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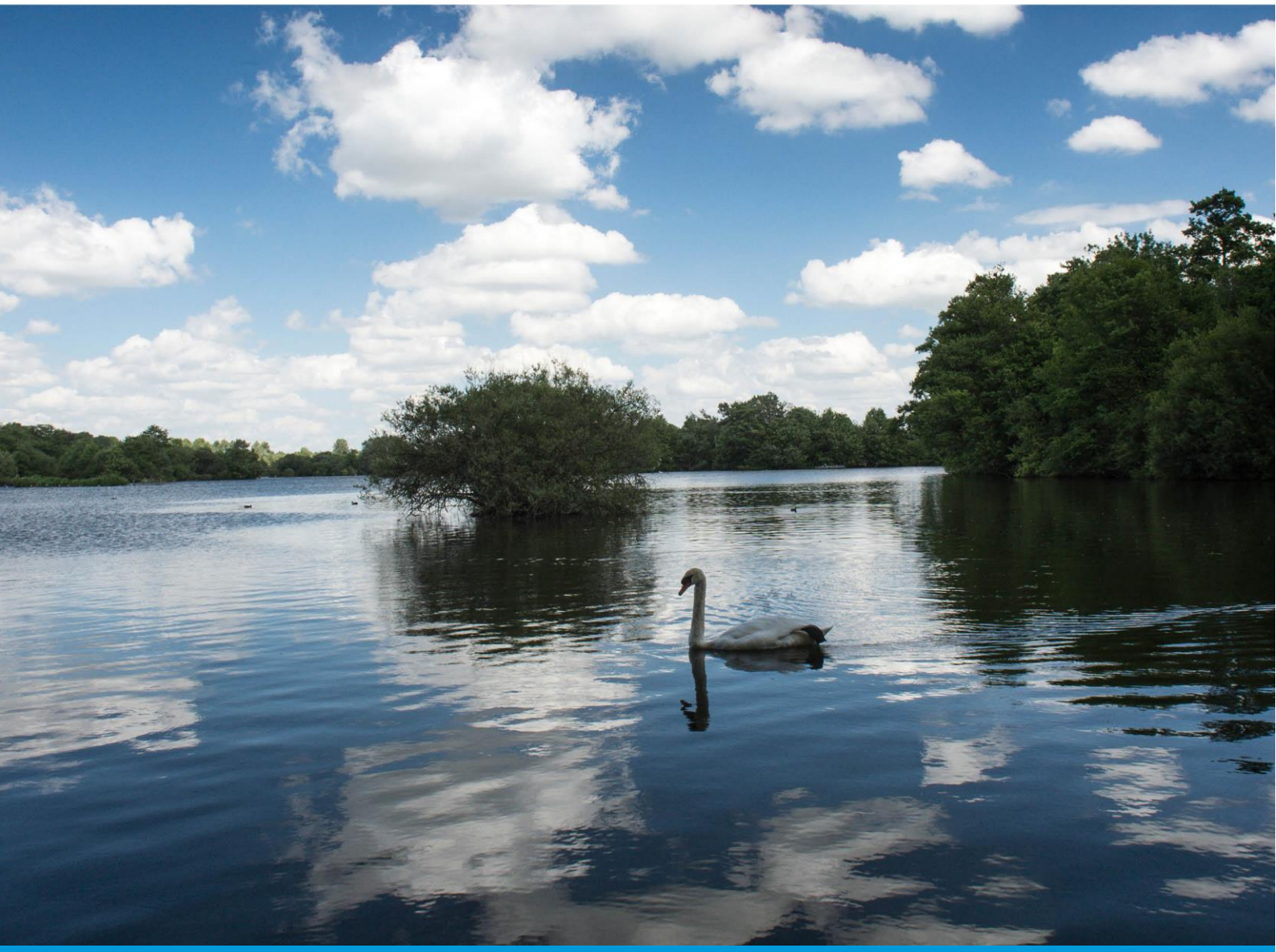

Bulk Supply Charges for New Appointments and Variations 2021/22

13 January 2021

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1. Background

1.1 Context

The New Appointments and Variations (NAVs) mechanism in England and Wales supports new entrants into the wholesale water and sewerage sector and also allows incumbent water and/or sewerage companies to expand into other geographic areas. Typically, NAV operations relate to new housing developments where instead of the incumbent, the NAV constructs, operates and maintains local 'on-site' infrastructure necessary to supply new homes. NAVs are licensed by Ofwat to carry out these activities.

