New Appointments and Variations

Approach to Charging

January 2022

WONDERFUL ON TAP

SEVERN TRENT

New Appointments and Variations

Charges for bulk supplies and bulk discharges

1. Overview of approach

The New Appointments and Variations (NAV) charge aims to provide a new appointee with sufficient margin to finance and maintain the network on a new development. It is primarily aimed at new appointments made under the "unserved" criterion which are typically new housing developments. NAVs under the other two criteria (large customers using more than 50 Ml/year and variations by consent) are also possible.

To derive the charge, we apply a discount to the standard wholesale tariffs that we would charge to the customers on site if we served them directly. If there are a mixture of property types (for example, houses and businesses) on the site then this will be reflected in the starting point. The discount is based on the average costs that we consider Severn Trent - or an Equally Efficient Operator (EEO) - would incur in building and maintaining the "last mile" of the network[1]. It is equal to the present value of those costs over the lifetime of the assets.

Our assumptions on costs and other cashflows arising from the local site are reflected within the NAV cost model which we have published on our website. In previous years (2016-2022) we published outputs from the model for a typical housing development within our Scheme of Charges. This year we are including standard charges for NAVs within this document; this reflects best practice guidance developed through the Ofwat working group on bulk charges for NAVs.

Where there are atypical costs at a particular site, the NAV model is available to calculate the impact on the bulk charge. The model should mean that NAV operators are able to broadly predict the rates for a bulk supply or discharge where there is a material difference from a standard site[2].

Bespoke charges should be the exception rather than the rule. Unless there is a material difference in the costs that we would incur when running a development or the composition of properties on the site (such as large non-households) then we will apply the standard rates set out in this document. Section 7 sets out the criteria we would consider for using a bespoke charge.

Overall calculation

We calculate the present value of all charges that we would make if serving the customers on site and deduct the present value of all costs that would be incurred if we served the site directly. An approach based on present value reflects the amount and the timing of all cashflows. In our view this is better suited to a new development site than one based on the regulatory building blocks that Ofwat would use to set revenue for an incumbent network.

A problem with the building block approach – Pay As You Go, return on capital, depreciation – is that from the start of AMP7 we have not paid for any initial investment on new development sites (see below). This means

[1] Note that in the case of a large user NAV, we would not maintain any customer assets if we were serving the site directly; in this case the NAV charge might provide no discount over and above the large user tariff which would be the starting point for the calculation.

[2] We will consider the wholesale discount to be applied based on the published model, having reviewed a NAV operator's inputs to the model and any other considerations that may not have been captured.

that where we serve sites directly, there is no return on capital and no depreciation. Using discounted cashflows avoids this problem because the return on capital is reflected within the discount rate.

Wholesale charges to the site

These are the wholesale charges we would apply to the customers on site if we served them directly. For example, for water they include any wholesale standing charges that household or non-household customers would pay us. The volumetric rate is weighted to include the effect of any non-households that are not charged at a standard rate.

Site costs - overview

The costs that we would bear if running the local network on a new development would be:

- The initial cost of any new mains, sewers, meters and associated assets that were not directly funded by the property developer;
- Maintenance and operation of these assets over their lifetime;
- Regulatory fees;
- Sampling and testing of water at the tap; and
- Network losses - including leakage, meter under-registration and other causes such as firefighting or theft.

Some sites may have other costs depending on their location – particularly pumping. We make no standard assumption for this as we consider it to be too variable – we will look at the reasonable costs that we would incur for pumping and other items for atypical sites.

The NAV tariff is calculated on the basis of a particular bundle of services from Severn Trent. If the operator requires additional services from us or is in a position to provide more services itself then we would adjust the tariff accordingly. Some examples are considered in section 3.

New assets - differences between AMP6 and AMP7

The cost of new assets on site would depend on (i) when the development began and (ii) which service was being provided.

(i) Before Ofwat's new charging rules came into effect, the "income offset" on new developments was provided against mains requisitions. In most instances, 12 years' water charges from a site would exceed the cost of any mains that needed to be laid and therefore Severn Trent would have paid this in full, with no contribution from the developer[3]. This position was reflected in the water discount for a pre-AMP7 NAV.

(ii) Before AMP7, developers usually laid their own sewers, with no contribution from Severn Trent. There were rare exceptions where this was not the case (e.g. where a pipe needed to be laid across private land and we were required to use our s98 powers). In terms of the NAV calculation, the cost of new sewers was not reflected within the discount because no sewerage NAVs of this type arose during AMP6. From AMP7 onwards all new assets (water or wastewater) have been funded by developers and therefore the discount reflects only maintenance and operating costs.

[3] In more recent years, changes in Ofwat charging rules have permitted companies to vary their approach in this area and the classic Discounted Aggregate Deficit (DAD) calculation described above has been replaced. Since 2018-19 Severn Trent has applied a 90% income offset against costs (being the average amount over all projects in the region). This factor is applied in the calculation for NAVs starting in 2018-19 or 2019-20.

