

Water 2020: Regulatory framework for wholesale markets and the 2019 price review

Appendix 3: Approach to access pricing

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Introduction

This appendix discusses our approach to access pricing (a key mechanism required to support the development of markets), which we have set out in our [main consultation](#). This approach will apply to companies based wholly or mainly in England. Consistent with the draft charging guidance issued by the Welsh Government, access prices relating to companies based wholly or mainly in Wales will continue to be set on the basis of the cost principle.

For third party water resource providers to provide resources to retailers, they will need to access the water distribution networks – and potentially the treatment facilities – of incumbent appointees. Incumbents will need to set prices for providing access to their facilities to third parties ('access prices'). Our proposals are that companies should publish access prices to facilitate greater transparency and enable efficient entry by third parties in customers' interests.

Access prices need to fulfil two objectives.

- They provide entry signals to incentivise efficient entry and so ensure that entry results in lower cost of service to customers.
- They compensate incumbents for efficiently incurred costs.

Where forward-looking costs are similar to historical costs, these two objectives may be fulfilled relatively straightforwardly. However, where there are large differences between forward-looking and historical costs, there can be a tension, which needs to be addressed when seeking to implement access pricing.

The cost of developing new resource is likely to differ markedly from the average cost for existing resources (noting that at present, end prices in the water sector reflect average costs). This is for two reasons.

1. Companies will typically have developed lower cost resources first, so that each new incremental resource will be more expensive than the last.
2. As described in our main consultation, the industry privatisation discount will also be reflected in prevailing average costs.

Cost measures used in this appendix

- **Average cost:** The total cost divided by the volume supplied or unit cost.
- **Average area cost (AAC):** The average unit cost of supplying a service in an area.
- **Fully allocated cost (FAC):** An accounting method for allocating all the costs of a company to defined activities. The allocation method would normally follow the principle of cost causation.
- **Average incremental cost (AIC):** The average unit cost of a particular additional increment in output. For example, the unit cost associated with an additional water resource scheme. This measure is used in water resources management plans (WRMPs).
- **Average incremental social costs (AISC):** The AIC plus environmental and social costs in addition to the costs the company incurs.
- **Long run incremental cost (LRIC):** The additional cost incurred in providing a defined increment of output, taking a long-run perspective, and assuming some level of output is already produced. For example, this could be the average unit cost of increasing existing water resource capacity by a given amount. Often expressed as a unit cost.

The extent to which the average costs for existing water resource differ from the long run incremental cost (LRIC) of new resource will in part depend on whether and how we allocate the regulatory capital value (RCV). Under our proposal to adopt an unfocused approach to RCV allocation, the LRIC of developing new resource is most likely above the average cost of existing resource, as the average cost will reflect a privatisation discount of nearly 90% on assets acquired at privatisation.

In setting access prices, we need to ensure a level playing field between third party providers and incumbent suppliers – and so promote efficient entry (that is, entry where the third party service provider has a lower cost of resource than the incumbent). If our approach to access prices did not address the above differential between LRICs and average costs, then third party providers would not enter the market, even where their resources are lower cost than the incumbent's. This ultimately means that customers would bear the higher cost of new resources.

To address the above issue, our proposal is that the published access prices for the water distribution network should be based on two elements.

1. The **average cost implied in our water network plus control**, which we will set at the 2019 price review (PR19).
2. A compensation payment or rebate, based on the **difference between the incumbent provider's incremental cost (measured by average incremental cost) and the average cost of water resources**. This will enable entry by service providers where their cost of new resources is lower than the incumbent's.

In the short term, we consider that AICs may offer the most appropriate basis for pricing. This is because the sector has a track record with estimating and using AICs in WRMPs. However, as discussed below, there are also a number of questions as to whether AICs are a suitable measure of the forward-looking costs companies face for the purpose of setting access prices. Accordingly, we will be looking to work with stakeholders to better understand the implications of using AICs and the desirability of developing other measures of LRIC.

For sludge, as we describe in our main consultation, we are not proposing to require appointees to offer access prices, as third party providers are interested in providing sludge processing and transport service using their own facilities. Rather, third party providers are interested in the gate price for sludge, which refers to the amount incumbents pay (or receive) for sludge to be taken away from sewerage treatment works to provide sludge treatment, transport and disposal activities. We therefore propose that companies should publish a range of information that will allow alternative providers to infer the likely gate price in a transparent manner. As our proposed approach, including data requirements, is described in our main consultation, we do not consider it further in this appendix.

The remainder of this appendix sets out the details of our proposals more fully. This is **structured around the key policy decisions we take** to establish our approach to access pricing. These are as follows.

- **What objectives** should we be seeking to achieve with our approach to access pricing? What approach is consistent with effective market development?
- **What is the right approach** to determining access prices? That is, what method and measures of cost should be used in determining access prices? Here it is important to note that our method needs to be considered in the broader context of our proposals – most importantly, in relation to our approach to the RCV, but also our proposal to implement a separate binding price control for water resources.

- **What should our role be in the implementation of access prices?** In particular, what is the right balance between providing detailed and prescriptive guidance and rules, versus relying on ex post competition law to ensure non-discrimination?

Our decisions in relation to the making of access price rules will be made in accordance with the general duties set out in section 2 of the Water Industry Act 1991 (where applicable). We will also have regard to relevant charging guidance from the UK and Welsh Governments.

Our objectives

Prices are central to how markets develop and function. Specifically, they are the signals that enable providers to identify where they are able to provide products at a lower cost than the incumbent. Consequently, in determining our approach to access pricing, the first issue we address is what aims we wish to achieve.

Access prices typically need to fulfil two objectives.

