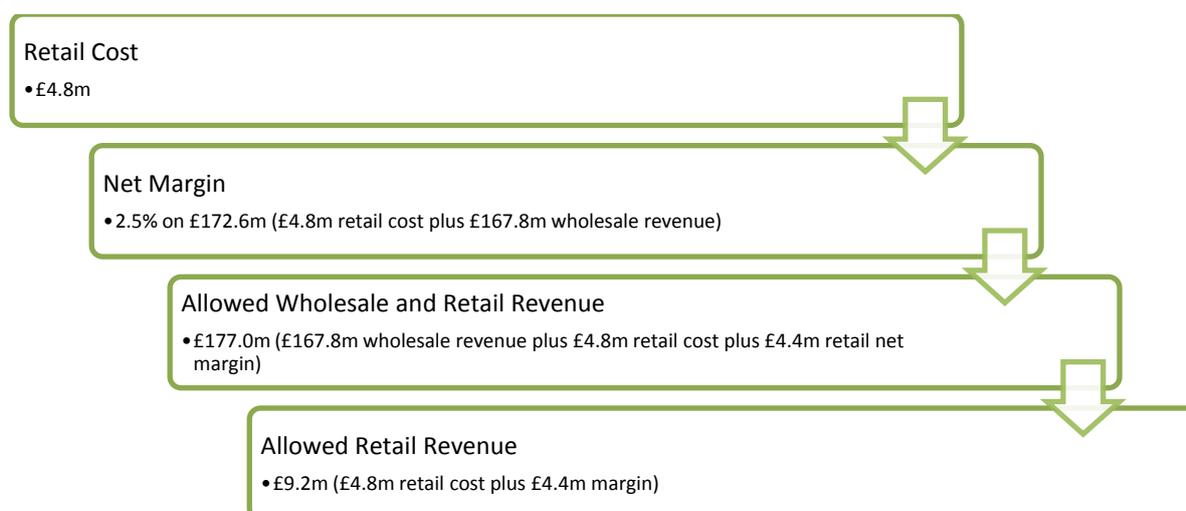


Figure 2 – Breakdown of cost element in the non-household retail price control for 2015/16 costs

The retail costs and net margin are fixed as part of PR14. The allowed retail revenue, as currently calculated, is based on forecast wholesale revenues. In reality wholesale revenue will vary over time and allowed retail revenue will therefore vary to match this.

The above calculation considers all non-household properties as a homogenous group, whereas it actually costs different amounts to provide retail services to different customers. If the all non-household properties were actually charged the same retail cost through the default tariffs, then some properties would be charged more than they cost to serve, which is unfair and provides significant opportunity for an alternate retailer to offer cheaper prices. On the other hand some customers will be charged less than they cost to serve and another retailer would be unable to offer their services at a level that can compete.

These two extremes means there would not be an equal opportunity for all customers to participate in the retail market, and the structure of the price control is intended to give a level playing field.

To solve this issue, the total allowed revenue for non-household retail price control is split by customer type, and we view this as splitting the non-household retail price control into a number of different, "mini" price controls, so that different types of customers have different price controls more appropriate to their retail costs.

The mini price controls are separated out by customer type, and we must define how to allocate customers and costs to each customer type. It should be noted that "customer type" is generic categorisation focussed more on reflecting the services provided and costs to serve. It does not mean that properties should be split by "type of business".

The formula set out above will be applied to each customer type and the totals across all "mini" price controls must add up to the total allowed retail revenue. The diagram below shows how we understand that the price control will work in practice.

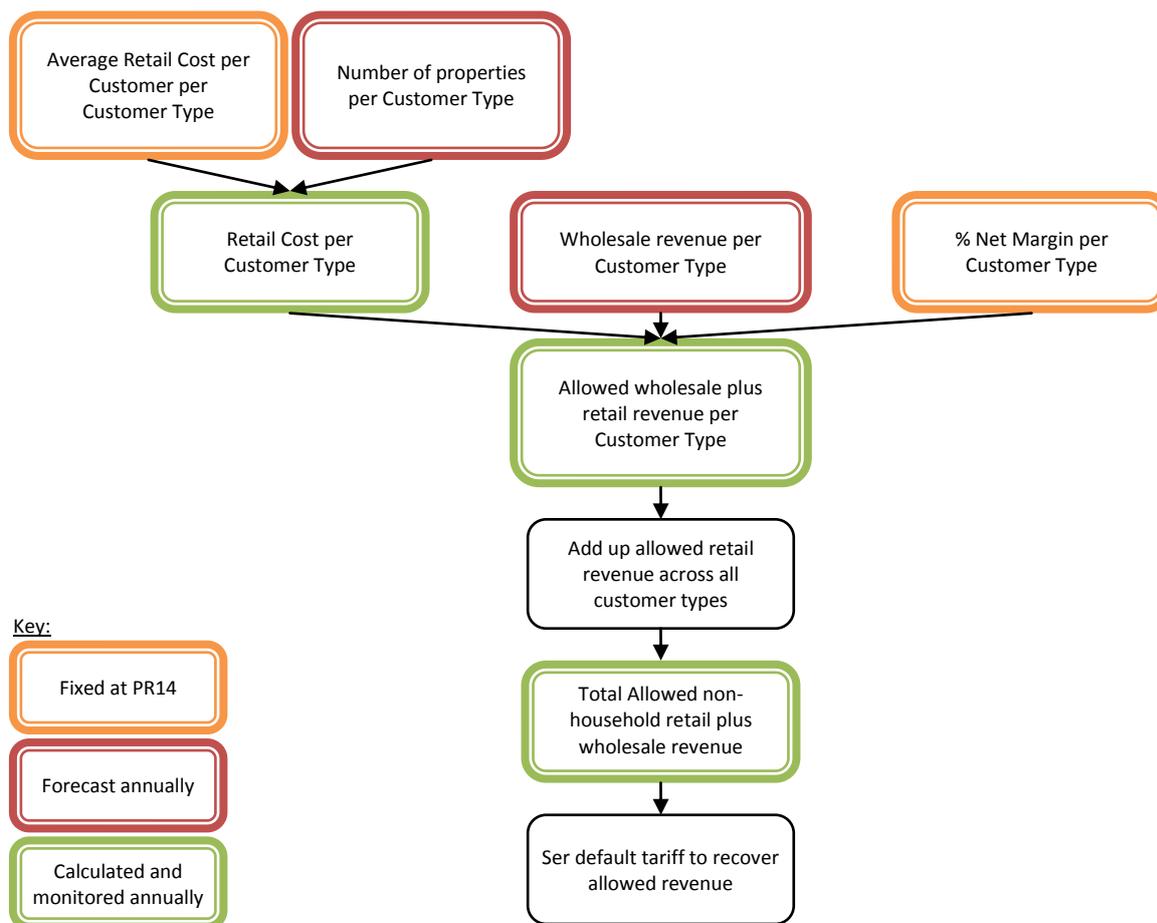


Figure 3 – Structure for calculation allowed non-household retail revenue

Ofwat will require that the default tariffs that we set each year to recover our revenues from non-households will allow us to recover no more than the sum of “Allowed wholesale plus retail revenue” for each individual customer type which will mean that no more than the allowed total retail revenue will be recovered.

3 ASSURANCE

The non-household retail price controls has been approved by the NWL Board at a special Board meeting held on 13 June 2014 and a special Audit Committee meeting on 23 June 2014. Prior to these meetings the price control was discussed with the NWL Management Team.

A two strand approach has been taken to assurance. The NWL Internal Audit team has checked the data used as a basis for modelling when setting the non-household price controls. This check covered the inputs used from billing systems and the final check that table R4 is populated as required from the modelling spreadsheet.

NERA, an economic consultancy, was engaged to look at the structure of the spreadsheet used to model the non-household price control. NERA checked the spreadsheet for computational errors as well as challenging our logic on some of the assumptions and choices made as part of the modelling.

In particular, NERA challenged our views, and the robustness of our decisions, in the following areas:

- Weighting for consideration of dual versus single service properties in the allocation of costs;
- Consideration of compliance with the Competition Act;
- Decisions on how to allocate the allowed total net margin of 2.5% across each customer type, such that adequate working capital is provided for each customer type;
- Consistency of assumptions across different areas of the cost and margin allocations.

Our submission reflects our response to the challenges arising from this process.

Individual decisions made at the detailed level in the cost allocations were also discussed with relevant experts within the company to provide confidence that reasonable assumptions had been made.

The table below summarises the key elements of our assurance and who carried it out.

Key assumption	Area	Audit
Decisions on how to define customer types	Customer types	NERA
Allocation of number of properties to each customer type (to give numbers and related wholesale revenue)	Customer types	Internal Audit
Check that total cost allocations add up to 2013/14 BP non-household retail costs (to be submitted for 27 June)	Cost allocation	Internal Audit
Logic for using cost drivers to allocate cost (definition of cost drivers and source information)	Cost allocation	NERA, NWL subject experts
Approach to allocating costs for each cost driver to each customer type	Cost allocation	NERA
Approach to allocating margin to each customer type	Net Margin	NERA
Model verification	Spreadsheet integrity	NERA

Figure 4 – Key assurance elements

4 CONSIDERATION OF THE COMPETITION ACT

4.1 GENERAL

The non-household retail price control exists to protect properties during the creation of the competitive retail market. As such it should ensure that the way retail costs are recovered from different non-household customer types does not prevent another efficient retailer from being able to compete against our charges. The concern is that, should an incumbent allocate too few costs to a category of customers then no one else would be able to offer the same service for a similar cost. This is known as margin squeeze and is against competition law.

There are no specific tests that can state whether the price control information is compliant with the Competition Act, however we considered a number of issues that should provide confidence that retail costs have not been set too low or too high for any individual customer type.

To assess whether the way we have defined customer types and allocated retail costs and net margin will be vulnerable to an accusation of margin squeeze, we considered the following tests:

- Total allowed revenue under the price control
- Average allowed retail revenue per unique property
- Average allowed retail revenue per property for the smallest properties
- Impact of net margin per customer type in terms of the average allowed revenue per property
- Whether the level of retail charge per unique property will allow for participation in the market
- Sense check as to whether average cost per property seems realistic and appropriate

A reasonableness check against these tests means that there should be limited opportunity for margin squeeze within the average allowed retail revenues per customer type. Further consideration of this issue will be required when setting default tariffs, but setting the price control information appropriately is the first step.

Appendix D provides a breakdown, per customer type, of the 11 elements that make up the average allowed retail revenue (8 related to retail costs and 3 related to net margin), and should be considered alongside these tests. We discuss each of these tests in more detail below.

4.2 TESTS FOR ASSESSING COMPLIANCE WITH THE COMPETITION ACT

4.2.1 Total allowed revenue under the price control

The total non-household retail costs, as shown in Table R4 Blocks A to C have been set following the Ofwat cost allocation guidance, and are discussed in our cost allocation submission. The net margin allowed under the price control is also fixed by the regulatory process at 2.5%.

The total allowed non-household retail revenue therefore is driven by the rules set through the regulatory process which set the limits on the total allowed revenue across all customer types. We then need to consider the fair allocation of these total allowed costs across customer types.

4.2.2 Average allowed retail revenue per unique property

Properties will be counted against up to four customer types (see section 5.3.2) depending on the number of services they receive (water, industrial water, sewerage trade effluent), which means the total allowed retail revenue for a unique property will be sum of the allowed retail revenue for up to four customer types. The allowed revenue per unique property ranges from £36 to £22,500.