To operate within Affinity Water Limited's (AWL) region a NAV company may require a bulk supply of water from us. In this context a bulk supply is the supply of water services from us as the incumbent appointed company, to a NAV company. To facilitate the bulk supply, we construct a connection from our existing network to the agreed point(s) of connection with the NAV's on-site infrastructure.

Where we provide bulk supplies, we make charges for those services, as part of bulk supply agreements in place between ourselves and NAVs. The charges we make have a significant bearing on the operating margin the NAV may achieve to allow it to finance, maintain and operate its assets and carry out its appointed activities on its site or sites.

In May 2018, after consultation, Ofwat published guidance[1] on bulk charges for NAVs. Accordingly, we revised our approach to bulk charges for charges effective from 1st April 2019 to meet those requirements. We made minor refinements to our approach for charges effective from 1st April 2020, for example updating the return on capital for the PR19 outcome.

On 14th July 2020 Ofwat published a consultation[2] on updating the guidance alongside a report[3] by its consultants, Cambridge Economic Policy Associates (CEPA). This report studied the industry's application of guidance and made suggestions for further development of charges. Ofwat published on 10th November 2020 the conclusions[4] of its July 2020 consultation and its final proposals[5] for revising guidance. Ofwat expects that incumbent companies introduce necessary changes in charges taking effect on 1st April 2021, whilst also acknowledging that in some areas further engagement is necessary and it may take some time to transition from current approaches to meet the new requirements.

We have produced this document and the charges contained within to be in alignment with the published guidance in order to provide NAVs with the charges information they need and to improve the transparency of our approach for stakeholders.

It should be noted that one of Ofwat's conclusions is that the industry should constitute a working group to promote more consistent approaches across incumbents and sharing of best practice, for example in cost estimation methods and treatment of environmental

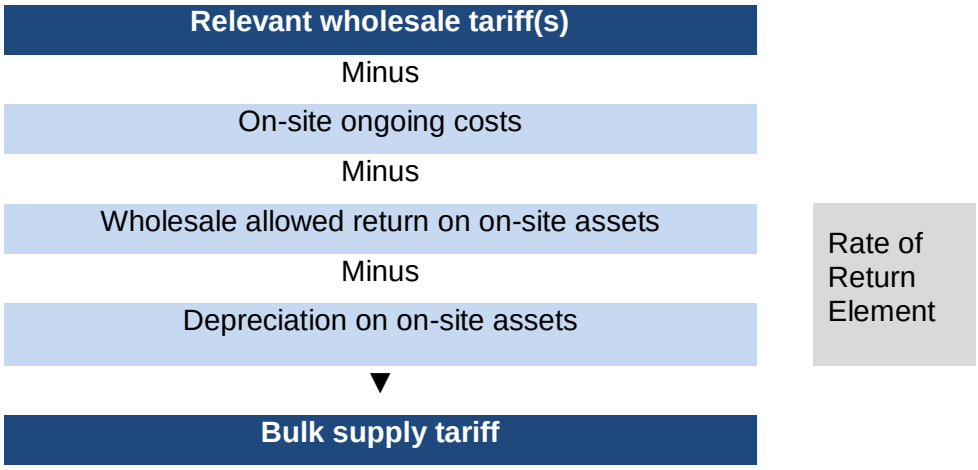
[1] See https://www.ofwat.gov.uk/publication/bulk-charges-for-navs-final-guidance/
[2] See https://www.ofwat.gov.uk/consultation/consultation-on-bulk-charges-for-new-appointments-and-variations-navs/
[3] See https://www.ofwat.gov.uk/wp-content/uploads/2020/07/200610-Ofwat-CEPA-NAVs-FinalReport-redacted.pdf
[4] See https://www.ofwat.gov.uk/publication/bulk-charges-for-new-appointees-our-conclusions/
[5] See https://www.ofwat.gov.uk/consultation/bulk-charges-for-new-appointees-a-consultation-on-revising-our-guidance/

costs. As the work of this group evolves, we may need to refine and further develop our approaches in future years.

1.2 Overall approach

Central to Ofwat's guidance is the 'wholesale-minus' approach to bulk supply pricing (Figure 1). This approach starts with the relevant wholesale tariff(s) for the NAV's site(s) and deducts the costs avoided by the incumbent as a result of NAVs carrying out certain appointed activities instead of the incumbent. As well as avoided costs, the approach also includes a return on on-site assets element and depreciation. We apply this approach to set our bulk supply charges.