- They provide entry signals where, to incentivise efficient entry, they should typically be based on forward-looking costs.
- They compensate incumbents for efficiently incurred (historical) costs.

Where historical costs are similar to forward-looking costs, setting access prices will not create a tension between the two above main aims. However, and as set out previously in this appendix, in relation to water resources there are likely to be significant differences between historical and future costs (linked in part to the RCV privatisation discount) and so this needs to be managed carefully in any approach to access price design. Therefore, in our view, **a key objective of our access pricing framework is to develop an approach that provides appropriate entry signals, while not undermining the recovery of efficiently incurred costs.**

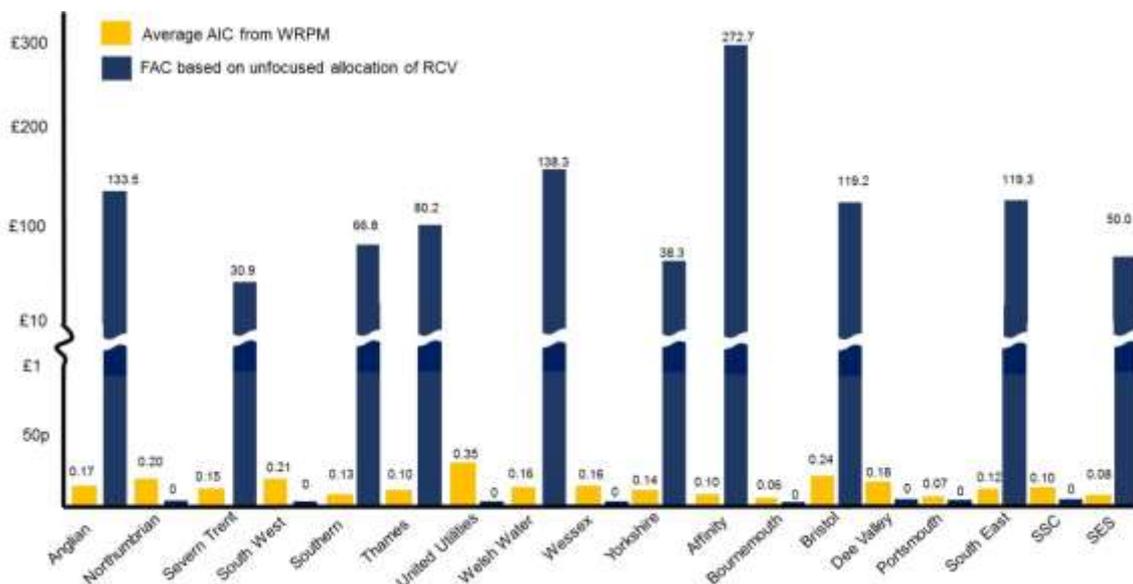
Our approach to setting access prices

In developing our **approach** to access pricing, we need to consider the broader context of the approach to regulation. In particular, and as noted above, a key issue is the average cost of existing water resources is likely to be materially below the LRIC of developing new water resources (given our proposal to adopt unfocused allocation of the RCV to water resources). This, then, creates a tension between the objectives of having pricing signals to motivate efficient entry while allowing the recovery of historical costs.

Specifically, as third party providers would need to recover the incremental cost of any new resource they develop, without an approach that addresses this issue, we would not expect efficient forms of entry to be feasible – and therefore, **the benefits to customers arising from third party provision of water resources would be lost**. This is because retailers would continue to face the lower (average) cost of water resources from incumbent water companies, and so the (higher) LRIC of new water resources, which would be reflected in the prices new third party providers could offer, would not be attractive.

The difference between the incremental cost new water resource and average costs is material. Indeed, and as shown in the figure below, **our analysis indicates that the AICs for water resources can exceed average costs by a multiple of over 2,700 times**.

Figure 1: Difference between average and incremental cost of water resources



It is important to note that, as we are proposing to set separate binding price controls for water resources and water network plus, a ‘wholesale minus’ approach to access pricing cannot be applied (that is, because there is not an overall wholesale control and therefore, no ‘minus’). **Importantly, however, our proposals – which include compensation for the LRIC/average cost differential – will create the same economic incentives as the wholesale minus approach**, which we note was preferred by a number of companies in their responses to our July discussion document.

The question of ‘how’ the LRIC/average cost differential could be addressed is considered in detail in United Utilities’ [paper](#) on upstream pricing. In essence, however, it requires some form of compensation (separate to the issue of how network distribution costs are recovered in the access price) to **offset the difference between the higher LRIC of the new resource and the lower average cost of existing resource**. This reflects the benefit to the incumbent appointee of the avoided cost of the new resource – that is, if the third party provider does not provide the resource, then the appointee would have incurred the incremental cost of acquiring the new resources and passed this cost through to retailers in the form of higher average charges.

As set out above, our approach to access pricing includes two elements.

- Average cost for network plus service (raw water transport, treatment and distribution).
- Compensation for cost avoided by incumbent appointee based on the difference between the AIC of new water resource and the average cost of water resources.

There are two key dimensions.

- What the cost measure should be.
- How the payment flows should be implemented.

The relevant cost measure

We consider that the network plus element of the access charge should be set on the basis of average cost and the compensation element should be based on AIC less the average cost of water resources. This provides efficient price signals to third party providers while ensuring customers’ interests are protected.

We propose that the network plus element is based on average cost, as this covers the monopoly element of the service and hence we are not faced with the same question around efficient entry signals for market entry. The use of average cost is consistent with cost recovery by the incumbent and it provides a level playing field to third party providers as it reflects the charges an incumbent appointee would face itself. The potential exception is water treatment costs, where there may be scope for the water resource provider to partially or fully treat water and where the quality of water resources may impact on the incremental costs faced by the incumbent. We discuss implications for setting access charges below.