Most of our properties fall into two categories, and the actual average allowed retail revenue per property for these groups is:

Measured standard water properties in ESW	£47
Measured standard water & sewerage properties in the North East	£115

We consider these figures are a fair reflection of the costs to serve these properties and include an adequate amount of margin that would satisfy a reasonable test of margin squeeze.

4.2.3 Average allowed retail revenue per property for the smallest properties

As shown in Appendix D, the average retail revenue per unique property is £94. There will be a wide range around this average. There is also a floor in costs reflecting the minimum fixed cost required to provide retail services to any single property.

Ofwat's average cost to serve for a single service *household* retail property, as shown in the 30 May draft Determination, is set at about £27. It would be unrealistic to expect it to cost less than this to provide retail services to any non-household property, as the household retail price control includes a lower allowed margin.

This indicates that, in the non-household retail price control, the lowest retail revenue for any unique non-household property should be somewhere above £30 per year. It may need to be higher to ensure that small properties can participate in the competitive retail market (a key concern for Ofwat). However, this can only be achieved within reasonable bounds of the cost and margin allocation methods.

The lowest average allowed retail revenue for a unique NWL property will be for an unmeasured water only property in the North East, who will only be counted under the *Unmeas Water N* customer type. The average allowed retail revenue for this type of property will be £36.

This amount is above the household ACTS, as would be expected, but not significantly, and seems reasonable.

4.2.4 Impact of net margin per customer type in terms of the average allowed revenue per property

The net margins we have allocated per customer type range from 0.7% to 6%, with a lower margin for customer types with higher wholesale revenues. While this seems counterintuitive, a low net margin on high wholesale revenue still gives a high pounds margin allocation, and is appropriate.

Considering the average allowed net margin per property in pounds shows that the amount varies considerably from property types with properties with low wholesale revenues to those with large wholesale revenues. The range of net margins we have set per customer type have resulted in a

pounds amount net margin per property that seems realistic for smaller properties, whilst also having much higher figures for large properties. We describe the process for deciding the levels of margins in section 5.5, and believe that our proposed margins reasonably reflect the different costs for each customer type.

4.2.5 Whether the level of retail charge per unique property will allow for participation in the market

The minimum allowed revenue per unique property is £36. This is reflective that some properties cost very little to serve and it is difficult to see how to fairly allocate costs to make this figure higher. Most properties will have an average allowed revenue of £47 or £115. At this level of costs, and particularly when considering several properties together, it seems to be a reasonable level of cost at which that another retailer could provide retail services.

4.2.6 Sense check as to whether average cost per property seems realistic and appropriate

The range of allowed retail revenue per customer type increases with level of wholesale revenue. It is also different for measured and unmeasured properties, for those that are billed more frequently and who have more meters. The variances seem reasonable as the high allowed revenues for larger properties reflect the very high wholesale revenues and therefore the working capital required as well as reflecting the risk that bills are not paid for these properties.

4.3 CONCLUSION

It is our view that our cost allocations for retail costs and net margins provide for a reasonable amount of allowed non-household retail revenue per customer type under the price control process.

5 PROCESS TO SET THE PRICE CONTROL

5.1 PROCESS

To determine the structure of the price control, the formula, as shown in section 2, needs to be worked in reverse for each customer type. The total retail costs and net margin for each year 2015-20 are known, and need to be allocated across the customer types so that they add up to the required totals. To do this the following process has been followed.

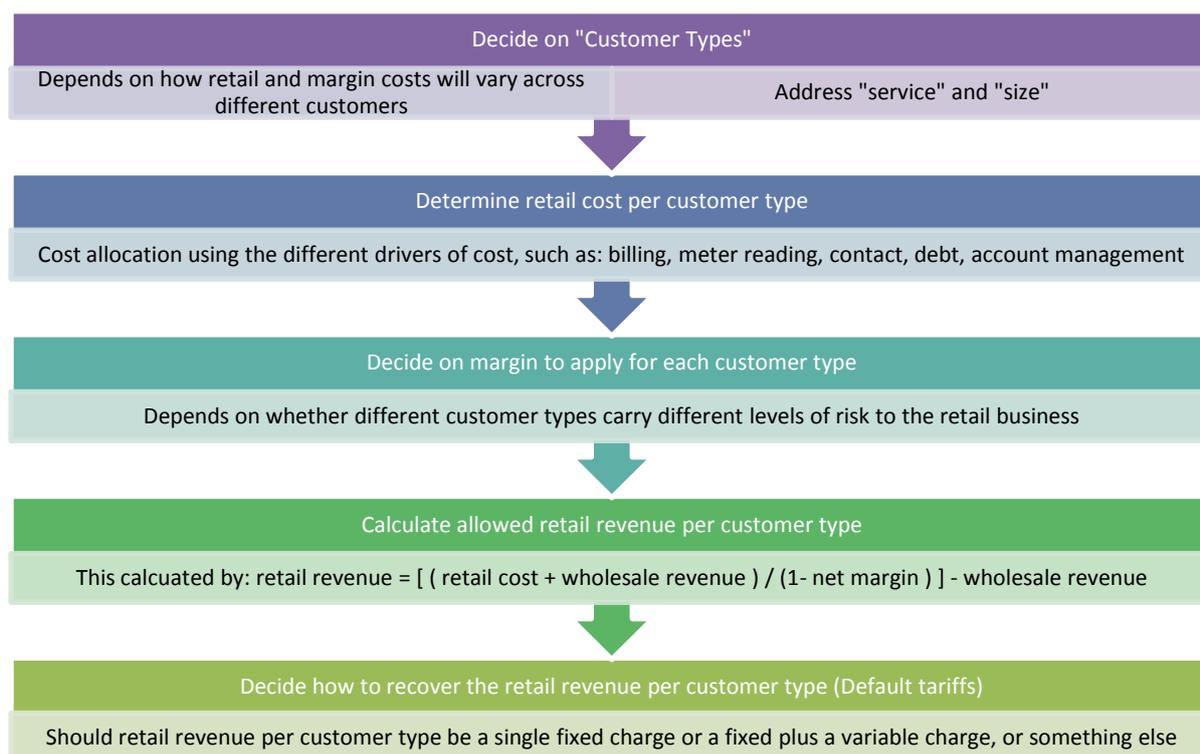


Figure 5 – Process for setting the non-household retail price control

5.2 KEY STEPS

There are three key steps that affect the structure of the non-household retail price control:

- **Customer types:** how customer types are defined, the number and groupings these cover;
- **Cost allocation:** how retail costs are allocated to each customer type (with the total adding up to the costs stated in the business plan table R4);
- **Net Margin:** the percentage net margin to be applied to each customer type (with the total adding up to a maximum of 2.5% in each year).

These decisions need to be made such that, if the number of properties to which NWL provide retail changes over time, if customers move to another retailer, or if a business closes, the amount by which retail revenue reduces reflects the retail cost to serve that customer.

Each of these steps is discussed in turn below.

5.3 CUSTOMER TYPES

5.3.1 Understanding customer types

“Customer type” is the terminology used by Ofwat to describe the groups into which properties are categorised for setting the mini non-household retail price controls. Properties could be grouped in many different ways.

As inferred from the 4 April guidance, the key drivers for whether properties should be considered in different groups are:

- Whether retail costs for different properties differ materially between customer types.
 - Where different retail services are provided to different properties as standard then this should be reflected in the retail costs allocated to a customer type.
 - For example meter readings are not carried out for unmeasured properties, so their costs differ to those for measured customers.
- Whether a different net margin should be applied for different types of customer because they carry a materially different risk to a retail business.
 - This considers the amount of money the retail business has to carry for working capital and risk to the retailer if a customer goes out of business.
 - For example, a larger customer may have a higher risk on both these points.

Some of the potential ways to define customer type are shown below.



Figure 6 – a few potential ways of deciding on customer types

Ofwat’s 4 April guidance requires that, at least, the following categories are covered by the customer types:

- Unmeasured Water;
- Measured Water;
- Unmeasured Sewerage;
- Measured Sewerage;
- Trade Effluent.

The guidance also mentions that the following points may affect decision on customer types:

- Retail costs for special agreements;
- Varying wholesale charges in different operating regions;
- Keeping default tariff structures similar to current tariff structures to minimise incidence effects.

We used these points as the starting position for deciding on which customer types we should define.

5.3.2 Defining customer types

In our December 2013 PR14 submission we defined customer types on the basis that each unique property would only appear once, and therefore that the customer types should reflect the unique combination of wholesale services received by each property, as well as the size of property to reflect the different margin requirements.

This approach does not meet the new requirement to show separate customer types for water and sewerage, and so we needed to review our definitions of customer type.

Taking into consideration the points raised in the 4 April guidance about defining customer types, we automatically need to consider separate water categories for our properties in the North East and those in ESW. This is because, while on average retail activities are similar in the two areas, they are not identical as measured properties may have differing levels of doubtful debt or different numbers of meter reads due to different numbers of meters or billing frequency. However the key difference is that wholesale tariffs for water are materially different, and are about a third higher in ESW than in the North East. This would mean that different doubtful debt and working capital levels should be considered for these two types of property.

Following our current wholesale tariffs would mean eight separate measured categories for water (four for the North East and four for ESW) and two for sewerage. This reflects the large user tariffs we have in place and therefore the different wholesale revenues across our property base.

Current water tariff structures cover: standard (<20MI/yr), focus20 (20-50MI/yr), focusextra (50-175MI/yr), focusplus (>175MI/yr)

Current sewerage tariff structures cover: standard (<50MI/yr), large user (>50MI/yr)

In our December 2013 submission we split the standard group into more categories, however on further consideration we have maintained consistency with our current tariff structures as, for retail activities, we provide the same level of service to all properties in this group.

For sewerage we started with two categories, standard and large user, but then considered the impact of whether retail services are different for properties which only receive domestic strength foul sewerage or surface water drainage services, as opposed to those properties that receive both these services. The key difference in retail costs will be associated with required working capital, as those with both services are likely to have higher wholesale revenues. We therefore split sewerage properties into a number of different customer types to reflect the possible combinations of domestic strength foul sewerage and surface water drainage services.

In addition, in the North East we provide non-potable water to a number of properties on Teesside through a discrete system, which has its own published tariff, and which may or may not be provided in addition to potable water. Given the significant wholesale revenues associated with these properties and the additional meters and therefore meter readings required, this service requires its own customer type.

This logic leads to the following breakdown for customer types that from standard water and sewerage services (customer types are shown in red).