Losses on site

Water would generally be measured at the boundary for the purpose of a bulk supply. This means there would be a difference between this volume and the amount that we could charge to customers on site because of leakage, under-registration on customer meters and other losses caused by – for example – firefighting and theft. The cost is calculated based on the volume that cannot be charged multiplied by the weighted wholesale volumetric rate. Note that this would not include any supply pipe leakage (customer-side leakage) because we would meter at the boundary box if we were serving the site directly and therefore this would be chargeable.

We think the likelihood of a NAV operator wishing to serve a very small development site is low but we do not wish to close off any potential segment of the market. There are some differences when looking at such developments, the main one being that for sites of up to 10 plots we would not meter at the boundary; this would (in the extreme) be double-metering. Volumes for the small sites will therefore be based on customer meters.

We also base wastewater discharge volumes on customer meters; this means that there is no cost for leakage or other losses built into wastewater charges.

Retail costs

All calculations are based on **wholesale charges alone**. There would be a further margin on charges we would make to an end user. This is deemed sufficient to cover Severn Trent's average retail costs such as billing, customer service, credit management and bad debt. It should therefore cover the cost of an Equally Efficient Operator.

2. Volumes and drivers

Number of properties and number of plots

The costs and revenues are based on the number of plots in a development. In the standard charge, we assume an average mix of flats, terraces, semi-detached and detached houses based on ONS data for housing sales averaged over a reasonable period. The mix of properties for actual sites will differ. It is possible to vary this mix within the model, but we do not consider that slight variations in the proportion of detached or semi-detached properties are material. If a site is significantly different – for example, because it has some larger non-household properties – then we would need to calculate a bespoke charge for the site.

We assume that some of the site costs will scale with the number of *plots* rather than the number of properties because several flats will be constructed on a single plot and will require only one connecting main to serve them. However, there will be one meter per *property*. We assume that for all houses or non-households this is installed in a boundary box and that there are no shared meters. For flats, we assume there will be an internal installation.

For the purpose of scaling mains length, we assume that there will be more than one flat to each plot. In our standard charge, we strike a conservative balance between: i) the possibility that there could be a very large number of stories; ii) that the size of the plot is likely to be somewhat larger than the average house. In our NAV model, it is possible to vary the number of flats to each plot.

Length of mains or sewers

It is also possible to vary the length of pipe per plot within the model. The default is based on the average length that we have observed from recent developments which Severn Trent has connected, but the value is almost certainly different for each and every site. If an operator applies for a non-standard NAV charge we would review the information provided before agreeing a bespoke bulk supply price.

Consumption

This determines the amount of income we would receive from the site if serving it directly and the wholesale charge that will be paid at the boundary. It is derived by:

- average Per Capita Consumption (PCC) x
- the average occupancy for each type of property x
- number of each type of property.

The default occupancy and consumption figures are based on Severn Trent averages for each type of property collected across our whole region for the purpose of leakage. It is possible to vary these assumptions within the model but – again – we would need to consider why they are expected to be significantly different from regional averages. We would not expect to apply a bespoke charge on the basis of differences in expected consumption.

3. Costs

Construction of mains

This cost was only relevant for NAV charges calculated before AMP7, as explained in section 1. They were based on the average costs from a sample of sites where the mains were installed by Severn Trent. This was used to derive average unit costs for mains laying:

- Average metres of main required per development plot; and
- Average cost per metre of mains laid.

The assumed number of plots was then used to generate a cost for the initial installation of the mains and a mains application design agreement fee was also applied.

For sites smaller than 10 plots, we assume that connections are via communication pipes alone and the length is reduced to a typical communication pipe for each. As no mains are being constructed, we assumed no design fee.

For timing purposes, we assumed that all mains were laid before any properties are constructed.

Infrastructure maintenance - water

Costs are based on Severn Trent data for the number of repairs for bursts and other reactive jobs on pipes in the Severn Trent area by age of pipe. The general trend is for the cost per metre of pipe to increase as pipes age. This data has been converted to a simple econometric model for unit costs, with a linear relationship between rising unit costs and the age of assets.

The intervention data is grouped for pipes installed over 10-year periods (for example, pipes between 2005 and 2015 and for each decade going back over the 20th Century). While there is a rising trend for maintenance on pipes over 10 years old, the number of jobs in the first 10 years is above trend. We judge this to be a result of correcting initial problems on installation. Accordingly, we have front-loaded the average maintenance costs for the first 10 years into the initial 3-year period; we then trend to the modelled rate.

Meter costs

We assume that an average meter and boundary box are installed for each property, with no shared meters. Our model assumes that meters are replaced in line with accounting life (15 years for meters and 60 years for boundary boxes). All costs are based on our metering contract plus overheads. For flats we assume an internal installation.