United Utilities, Severn Trent Water and Anglian Water propose to use AICs as a proxy for the LRIC of costs avoided by the provision of third party water resources, for the purpose of setting access prices in water. Elsewhere in the sector, prices are based on the average area or fully allocated costs.

There are two key benefits in using AICs. First, the AIC is a forward-looking cost, and therefore is more closely aligned with the objective of signalling efficient entry. Conversely, the average cost from the regulated accounts reflects the low cost sources that companies have developed first, and will also reflect the privatisation discount.

Companies have proposed that AICs are able to send the right investment signals because they represent the costs that companies will have to incur to develop new capacity to respond to growing demand¹. As such, alternative providers that are able to provide water more cost effectively can reduce the overall cost by providing water rather than the incumbent developing its scheme.

We recognise that, in the immediate term, **it is likely to be more practical for companies to make use of average incremental cost (AIC) data as contained in their WRMPs, as the measure of avoided cost.**

However, we acknowledge that AICs have not been developed with access pricing in mind. We will be working with companies to understand how AICs in WRMPs are calculated. As part of this work we will identify issues that might arise in using AICs to set access pricing and the assurance provided for AICs and any improvements, so that they better reflect the LRIC that a company faces.

¹ See, for example, Untied Utilities.

Some of the issues we have identified with using AICs may be avoided by the averaging implicit in developing LRIC charges. In particular, AICs relate to discrete schemes and therefore each company may have several AICs. We discuss some options for deriving a single access price from AIC below.

A single cost measure has the benefit of being simple and therefore may aid the assessment of entry. Conversely, the averaging of costs implicit in developing a LRIC may mask important aspects of the costs that companies face. This issue equally affects how access prices can be derived from AICs, which we discuss below. To address this, in addition to looking into how the cost information contained within WRMPs can be better used, we will consider the potential to develop LRIC cost measures.

Payment flows

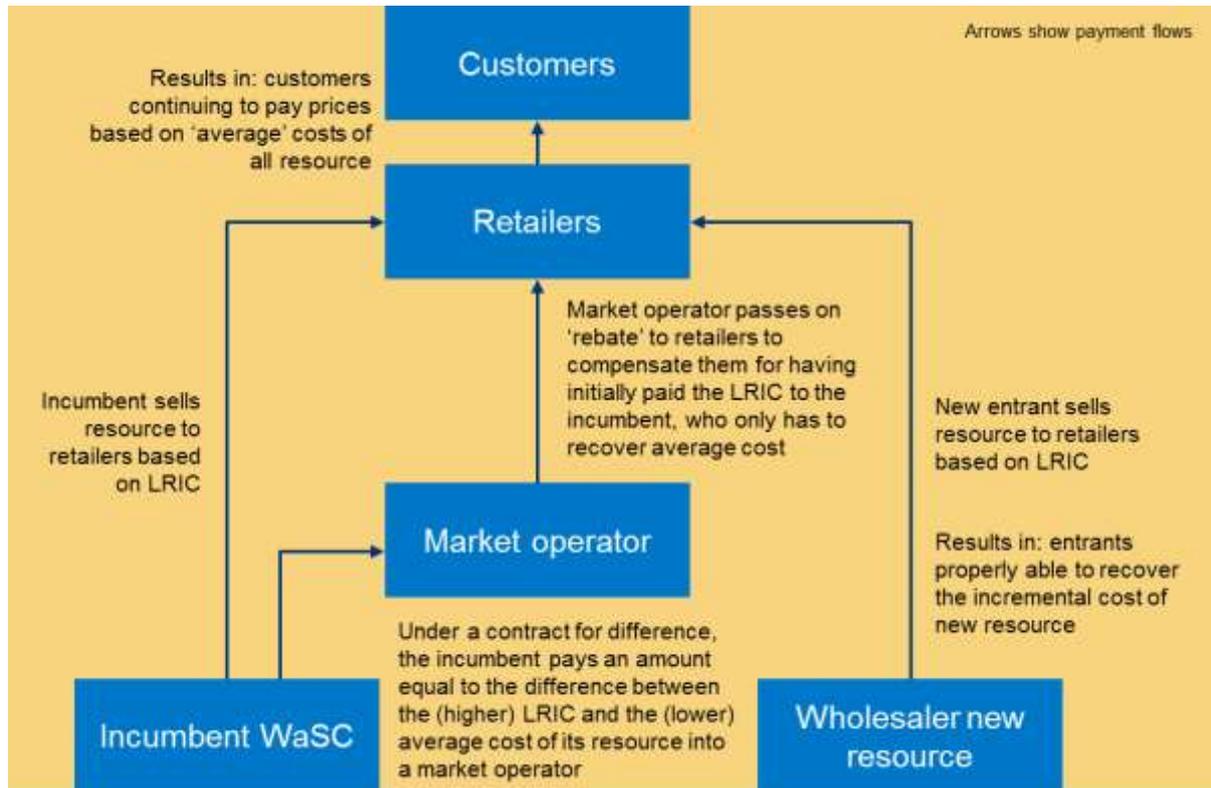
We are further of the view that the **LRIC/average cost differential payment should be set in relation to the incumbent's average cost and LRIC**, rather than the third party provider's LRIC as this provides for efficient entry signals – that is, entry where the third party provider has lower cost resource than the appointee.

In relation to the second issue above – that is, how the offsetting compensation payment could function in practice – there are a number of options. These include the following.