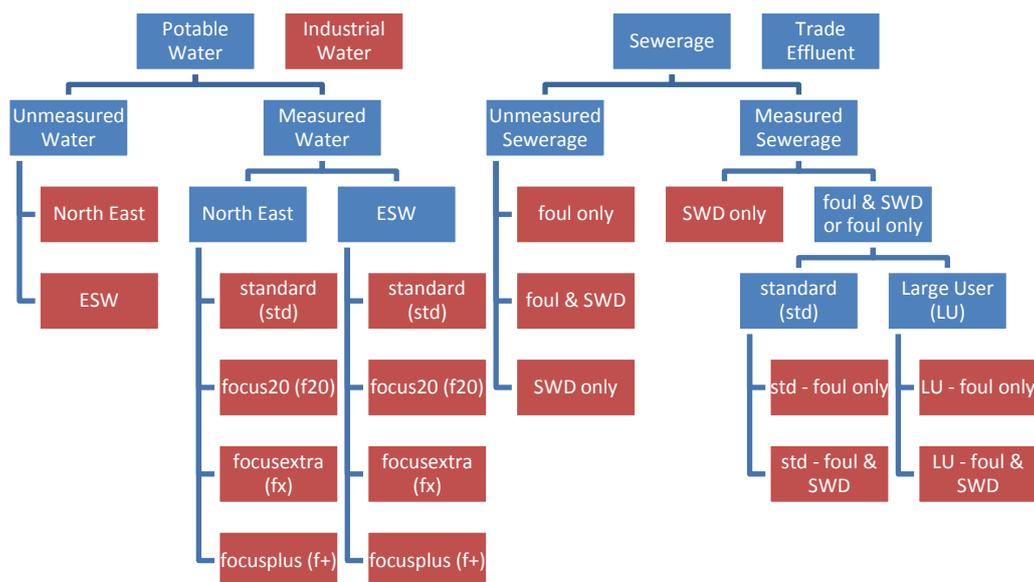


Figure 7 – Breakdown of customer type derivation

5.3.3 Addressing special agreements

The 4 April guidance also requires that we consider special agreements. The retail services provided to properties with special agreements are no different than for those provided to other properties, as a special agreement is usually associated with providing a different wholesale service. However the wholesale revenues for these customers can be different and so separate customer types may be required.

All NWL material special agreements are related to providing special industrial effluent treatment at one of our treatment works. These agreements are large and therefore merit a separate customer type, however we have allocated this as a trade effluent customer type, where a customer will be either a standard or special agreement kind of trade effluent customer, as this is how our current special agreements and therefore their 2013/14 costs (on which the definition of costs per customer type are based) are attributed.

We believe that further consideration of special agreements is required. We agree that the retail costs associated with special agreements need to be separated out so that they cannot be recovered from other customers. This is the same consideration as for retail costs associated with developer services and miscellaneous charges. However we do question whether it will be appropriate to publish default tariffs for these agreements. These agreements are commercially based, on non-standard charges, for wholesale activities, that are not published. These agreements also already need to be compliant with competition law. It is not clear whether it is appropriate to publish default tariffs for commercially based contracts.

It is also unclear how special agreements will function under the market operator, and we believe careful consideration of these processes will be required. However for the purposes of setting the retail non-household price control we believe we have appropriately reflected the retail costs of managing these agreements.

We would welcome further clarification on setting default tariffs for special agreements as part of the working groups for setting 2015/16 charges, and will signal this in our response to the consultation on 2015/16 charges.

5.3.4 Economies of scope

Ofwat's non-household price control guidance clearly specifies that customer types must only cover single wholesale services, and that there should not be a dual service customer type, which is how we defined customer types in our December 2013 submission.

We have therefore defined our 21 customer types to cover a single wholesale service each, which means that a unique property can be counted under up to four separate customer types.

The fact that a unique property can be counted under up to four separate customer types means that the total retail charge to these customers will be made up of up to four elements, one for potable water, one for industrial water, one for sewerage and one for trade effluent. This will be an appropriate reflection of their true retail costs as the number of services provided to each unique property varies.

However this also means that within the cost allocation process, the retail costs and margin associated with these properties must be appropriately shared between these customer types.

When carrying out our cost allocation we have considered whether the costs for a particular driver need to be shared between different services. Certain costs will be higher for dual service properties than for a single service property, however others are not. For example, a bill costs broadly the same whether it is for water only or water and sewerage. Given that all ESW properties are single service, care must be taken not to allocate too little cost to these customer types by spreading costs across all properties.

The final cost allocation approach described in 5.4 has taken this issue into account, so that the total allowed retail revenue for each customer type will cover the appropriate amount of cost for the combination of single and dual service properties included in that customer type. This means that the costs allowed for in the price controls will be appropriate.

In addition, we will need to consider how retail costs are recovered from different properties as part of setting the default tariffs. In particular we will need to take a view on whether costs for single and dual service properties differ materially enough to warrant different kinds of default tariff, such as the discount approach suggested by Ofwat in the 4 April guidance.

5.3.5 Summary of customer types

In taking Ofwat's guidance into consideration we have defined twenty one customer types. These customer types reflect our current tariff structures, which will roll over to be our wholesale tariffs. They also reflect the minimum five categories defined by Ofwat.

A unique property could be counted up to four times, depending on the combination of services the property receives. The customer types are shown below.

Potable Water (10 Types)	Industrial Water (1 type)	Sewerage (8 types)	Trade Effluent (2 types)
<ul style="list-style-type: none"> •Unmeasured Water North •Unmeasured Water South •Measured Water North std •Measured Water focus20 North •Measured water focus extra North •Measured water focus plus North •Measured Water ESW std •Measured Water focus20 ESW •Measured water focus extra ESW •Measured water focus plus ESW 	<ul style="list-style-type: none"> •Industrial Water 	<ul style="list-style-type: none"> •Unmeasured Sew (foul only) •Unmeasured Sew (foul & SWD) •Unmeasured Sew (SWD) •Measured Sew (SWD Only) •Measured Sew (foul only) Std •Measured Sew (foul & SWD) Std •Measured Sew (foul only) LU •Measured Sew (foul & SWD) LU 	<ul style="list-style-type: none"> •Trade Effluent - std •Special Agreement

Figure 8 – NWL proposed customer types

5.4 RETAIL COST ALLOCATION

5.4.1 General approach to retail cost allocation for 2013/14 costs

Total allowed retail costs across all customer types for 2015-20 must total the retail costs shown in Table R4 line 8. More cost should be allocated to customer types with more properties, or more cost should be allocated to customer types which have higher levels of service. An example is meter reading, where no cost is allocated to unmeasured customers, who have no meter. More cost is allocated to customer types with larger customers whose meters are read more frequently and have, on average, more than one meter per property.

We have allocated retail costs between customer types using the 2013/14 retail costs defined in Proforma A8 of the Regulatory Accounts as a baseline. These 2013/14 costs are split across the different drivers and then allocated per customer type. This helps identify a different “driver unit” for each cost driver which we have then fixed for the whole of the 2015-20 period, and the “driver unit” can then be multiplied by the number of properties in each year, which means that as the number of properties in each customer type changes over time, the relative proportion of costs in each customer types will change.

This process effectively follows a number of steps, which we discuss in more detail below:

- Step 1 – identifying cost drivers
- Step 2 – allocation of 2013/14 retail costs to each cost driver
- Step 3 – allocation of retail cost for each cost driver to each customer type.

5.4.2 Step 1 – Identifying cost drivers

The cost drivers we have identified to use in the allocation cost are shown in Figure 9.

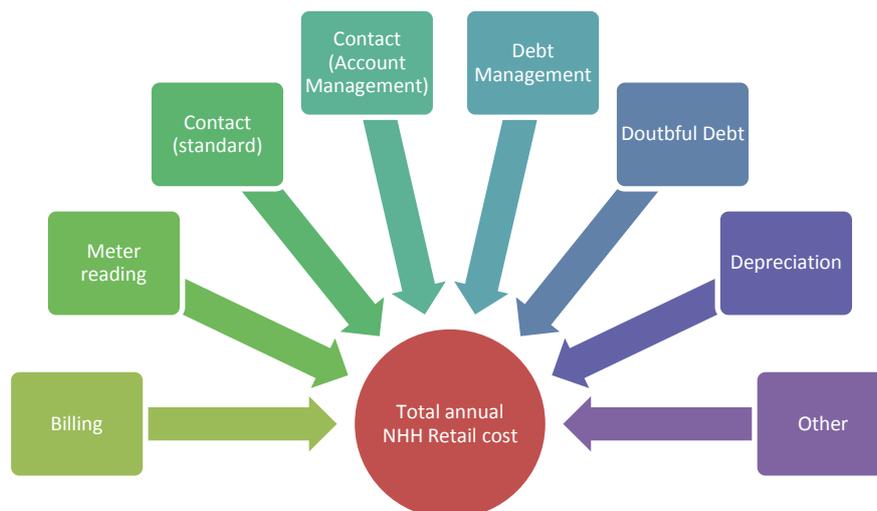


Figure 9 – Retail cost drivers

Six cost drivers were specified by Ofwat in the 4 April guidance, which we have used as a baseline for our cost allocation. We have added two additional cost drivers to reflect further areas where costs may be different across customer types. We have only varied from the recommended drivers in the 4 April guidance where more information is available that will provide a better cost allocation.

The “Other” cost driver has been added to match the “other operating expenditure” line in Proforma A8. These costs are mainly support and general costs and should be allocated evenly across properties, and not skewed by other costs drivers. We have also split the “Contact” cost driver into two categories, “contact (standard)” and “contact (account management)”. Properties that are account managed have costs that are distinct from those customers who are not and we have therefore separated these costs to facilitate clear allocation.

The table below summarises the “driver unit” used to apportion total retail costs between each customer type for each retail cost driver.

Cost driver	“Driver units”
Billing	Number of annual bills per property
Meter Reading	Number of annual meter reads per property
Contact (standard)	Number of contacts per property, for properties who are not account managed
Contact (Account Management)	Customer types with account management
Debt Management	Number of properties
Doubtful Debt	Percentage of total doubtful debt
Depreciation	Relative to the total costs for Billing plus Contact
Other	Number of properties

Figure 10 – Cost drivers used for retail cost allocation

To determine the fixed “driver unit” to be used in each year for each cost driver, the costs for 2013/14 are allocated as a baseline.

5.4.3 Step 2 - allocation of 2013/14 retail costs to each cost driver

The allocation of costs to each customer type by driver has been carried out against the 2013/14 Business Plan version of the non-household retail costs as reported in Proforma A8 of the accounting separation tables that are defined as part of the 2013/14 Regulatory Accounts. It should be noted that this is the version to be submitted in the cost allocation work as part of the PR14 27 June Business Plan submission, complying with Ofwat’s cost allocation guidelines for the BP, not the version reported in the Regulatory Accounts.

Proforma A8 is shown to the right.

When allocating the retail costs we have started with the data shown in this table for 2013/14.

Each of the lines can be directly attributable to an identified cost driver, except for the “customer services” line, which must be split into the “billing”, “contact (standard)” and contact (account man)” cost drivers.

This split is obtained from the detailed accounting separation data used to produce Proforma A8.

	Household	Non-household	Total
Operating expenditure			
Customer services			
Debt management			
Doubtful debts			
Meter reading			
Services to developers			
Other operating expenditure			
Local authority rates			
Exceptional items			
Total operating expenditure excluding third party services			
Third party services operating expenditure			
Total operating expenditure			
Capital maintenance			
Current cost depreciation			
Recharges to other business units			
Recharges from other business units			
Amortisation of deferred credits			
Amortisation of intangible assets			
Total capital maintenance			
Total operating costs			
Debt written off			

Addressing retail costs relating to developer services and miscellaneous charges

Not all costs in Proforma A8 will be recovered through charges covered by the default tariffs, and therefore should not be included in the costs to be allocated. These costs have been separated out on Table R4 and are excluded from the total retail cost to be included in the allowed retail cost for each customer type. These costs are:

- Retail element of developer services charges
 - This cost has its own line on both R4 and Proforma A8, which we have excluded the costs shown in the Proforma A8 “Services to Developers” line from the 2013/14 costs before any allocation between customer types is carried out.
- Retail element of miscellaneous charges
 - This cost is not shown as a separate line in Proforma A8, but is shown in BP table R4. We have therefore deducted the amount shown in R4 from the Proforma A8 retail costs. This has been deducted from the “customer services” cost driver as retail costs for miscellaneous charge are related to billing and contact.