Efficiency

For the purpose of the discount, we have made a conservative assumption that some continuing efficiency over inflation should be possible over the period – 0.1% per annum. This is significantly lower than the 1.5% productivity gain that Ofwat has assumed for the sector in its PR19 determinations. The lower efficiency assumption operates in favour of NAV operators.

Construction of sewers

The construction cost per meter of sewers is based on the project estimator we use to develop business plans. The initial construction costs are higher than water mains due to the depth at which the sewers are laid. However, current industry practice is that this construction cost is borne by developers, as noted in the "overall approach". Should this change in future as a result of Ofwat charging consultations, we would need to revisit the model.

We assume that the length of sewer would be equal to the length of mains and that all sewers are laid before any properties are constructed or occupied.

Maintenance of sewer infrastructure

As noted above, we reviewed our data on water mains and found a relationship between age and maintenance costs. We looked to see whether we could demonstrate a similar relationship for sewer maintenance but from the data available there was no clear link. This was as expected for sewer blockages, but the correlation between age and sewer collapses was also insufficiently strong. We have therefore applied an average unit rate (£/m) for both blockage clearance and collapses.

Regulatory fees

Fees to Ofwat and CCWater are based on their budgets and the site's revenue as a proportion of industry turnover. As we are only considering a discount to wholesale rates, this is based on the site's wholesale revenue only.

Sampling and testing

If serving the site directly, we would need to undertake sampling and testing in line with Drinking Water Inspectorate requirements. Costs for normal sites are based on Severn Trent's unit rate. Given the disproportionate cost arising from very small sites we have not factored sampling and testing costs into the charge for sites of up to 10 plots. We would offer to provide this service since there would be little or no local network between our own and the customer's meter at the boundary. Depending on the size of sites above

the 10 plots level it might also be more practical for Severn Trent to provide this service to a site and to adjust the discount accordingly.

Assistance supplies

These are assumed to be provided by Severn Trent in line with the standard Bulk Supply Agreement for NAVs. Residents of NAV sites would be able to access any bottled water distribution sites in the Severn Trent area in the event of an incident – staff on site would not check whether they were customers of Severn Trent or a NAV.

We will not charge for this service. If we did, we would simply have to "recycle" the charge by allowing an amount to pay for it within the discount. If an operator chose an alternative to Severn Trent provision, we would need to adjust the margin accordingly.

Leakage

Our leakage assumptions are based on our analysis of leakage rates, mains material and age data. The leakage deterioration rate, also known as the Natural Rate of Rise, has been derived from our assessment of 265 District Metering Areas where polyethylene pipe was the predominant material (c.8% of the total). Within most of these there is likely to be some pipework in other materials and therefore leakage rates are likely to be somewhat higher than we would achieve if we were to serve the property ourselves. Based on this data, our model takes account of the growth in leakage and the average age of the DMAs.

On average around a quarter of leakage arises on customer supply pipes. While there would be supply pipe leakage on any new site, it would be chargeable and is therefore excluded from the calculation - the discount only needs to take account of the unbilled water.

As noted above, for sites of 10 plots or fewer or wastewater services, leakage is not relevant to the charge because volumes would be based on customer meters.

Meter under-registration

The rate of meter under-registration is based on average company data. As noted above, for the purpose of calculating meter maintenance costs on the new site we err on the side of caution by allowing for replacement at the end of the accounting life (15 years) rather than a fix on fail approach. We assume that under-registration grows from the manufacturer's specification (1% on installation) to typical company rates before replacement.

Water taken unbilled and network operational usage

This is based on company averages from our water balance calculations. It includes use for fire-fighting, theft, unbilled standpipes, mains flushing, mains rehabilitation and other items that are included in annual returns. Since it is based on the whole of the network it is likely to err on the side of caution as unbilled water is frequently taken for commercial purposes – most new appointees serve housing developments where such activity is less likely to occur. Operational usage such as flushing is likewise based on our water balance calculations.

Other costs

The NAV model includes user-defined inputs for any other costs that may be incurred on an individual site. The most likely item is pumping where water supplies to the site cannot be delivered through the pressure in our main or sewerage cannot be discharged through gravity. No standard value is assigned to these items as the value will depend on the topography of the site.

If providing water for larger sites, we would normally install some pressure loggers to manage service levels to customers. There would also be a logger at the boundary of the site but we assume that this would be attached to Severn Trent's bulk meter and owned by Severn Trent, whereas the asset within the site would be owned and maintained by the NAV operator. This additional cost is factored into the discount for larger sites.

There may be other assets that will be required for larger developments but in our view this will depend on the site. There are a number of input lines for other costs. If a NAV operator has additional costs for a specific site and requires a bespoke charge, we will review their cost assumptions when negotiating a bulk agreement and consider what cost we think we would incur for these items if we were serving the site directly.