Figure 1: 'Wholesale-minus' approach



Source: Ofwat: Bulk Charges for NAVs Final Guidance, May 2018

The following sections of this document provide more detail on our assessments of each of the components of this approach alongside other relevant NAV bulk supply pricing considerations. We include in the Appendices worked examples showing how we calculate the relevant starting point, how we apply the deductions to produce bulk supply tariffs, and in Appendix 3, our assessment of how we meet Ofwat's guidance.

2. Relevant wholesale tariffs

2.1 The relevant starting point

The relevant starting point is the wholesale charge that we would make to the properties within a NAV appointment if we, rather than the NAV were the supplier. It is called the starting point because it establishes the base value of wholesale charges from which the deductions required by the wholesale minus methodology are made.

2.2 Menu-based approach

To derive the relevant starting point (2.1 above), we use the 'menu-based approach'. In other words, we apply our published wholesale charges to the actual mix of properties (residential and business) and actual volumes used on each NAV site. We determine the actual mix of properties by collecting information from each NAV about the number, type and consumption of properties within their appointments.

Where NAVs have more than one site serviced by a bulk supply from us, we calculate the starting point for each site according to its actual mix of properties and add all the sites together to produce a total for that NAV.

We show a worked example in Appendix 1 to describe how the weighted average calculation is accomplished.

2.3 Our wholesale charges

Our published wholesale charges are made of two parts[6]:

- a £/year fixed charge that varies according to meter size
- a volumetric charge per cubic metre, that varies by region

2.4 Fixed charges

Table 1 below shows the prior year, 2020/21 and current year 2021/22 wholesale fixed charges, in £/year, which increase with meter size. Residential properties, which form the majority of properties within NAV appointments typically use a 12/15mm meter. Larger business customers that may be included in a NAV appointment (e.g. schools) may have larger sized meters.

[6] Whilst we also publish a large user wholesale tariff for the largest customers using more than 50,000m3/year, this tariff is not generally applicable to NAVs as in new developments, properties are predominantly residential with some small business customers. If a customer inside a NAV appointment would qualify for large user tariff in its own right, we would reflect the large user tariff in the relevant starting point as part of the menu-based approach

Table 1: Wholesale Fixed Tariff

Wholesale Fixed Tariff	Units	2020/21	2021/22
Fixed Charge12/15mm meter	£/year	15.24	16.20
Fixed Charge19/21mm meter	£/year	24.72	26.40
Fixed Charge 25mm meter	£/year	26.52	28.32
Fixed Charge 30mm meter	£/year	29.52	31.44
Fixed Charge 40mm meter	£/year	31.20	33.24
Fixed Charge 50mm meter	£/year	38.04	40.56
Fixed Charge 75/80mm and larger	£/year	97.92	104.40

2.5 Volumetric charges

As noted above, our volumetric charges differ according to the region in which the NAV appointment is located. We operate 3 charging regions the boundaries of which are shown in the diagram below, along with the volumetric rates applicable in each region.

Figure 2: The three charging regions

Table 2: Volumetric Wholesale Tariff

Volumetric Wholesale Tariff	Units	2020/21	2021/22
Volumetric Charge Central Region	£/m3	0.9010	0.9610
Volumetric Charge East Region	£/m3	1.5283	1.6301
Volumetric Charge Southeast Region	£/m3	1.6254	1.7337

3. On-site ongoing costs

3.1 Overall approach

The wholesale minus method requires that we deduct on-site ongoing costs, sometimes called 'last-mile' costs from the relevant starting point. On-site ongoing costs are the operating costs that we avoid because NAVs are carrying out certain activities in the water supply chain instead of us. We analyse our on-site ongoing costs across three categories:

- Direct operating costs
- Indirect operating costs - 'common costs'
- Capital maintenance costs

For direct operating costs, Ofwat's 10 November 2020 guidance creates an expectation that incumbents estimate avoided costs using 'bottom-up' approaches. Bottom-up means using specific estimates of the typical costs incurred for different on-site activities. This is in contrast to potentially less accurate 'top-down' approaches that use company-level data to derive unit costs for on-site ongoing costs. Ofwat further say that estimates do not necessarily need to be site-specific but incumbents should aim to accurately reflect all relevant on-site costs, including through the use of appropriate cost modelling drivers to avoid excessive averaging.