5.4.4 Step 3 - allocation of retail cost for each cost driver to each customer type

Defining the driver for each customer type

Costs for each driver are apportioned between each customer type based on a “driver unit”, and also take account of the relative movements in numbers of properties over 2015-20.

For all customer types except doubtful debt and depreciation, the percentage of cost allocated to each customer type is calculated for each year by taking a number of drivers per customer type, multiplying this by the number of properties and then taking the percentage the total to allocate the amount of total cost to each customer type.

This is calculated as follows:

$$\text{retail driver cost}_t = \frac{\text{no. driver units}_t \times \text{no. properties}_t}{\text{total units}} \times \text{total retail driver cost}$$

Where t = customer type

For doubtful debt the percentage of total doubtful debt allocated to each customer type is fixed for each of the five years, and for depreciation the proportion is calculated by adding up the total number of bills and contacts for each customer type. The table below summarises the part of this calculation that has been fixed for each year across 2015-20, that will then cause the total percentage of cost to vary each year once the forecast number of properties has been taken into account.

	Billing	Meter reading	Contact (Standard)	Contact (Acct Man)	Debt Man	Doubtful Debt	Depreciation	Other
Driver units per property	Weighted number of bills	Number of meter reads	Number of contacts per property	£ per property	£ per property			£ per property
Number of properties								
Total Drivers =units * no. props							No. bills plus no. contacts	
% of total cost = Total drivers per cust type / total drivers						% of total debt		

Figure 11 – “Driver units” fixed for 2015-20 for each cost driver

Detailed discussion on the allocation methodology for each cost driver is included at Appendix F.

Cost driver summary

The table below summarises how the cost allocation by customer type is calculated.

Cost type	Cost driver	Retail cost allocation calculation for each year by customer type (t)	Data source
Billing	Number of annual bills per property	$\%_t = \frac{(no. \text{ annual bills per prop}_t \times no. \text{ props}_t)}{total \text{ annual bills}}$	Number of bills per property per property type fixed from 2013/14 baseline. North customer type number of bills weighted to take account of the spread of costs across services. Source: 2013/14 accounting separation cost analysis
Meter Reading	Number of annual meter reads per property	$\%_t = \frac{no. \text{ annual meter reads}_t \times no. \text{ props}_t}{total \text{ meter reads}}$ Where $No. \text{ annual meter reads}_t = average \text{ no. meters}_t \times no. \text{ annual bills per prop}_t$	Number meters per property fixed across all years Source: 13/14 Billing data. Average number meters for each customer type calculated from allocation of properties to each customer type.
Contact (standard)	Number of contacts per property	$\%_t = \frac{av \text{ no. contact}_t \times no. \text{ props}_t}{total \text{ contacts}}$	Average number of contacts per property fixed across all years. Source: 2013/14 accounting separation cost analysis Number of contacts allocated to customer types with account management.
Contact (Account Management)	£ per property	$\%_t = \frac{\left(\frac{total \text{ £ account man}}{total \text{ number of acct man props}} \right) \times no. \text{ props}_t}{total \text{ £ acct man}}$	This is a switch, either on or off. Only large customers are account managed – which correlates with the focus tariff customers. An average cost per property is calculated annually from the total number of account managed properties.
Debt Management	£ per property	$\%_t = \frac{\left(\frac{total \text{ £ debt man}}{total \text{ props}} \right) \times no. \text{ props}_t}{total \text{ £ debt man}}$	Proportion of debt management calculated for each year, depending on proportion of properties in each customer type. This gives an equal allocation of debt management costs per property.
Doubtful Debt	% of total doubtful debt	$\%_t = \%_t$	A debt “provision” figure is calculated per property from write off plus outstanding debt data. The proportion per customer type then drives the amount allocated per customer type. Source: 2013/14 billing data
Depreciation	Number of contacts & number of billing	$\%_t = \frac{nb \text{ bills}_t + no. \text{ contacts}_t}{(total \text{ bills} + total \text{ contacts})}$	The proportion of cost to allocate to each customer type is calculated annual based on the relative proportions of billing and contact costs allocated to each customer type.
Other	£ per property	$\%_t = \frac{\left(\frac{total \text{ £ other}}{total \text{ props}} \right) \times no. \text{ props}_t}{total \text{ £ other}}$	Proportion of other costs is calculated for each year, depending on proportion of properties in each customer type. This gives an equal allocation of other costs per property.

Figure 12 – Cost allocation methodology across customer types for each cost driver

5.5 NET MARGIN

5.5.1 Requirements

Ofwat determined in their “Risk and reward guidance” that the net margin for the non-household retail price control would be a maximum of 2.5% in each year, 2015-20.

The 4 April guidance suggested that the margin could be an aggregate 2.5% over the five years, which meant that different levels of margin could be allocated in each year, some higher and some lower than 2.5%. However the response to a question posed at the 17 April workshop indicated that the maximum allowed net margin in any year would be 2.5%. The subsequent issue of tables also limits the net margin in each individual year to a maximum of 2.5% across all customer types.

We have therefore populated Table R4 such that the full 2.5% margin is calculated for each year over 2015-20. Because the total net margin across all customer types does not change over the five year period, we have decided to fix the net margin for each customer type so that they do not change each year. At this point there is no clear justification for changing the level of margin for individual customer types for each year.

Expectations 11 and 12 set out in the Ofwat’s 4 April guidance require that we consider whether the same net margin should be applied across all customer types.

Initially we tested what the net margin allocation would look like if we set the net margin for all customer types to 2.5% or if we set the same “mark up” for all customer types. These two allocations either resulted in allowed revenue that was too low for small properties or much too high for large properties, and therefore indicates that that a different net margin per customer type is required.

In Table R4, net margin is a calculated line from the other inputs in the table, and is calculated using the following formula (derived from the R4 calculation):

$$NHH \text{ retail price control revenue} = \left[\frac{(\text{retail cost} + \text{wholesale revenue})}{(1 - \text{net margin})} \right] - \text{wholesale revenue}$$

However to determine the net margin for each customer type our model allocated the total net margin to each customer type, and the percentage net margin figure then needs to be calculated for each customer type as follows:

$$\text{net margin} = 1 - \left[\frac{(\text{retail cost} + \text{wholesale revenue})}{(NHH \text{ retail price control revenue} + \text{wholesale revenue})} \right]$$

5.5.2 Apportioning net margin across customer types

To determine what proportion of the total net margin should be applied to each customer type we have followed a similar process to the cost allocation. Three different drivers of margin have been identified, and the associated costs have been allocated on the principles as shown in the table below.

Net Margin category	Allocation method to customer type
Return on retail assets not in the RCV	Allocated according to the same proportion of depreciation allocated under the retail costs
Working Capital	Calculated value per customer type based on number of debtor days and creditor days
Residual Return on Risk	Fixed percentage allocation between customer types

Figure 13 – Net margin categories

These three categories have been used by Ofwat to calculate the household retail margins and it seemed appropriate to follow the same logic for the non-household retail margins. The two step process that has been followed is:

- Step 1 - allocation of total allowed margin into different categories;
- Step 2 - apportioning the net margin across customer types.

5.5.3 Step 1 - allocation of total allowed margin into different categories

To split the allowed margin across the three categories, the amount of margin associated with the return on retail assets not in the RCV, and the working capital were calculated, which left the remainder of the allowed margin as the residual return on risk.

The amounts are calculated as a total over the whole of 2015-20 as the margins will be fixed over this time period, and were determined as follows:

Calculating the margin associated with return on retail assets not in the RCV

The part of the margin for retail assets not in the RCV is the financing cost for the amount invested. This is calculated by taking the amount of retail capex over 2015-20, deducting the amount to be funded and then determining the amount that needs to be financed using the following formula:

$$\text{financing cost} = \text{retail capex} \times \text{interest rate}$$

The retail capex figure has been sourced from the PR14 financial modelling. The interest rate for the return has been set at 4%. We discuss this below.

This calculation provides a total pounds amount of net margin over the five year, which can then be turned into net margin expressed in percentage terms.

Calculating the margin associated with financing working capital

The total amount of required working capital has been calculated for each individual customer type using debtor and creditor days from the Business Plan inputs provided in Table A12, and summed up to give the total required working capital, which is then translated into net margin expressed in percentage terms.

We used a fixed 30 creditor days in the working capital calculations, as suggested by the fixed terms likely to be set by Open Water. The total debtor days used for each customer type were fixed as below.

	Debt	Measured Income accrual	“Long tail”	Total
Unmeasured	17.4	0.0	27.0	44.4
Measured	18.9	38.1	27.0	84.0

Figure 14 – Debtor days for working capital calculations

These figures are consistent with those used in our retail financial modelling, and are derived from the information shown in Table A12.

We considered using different debtor days for each measured customer type, however there is no clear justification for considering different figures, and the differences would be unlikely to have a material impact.

To calculating the financing costs of this we have used the same assumption as for the return on retail assets. We discuss choosing 4% below.

Calculating the margin associated with residual return on risk

This category is the remaining margin left after the return on retail assets and working capital have been calculated.

Discussion of interest rate to use for financing costs for the retail assets not in the RCV and working capital

Financing costs for a water retail business are not yet clearly identified and a range of interest rates could be used.

In their report for Ofwat on net margins, PwC suggested that the financing costs for retail would be about 3.2%. We view this as the lower end of the potential range, and considered using a figure somewhere between 3.2% and the 5% nominal cost of debt used in the WACC calculations as the top end of the range.

After discussions with NERA and testing the impact on the net margin allocation for retail assets and working capital for the two ends of the range, we decided to use an interest rate of 4% as a mid ground estimate.

Cross checking that working capital is more than sufficient

The total net margin for the return on retail assets and working capital is 0.6% which is in the expected range indicated by the July 2013 methodology. To get a higher level of margin for these two elements we would need to use a higher interest rate, which is not appropriate. In addition this would have the impact of reallocating margin away from the residual return on risk element of the margin, which would have an immaterial impact on margins for different customer types. We therefore believe that sufficient net margin has been allocated to finance working capital.

Net margin summary

In summary the proportions of margin falling into each category is as follows:

Net Margin category	% Net Margin
Return on retail assets not in the RCV	0.04%
Working Capital	0.57%
Residual Return on Risk	1.89%
Total	2.50%

Figure 15 – Summary of net margin

The proposed split of net margin across these three categories seems appropriate and should ensure a sufficient level of working capital.

5.5.4 Step 2 – apportioning the net margin across customer types

The amount of margin for each category is apportioned across each of the customer types in a manner appropriate to each driver.

Apportioning the net margin associated with return on retail assets not in the RCV

To allocate the net margin associated with the return on retail assets across customer types we have used the same allocation as used for the depreciation cost driver used as part of the retail cost allocation.

Apportioning the net margin associated with working capital

As discussed in section 5.5.3 the working capital for each customer type was calculated individually. For more information please refer to this section.

Apportioning the margin associated with residual return on risk

The remaining margin mainly covers the profit element of the margin. This should be apportioned as equally as possible across all customer types, however an equal percentage or an equal pounds amount allocation means quite different things. The choice of allocation needs to ensure that small customer costs aren't too low to prevent their exclusion from market.

We considered a number of different options for allocating the residual margin to each customer type. The assessment of these options is summarised below.