- It could flow from the incumbent to the third party provider, assuming the LRIC is higher than the average cost.
- It could flow directly between the wholesale third party provider and the incumbent, or it could be made through an independent third party entity, such as a market operator, onto end retailers.
- Alternatively, it could be embedded within the access price charged by the incumbent appointee to the third party provider (our preferred approach, as discussed below).
- It could be implemented through a contract for difference approach, reflecting both the commodity and capacity costs of resources, or alternatively through a 'split contracting' approach where the commodity and capacity are priced separately to offset the LRIC/average cost differential.

In its paper on upstream pricing, United Utilities advocated a particular form of contract for difference (CFD) approach. We illustrate this in the diagram below.

Figure 2: Illustrating the implementation of a contract for difference to offset the LRIC/average cost differential



The following table provides a worked example. This is also based on United Utilities' proposed model, which we term the **'retailer rebate' model**. Here, both new third party providers and incumbents initially 'sell' in at the higher LRIC for resource (as illustrated above). A CFD (assumed to be paid through a market operator – 'MO') then offsets the difference between the LRIC and the average costs; and retailers ultimately receive a rebate in relation to existing resource.

Table 1: Illustration of CFD under a ‘retailer rebate’ approach

	Existing resource	New resource	Total
Million cubic metres	1,000	100	1,100
Price received by wholesaler (£s per m ³)	£0.40	£0.40	£0.40
Cost (£s per m ³)	£0.25	£0.40	£0.26
CFD (£s per m ³)	£0.15	£0.00	
Charge to retailers (£m)	£400	£40	£440
CFD to market operator – paid by wholesaler (£m)	£150	£0	£150
Net retail revenue (£m)	£250	£40	£290
Rebate spread by MO – paid to retailers (£m)	£-136	£-14	£-150
Charge to customers (£m)	£263	£26	£290
Price to customers (£s per m ³)			£0.26

The next table shows a similar worked example. Here, however, wholesalers of water resources initially sell in at the (lower) average cost of resource. Ultimately, therefore, under this approach, it would be the wholesalers that receive the rebate – we term this the **‘wholesaler rebate’ model**.

Table 2: Illustration of CFD under a ‘wholesaler rebate’ approach

	Existing resource	New resource	Total
Million cubic metres	1,000	100	1,100
Price received by wholesaler (£s per m ³)	£0.25	£0.25	£0.25
Cost (£s per m ³)	£0.25	£0.40	£0.26
CFD (£s per m ³)	£0.00	£0.15	
Charge to retailers (£m)	£250	£25	£275
CFD to market operator – paid by retailers (£m)	£0	£15	£15
Net retail revenue (£m)	£250	£10	£260
Rebate spread by MO – paid to wholesalers (£m)	£-14	£-1	£-15
Charge to customers (£m)	£263	£26	£290
Price to customers (£s per m ³)			£0.26

The key point to note in relation to the above worked examples is that the price faced by customers following the CFD remains at £0.26 per m³ – consistent with the average cost of resource, yet the third party provider in each case recovers its incremental cost. The two examples above show that the same outcome can be achieved with the ‘side payment’ (in this case a CFD) being made to, or from, the wholesaler.

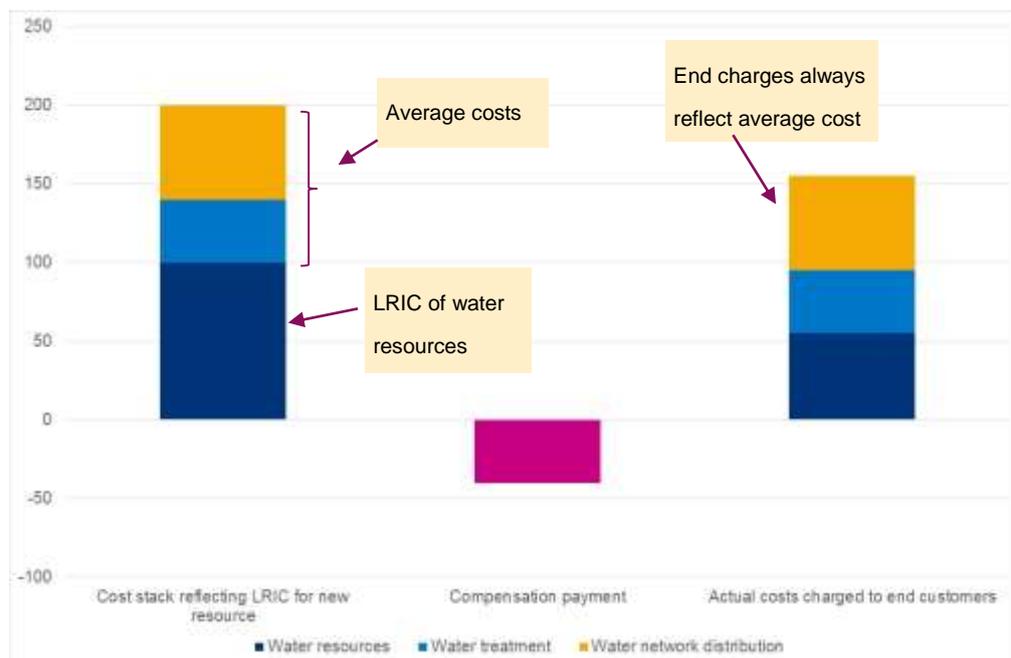
We would further emphasise that, as noted above, **while the United Utilities example assumes that there is a market operator to facilitate the CFD payment, in practice this need not be the case**. For example, in principle there is no reason as to why the offsetting payment could not be made directly between a third party provider and an incumbent. Furthermore, we think that this differential payment could alternatively be embedded within the network access price (which we discuss below). We further note that, while the United Utilities model assumes the payment relates to both the capacity and the commodity, an alternative ‘split contracting’ method that differentiated between the two, could also achieve the same effective price the third party provider would have to pay as an access price.