In addition to direct operational costs, we include indirect costs in our on-site ongoing costs calculation, which we assess as being avoidable as a consequence of NAV entry. Indirect costs are the costs that cannot be directly attributed to the provision of a single product or service (e.g. shared head office functions). Within indirect costs, there is a distinction to be made between 'common costs' and 'joint costs'. Unlike joint costs, which are fixed, common costs usually vary by the quantity of a product or service. Ofwat's guidance expects incumbents to allocate a portion of common costs when estimating their avoided costs.

Regarding capital maintenance we use a bottom-up approach to estimate capital maintenance and replacement expenditure. Recognising that capital maintenance requirements vary over time, we reflect maintenance requirements in on-site ongoing costs as an annuity.

3.2 Direct operating costs

We manage our operating costs by setting annual budgets for cost centre codes that are broadly either activity based or departmental. We record operating expenditures incurred against the appropriate cost centre and monitor performance against budgeted spend throughout the year. Estimating avoided costs on a bottom-up basis requires detailed study of the expenditures allocated to each cost centre to determine which are avoidable as a consequence of NAV entry. This is in contrast to a top-down approach that would make use of cost information at a less granular level, for example from our accounts, to derive unit costs for activities.

Our wholesale operating costs arise from the activities we carry out across 4 business segments:

- Water resources
- Water treatment
- Raw water distribution
- Treated water distribution

The diagram below shows the relative proportions of our wholesale operating expenditure in 2019/20 accounted for by each segment. For typical NAV developments, avoided costs arise in the treated water distribution activity, which makes up about three-quarters of our operating expenditure. Therefore, we consider avoided costs from that business segment.

Figure 3: Proportions of our wholesale operating expenditure

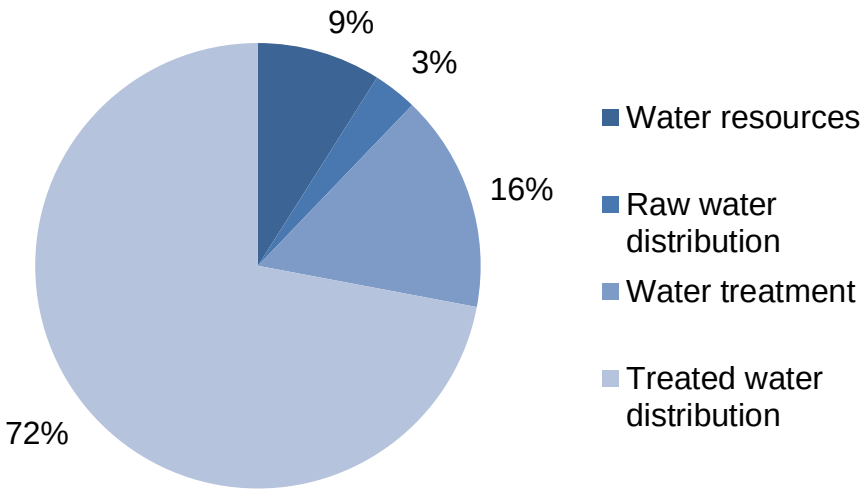


Table 3 summarises direct operating costs in the treated water distribution segment that we assess as being avoidable. The table is consistent with that published in Appendix B of the CEPA report. Our approach is to extract the expenditures in our cost centre codes that relate to these activities and express these as a unit cost, using the cost driver

indicated (£ per property, £ per metre of pipe and so on). In this way we produce estimates of representative unit costs for the different on-site activities. These estimates are not site-specific to an individual NAV or NAVs, but reflect the unit costs we typically incur when we carry out the on-site activities indicated. The unit avoided cost estimates are shown in the right hand column of the table.

Table 3: Direct operating costs

Activity / Service	Description	Cost driver	Estimated avoided cost 2021/22 £/property or £ per metre main
Water quality sampling	Costs associated with taking and analysing water Samples	Number of properties	0.50
Regulatory compliance	Costs associated with complying with regulatory requirements and inspections (By-law inspections, Drinking Water Safety Plans)	Number of properties	0.84
Leakage detection	Costs of detecting and solving on-site leakages	Number of properties	3.99
Mains repair and Replacement	Costs associated with the inspection, cleaning, repair and reactive renewal of on-site water distribution mains and costs associated with the repair and reactive renewal of pipes that connect the water main with each property	Length of main	2.22
Emergency support	Costs associated with investigating and dealing with emergency issues or faults such as mains bursts	Number of properties	0.32

3.3 Indirect costs

Indirect costs are the costs that cannot be directly attributed to the provision of a single product or service. Within indirect costs, there is a distinction between 'common costs' and 'joint costs'. 'Common costs' are a subset of indirect costs. Unlike 'joint costs', which are fixed, common costs usually vary by the quantity of a product or service. Ofwat's guidance expects incumbents to allocate a portion of common costs when estimating their avoided costs.