Bad debt

Since the NAV charge is based upon a wholesale rate, there is no charge for bad debt. There is no bad debt cost allowance within the wholesale control, which implicitly assumes zero risk of default on bulk supplies that are provided to any other appointee, including a NAV operator. In a wholesale-minus approach it is not possible to adjust for bad debt within the charge because we would simply have to compensate for any extra charge with an additional item in the discount calculation. The cost of bad debt from customers on site is included within the retail cost allowance. NAVs receive this allowance in full, and it is separate from the wholesale-minus calculation.

Social tariffs and WaterSure

These are discounted tariffs that are made available to qualifying household retail customers. They are a cross-subsidy from other retail customers to those who may struggle to pay their bill and the value of this subsidy is included within the retail charges which NAVs apply. Retail charges for all regular customers are set a little higher than cost so that a few customers can receive this discount.

Like other incumbents, Severn Trent does not receive any margin as a result of this uplift – it is a cross-subsidy from one group of customers to another. At the end of each price control period, Ofwat operates a true-up which removes any imbalance due to forecasting error.

We have included a projected value of the cross-subsidy in table 7.6. This sets out the average value of the cross subsidy per regular customer served and the average value of the cross-subsidy provided to each customer on our social tariff or WaterSure.

In simple terms, there is a ratio between the number of customers supporting these subsidies and the number of average customers that can be placed on that tariff. The actual value of the cross-subsidy will vary depending on the bill that each customer would have paid on a standard charge and the discount offered.

Like other incumbents, Severn Trent has to limit the number of customers on social tariffs because there is a limit on the level of cross-subsidy that other customers are willing to support. In some areas that we serve the number of applicants is higher than others and we need to manage the number of applicants we can accept. Likewise, it is for NAVs to manage the number of customers on discounted tariffs across their areas of

appointment. Wholesale charges include no provision for social tariffs and no adjustment will be made to bulk charges for these discounts.

4. Commuted Sum (Discounted Aggregate Deficit)

For pre-AMP7 calculations, the model compares the costs with the income that Severn Trent would expect to receive from the properties on the site over 12 years – the standard DAD calculation. Because this method has been in place since before privatisation, we have not changed the approach for the purpose of this model – for example:

- The income calculated for this purpose is based on end-user revenue (i.e. including retail costs, rather than wholesale alone).
- The discount rate is set per the method which Ofwat previously advised to companies.

Although the DAD calculation has been replaced by new methods, Government guidance is that the balance between developers and other customers should remain the same. Therefore, any replacement should produce similar results with regard to the overall level of cost to be borne by an incumbent (or NAV) and any excess where a developer would be required to contribute.

Timing of revenue

The model assumes that properties will be built and occupied over a period of time before all construction is completed. This lowers the level of income that we would expect to receive from the site during the early years. The time taken for the first occupant, and for the site to be full, are user-defined inputs to the model. The model assumes that the properties are occupied evenly over the intervening 12 months. The same assumptions are used for the timing of meter installation and for the calculation of wholesale charges.

Comparison to mains construction costs

If construction costs were greater than the commuted sum, a developer would have to contribute the difference in cost. If costs are less than projected income, Severn Trent would not charge for the mains. To be on an equivalent footing, the pre-AMP7 NAV charge needed to cover the lesser of the construction cost or the commuted sum.

In our typical housing development (as per the indicative charge we published), the commuted sum was higher than the cost of the mains. Severn Trent would have financed the construction cost and therefore an EEO should been able to finance the same amount.

Developments in 2018-19 and 2019-20

The method above fits the approach from privatisation to 2017-18. Following changes in Ofwat rules and guidance, most companies moved away from the classic DAD method and applied an average contribution rate to mains requisitions. Severn Trent bore 91% of costs in 2018-19 and 90% in 2019-20 – however, this was not adopted in Wales.

Developments in AMP7

From 1 April 2020, the “income offset” has been applied as a rebate against infrastructure charges in England. This cost of new infrastructure is paid by the developer and the calculations above are redundant. At present this approach has not been applied in Wales and the commuted sum calculations remain relevant.

5. Standard charges

We calculate the standard **wholesale only** charges that we would expect to receive from the properties on site, once occupied. Retail charges are assumed to cover retail costs including billing, customer service, credit management and bad debt in line with the split in Severn Trent's revenue controls.

Water charges

The charges received are based upon the volume that would be registered on customer meters if we served the site directly. Any standing charges are also based upon those that would be received if we provided a direct service to the customers on site.

The model has inputs for non-household customers. The model includes inputs for the number and type of non-households based on the standing charges that would be applied (there are different charges depending on the size of the meter). The model includes a broad-brush guide to the size of the meter that most customers have at a given level of consumption though the actual size will depend on the peak flow requirement. We assume that there is only one meter per customer; within the Severn Trent area there are customers that have multiple meters for historical reasons but this is not something that we would engineer by choice.