Options	Method of allocation	Observations
Option 1	Proportionate to retail cost	Very little margin allocated to small customers, resulting in a low overall average retail revenue per property.
Option 2	Proportionate to wholesale revenue plus retail cost	Most residual margin is allocated to very large customers and very little to small customers resulting in extreme differences in average retail revenue per customer type.
Option 3	Fixed amount (£) per property	Residual margin allocated to larger properties is very low.
Option 4	Fixed amount per property plus an amount proportionate to retail cost	Residual margin is higher for larger properties, but not very low for smaller properties.
Option 5	Fixed percentage per property over and above retail cost plus depreciation margin plus working capital	Weighted to larger properties, resulting in a very low average retail revenue per property for smaller customer types
Option 6	Fixed amount per property plus an amount proportionate to retail cost plus depreciation margin plus working capital	Heavily weighted to very large property customer types, reasonable amount to smaller properties

Figure 16 – Options for allocating residual return on risk costs across customer types

When deciding which method of allocation to use for the residual return on risk element of the margin, the average retail revenue per customer type was considered. Small properties, which use low volumes of water and are not billed frequently, have low costs to serve. The lower these charges are the less opportunity there will be for these properties to participate in the retail market.

If the residual return on risk is allocated using the size of the wholesale bill, the pounds amount of residual return on risk weights the total heavily to the customer types with larger wholesale bills. Applying the same pounds amount to each customer types has the opposite effect. These are the two extremes of allocation and are represented by options 2 and 3.

Any of the options that included working capital or wholesale revenue in the apportionment weight a lot of the residual margin to the larger properties.

None of the options that allocate costs in this way seem appropriate. We have therefore chosen Option 4, which effectively splits the difference by applying a fixed amount per property and then the rest is apportioned according to retail cost.

Deciding on the amount to use as the fixed part of the cost is a judgement call. There is no “rule” available to say that the net margin should be allocated using one of the two extremes of allocation (on an equal pounds basis per property or according to wholesale plus retail revenue) or where in this range the net margin should be allocated. We have therefore chosen to use 50% of the amount that would be allocated if an equal pounds amount was allocated per property. Having considered a range of alternatives this was considered to be a simple rule that appeared to generate a reasonable allocation.

6 CALCULATING THE PRICE CONTROLS

6.1 MODELLING SPREADSHEET

To populate Table R4 and calculate the price control numbers, a spreadsheet has been developed in Excel. The diagram below summarises its structure.

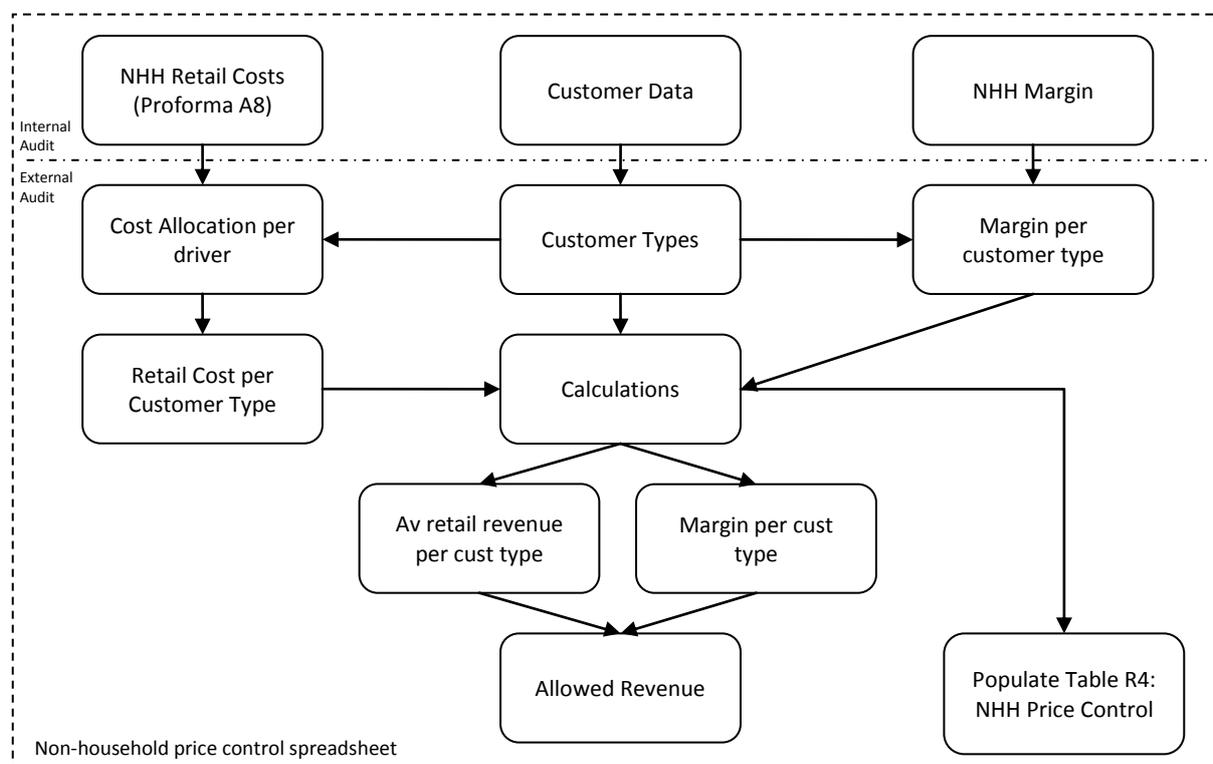


Figure 17 – Spreadsheet modelling structure

We have attached this spreadsheet with our 27 June submission. In the spreadsheet we have included switches that allow recalculation to assess the different options for cost allocation outlined in this document. The spreadsheet has also been used to model potential incidence effects for individual properties.

6.2 FORECASTING

All retail cost allocation has been carried out using 2013/14 data. This information needs to be projected over 2015-20 to be consistent with the total overall forecast retail costs as shown in our Business Plan (shown in Block A for Table R4 Line 8).

Over this time the total number of non-household properties, as well as the relative number of properties in each customer type will change. This will change the relative proportions of retail cost and net margin for each customer type for each year. Therefore three types of data need to be forecast over 2015-20 so that the correct inputs for R4 can be applied:

- Proportion of retail cost per cost driver allocated per customer type
- Number of properties in each customer type
- Wholesale revenue per customer type

6.2.1 Total retail costs per year (R4 Block A and B)

Total retail costs have been projected according to our business plan forecasts. This is not covered in this document, but in our 27 June cost allocation submission

6.2.2 Proportion of retail cost per cost driver allocated per customer type

To derive the retail costs for each year the total cost per retail cost driver needs to be forecast, as does the proportion of this total cost allocated to each customer type.

The retail cost per cost driver for each year is kept proportional to the change in total retail cost for each year. The forecast has been kept simple as the total retail costs remain relatively stable over 2015-20, and a more complex forecast would be dependent on assumptions. The relatively small change in total retail cost over 2015-20 does not justify more complex assumptions.

The fixed drivers set out in 5.4 are used to calculate the annual retail costs for each cost driver.

6.2.3 Number of properties in each customer type

The number of properties in each customer type is used as part of the calculations to apportion retail costs for each year over 2015-20. The customer types reflect our current tariff structures, and therefore our current tariff model, which forecasts the number of properties over time at a detailed level, has been used to provide the forecast number of properties for each customer type for each year.

This level of detailed information is not required as part of the PR14 submission, however our tariff model is used to set our charges annually and is therefore audited as part of the Principal Statement process. This model has been used for a number of years and provides a robust forecasting approach.

6.2.4 Wholesale revenue per customer type

Total non-household wholesale revenue forecasts for 2015-20 are sourced from Table A19 of the PR14 Business Plan. This amount of this wholesale revenue that is relevant for each customer type needs to be determined.

As wholesale tariffs do not yet exist, a calculated version of wholesale tariffs has been used for the purposes on the non-household retail price control. We have used our tariff model, as described above for the property number forecasts, to provide the wholesale revenue per customer type.

The tariff model has been solved to return a revenue that matches the allowed wholesale revenue set by the 30 May Draft Determination. This in turn defines a set of tariffs, based on our current tariff structure, which will only include the wholesale element of costs. This allows for a forecast of wholesale revenue per customer type that reflects the current forecast changes in property numbers and changes in volume by different types of property.

At this time this is the best available approach to forecasting wholesale revenue, and provides a reasonable forecast of wholesale revenue per customer type.

7 CONSIDERING INCIDENCE EFFECTS

7.1 CALCULATING INCIDENCE EFFECTS

Under the new price controls, explicitly splitting costs between wholesale and retail will reveal whether, under current tariff structures, there are properties that are being charged too much or too little for retail services.

The simplest way to understand the potential impact is to remove retail costs from current tariff structures to leave them to solely recover wholesale costs. The impact on different unique properties can be quite different whether the retail costs are removed from current tariffs that are based on fixed costs or those that are based on volumetric costs. An appropriate way to remove the costs needs to be determined.

As discussed under 6.2.4 we have used our current tariff model to model 2015/16 tariffs. Two versions of this model has been solved to set the 2015/16 tariffs. One model is solved so that the tariffs should recover revenues that cover the total allowed wholesale plus retail revenues set out in the 30 May Draft Determinations. The second is solved to recover the allowed wholesale revenues only.

This process provides two sets of 2015/16 tariffs that are derived on a consistent basis and the only difference between them will be retail costs.

In our non-household retail price control spreadsheet model we show the charge multipliers for each unique NWL property for each tariff. This allows us to model the revenue that would be recovered from each unique property if tariffs on the current basis or on a wholesale basis only. This shows the amount of retail cost that will be removed from each unique property's charges.

We can then add a "total retail" charge for each unique property based in which customer types they belong to and an assumed tariff structure. The model has been set up to choose whether retail charges are recovered under a fixed element of charge only or through a combination of fixed and variable charges.

The wholesale tariff plus the retail elements can be considered to approximate a view on how the default tariffs may be set.

For the purposes of this price control assessment, incidence effects have been assessed based on retail charges being recovered through an assumed fixed charge element plus a variable charge element. This may not be how we set our final default tariffs but it provides an indication of the potential incidence effects.

Assumptions that may affect the incidence effects analysis:

- This assessment considers the difference between what a property would be charged in 2015/16 if there is no change to current tariff structures compared to what they would be charged in 2015/16 if charges were separated for wholesale and retail
 - The incidence does not consider the change between 2014/15 charges and 2015/16 charges (i.e. the price change for the year) and therefore also does not address rebalancing for other purposes, such as the recovery of competition implementation costs only from non-households.
 - This incidence effects analysis is therefore isolates the assessment of how the balance of retail and wholesale charges will change.

- For this assessment, to calculate wholesale charges we have deducted an assumed fixed amount from the current fixed tariffs, which then solves the amount by which the current variable tariffs need to be adjusted. This amount may not be the final figure as more modelling will be required to determine the appropriate amount to remove from the current fixed and variable tariffs.
 - The fixed charge element of the retail tariff has been calculated for each customer type as the total of the retail cost elements that does not vary by a properties wholesale charge. Only the doubtful debt and working capital retail costs vary according to the wholesale charge, therefore the fixed charge sets the lowest “floor” retail charge for any property for each customer type.
- While we have assessed incidence effects using a fixed plus variable charge recovery of retail costs, we have only shown fixed charges in table R4 as we have not yet made a final decision on the structure of our default tariff and showing a fixed and variable element may be misleading at this point.