Our indirect costs tend to be in the nature of business overheads for example, head office functions such as legal and human resources. It is not always possible to find an appropriate cost driver for these activities as they do not obviously increase with the volume of water supplied or with the number of properties or network length. In most cases we have chosen to express them as a £/property figures.

As with direct costs, we budget for and monitor indirect costs through a system of cost centre codes. However, our cost centres for indirect costs tend to be organised at departmental level as opposed to being activity based, because of the nature of indirect costs. We are able to extract indirect costs according to the principal activity or service accounted for in each of our indirect cost centres to identify common costs for inclusion in on-site ongoing costs.

The majority of our indirect costs are labour costs. Therefore, we have allocated costs to each business segment (retail, water resources, raw water distribution, water treatment and treated water distribution) according to the number of Full Time Equivalent employees (FTEs) in each segment to determine the share of indirect costs that could be included within the on-site ongoing costs. Based on this approach to indirect cost allocation, 51% of indirect costs can be associated with treated water distribution. Expressed as a £ per property figure, we estimate indirect common costs as £12.12 per property. The derivation of our result is provided in Table 4.

Table 4: Indirect operating costs

Activity / Service	Cost driver	Estimated avoided cost 2021/22 £/property
Human resources	Number of properties	1.44
Regulation	Number of properties	0.59
Legal / Assurance	Number of properties	0.36
Finance / Procurement	Number of properties	1.26
Information Technology	Number of properties	2.63
External Communications	Number of properties	1.00
Estates & Facilities	Number of properties	0.62
Insurance	Number of properties	1.64
Asset Strategy	Number of properties	0.44
Corporate overheads	Number of properties	2.15
Total	Number of properties	**12.12**

3.4 Capital maintenance costs

Capital maintenance expenditure relating to capital assets and infrastructure on NAV sites is the investment needed to renew and replace on-site assets as they come to the end of

their useful lives. As NAVs, rather than us, carry out and finance these replacements, it represents an avoided cost for us. Since NAV sites are typically new housing developments with newly constructed infrastructure assets, those assets are not likely to need replacement for some years. This is because the assets are newly constructed and have their service life ahead of them. Replacement needs are only likely to materialise over time as assets begin to deteriorate. The future profile of capital maintenance expenditure for any individual NAV site is likely to be uneven with significant replacement outlay in future years, but little in the years immediately ahead. Our approach to reflecting avoided on-site ongoing costs for capital maintenance needs to smooth out the effects on bulk supply charges, of uneven replacement requirements.

Our approach is to recognise cost deductions for capital maintenance in our bulk supply tariffs as an annual amount, as follows. For each NAV site, we determine the on-site assets that we would have constructed in order to supply the site with the same number of properties, based on our usual design and service standards[7]. We estimate the replacement costs for on-site assets from our published schedules of new connection charges (our published schedules are reflective of our costs as they are built from the rates we pay our contractors, plus a share of our overheads). We assume that on-site assets depreciate in a straight line until the end of their useful lives, at which time they will be replaced, like for like, with modern equivalents. We use our normal depreciation lives to estimate the expected useful life of the assets. In this way it is possible to project the long term capital maintenance requirements of the on-site assets.

We calculate the annuity by working out what series of equal annual payments would have the same present value as the series of future replacement expenditures needed, measured over the period up to the longest asset life. In other words, we convert the net present value of a series of future uneven costs into a series of equal annual charges over the period up to the service lifetime of the longest-lived asset. In this way, as shown in Table 5, we estimate that the avoided cost for capital maintenance is £6.41 per property.

[7] NAVs may actually construct different assets to serve the site than the ones we would have constructed. However for our calculation of avoided costs, we consider it correct to build into the deduction for capital maintenance costs, the costs that we would have expected to incur based on our engineering solution, because these are reflective of the costs being avoided by us.