We recognise that further consideration will need to be given as to precisely how this payment should function. We also acknowledge there are some benefits from developing contracts for differences in that they would provide a longer-term price signal and allow efficient investment by third party providers. We are also concerned as to the extent to which contracts for difference will depend on the strength of competition in retail and water resource markets in order to work in the best interest of customers. In the absence of sufficient competition, contracts for difference may allow incumbents to embed higher prices over the longer term between their retailer and the water resource business.

Combining both the network charge and offsetting compensation for difference between AIC and average cost allows the appropriate cost difference to be reflected in access charges. It also avoids the potential complexity about the flows of money between retailers, the market operator, the incumbent and resource providers. So we see some advantages to embedding it within the network access charge while also allowing the possibility of long-term contracts to be developed alongside the regulated terms to reflect parties’ interests in longer-term contracts.

The following figure illustrates how end costs (and therefore prices) would be built up, consistent with our proposals here.

Figure 3: Illustration of water resource costs (prices) under our proposals



As indicated above, we think that the payment to compensate for the difference in LRIC/average costs could itself be incorporated into the network access charge. As set out previously, **this approach is equivalent to the access price being the total average cost less LRIC for resources** (which is the approach a number of companies preferred). This is depicted in the following table. Retailers acquiring their own water resource would pay a wholesale charge equivalent to the total average cost less the incumbents LRIC of new resources (£1/m³). This is equivalent to the retailer paying a charge to cover network plus costs and receiving a rebate (of £14) as described above.

Table 3: Illustration of total cost less LRIC access price

	Existing resource	New resource	Total
Million cubic metres	1,000	100	1,100
Average cost/LRIC water resources	£0.25	£0.40	£0.26
Total WR cost	£250	£40	£290
Other costs	£1,250	£0	
Total average cost	£1,500	£40	£1,540
Total average cost price per cubic meter			£1.40
Network + total cost			£1,250
Recovery of network + costs			£1.14
Total average cost less LRIC (Access price)	£1.15	£1.00	£1.14
Balancing charge	£0.01	-£0.14	

Note: the worked example above (and the previous chart) are for illustrative purposes and can be thought of as showing how access prices would be set at a 'regional' level. Below we consider some further important points of detail regarding our conceptual approach to access pricing. In turn, we address:

- water treatment costs;
- the relevant geographic area for setting prices;
- water distribution and transport costs;
- deriving access prices from AICs;
- losses and leakage;
- scarcity; and
- other relevant agreements.

Water treatment

Our proposed price controls separate the wholesale water business into raw water resources and network plus (which combines raw water transport, treated water distribution and water treatment) for the purpose of setting price controls. In principle, water can be traded in its raw form (that is, the form that it is abstracted in) or it can be treated or partially treated for public consumption before being transferred to an appointee's network. Trades between water companies of treated water already occur under the current framework.

There are issues to address to enable the supply of treated water by non-appointed companies, including ensuring the regulatory framework addresses water quality issues with a non-appointed third party provider of treatment. We also note that third party providers may provide raw water that requires more or less treatment than water supplied by the incumbent. To signal appropriate entry signals, it will be necessary for the access price to reflect the incremental costs associated with treatment. This will mean third party provision will minimise total cost to customers, such as undertaking partial treatment where appropriate.

In terms of an approach to setting access prices to reflect avoided costs of treatment, we consider there are two broad approaches.

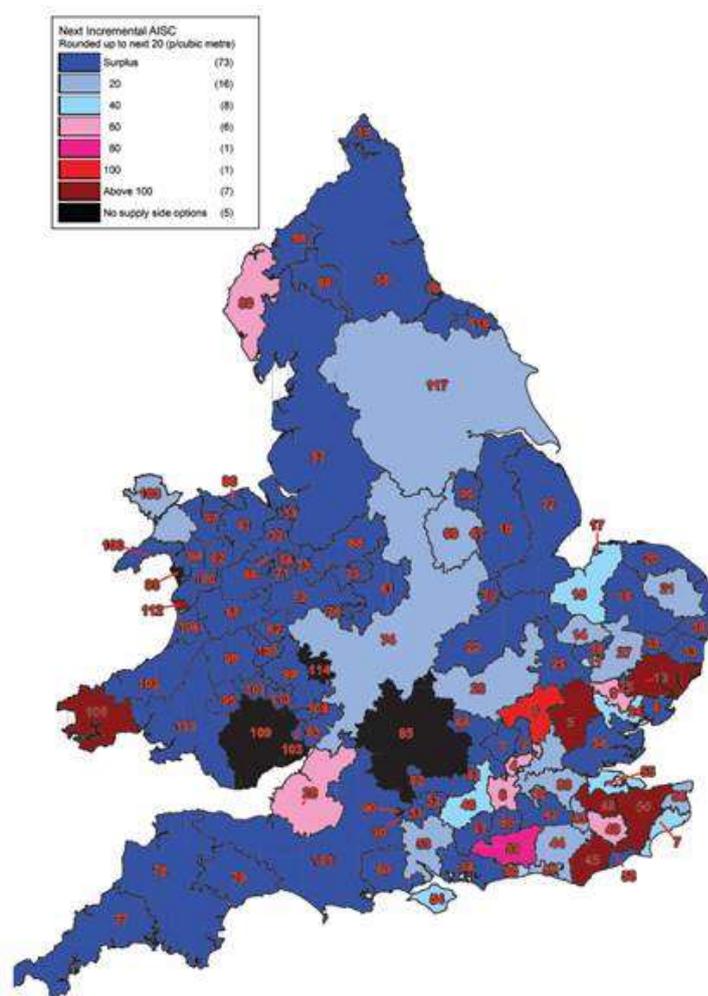
- Deduct/add the forward-looking avoided/additional LRIC of partial or full treatment of water from the network plus charge (that is, a wholesale minus type approach).
- Deduct the average cost for treatment from regulatory accounts. This would reflect the incumbent's average cost of treatment.