7.2 IMPACT ON PROPERTIES

For each unique property we have assessed three measures of incidence:

- Percentage change in total charge from current tariffs to the wholesale plus retail tariffs;
- Pounds change in total charge from current tariffs to the wholesale plus retail tariffs;
- Retail charges as a percentage of wholesale plus retail charges.

Change in total wholesale plus retail charges

Figure 18 shows that a small proportion of properties will see a large pounds increase in their total charges when retail charges are recovered under the new price control process, however these tend to be properties with higher charges for which this will be a relatively small percentage of their total charges.

		Total Wholesale + Retail Bill								Total
		<£50	£50 to £100	£100 to £500	£500 to £1,000	£1,000 to £10,000	£10,000 to £50,000	£50,000 to £100,000	>£100,000	
£ Bill change	<-£100	29	40	250	311	6,236	1,238	70	86	8,260
	-£100 to -£1	75	244	1,736	2,962	6,036	80	2	3	11,138
	-£1 to £1	17	1	53	13	677	0	0	0	761
	£1 to £10	1,674	7,826	16,759	3,131	462	9	0	0	29,861
	£10 to £25	531	1,691	7,886	2,765	597	11	0	0	13,481
	£25 to £50	267	210	17,670	2,254	1,311	11	0	1	21,724
	£50 to £100	8	304	3,284	4,044	3,030	48	0	3	10,721
	>£100	0	0	23	41	1,741	438	67	36	2,346
Total	2,601	10,316	47,661	15,521	20,090	1,835	139	129	98,292	

Figure 18 – Number of properties categorised by size of wholesale plus retail bill and the pounds value change in their bill from current tariff structures

In contrast Figure 19 identifies that properties with lower charges will tend to see a larger percentage increase in their charge. This signals that the properties with the lowest bills, i.e. those that use the smallest amount of water, are probably not being charged enough for retail activities at the moment.

		Total Wholesale + Retail Bill								Total
		<£50	£50 to £100	£100 to £500	£500 to £1,000	£1,000 to £10,000	£10,000 to £50,000	£50,000 to £100,000	>£100,000	
% Bill change	<-1%	276	284	1,982	3,177	9,464	1,171	59	57	16,470
	-1% to -1%	12	1	241	2,811	4,468	281	24	50	7,888
	1% to 5%	25	1	10,515	4,572	3,868	351	49	22	19,403
	5% to 10%	13	51	10,576	3,165	2,211	28	7	0	16,051
	10% to 15%	8	3,807	7,985	1,720	24	3	0	0	13,547
	15% to 25%	104	4,387	11,344	35	16	0	0	0	15,886
	25% to 50%	1,773	1,234	4,103	6	15	0	0	0	7,131
	>=50%	390	551	915	35	24	1	0	0	1,916
Total	2,601	10,316	47,661	15,521	20,090	1,835	139	129	98,292	

Figure 19 – Number of properties categorised by size of wholesale plus retail bill and the percentage value change in their bill from current tariff structures

Even though this is a high percentage increase in charges, it will still be a relatively low pounds increase, which in many cases will be a small proportion of the turnover of the business concerned.

It is difficult to mitigate against this because, while such a large percentage increase may difficult to explain and manage, it is necessary to charge this way as otherwise we would be charging less than the cost for providing retail services for these properties. This could lead to accusations of margin squeeze for these properties.

We explain below the impact for a property charged a very low amount in total.

Retail as a percentage of total wholesale plus retail charges

		Total Wholesale + Retail Bill								Total
		<£50	£50 to £100	£100 to £500	£500 to £1,000	£1,000 to £10,000	£10,000 to £50,000	£50,000 to £100,000	>£100,000	
% Bill change	<-12.5%	313	1	4,643	10,512	19,917	1,833	139	129	37,487
	12.5% to 25%	0	0	19,762	4,967	123	1	0	0	24,853
	25% to 37.5%	0	57	15,967	5	25	0	0	0	16,054
	37.5% to 50%	0	3,794	6,289	11	6	0	0	0	10,100
	50% to 62.5%	1	3,187	466	9	1	0	0	0	3,664
	62.5% to 75%	3	2,330	336	2	3	0	0	0	2,674
	75% to 87.5%	1,865	709	193	12	6	0	0	0	2,785
>=87.5%	419	238	5	3	9	1	0	0	675	
Total	2,601	10,316	47,661	15,521	20,090	1,835	139	129	98,292	

Figure 20 – Number of properties categorised by size of wholesale plus retail bill and the percentage of the total bill that relates to retail

Figure 20 shows that properties charged a smaller amount will see retail charges that form a relatively high percentage of their total wholesale plus retail charges. This is to be expected as retail will be fixed cost that could be relatively significant in relationship to their wholesale charge.

Biggest impacted properties = very low volume properties

The very lowest volume properties see the largest impact from introducing specific retail charges. This is because, historically, the split between revenue recovered through fixed and variable charges was set across total revenues, and the amount recovered through fixed charges was set to recover costs for a set of activities that does not exactly match the retail activities defined by the retail non-household price control costs. One key area that makes a difference is that the non-household price control includes a margin that does not exist under current charges.

Not all retail costs should be recovered through a variable charge, as there is a minimum fixed cost to provide retail services to any property. Only doubtful debt and working capital retail costs could be said to vary according to wholesale bills. Therefore there is a floor fixed charge for any property and if this floor fixed charge plus the wholesale fixed charge is higher than the current fixed charge, then this impacts the total charges for a property.

Total charges for very low volume properties are mostly recovered through fixed charges and therefore the change in total fixed charge could have a significant impact on their total charge. Figure 21 illustrates this for a measured water only property that is billed for 10 cubic meters of water per year.

Small Measured Property		Charge Multiplier	Current Charges		Under "Default tariffs"		Change	
			Tariff	Charge	Tariff	Charge	£	%
Retail	Fixed Charge	1			£42.50	£42.50	£42.50	
	Variable Charge	10			£0.0262	£0.26	£0.26	
						£42.76	£42.76	
Wholesale	Fixed Charge	1	£38.00	£38.00	£10.30	£10.30	-£27.70	-72.9%
	Variable Charge	10	£1.1000	£11.00	£1.1011	£11.01	£0.01	0.1%
	Total			£49.00		£21.31	-£27.69	-56.5%
Total				£49.00		£64.07	£15.07	30.8%

Figure 21 – Illustration of potential impact of retail charges on a small measured non-household in the North East

This illustrative property will see a 30% increase in charge, which sounds high. However it is actually an increase on £15 per year, which is an amount that a business should be able to absorb. If charges are not moved to reflect this retail floor cost then we could be accused of applying margin squeeze against this property.

7.3 INCIDENCE EFFECTS FINDINGS

Incidence effects cannot be avoided, however the change in balance of charging is necessary to ensure a proper reflection of retail costs for all properties to avoid margin squeeze and to ensure that all properties have a change to participate in the retail market.

In particular very low volume properties will see a reasonably large percentage increase in their charges due to the rebalancing of wholesale and retail revenues, however in pounds terms this is reasonably low and should be capable of being absorbed by any businesses.

When setting 2015/16 charges, careful consideration will be required on whether changes to charges due to separating the wholesale and retail price control should be phased, and how this complies with competition law. Any changes may also require communication with individual customers to explain the incidence.

8 CONCLUSIONS

We have split our non-household price control into twenty one mini price controls, one for each defined customer type.

The process followed for defining the customer types and determining the proportion of retail cost and net margin that should be applied to each customer type has been based on the guidance set out by Ofwat in its various guidance documents. In particular we have addressed the twenty three expectations set out by Ofwat in the 4 April guidance, and which we have summarised in Appendix A, and the original risk based review guidance, which is summarised at Appendix B.

One of the important considerations in defining the price control is whether any customer type may be subject to margin squeeze. While there is no specific test for complying with this issue, we believe that the tests we have applied provide sufficient confidence that our costs as allocated under the non-household retail price control are reasonable.

We have followed a detailed process and rigorous, and therefore consider that the allowed retail cost per customer type and the net margin per customer type, which will be fixed as part of the non-household price control, are appropriate for our non-household properties.

It should be noted that our submission does not address default tariffs and that there are a number of areas, specifically special agreements, where more clarity is required before setting default tariffs for 2015/16.

In summary, our non-household price control submission:

- Addresses the guidance set out by Ofwat;
 - In how to define customer types;
 - To use at the minimum the cost drivers specified;
 - To clearly address required levels of working capital;
- Tests for margin squeeze;
- Considers incidence effects;
- Results in an average allowed revenue per customer type that seems reasonable for each customer type.

Appendix A OFWAT EXPECTATIONS

The table below lists the twenty three expectations set out by Ofwat in their guidance on the non-household price control. We have described how our submitted price control information addresses each of these expectations and provided a cross reference to where this expectation is discussed in the submission document.

Ofwat Expectation from guidance (p36)	Comment	Reference
1. If assumed wholesale charging structures differ from existing tariff structures, for a clear justification to be provided why an alternative structure has been used to calculate the projected wholesale charge.	We have defined a set of customer types that mirror our current tariff structure, which will be used to define our wholesale tariffs structure. No explanation is therefore required.	5.3.2
2. For companies to consider re-balancing the wholesale charges across the non-household tariff bands to limit the implication of any significant incidence effects.	In our price control modelling we have used the levels of wholesale tariffs that reflect current tariff levels. When defining the default tariffs for publication we will consider whether any rebalancing is required to manage incidence effects, whilst complying with the required price controls.	5.3.2
3. If new structures are proposed, for companies to explain clearly why they consider those structures to be appropriate.	Not applicable - current wholesale tariff structures used in the modelling.	5.3.2
4. If new structures are proposed, for companies to have considered the potential incidence effects.	Noted. See expectation 2.	7
5. For companies to have included distinct proposals for the services identified above in completing table R4.	Our proposed customer types address all the proposals that have been identified in their guidance. This was discussed in the 13 June Board paper.	5.3.2
6. For companies to explain why they have decided on the number of tariffs proposed.	Noted. Addressed in submission document.	5.3.2
7. For the retail service costs allocated to default tariffs to not include costs associated with services to developers.	Developer services costs have been deducted from the 2013/14 accounting separation costs (Regulatory Accounts Proforma A8) before the cost allocation. These costs are also deducted in table R4.	5.4.3
8. For WaSCs to offer a water only and wastewater only default tariff, and not a dual service tariff.	Noted. See expectation 5. Each customer type covers water only and wastewater only costs.	5.3.2
9. For WaSCs choosing to reflect economies of scope in the default tariffs, to use the approach outlined above of including a charging variable (as opposed to using a separate tariff to take account of the effect).	Noted. Where appropriate we have weighted our cost allocations to take account of economies of scope. This will also be considered when setting the default tariffs.	5.3.4
10. For companies to have considered whether separate default tariffs are required for any special agreements.	We have defined a "special agreement" customer type. The retail costs for these properties are very similar to an account managed property, but are an "extra" service in the same way as water and sewerage are separate services. This allows an appropriate allowed retail cost to be allowed for these types of property.	5.3.3
11. For companies to consider having different net margins for different proposed tariff bands.	We have calculated a different net margin for each customer type using the approach outlined in this paper.	5.5.1