Table 5: Capital Maintenance - Annuity

Activity / Service	Capital Maintenance Annuity 2021/22 £/property/year
Communication pipes	0.60
On site mains	0.50
Customer meters	2.27
Customer boundary boxes	2.89
Bulk meter & space	0.16
Other	0.00
Total	**6.41**

3.5 Discount rate

As our calculation of avoided capital maintenance costs is based on annuitising expected capital maintenance expenditures over the lifetime of the assets, we need to set a discount rate for this purpose. The starting point for our discount rate is the wholesale weighted average cost of capital determined for our 2020-25 price controls, 2.96% (real CPIH basis). We adjust this by making the same modifications to the PR14 incumbent WACC, as published by Ofwat in its 2018 guidance on bulk charges for NAVs, as follows:

- Notional gearing of 50%
- Uplift to asset beta of 15bp
- A tax rate of 10%

With these adjustments, we calculate an adjusted discount rate, 3.89% real, on a CPIH stripped basis. We use this rate to discount capital maintenance expenditures and calculate the appropriate annuity for on-site ongoing cost deduction. The derivation of our 3.89% result is provided in Table 6.

Table 6: Derived NAV Weighted Average Cost of Capital

Item	Final Determination 2019 Incumbent WACC	Derived NAV WACC
Total market return	6.50%	6.50%
Real risk-free rate	1.40%	1.40%
Equity risk premium	7.90%	7.90%
Notional gearing	60%	50%
Asset beta	0.36	0.51
Debt beta	0.125	0.125
Equity beta	0.71	0.89
Cost of equity	4.19%	5.64%
Ratio embedded/new debt	80%	80%
Cost of new debt	0.53%	0.53%
Cost of embedded debt	2.42%	2.42%
Allowance for fees	0.10%	0.10%
Cost of debt	2.14%	2.14%
WACC/Discount rate	**2.96%**	**3.89%**

4. Return on capital

4.1 Regulatory considerations

In its May 2018 guidance, Ofwat suggested that incumbents should deduct an appropriate level of return on on-site assets, and depreciation of the on-site assets, to reflect the financing costs that incumbents have avoided due to NAV entry. In its report, CEPA notes that with changes to the income offset for English incumbents from 1 April 2020, which mean incumbents' on-site assets are funded by developers, and if maintenance costs are incorporated into the avoided ongoing costs element, the rate of return element will no longer apply to these incumbents. CEPA also suggests an additional allowance could be made to ensure a NAV that is equally efficient is able to earn a profit margin, and to reflect wholesale operating risks to which it is exposed.

Ofwat note that changes to the income offset for English incumbents mean that developers now fully fund the cost of on-site assets. They go on to say that for this reason, English incumbents should no longer include a deduction through the rate of return element because these costs are no longer avoided by the incumbent. Regarding the additional allowance suggested by CEPA, Ofwat expect that in principle, this should reflect the operational risk experienced by NAVs to operate on-site assets which the incumbent has avoided. Ofwat also say that use of a discounted cash flow approach where an adjusted return is used as the discount rate for an average annuity, may be an appropriate way to reflect this.

4.2 Our approach

As we are incorporating capital maintenance costs in our avoided on-site ongoing costs elements (see 3.4 and 3,5 above), and in accordance with regulatory guidance, we are no longer including the rate of return element in our bulk supply charges calculations.[8]

However, in our NAV bulk supply charges effective from 1st April 2021 we use the adjusted discount rate, 3.89% in the average annuity for avoided capital maintenance costs, to reflect operational risks, over and above the return available to incumbents.

5. Other considerations

5.1 Leakage adjustment

Usually, we measure the water we supply to NAVs at the boundary of the NAV site using a bulk meter. In our calculation of bulk supply charges we need to account for the

[8] The rate of return element was included in our NAV bulk supply charges in 2019/20 and 2020/21

difference in the billable volume at the bulk meter compared to the aggregate billable volume at customers' meters. The difference arises due to losses, such as leakage, meter under registration, unbilled water use and water used for fire-fighting.

Our approach is to evaluate the difference as a percentage leakage adjustment, applying this to the bulk supply tariff as a percentage reduction in volumetric wholesale charges. As well as accounting for water losses between the bulk meter and customers' meters, this approach also provides incentives to NAVs towards leakage control since it exposes NAVs to the costs of losses in excess of our leakage adjustment factor.

To estimate the leakage adjustment factor, we have estimated losses on new developments that we operate, to study the difference between water entering the location at the site boundaryand the volume billable to customers. This provides a representative estimate of local supply system losses due to leakage, under registration, unbilled water use and fire-fighting. We estimate percentage losses to be 3%. We note that this is similar to the typical rate, 2-3% published in the CEPA report.

It is worth noting that costs related to leakage detection and repair of on-site infrastructure are also avoided costs, but we already allow for these under the ongoing cost deduction as a direct operating cost.