In most instances the wholesale volumetric rate is the same as for households but it is possible that a new development could include non-households that would be charged on the Intermediate or Large User Rates (typically those using more than 10,000m^3 and 50,000m^3 per year). Where this occurs, the starting point for the NAV volumetric charge will be the weighted average volumetric rate for all users on site.

The volume charged for the purpose of a bulk supply to sites of more than 10 plots would include leakage and other losses as described above.

Wastewater charges

The charges received are based upon the volume that would be registered on customer meters if we served the site directly. Any standing charges are also based upon those that would be received if we provided a direct service to the customers on site.

Bulk discharge volumes would also be based upon customer meters, so there will be no difference between the volume charged by Severn Trent and that charged to customers on site. This means that the wastewater discount does not need to take account of losses on site, as discussed in section 1. In addition, there is no need to weight the volumes between households and non-households as customer volumes can be used directly in any charges that are applied.

Household standing charges for wastewater will be included in the starting point for the NAV charge; there is no wastewater standing charge for non-households. Where surface water from the site drains to sewers managed by Severn Trent, surface water charges will also apply. These are based on the type of property for households and the area of non-household properties i.e. the charges that we would apply if we served the site directly.

If we were to serve the site directly, we would apply highway drainage charges to the properties on site. NAV operators will also apply this charge and thus it forms part of the starting point for the discount calculation.

Highway drainage charges pay for the cost of draining the road network in general rather than a specific stretch of road adjoining a customer's property. Companies are not permitted to charge these costs to highway agencies. The charge is paid by all customers that have a sewerage connection, irrespective of whether they are connected for surface water drainage.

6. Discount calculation

The calculation is based on comparing the present value of charges for bulk supplies or discharges (as described in 5) to the costs that Severn Trent would incur if we served the site directly. This generates a margin which is sufficient to cover the cost of capital.

Discount rate

If we were serving the area directly, the relevant discount rate would be that of Severn Trent as a whole. However, in its May 2018 guidance on bulk supplies for NAVs, Ofwat determined that there should be a departure from the normal EEO test because it considers that the risk for the operator of a NAV differs from that of the incumbent.

Within the regulatory framework, Ofwat uses a Weighted Average Cost of Capital (WACC) on a post-tax basis because an allowance is made for the tax costs. For the NAV calculation, a pre-tax rate is used with an advised effective rate of 10%. Ofwat also sets WACC for the appointed business, with a deduction for retail in order to arrive at the wholesale WACC. We have started from the implied asset beta for the wholesale business since this is a wholesale only calculation (the retail is implicit within the retail margin which is considered separately).

The May 2018 guidance estimated a 15bps difference in asset beta. This was mainly attributed to the fixed revenue control, which removes revenue uncertainty – typically in the range of +/- 2% within the industry.

The allowed WACC has been updated to take account of Ofwat's Final Determination as published on 16 December 2019. The CPIH-stripped version has been applied on the basis that a new appointee has no existing RCV (it would also have no RPI-linked debt to service). Future charges are also linked to CPIH and the cashflows deflated with the same measure of inflation.

The implied wholesale values from the determination are adjusted as follows:

Weighted Average Cost of Capital	FD Wholesale	NAV
Risk free rate	-1.39%	-1.39%
Assumed level of gearing	60.00%	50.00%
Assumed rate of tax	19.00%	10.00%
Inflation	2.00%	2.00%
Debt Beta	0.1250	0.1250
Premium over RFR	3.53%	3.53%
Real cost of debt (pre-tax)	**2.14%**	**2.14%**
Real cost of debt (post-tax)	1.93%	1.93%
Total market return	6.50%	6.50%
Equity premium	7.90%	7.90%
Asset Beta adjusted for debt beta	0.3429	0.4929
Equity Beta	0.6697	0.8608
Cost of equity (pre-tax)	**4.33%**	**6.01%**

Weighted Average Cost of Capital	FD Wholesale	NAV
Cost of equity (post-tax)	3.90%	5.40%
WACC (Pre-tax)	**3.02%**	**4.07%**
WACC ("Vanilla")	2.84%	3.77%

Our calculation assumes that the NAV should earn its cost of capital over the life of the network; allowed levels of infrastructure maintenance for regulated companies actually imply a significantly longer lifespan than the accounting lives as published in the company's accounts.

Discount calculation

The proforma discount calculation is set out below.

Water	£	£	
Charges			
Volumetric charges	X		Volume at boundary
Standing charges for properties on site	X		
Non-household fixed Charges	-		NAV is not an eligible NHH
Standard wholesale charges paid		**X**	
Costs			
Distribution losses (leakage)	X		For sites >10 plots
Water taken unbilled	X		
Distribution system operational use	X		
Meter under-registration	X		
Net cost of mains	X		Only for pre-AMP7 NAVs
New meter installation cost	X		
Infrastructure Maintenance	X		
Regulatory fees, sampling and testing	X		
Pumping and other non-standard costs	X		
Meter maintenance	X		
Total cost of site		**X**	
Total discount		**B / A**	

The discount for water is allocated between charges in the following priority order:

1. Standing charges: feedback from NAV operators is strongly against standing charges and therefore we will apply any discount against these first.
2. Volumetric charges: the residual will be applied against the weighted average volumetric charge for the site (where there are only standard users, this will be the standard rate).