At this point, we are minded to take a wholesale minus type approach as this will better reflect forward-looking costs and provide the appropriate price signal.

The relevant geographic area for setting access prices

Water costs vary considerably even within a company, as shown in the following figure. Specifically, average incremental costs (AICs) are already reported by water resource zone (WRZ) and these vary within a company's given region of appointment. For example, Anglian Water's AICs vary from less than 10 p/m³ to more than £12/m³.

Figure 4: AICs by water resource zone



It is important to reflect differences in companies' own costs of expanding capacity if access prices are to send signals consistent with efficient entry. An access price that understates a company's own cost in any particular area would fail to encourage entry where it might be more efficient. That is, a lower cost provider would not seek to provide water because the price it would expect to receive would be below its own cost. Conversely, an access price that overstates the incumbent's own cost of expanding capacity would encourage inefficient entry by enabling higher cost providers to enter.

At one extreme, access prices could depend on the specific point the water is available. At the other extreme, there could be a regional access price. Location-specific pricing would have the benefit of being able to reflect all aspects of costs, but they would lack transparency, as it would be difficult to develop and publish a consolidated list of access prices. Conversely, a regional price would fail to capture the significant differences in scarcity and cost differences. There are two key candidates for the geographic area over which access prices could be set.

- **Water resource zone (WRZ).** WRZs are areas in which water companies are able to transfer water internally. They may incur costs in pumping water around a WRZ, but it is physically possible to transfer water. This is also the basis on which companies develop their plans, including the need for more resources or interconnection. Therefore, water within a zone is more likely to have a common value.
- **Appointee area.** Appointees can connect their WRZs that are vicinal and consequently have connected zones to develop greater resilience and also to resolve water scarcity issues (for example, United Utilities will be connecting its West Cumbrian zone with its main zone via the Thirlmere link). Appointee-wide access prices may reinforce incentives to resolve scarcity by developing more internal transfer links². An appointee-wide price would better align with retailers, as it is likely that any retailer that obtains supply from a third party resource provider would have customers outside the WRZ where the third party provider is located. An appointee-wide price is therefore likely to be simpler for retailers and water resource providers to negotiate from.

We consider that the WRZ is the right area to set access prices. An access price at the level of the WRZ would reflect the costs the incumbent currently faces. Because of the variation in costs within company regions, setting a uniform price across a company's area of appointment might lead to inefficient price signals.

² Some appointees have geographically distinct areas, where it may be appropriate to apply a separate price to each area. For example, it may be appropriate to apply separate prices in Northumbrian's Essex and Suffolk area and its Northumbrian area.

Distribution and transport costs

The AICs in WRMPs examine the cost of providing additional water in a resource zone. They do not make a distinction based on the cost of transporting water to where it is required elsewhere in a company area. Yet retailers are likely to have customers spread across a company region and beyond company boundaries.

Different WRZs have different transport configurations, which are often dependent on the topography. Water that is collected further away from customer locations, at a lower point, or on the edge of a WRZ, is likely to incur greater transport costs. There are a number of question relating to transport.

- Should water resource providers pay average transport and distribution costs within a WRZ?
- Should water resource providers pay average transport and distribution costs within the appointed area?
- Should water resource providers pay average transport and distribution costs to other appointed areas?

We do not propose that access prices are adjusted for transport costs within a WRZ; the AICs are calculated on the basis of the WRZ and therefore should provide an appropriate price signal. Incumbents will already be compensated for network costs through the network control and the AICs within each zone will provide efficient entry signals relating to volumes required in each zone. Adjusting access pricing for transport costs would add a further layer of complexity that would reduce the clarity of access prices, and consequently their ability to signal entry criteria effectively. It would also create an inconsistency between the WRMP process and signals faced by third party providers.

We also consider that it is appropriate for water resource providers to pay average network plus charges for distribution throughout the appointed area. This is consistent with averaging of charges across appointees' areas and incentives are aligned as water resource providers will only receive compensation payments for water resources provided in the WRZ to which their resource is connected. The incumbent appointee is able to despatch water around the company area to optimise efficiency. One exception to this approach would be where a water resource provider procured interconnection to another WRZ. In this case, they would be eligible to receive compensation payments related to the volume supplied to the receiving WRZ. This is because the second WRZ also receives the benefit of additional incremental water resource and consequently avoided costs for the incumbent appointee in providing supply. The key issue would be the need to demonstrate additional capacity into the importing area.

Similarly, a water resource provider may procure interconnection to an adjacent appointee WRZ and supply retail customers in the adjacent appointee's area. In such a scenario, the resource providers will be eligible for compensation payments for the AIC avoided less the average for the WRZ to where the water is exported to. It will also need to pay network plus distribution charges in the appointee area to where water is exported to. It will not be eligible for compensation payments in the WRZ of origin for water that is exported from this zone, as there is no benefit from avoided water resource costs in relation to the export volumes. This reflects that the benefit of AIC of new resource avoided in the originating appointee company is diminished as a proportion of the water is exported to another appointee area.