We apply the leakage cost adjustment factor to the volumetric rate component of our tariff, as we consider the appropriate cost driver for distribution losses to be the volume of water delivered.

5.2 Site specific considerations

The charges and information we publish relate to the typical case where we provide a bulk supply at the NAV site boundary. It is possible that NAV projects may differ from the typical case. Some examples include:

- Where there is no bulk meter at the NAV boundary, in which case we would not need to apply the leakage adjustment as NAVs would be billed on the aggregate volume recorded on customers' meters, not on the basis of a bulk meter reading
- Where the NAV installs infrastructure that results in materially lower consumption per property than usual, for example because the site features on-site resources, grey water recycling, or rainwater harvesting systems. In this case it may be appropriate to reflect in NAV bulk supply charges the avoided long-run incremental costs of water resources in addition to the usual deductions for on-site ongoing costs.

Where there are unusual site-specific circumstances, we would consider those circumstances and if necessary, produce a bespoke bulk supply price reflecting the differences in avoidable costs between the unusual site and a more typical site.

5.3 VAT

All charges are subject to the addition of any Value Added Tax chargeable.

6. Bulk supply tariffs

6.1 Overall

This section describes how we structure our bulk supply tariffs. Ofwat's guidance requires that incumbents consider the right balance of fixed and volumetric elements in their bulk charges for new appointees. They must also consider the impact of how they structure their bulk charges on environmental outcomes. Ofwat say that this might be addressed through greater reliance on volumetric charges and that it may be appropriate for the avoided cost element to be estimated on a per property basis in order to set the right environmental incentives for new appointees.

6.1 Our approach

As noted in the sections above, to estimate avoided costs we have used appropriate cost drivers, typically £/property and £ per metre of main. We must consider how to structure our NAV tariff as between fixed charges and volumetric charges, taking into account the need to be cost reflective in application of avoided costs alongside meeting environmental objectives.

We have concluded that the best way to achieve these dual objectives simultaneously is to set a two-part tariff. The first part is a negative fixed charge equal on an annual basis to the £/property avoided costs (where avoided costs are estimated as described in section 3 above). The negative fixed charge guarantees that the NAV is credited with thevaklue for avoided costs based on the number of properties within its sites, no matter how much water is used. The second part of the tariff is the volumetric rate. We set this equal to our standard published volumetric rates, after applying the percentage reduction for leakage adjustment factor (see 5.1 above). The volumetric part ensures that NAVs incur increments to their total bill for each successive unit of water used, retaining environmental incentives. Table 7 sets out the tariffs for 2021/22.

Table 7: Affinity Water NAV Bulk Supply Tariff 2021/22

Fixed Charge NAV Tariff	Units	2021/22
Fixed Charge Credit per NAV property (Credit per property)	£/prop	35.26
Volumetric NAV Tariff	**Units**	**2021/22**
Volumetric Charge Central Region	£/m3	0.9330
Volumetric Charge East Region	£/m3	1.5826
Volumetric Charge Southeast Region	£/m3	1.6832

Appendix 1 Worked Example of Relevant Wholesale Tariff

This example assumes a NAV has 351 properties over two sites in our area of operations:

- A site in our Central region, consisting of 250 residential properties and 1 business property (with a 25mm meter) Each residential property has an average annual demand 120 m^3/year, and the business property 500m^3/year.
- A site in our East region with 100 residential properties, each using 85m^3/year.

The relevant wholesale tariff is the wholesale charge, built up from our published wholesale tariff rates (see section 2), that would apply if we, rather than the NAV supplied the end customers.

Appendix 1 Table 1 – Relevant wholesale tariff

Item	Charge Multiplier	Fixed Charge (£/year)	Revenue (£)
No. of residential sites (Central)	250	16.20	4,050.00
No. of businesses sites (Central)	1	28.32	28.32
No. of residential sites (East)	100	16.20	1,620.00
Subtotal fixed charges			5,698.32
		Volumetric rate (£/m^3)	
Volumetric demand residential (Central) (m^3)	30,000 (250 properties @ 120m3 each)	0.9610	28,830.00
Volumetric demand business (Central) (m^3)	500	0.9610	480.50
Volumetric demand residential(East) (m^3)	8,500 (100 properties @ 85m3 each)	1.6301	13,855.85
Subtotal volumetric charges			43,166.85
Total			**48,864.17**

Appendix 2 Worked Example of Bulk Supply Tariff

Using the same example as Appendix 1, we consider a NAV with 351 properties, over two sites in our area of operations:

- A site in our Central region, consisting of 250 residential properties and 1 business property (with a 25mm meter) Each residential property has an average annual demand 120m^3/year, and the business property 500m^3/year.
- A site in our East region with 100 residential properties, each using 85m^3/year.