Wastewater	**£**	**£**	
Charges			
Volumetric charges	X		Volume at boundary
Standing charges for properties on site	X		
Highway drainage charges	X		
Non-household fixed Charges	-		NAV is not an eligible NHH
Surface water drainage	X		If connected
Standard wholesale charges paid		**X**	
Costs			
Net cost of new sewers	X		Assume nil
Infrastructure Maintenance	X		
Pumping and other non-standard costs	X		
Total cost of site		**X**	
Total discount		**B / A**	

The discount for wastewater is allocated between charges in the following priority order:

1. Highway Drainage.
2. Standing charges: in line with the approach for water, standing charges and other fixed charges such as highway drainage will be removed first.
3. Surface water and volumetric charges: the residual will be applied against surface water (if connected) and volumetric charges for the site. Since wastewater volumes will be based on customer meters, a uniform percentage reduction can be applied to both household and non-household volumes where the rates for these differ.

7. New Appointments and Variations charges for 2022-23

The terms of any service to a New Appointment or Variations (NAV) will be set out in the Bulk Supply Agreement or Bulk Discharge Agreement between ourselves and the NAV operator. This section sets out the charging policy that we will apply within any agreement that we reach.

General

7.1 Where we provide a bulk service (a bulk supply or bulk discharge) to a NAV, the operator will pay the NAV charge for that service.

7.2 We will calculate a discount to our wholesale charges based on our assessment of the cost that we would incur and the wholesale charges that we would apply if we had served the site directly. We will publish the model we use to calculate the discount on our website.

7.3 Intermediate and Large User Tariffs are not available for NAVs, but if there are customers on site that pay the Intermediate or Large User tariffs then we will include their charges within the starting point for the calculation of the NAV charge.

7.4 The charge is primarily designed for a NAV granted under the "unserved" criterion but could be applied to a variation by consent or to a Large User consuming more than 50,000m^3 of water per year. However, if we were to serve a Large User directly we would not maintain any of the customer's own pipework or assets within the curtilage of its property. It is therefore likely that no additional wholesale discount would be provided over and above the Large User Tariff.

7.5 We apply a higher discount to qualifying NAV site which started receiving a bulk service before 1 April 2020. Connections made on these sites will not be eligible to receive any income offset against infrastructure charges that we apply; this includes new connections on those sites which may be made after 1 April 2020. The higher discount for these sites will apply to all supplies and takes account of assets which the operators of these NAV sites would have been required to finance.

Income offset

7.6 NAV sites which start receiving a bulk service after 1 April 2020 will be eligible to receive any income offset that we may apply against infrastructure charges for connections on the site. Under Ofwat Charging Rules applicable from this point onwards, new assets on a site should be funded by the developer and the NAV discount for sites starting after 1 April 2020 reflects that position.

Information and measurement

7.7 The NAV operator must supply us with information about the volume of water supplied to customers on its site, together with the number and type of charges that have been made to them. The frequency of data provision will be set out within the bulk supply agreement between us and the NAV operator.

7.8 For bulk supplies:

- If the development site comprises ten plots or fewer, volumetric charges for bulk supplies will be based on the volumetric information supplied by the NAV operator as described in 7.7, and a lower level of discount will apply. Amongst other things, this reflects the fact that any leakage on the NAV assets would not be included in the charge paid by the NAV.
- If the site comprises of more than 10 plots, volumetric charges will be based upon readings from our bulk supply meter and a higher level of discount will apply.

7.9 The volume for the purpose of a bulk discharge from a NAV that supplies wastewater services will be based on the information that the NAV operator supplies to us as described in 7.7.

Applicable charges

7.10 For a bulk supply to a qualifying NAV, we will apply the relevant discount to the following charges:

- A standing charge based on the aggregate value of wholesale standing charges for water recovered from customers on the NAV site; and
- Wholesale volumetric charges for water based on the volume described in (iv) above.

7.11 Where a NAV provides wastewater services, we will apply the relevant discount to the following charges:

- A highway drainage charge based on the aggregate value of wholesale highway charges recovered from customers on the NAV site;
- A standing charge based on the aggregate value of wholesale standing charges for wastewater recovered from customers on the NAV site;
- Volumetric charges based on the volume described in 7.7 for all used water draining from the site to the public sewer; and
- A surface water charge based on the aggregate value of surface water charges paid by properties on the NAV site for surface water draining from the site to the public sewer.