Ofwat Expectation from guidance (p36)	Comment	Reference
12. Where companies have used different margins for different proposed tariff bands, for them to explain how they have determined the appropriate proposed margin.	Noted. Addressed in submission document.	5.5.4
13. For companies to have checked that the proposed net margins more than cover the working capital associated with each tariff band.	Working capital has been calculated bottom up and therefore should be appropriate for each customer type.	5.5.4
14. For companies to consider the profiling of the proposed net margin across the different years.	Revised guidance given out through an Ofwat default tariff working group stated that the net margin can be no more than 2.5% in any year, not an aggregate 2.5% over the whole five years. Our net margin therefore totals 2.5% in each year. We have also fixed the net margin for each customer type over the five years.	5.5.1
15. For companies to explain how they have decided to profile the proposed net margin.	Not relevant, we have not profiled our net margin. See expectation 14.	5.5.1
16. For companies to consider Ofwat's risk and reward guidance (published in January 2014).	Noted. We have addressed the points raised by Ofwat's guidance, for example that the financing costs for retail assets and working capital should result in about 0.6% net margin for these items.	1
17. For companies to explain clearly the cost drivers they have used to allocate costs.	Noted. Addressed in submission document.	5.4.2 & Appendix F
18. For companies to allocate costs using cost drivers that are at least as cost reflective as those identified above.	We have used the cost drivers identified by Ofwat in their guidance, and added two additional items to provide a more accurate allocation.	5.4.2
19. For costs to reconcile to externally audited accounts for 2013-14.	The retail cost allocations across customer types has been carried out on the non-household retail costs as set out in the audited 2013/14 Regulatory Accounts Proforma A8, as modified for the 27 June Business Plan cost allocation submission to Ofwat.	5.4.3
20. For data to reflect any updates made to companies' business plans as set out in our price control process.	Noted. Inputs from the 30 May Draft Determination have been used where relevant.	5.4.3
21. For the retail service costs allocated to default tariffs to not include costs associated with miscellaneous charges.	Retail costs associated with miscellaneous charges costs have been deducted from the 2013/14 accounting separation costs (Regulatory Accounts Proforma A8) before the cost allocation. These costs are also deducted in table R4.	5.4.3
22. For companies to apply appropriate quality checks to assure the quality of the submission.	Internal Audit has checked the quality of system data used in our model. An external consultancy, NERA, have reviewed the spreadsheet for errors and our methodology for consistency and appropriateness.	3
23. For companies to produce a statement explaining how they have assured the quality of the submissions.	Noted. Addressed in submission document.	3

Appendix B RISK BASED REVIEW TESTS

While the original methodology document issued in July 2013 has been augmented with several subsequent documents, we have reviewed our non-household retail price control submission against the original risk based review questions. A summary of how our submission relates to these original tests is included below.

Retail cost allocation

How clearly and appropriately has the company allocated current and historic costs, including between wholesale and retail, and between household and non-household retail?

This test is a simple check to ensure costs have been allocated in line with the latest regulatory accounting guidelines, incorporating updates specified in this statement.

Our costs have been allocated using 2013/14 detail accounting separation data. The allocation of wholesale and retail, and household and non-household costs has been carried out according to the March 2014 Ofwat guidance "2014 price review cost allocation for retail and wholesale price controls".

Default tariffs

How well do the company's proposed default tariffs ensure it recovers no more than appropriate proportion of its allowed costs and net margin?

The non-household price control does not fix the default tariff, but the allowed retail revenue per customer type. The detailed cost allocation process set out in section 5 means that an appropriate allowed revenue per customer type has been defined.

The default tariffs will be fixed when setting 2015/16 tariffs in such a way to recover retail costs appropriately from properties, considering this requirement alongside all the standard tariff obligations.

How adequate is the company's assurance that its proposed default tariffs do not unduly discriminate between customers in a given customer class or between customer classes? We will have a particular focus on the evidence that smaller non-household customers are not subject to undue discriminatory tariffs.

We have addressed these issues as part of our consideration of the Competition Act and margin squeeze under section 4.

Appendix C NON-HOUSEHOLD PRICE CONTROL INFORMATION – AVERAGE COST PER PROPERTY AND NET MARGIN TO BE SUBMITTED AS THE PRICE CONTROLS TO OFWAT.

Customer type	Number of properties	Information fixed in Price Control (% Net Margin is the same for each year, and an different average retail cost per property is set for each year as retail costs change each year)						Average per property (summary based on 2015/16 information)			
		% Net Margin	2015/16	2016/17	2017/18	2018/19	2019/20	Retail Cost	Allowed Margin	Allowed Retail Revenue	Wholesale Revenue
Unmeas Water N	6,262	6.02%	17.50	17.94	19.43	19.88	20.51	17.50	18.67	36.17	274
Unmeas Water S	1,561	3.66%	23.36	24.18	26.46	27.40	28.63	23.36	21.66	45.02	547
Meas Water N std	52,435	3.90%	30.56	30.79	32.74	32.85	33.18	30.56	25.73	56.29	603
Meas Water N f20	78	2.57%	1,754.36	1,771.41	1,887.32	1,897.40	1,920.67	1,754.36	806.00	2,560.36	28,802
Meas Water N fx	57	1.31%	1,762.61	1,779.72	1,896.14	1,906.25	1,929.60	1,762.61	1,149.42	2,912.03	84,830
Meas Water N f+	26	0.73%	1,792.62	1,809.92	1,928.19	1,938.38	1,962.00	1,792.62	3,249.83	5,042.45	440,140
Meas Water S std	35,940	3.34%	23.47	23.65	25.14	25.23	25.49	23.47	23.67	47.14	662
Meas Water S f20	45	1.99%	1,773.31	1,790.47	1,907.51	1,917.62	1,941.04	1,773.31	893.40	2,666.71	42,228
Meas Water S fx	36	1.11%	1,758.89	1,775.94	1,892.11	1,902.17	1,925.47	1,758.89	1,284.62	3,043.51	112,688
Meas Water S f+	11	0.78%	1,775.18	1,792.27	1,909.45	1,919.64	1,943.00	1,775.18	2,714.31	4,489.49	343,499
Unmeas Sew (foul only)	1	4.99%	19.00	19.00	21.00	21.00	21.00	19.00	18.43	37.43	332
Unmeas Sew (foul & SWD)	6,488	5.24%	21.27	21.82	23.64	24.20	24.96	21.27	20.38	41.65	347
Unmeas Sew (SWD only)	3,593	3.66%	19.44	19.86	21.44	21.85	22.45	19.44	18.56	38.00	469
Meas Sew (SWD only)	1,152	3.26%	34.59	34.77	36.88	36.92	37.21	34.59	28.79	63.38	820
Meas Sew (foul only) - std	2,448	3.66%	30.53	30.71	32.59	32.64	32.91	30.53	26.43	56.96	665
Meas Sew (foul & SWD) - std	41,957	2.28%	29.69	29.87	31.70	31.75	32.02	29.69	29.41	59.10	1,231
Meas Sew (foul only) - LU	4	1.56%	1,673.00	1,689.25	1,799.75	1,809.50	1,831.75	1,673.00	963.11	2,636.11	59,102
Meas Sew (foul & SWD) - LU	23	0.85%	1,681.09	1,697.52	1,808.65	1,818.43	1,840.83	1,681.09	1,947.25	3,628.34	225,460
Trade Effluent - std	420	1.40%	247.25	249.03	264.67	265.44	268.04	247.25	189.00	436.25	13,064
Ind Water	12	0.71%	1,955.58	1,974.42	2,103.50	2,114.58	2,140.42	1,955.58	4,206.62	6,162.21	586,320
Trade Effluent - Special Agreement	6	0.67%	1,882.33	1,900.17	2,024.00	2,034.17	2,058.67	1,882.33	5,778.02	7,660.35	854,731
Total	98,292	2.50%						48.74	45.01	93.75	1,704

Appendix D SUMMARY OF COST AND MARGIN ALLOCATION BREAKDOWN (2015/16 INFORMATION)

	Billing	Meter Reading	Contact (standard)	Contact (Account Man)	Debt Management	Doubtful Debt	Depreciation	Other	Total Retail Cost	Return on retail assets	Working Capital	Residual return on risk	Total Net Margin	Total Retail Revenue
Unmeas Water N	0.87	0.00	2.63	0.00	2.25	6.52	1.38	3.86	17.50	0.20	0.49	16.82	17.51	35.01
Unmeas Water S	1.46	0.00	2.63	0.00	2.25	11.42	1.74	3.86	23.36	0.25	0.90	18.77	19.92	43.28
Meas Water N std	3.31	5.54	2.63	0.00	2.25	10.07	2.91	3.86	30.56	0.42	3.91	21.74	26.06	56.62
Meas Water N f20	8.53	35.33	0.00	1,637.46	2.25	61.57	5.36	3.86	1,754.35	0.77	188.85	625.89	815.50	2,569.86
Meas Water N fx	7.68	44.97	0.00	1,637.46	2.25	61.57	4.83	3.86	1,762.61	0.69	520.40	628.76	1,149.85	2,912.47
Meas Water N f+	8.30	73.94	0.00	1,637.46	2.25	61.57	5.22	3.86	1,792.60	0.75	2,636.94	639.21	3,276.89	5,069.49
Meas Water S std	2.92	2.83	2.63	0.00	2.25	6.32	2.66	3.86	23.47	0.38	4.17	19.27	23.82	47.29
Meas Water S f20	17.50	49.13	0.00	1,637.46	2.25	52.10	11.01	3.86	1,773.30	1.58	269.09	632.47	903.13	2,676.44
Meas Water S fx	17.50	34.71	0.00	1,637.46	2.25	52.10	11.01	3.86	1,758.89	1.58	712.57	627.45	1,341.59	3,100.48
Meas Water S f+	17.50	50.97	0.00	1,637.46	2.25	52.10	11.01	3.86	1,775.15	1.58	1,983.40	633.11	2,618.09	4,393.23
Unmeas Sew (foul only)	1.25	0.00	2.63	0.00	2.25	7.53	1.61	3.86	19.13	0.23	0.63	17.74	18.59	37.72
Unmeas Sew (foul & SWD)	1.41	0.00	2.63	0.00	2.25	9.41	1.72	3.86	21.27	0.25	0.61	18.16	19.02	40.29
Unmeas Sew (SWD only)	1.97	0.00	2.63	0.00	2.25	6.66	2.07	3.86	19.44	0.30	0.84	17.49	18.63	38.07
Meas Sew (SWD only)	4.90	0.00	2.63	0.00	2.25	17.05	3.91	3.86	34.59	0.56	5.21	23.22	28.99	63.58
Meas Sew (foul only) - std	5.00	0.00	2.63	0.00	2.25	12.82	3.97	3.86	30.53	0.57	4.25	21.79	26.61	57.15
Meas Sew (foul & SWD) - std	4.99	0.00	2.63	0.00	2.25	12.00	3.97	3.86	29.69	0.57	7.65	21.50	29.72	59.41
Meas Sew (foul only) - LU	15.72	0.00	0.00	1,637.46	2.25	3.73	9.89	3.86	1,672.90	1.42	367.63	597.38	966.43	2,639.34
Meas Sew (foul & SWD) - LU	14.23	0.00	0.00	1,637.46	2.25	14.33	8.95	3.86	1,681.08	1.28	1,355.32	600.27	1,956.87	3,637.95
Trade Effluent - std	138.04	0.00	2.63	0.00	2.25	12.80	87.67	3.86	247.25	12.55	79.92	97.23	189.70	436.95
Ind Water	8.51	77.43	0.00	1,637.46	2.25	220.70	5.35	3.86	1,955.55	0.77	3,456.82	696.32	4,153.90	6,109.45
Trade Effluent - Special Agreement	137.72	0.00	0.00	1,637.46	2.25	14.33	86.64	3.86	1,882.26	12.40	5,029.02	670.39	5,711.81	7,594.07
Average per unique property	6.02	4.11	4.07	4.96	3.49	15.02	5.07	5.99	48.74	0.40	10.23	34.38	45.01	93.75

Appendix E EXAMPLES OF FULL RETAIL CHARGES FOR UNIQUE PROPERTIES

The table below shows to total retail charges combined across the four possible customer types against which each property could be counted. These charges are based on the average allowed retail revenue per customer type, which may be recovered through default tariffs through both fixed and variable charges.