Deriving prices from AICs

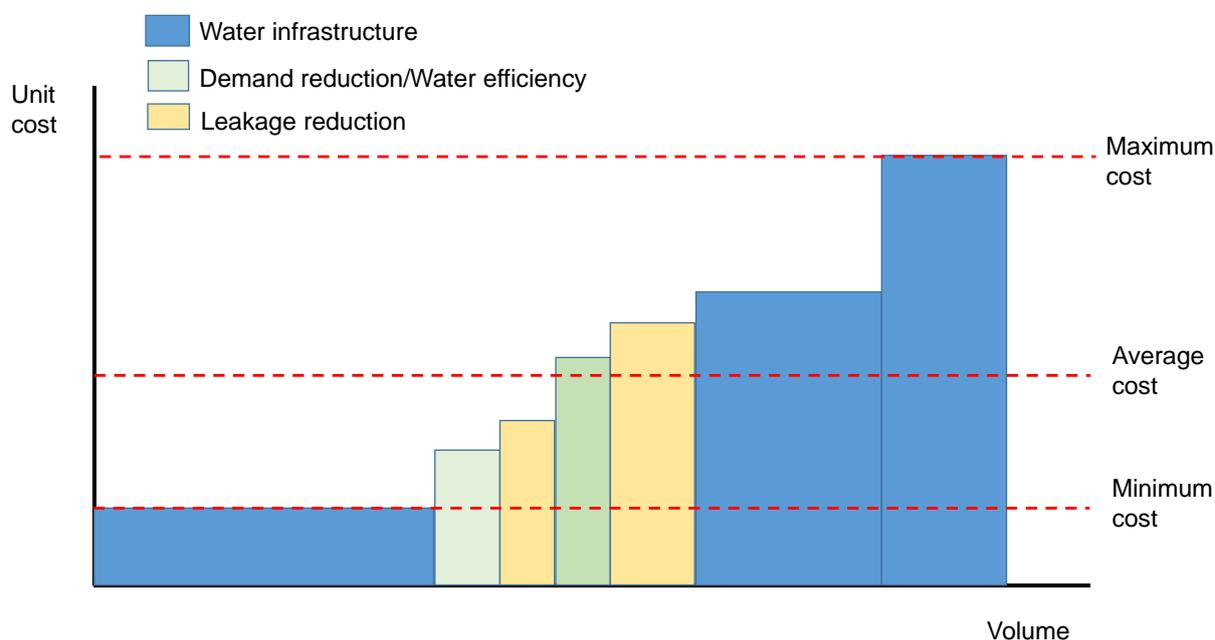
Within a WRZ, companies are able to undertake different projects that will have different costs and lead to different increases in the capacity of water available. These are set out in companies' WRMPs, and provide a 'merit curve' of projects.

Companies are able to increase the water available for use in three ways.

- They can develop new water infrastructure to provide additional input – for example, developing a new borehole or a new interconnector to access resource in other areas.
- They can undertake to reduce leakages (so reducing water losses).
- They can implement projects to reduce customer demand – for example, by fitting meters, or providing water saving devices.

As part of their WRMPs, companies identify the possible schemes in each of their WRZs, along with the cost of the scheme and the anticipated change in the volume of water available for use. The following figure illustrates the 'merit curve' of project costs, as referenced above. Importantly, the **WRMPs contain data on the average incremental costs (AICs) of individual projects** – and so (in the absence of suitable LRIC data) this provides a practical option for the setting of access prices in the near term.

Figure 5: Illustration of merit curve



WRMPs look at the potential schemes to meet expected demand over a 25-year period. A company would expect to undertake some of the schemes it has identified to meet supply/demand deficits³. Therefore, in principle a company should be prepared to pay up to the maximum of the AIC for those schemes for a marginal increase in capacity. Yet, in practice, a company might not be prepared to pay the maximum AIC either because:

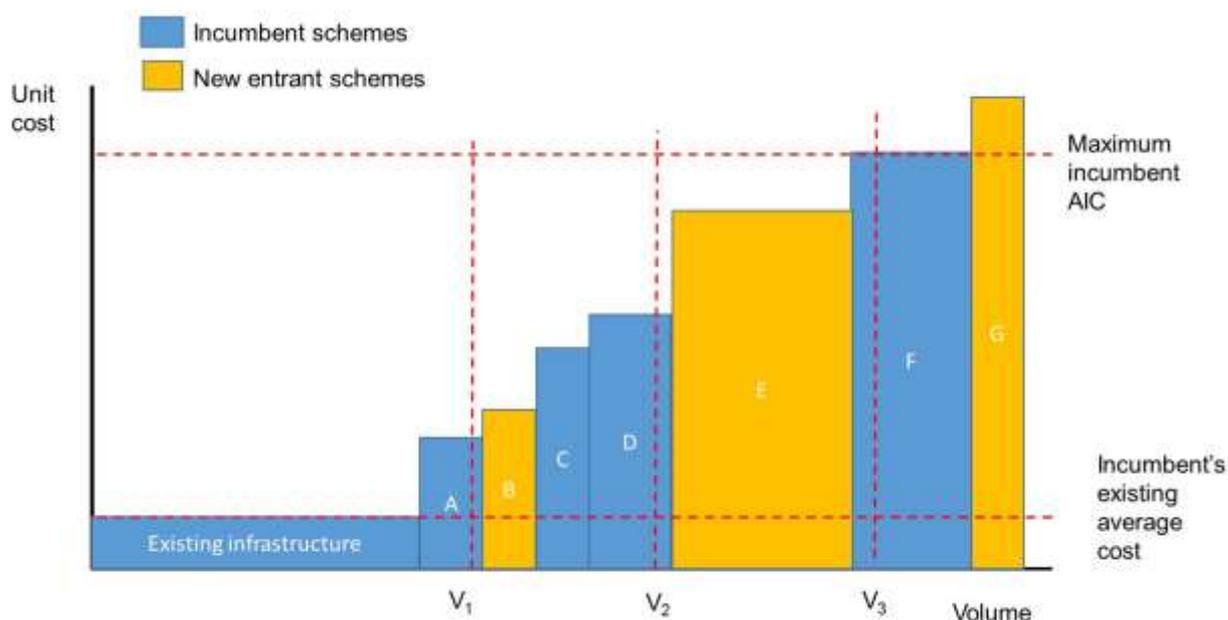
- the demand/supply imbalance does not need to be addressed at the current time, but later in the 25-year period;
- there would be lower cost schemes a company would develop before the highest cost scheme;
- the maximum AIC is associated with a small increase in capacity, and is disproportionately costly compared to other schemes; or
- there is the prospect of (as yet unidentified) schemes materialising with lower costs.