Surface water drainage

7.12 If the NAV site includes a Sustainable Urban Drainage System (SUDS) or other drainage arrangement then the NAV operator must demonstrate to our satisfaction that the site has no surface water drainage connection to a public sewer. If there is a direct or indirect connection then surface water drainage charges will be payable as described in 7.11.

7.13 If the site is connected for surface water then we will charge the NAV operator for surface water:

- Households will be charged according to the type of property.
- Non-households will be charged according to the area of their site that drains to the public sewer (the “chargeable area”).

7.14 For non-households, the chargeable area includes the total site area of the premises (whether or not the surface area is permeable), including the boundary of the premises and all land belonging to the premises (whether or not separated at any point by a highway or other public right of way). It excludes any area or areas that in total are more than 10% of the total site area of the premises and from which in our opinion no surface water or groundwater drains or could drain either directly or indirectly to the public sewer, such as:

- permanently grassed or cultivated areas;
- playing fields;
- farmland;
- racecourses;
- sports grounds;
- golf courses;
- parkland;
- soakaways;
- areas of land on which no building can legally be built;
- any other area from which in our opinion no surface water drains or could drain directly or indirectly to the public sewer.

7.15 Where a rainwater harvesting system is installed within any property on site and we are **not** charging for surface water on that property (either because the site as a whole is not connected or because that specific property is not connected for surface water within the NAV site):

- For households on site, we will charge an additional volume for each property where a harvesting system has been installed, based on our assessment of the additional volume that would be discharged to the sewer. These volumes are set out in table 5.
- For non-households, the harvesting system must be installed in such a way that the volume of "water-out" can be metered.
- The volumes of "water-out" from rainwater harvesting system will be charged in addition to the volume of "water in" measured by customer supply meters (as described in 7.7).

7.16 Where a rainwater harvesting system is installed within any property on site and we are **charging** for surface water on that property (because the property is still connected and the site has a surface water connection to the public sewer):

- For households, we will make no adjustment to the volume of water discharged, and no adjustment to the surface water charges that would otherwise apply.
- For non-households, we will require measurement of the "water out" from the harvesting system as described in 7.13 and this will be an addition to the chargeable volume from the site.
- We will reduce the area chargeable area as defined in 7.14 by the area from which rainwater is harvested.

Standard and bespoke NAV charges

7.17 A typical development will pay the standard NAV charges for water and used water as set out in Tables 2 and 3 below.

7.18 A bespoke NAV charge may be required where:

- The customers on a NAV site qualify for a discounted wholesale tariff (such as the Intermediate User Tariff, Large User Tariff or Standby Tariff);
- Any trade effluent consents are required for the site;
- The volume of water supplied to non-households (or discharged by non-households) is more than 10% of the total; or
- The site has any costs beyond the standard items described in section 3.

In this case we will calculate a NAV discount based on the wholesale charge that we would apply and the costs that we would incur if we supplied the site directly.

Standard NAV Charges for Zones 1-8

Severn Trent Zones 1-8 comprise the original area of Severn Trent Water within England – i.e. excluding the parts of Dee Valley Water which were added to our area of appointment in 2018-19.

Table 7.1: Standard NAV Charges – level of discount 2022-23 (Zones 1-8)

Discounts	Up to 10 plots	More than 10 plots	More than 1,000 plots
Bulk supplies			
Discount on standing charges	54.67%	100.00%	100.00%
Discount on volumetric charges	-	10.24%	10.30%
Bulk discharges			
Discount on highway drainage	35.51%	65.01%	65.01%
Discount on volumetric charges	-	-	-

There may be further non-standard assets on individual sites, particularly where they are very large. Where this is the case then we will calculate a bespoke rate.

Table 7.2: Standard NAV Charges for Bulk Supply 2022-23 (Zones 1-8)

Standard NAV Charges - Bulk Supply		Up to 10 plots	More than 10 plots	More than 1,000 plots
Volume supplied	£/m3	1.6134	1.4482	1.4473
Households				
Standing charge	£/property	5.00	-	-
Non-households				
Meter size 15 mm	£/property	5.20	-	-
Meter size 22 mm	£/property	5.20	-	-
Meter size 28 mm	£/property	6.69	-	-
Meter size 42 mm	£/property	16.61	-	-
Meter size 50 mm	£/property	19.16	-	-
Meter size 80 mm	£/property	24.40	-	-

Table 7.3: Standard NAV Charges for Bulk Discharge 2022-23 (Zones 1-8)

Standard NAV Charges - Bulk Discharge		Up to 10 plots	More than 10 plots	More than 1,000 plots
Volume discharged	£/m3	1.1125	1.1125	1.1125
Households				
Standing charge	£/property	-	-	-
Highway drainage	£/property	9.67	5.25	5.25
Non-households				
Highway drainage	£/property	9.67	5.25	5.25

Table 7.4: Standard NAV Charges for Surface Water 2022-23 (Zones 1-8)