	Customer Type				Retail Charge				
	Water	Industrial Water	Sewerage	Trade Effluent	Water	Industrial Water	Sewerage	Trade Effluent	Total
North East									
Unmeasured Water only	Unmeas Water N	None	None	None	£36	£0	£0	£0	£36
Unmeasured Sewerage only	None	None	Unmeas Sew (SWD only)	None	£0	£0	£38	£0	£38
Unmeasured Water & Sewerage	Unmeas Water N	None	Unmeas Sew (foul & SWD)	None	£36	£0	£42	£0	£78
Small Measured Water only	Meas Water N std	None	None	None	£56	£0	£0	£0	£56
Small Measured Sewerage only	None	None	Meas Sew (foul & SWD) - std	None	£0	£0	£59	£0	£59
Small Measured Water & Sewerage	Meas Water N std	None	Meas Sew (foul & SWD) - std	None	£56	£0	£59	£0	£115
Identified Customer	Meas Water N f+	None	Meas Sew (foul & SWD) - LU	Trade Effluent - std	£5,042	£0	£3,628	£436	£9,107
Identified Customer	Meas Water N f+	Ind Water	None	None	£5,042	£6,162	£0	£0	£11,205
Identified Customer	Meas Water N f+	None	Meas Sew (foul & SWD) - std	Trade Effluent - std	£5,042	£0	£59	£436	£5,538
Identified Customer	Meas Water N std	None	Meas Sew (foul & SWD) - std	None	£56	£0	£59	£0	£115
Essex									
Unmeasured	Unmeas Water S	None	None	None	£45	£0	£0	£0	£45
Measured	Meas Water S std	None	None	None	£47	£0	£0	£0	£47
Identified Customer	Meas Water S f20	None	None	None	£2,667	£0	£0	£0	£2,667
Identified Customer	Meas Water S fx	None	None	None	£3,044	£0	£0	£0	£3,044
Suffolk									
Unmeasured	Meas Water S std	None	None	None	£47	£0	£0	£0	£47
Measured	Meas Water S std	None	None	None	£47	£0	£0	£0	£47
Identified Customer	Meas Water S fx	None	None	None	£3,044	£0	£0	£0	£3,044
Identified Customer	Meas Water S f+	None	None	None	£4,489	£0	£0	£0	£4,489

Appendix F DETAILS OF COST ALLOCATION METHODOLOGY ACROSS CUSTOMER TYPES FOR EACH COST DRIVER

Billing

Billing costs vary according to the number of bills issued annually to properties. Unmeasured properties are billed once per year, whereas measured properties are billed more frequently.

NWL bills large properties monthly and Essex & Suffolk measured properties are billed once every six months. However in the North East a number of customers are billed once every six months and some are billed quarterly.

This means that a different proportion of billing costs needs to be allocated to each customer type.

In addition, in the North East, most properties are billed for water and sewerage, and therefore consideration needs to be made for whether billing costs should be spread across the two services.

The number of bills in each customer type may change over time as the relative number of properties change (for example, as more properties are measured). This means the proportion of costs needs to be calculated in each year for 2015-20 according to the forecast number of property types.

To allow the proportion of cost to change over 2015-20, a fixed driver per property is defined as the way to calculate the proportion of cost in each customer type.

To take account of the issue of North East versus ESW properties as well as water and sewerage, we have used a weighted average number of billed per property as the driver for billing costs.

The weighted average number of bills is calculated taking the average number of bills per customer type divided by the average number of services the properties in a customer type receive.

For example, in ESW all properties have one service, so if there is one bill per year, the weighted number of bills is 1. In the North East if all properties in a customer type have two services, and one bill per year, the weighted number of bills would be one.

Meter Reading

Meter reading costs have been solely allocated to water customer types. No costs are allocated to unmeasured properties. The number of meter reads follows the number of bills issued per customer per year and the number of meters each property has.

Therefore the driver for allocating meter reading costs per year is the number of meter reads per property multiplied by the average number of meters per customer type.

The average number of meters per customer type is obtained from the count of meters against all properties in that customer type.

Contact

Contact costs are split into two categories:

- Properties that are account managed and receive regular contact, visits and interaction with NWL
- Properties that account managed and who contact NWL when they have a query.

The categories are exclusive of one another, and a customer type will be allocated costs from either one or the other.

Contact (standard)

The retail costs for standard contacts is spread equally across all properties. An average number of contacts per property is calculated from the 2013/14 number of contacts, and fixed per year. When multiplied up by the number of properties in each customer type this provides a proportion of the total contact cost to be allocated to each customer type.

A weighted average by service has not been used in this case, as where a property has more than one service there is greater reason to make contact.

Contact (Account Management)

An average cost per account managed customer is applied for each year. When multiplied up by the number of account managed customers for those customer types allocated as account managed, this provides a proportion of the total cost to be allocated to that customer type.

Debt Management

Debt management is a cost that is spread across all customer types equally, on the basis of an average amount per property. This is an overarching activity, which cannot be allocated to particular properties as any property may incur cost at any time in the future.

Doubtful Debt

There are a number of ways doubtful debt could be allocated across the customer types. The amount of debt will vary according to the size of a wholesale bill, however certain types of property are more likely to go into debt. Properties with larger wholesale bills will tend to be followed very proactively for any outstanding debt, which means that a relatively low amount of doubtful debt costs will be incurred for these properties. The ability to disconnect commercial properties assists in the management of these costs. That is unless the occupant of a property goes out of business, in which case a large one off debt cost will be incurred.

It is difficult to allocate such a large one off event to a particular customer type, because in one year such an exceptional event would occur in one customer type, and in another year it could be a different customer type.

Among smaller customers there will always be a number of properties incurring a relatively steady amount of debt cost, even if the particular properties change each year.

During 2013/14 there were no extremely large one off debt write offs to a single property. In this case it means that 2013/14 was as steady a year as can be expected. The actual doubtful debt costs per property for 2013/14 have therefore been used to proxy the non-household doubtful debt charge and allocate the amount required to each customer type.

The percentage of doubtful debt per customer type has been fixed for all of 2015-20 based on the 2013/14 proportion of doubtful debt.

Total doubtful debt costs have been allocated to each customer type on the basis of the write off in 2013/14 plus an estimation of the provision based on outstanding debt. This data has been obtained as follows.

Write off: For each property, the amount of debt written off during 2013/14 has been extracted from the billing system.

Provision: For each property, the amount outstanding debt against each property as at the 31/03/14 has been extracted from the billing system. For each age of debt we have calculate a proportion that would be calculated in the bad debt charge. This amount has been derived from our actual doubtful debt calculations. The table shows the percentages of outstanding debt included in the “provision” calculation.

Debt Age (months)	Percentage provided for in proxy provision	
	North East	ESW
0-3	0.37%	0.20%
4-6	4.85%	1.99%
7-9	9.39%	6.38%
10-12	12.63%	10.89%
13-24	24.66%	16.92%
25-36	32.45%	18.98%
37-48	33.24%	18.73%
49+	34.28%	22.90%

The write off and provision figures are added together to obtain a total “proxied doubtful debt” figure per property. This is then summed up across the customer types, and the percentage of this “proxied doubtful debt” figure is used to apportion the actual non-household doubtful debt retail costs.

The total “proxied doubtful debt” figure is not exactly the amount shown in the retail costs, but it provides an approximation that allows an allocation that reflects where the costs of debt stand by customer type.

Depreciation

Depreciation costs are mainly for billing systems and buildings. We have followed Ofwat’s recommended approach to allocating these costs and have added together the billing plus contact costs to obtain the proportion for each customer type.

Other

Other costs are mainly costs that are not attributable to a particular customer. These costs have therefore been allocated across customer types on an average amount per property. This equally spreads the costs across all properties.

Appendix G TABLE COMMENTARY FOR R4

Block A, B and C

The figures entered in these blocks are described in our 27 June PR14 submission relating to the required updated table, and this is not repeated here.

Blocks D to X

Line Ref.	Line Description	Ofwat item ref	Units	dp	NWL description of how populated
Block Number	[Tariff band xx]	R4D55 D01			The name is entered simply as "Cust type" with a sequential number to follow for each type (1 to 21)
Line xx	[Tariff name] [volume band] [water/sewage/trade effluent] [metered/unmetered]	R4D55 D02			A four part title to mirror the four categories is shown, with the parts separated by commas.
Line xx	Total retail costs on this default tariff (opex, plus pension deficit repair costs, plus depreciation, excluding financing costs)	R4D55 TC	£m	3	Retail cost derived from the retail allocation to customer types. Data entered to 6dp as rounded data will calculate incorrect margins.
Line xx	Customer numbers on this tariff band	R4D55 D03M	000	3	Number of properties counted in each tariff band.
Line xx	Net margin	R5E000 55	%	2	Calculated line in R4
Line xx	Tariff band - fixed charge element	R4D55 C01	£	[dp]	This is set to equal the average allowed retail cost per property for each customer type. We have only shown a simple tariff structure in R4 of an average charge per property.
Line xx	Tariff band - variable charge element	R4D55 C02	£	[dp]	Not used.
Line xx	Tariff band - [description of additional retail charge 1]	R4D55 C03	£	[dp]	Not used.
Line xx	Tariff band - [description of additional retail charge 2]	R4D55 C04	£	[dp]	Not used.
Line xx	Charge multiplier - fixed charge element	R4D55 M01	[units]	[dp]	The number of fixed the fixed charge is made is the same as the number of properties in the band. The information is entered in a unit of one millionths so that when multiplied by the tariff a revenue is produced in £m. For example if there are 2,260 properties in a customer type the charge multiplier is entered as 0.002260.
Line xx	Charge multiplier - variable charge element	R4D55 M02	[units]	[dp]	Not used.
Line xx	Charge multiplier - [description of additional retail charge 1]	R4D55 M03	[units]	[dp]	Not used.
Line xx	Charge multiplier - [description of additional retail charge 2]	R4D55 M04	[units]	[dp]	Not used.
Line xx	Total non-household retail service revenue	R4D55 D07	£m	3	Calculated line in R4
Line xx	Cross-check non-household service revenue	R4D55 D08	£m	3	Calculated line in R4
Line xx	Projected wholesale charge for this tariff band	R4D55 D04	£m	3	Total wholesale revenue for the customer type derived from the tariff model forecasts. Data entered to 6dp as rounded data will calculate incorrect margins.
Line xx	Debtor days for this tariff band	R4D55 D05	days	3	Debtor day information used in the working capital calculations
Line xx	Average gross margin per customer	R4D55 D09	£	2	Calculated line in R4
Line xx	Average gross margin	R4D55 D10	%	2	Calculated line in R4

It should be noted that for customer type 11 there is only one property, which means that the allocated retail costs and wholesale revenue figures have been entered into the table for these lines to 6 decimal places. If these lines are rounded up or down to 3 decimal places the costs and revenues will be inaccurate and therefore the wrong margin will calculate.