Our approach to setting bulk tariffs, based on setting a negative fixed charge (to credit avoided on-site ongoing costs), and a volumetric rate (to recover our costs and preserve environmental incentives) is described in part 6. Table 1 below sets out a worked example.

Appendix 2 Table 1 – Bulk supply tariff

Item	Charge Multiplier	Fixed Charge (£/year)	Revenue (£)
Deduction for avoided direct operating costs (£/prop)	351	-16.73	-5,872.23
Deduction for avoided indirect operating costs (£/prop)	351	-12.12	-4,254.12
Deduction for avoided capital maintenance costs (£/prop)	351	-6.41	-2,249.91
Negative Fixed Charge			**-12,376.36**

Item	Charge Multiplier	Volumetric rate (£/m^3)	Revenue (£)
Volumetric demand residential (Central) (m^3)	30,000 (250 properties @ 120m3 each)	0.9610	28,830.00
Volumetric demand business (Central) (m^3)	500	0.9610	480.50
Volumetric demand residential (East) (m^3)	8,500 (100 properties @ 85m3 each)	1.6301	13,855.85
Sub-Total Volumetric Charge	-	-	43,166.35
Leakage Adjustment Factor (%)	-	-	-3.0%
Volumetric Revenue adjusted for leakage	-	-	41,909.08
NAV Volumetric Rate	**39,000**	**1.07459**	**41,909.08**

In this example, the NAV bulk supply tariff would comprise a negative fixed charge -£12,376.36 per year, and a positive volumetric rate £1.0746/m^3. If consumption were 39,000m^3/year, the NAV would pay bulk supply charges £29,532.65 in the year (being £41,909.08 volumetric charges, less £12,376.36 fixed charge credits). This is a 40% discount (operating margin) compared to the £48,864.17 relevant wholesale tariff.

Appendix 3: Consistency with Bulk Supply Guidance

Considering Ofwat's guidance published on 10 November 2020, we provide information below on how we have updated our approach to achieve consistency with each relevant guideline.

Guidance	How we meet the guidance
an expectation that incumbents use **menu-based approaches** so that charges reflect the actual mix of properties in the relevant starting point, making bulk charges for new appointees more cost reflective and accessible to new appointees;	We use the menu-based approach, by reflecting the actual number and mix of properties within NAV appointments where we are the bulk supplier. We approach NAVs to obtain accurate estimates of the number, types of properties and estimated consumption for this purpose
a clarified approach to **large user tariffs**, ensuring all incumbents adopt the wholesale minus approach for at least all new sites while recognising transitional arrangements may be needed for existing sites;	We do not use the large user tariff for the relevant wholesale tariff for any sites. We would only do so in the case where a NAV site contained large customers that would qualify for our large user tariff in their own right.
a preference for **bottom-up cost estimation approaches** when incumbents calculate their avoided costs to promote the development of more cost-reflective charges;	We have built our estimates of avoided costs by studying our costs at a granular, cost centre level rather than using high level cost data, (for example high level data from our published accounts). We have used the CEPA report as a starting point to identify costs that are capable of being avoided and have re-considered the appropriateness of cost drivers. In most cases we are now using the number of properties and the length of mains as cost drivers, in line with CEPA's suggestions.
a clarification that **indirect costs** that are avoided by incumbents due to the entry of a new appointee should be included in the estimation of avoided costs;	We have included a proportion of our indirect costs, as allocated to the treated water distribution activity. We have allocated common costs according to the proportion of FTEs employed in each business segment (retail, water resources, raw water transport, treatment and treated water distribution)
a revised approach to the **rate of return element**, reducing the level of prescription on providing an appropriate allowance for new appointees, which may include the use of an adjusted rate of return when estimating average annuities;	We have used an adjusted rate of return approach to estimating the annuities required to finance capital maintenance expenditures.
a new principle which sets out that we expect incumbents to consider the impact of how they structure their bulk charges on **environmental outcomes**;	We re-considered the structure of our bulk supply charges and for 2021/22 charges, have moved to an approach where we credit NAV bills with avoided costs, but retain environmental incentives through volumetric charging for usage.
additional detail on the approach to avoided surface water drainage and highway charges.	Not applicable, as we are not a wastewater company