Standard NAV Charges - Surface Water Drainage			Charge
If surface water is connected - households			
Flat or terrace		£/property	21.69
Semi-detached		£/property	43.37
Detached		£/property	65.06
If surface water is connected - non-households			
Band 1	up to 20m^2	£/property	8.76
Band 2	21-99m^2	£/property	47.92
Band 3	100-199m^2	£/property	96.07
Band 4	200-299m^2	£/property	160.14
Band 5	300-499m^2	£/property	256.33
Band 6	500-749m^2	£/property	400.72
Band 7	750-999m^2	£/property	561.12
Band 8	1,000-1,499m^2	£/property	801.50
Band 9	1,500-1,999m^2	£/property	1,121.66
Band 10	2,000-3,999m^2	£/property	1,922.89
Band 11	4,000-7,499m^2	£/property	3,685.94
Band 12	7,500-9,999m^2	£/property	5,609.42
Band 13	10,000-14,999m^2	£/property	8,013.40
Band 14	15000-19,999m^2	£/property	11,219.09
Band 15	20,000-24,999m^2	£/property	14,424.69
Band 16	25,000-29,999m^2	£/property	17,630.38
Band 17	30000-34,999m^2	£/property	20,835.87
Band 18	35,000-39,999m^2	£/property	24,043.46
Band 19	40,000-44,999m^2	£/property	27,251.06
Band 20	45,000-49,999m^2	£/property	30,458.77
Band 21	50,000-99,999m^2	£/property	48,087.30
Band 22	Over 100,000m^2	£/property	112,219.74

Table 7.5: Assessed volumes for rainwater harvesting 2022-23 (Zones 1-8)

Assessed volume for rainwater harvesting systems	m^3 per year	Note
Households		
Flat or terrace	15	1
Semi-detached	36	
Detached	52	
Non-households		
Based on measurement from the harvesting system	var	2

1. Will only apply assessed volumes if the property is not connected for surface water (see 7.15)
2. If the property is connected for surface water, an adjustment will be made to surface water charges (7.16)

Table 7.6: Forecast level of cross-subsidy (within retail charges)

Cross-subsidy (WaterSure and Big Difference Scheme)		Water	Wastewater	Note
Average cross-subsidy per customer on regular charge (A)				
WaterSure	£	1.00	0.70	1
Social Tariff	£	4.50	3.80	
Average cross-subsidy per customer on a discounted charge (B)				
WaterSure	£	200.30	146.80	2
Social Tariff (Big Difference Scheme)	£	163.50	143.90	3
Average number of customers per subsidised charge (C)				
WaterSure	Nr	200	210	4
Social Tariff (Big Difference Scheme)	Nr	36	38	

1. The average uplift within retail charges to pay for cross-subsidies (WaterSure and Social Tariff) - forecast for next charging year.
2. The expected average level of cross-subsidy to customers on discounted tariffs, based on typical characteristics.
3. For the Big Difference Scheme, the level of subsidy will also depend on the discount provided. BDS charges are 10-90% of the average bill.
4. This is the ratio between the cost of the subsidy and the contribution per customer (B/A)

Standard NAV Charges in Zone 9 (Chester)

We have a different base wholesale charge in the Chester area, which is a legacy from our acquisition of Dee Valley Water and this leads to a different percentage discount and charge for any NAV in the area. Zone 9 is outside our wastewater area so there any NAV rates for bulk charges would be set by other companies – most likely Dŵr Cyrmru or possibly United Utilities depending on location.

Table 7.1C: Standard NAV Charges – level of discount 2022-23 (Zone 9)

Discounts	Up to 10 plots	More than 10 plots	More than 1,000 plots
Bulk supplies			
Discount on standing charges	54.81%	100.00%	100.00%
Discount on volumetric charges	-	10.53%	10.59%

There may be further non-standard assets on individual sites, particularly where they are very large. Where this is the case then we will calculate a bespoke rate.

Table 7.2C: Standard NAV Charges for Bulk Supply 2022-23 (Zone 9)

Standard NAV Charges - Bulk Supply		Up to 10 plots	More than 10 plots	More than 1,000 plots
Volume supplied	£/m3	1.4150	1.2659	1.2652
Households				
Standing charge	£/property	4.99	-	-
Non-households				
Meter size 15 mm	£/property	5.19	-	-
Meter size 22 mm	£/property	5.19	-	-
Meter size 28 mm	£/property	6.67	-	-
Meter size 42 mm	£/property	16.56	-	-
Meter size 50 mm	£/property	19.11	-	-
Meter size 80 mm	£/property	24.32	-	-

Zone 10 is a very small area that was originally served by the Wrexham water company before it was incorporated into Dee Valley. We have not set out standard charges for this zone as the likelihood of a NAV being connected in the area is remote; if a NAV was granted in Zone 10 then we would calculate a set of charges using our standard approach as required.