³ This might not correspond to the project with the lowest unit cost if the company does not anticipate requiring the all the capacity of that scheme. In that case, a company may undertake a scheme with a higher unit cost, but a lower total cost. Companies may also take into account network effects (such as increased resilience or lowering load on distribution networks). When appraising schemes companies are also required to consider environmental impacts.

An offsetting payment that is based on the maximum AIC from the WRMP would provide the strongest incentive for alternative entry – but it may also lead to inefficient or early entry. The figure below demonstrates how this could occur. If the offsetting payment is set at the difference between the maximum AIC and the average cost, new third party providers would develop schemes B and E. However, if in the short term the incumbent only needed to increase capacity to V_1 , it would only be efficient for the incumbent to develop scheme A (appreciating there may be wider considerations to take into account such as environmental impact and resilience). Developing schemes B and E might be inefficient and raise the total cost of the sector.

A rebate based on average cost over the schemes would not take account of the discrete nature of water resource schemes. If the total water required was V_3 , it would be more efficient to develop scheme G than F because although scheme G is more expensive on a unit cost basis it would be lower on a total costs basis.

Figure 6: Illustration of merit curve



One potential approach to address this issue is for companies to publish and maintain a list of relevant schemes that are being considered to meet demand/supply imbalances over a shorter period such as rolling five-year period. This essentially would represent what the company is willing to pay to meet the imbalance in this period. Appointees would be required to set out factors such as the:

- quantity required;
- firmness of supply; and
- time period when supply needs to be available (there is likely to be gap between contracting resource and when it is supplied).

This information would be part of the information library as discussed in the [water resources appendix](#).

There is also a question of how the compensation payments may change over time as the wider supply/demand balance changes. In terms of implementing our approach, our overarching goal is to ensure that there is a level playing field that delivers the right incentives for long-run cost minimisation. In principle, the combination of the network distribution average cost and the water resource AIC/average cost differential will achieve this.

However, as water resources often require significant upfront investment, providers may require certainty around the future value of the compensation payment, so any adjustments to the compensation value, as the supply/demand balance changes may deter efficient investment. **For this reason, third party providers are (in some circumstances) likely to prefer to agree long-term contracts or other arrangements which provide the same level of certainty for their access prices.**

This suggests that we need to consider how our approach to using AICs, and setting access price provides both:

- a level playing field, creating the right incentives for long-run cost minimisation; and
- efficient long-term certainty to providers to facilitate efficient entry.

We have identified three ways in which this could be accomplished.

1. **Requirement for equivalence of treatment.** In negotiating with third party providers, water companies treat alternative providers on an equivalent basis. For example, if a water company examines its own new boreholes on a ten-year horizon, it should offer ten-year contracts in relation to compensation payments to third party providers.
2. **Default contracts.** Ofwat specifies default contract term lengths for access prices. For example, there could be a range of different contracts offered for one, five and ten years of supply.

- 3. Fixed level compensation payments at point of entry.** The level of the compensation payment is fixed on the difference between the company's AIC and its average cost at the time the new resource enters. The compensation payment would still vary over time for new providers, but once the water resource provider entered the market it would receive a fixed level of compensation payment regardless of changes to the future supply/demand balance. From the diagram above, the initial compensation payment would be the difference between scheme A and average costs. Once the demand/supply balance changed, the compensation payment would adjust to the difference between schemes C and the (new) average cost. The third party provider of scheme B would then enter and would receive the fixed level of compensation for the duration of their supply, regardless of how the supply/demand balance changed and future levels of compensation payment to future suppliers was adjusted.

We welcome views on the best means of addressing these issues.

Scarcity

It would be possible to add an uplift factor to the access price to take account of scarcity that is not currently priced into abstraction fees. If abstraction prices reflected the scarcity of water, then AICs would better reflect the full social cost of obtaining water. The AICs including a social value are calculated by companies as part of their WRMPs.

In the absence of scarcity based abstraction prices, access prices may overvalue water from water stressed areas. This might lead to trades of water from those areas to areas with relatively more water available. If the access price were derived from average incremental social costs (AISCs), then third party providers would receive larger compensation payments and this would lower access prices for providing water in water scarce areas. However, whether this provides socially efficient incentives depends on the extent to which third party water resource providers' abstractions are restricted to environmentally sustainable levels. If third party abstractions reflect sustainable abstraction levels, then lower access prices for providing water in water scarce areas would be appropriate.

The UK Government has consulted on proposed changes to the abstraction regime to address scarcity and to allow trading for abstraction rights. These changes are scheduled to be introduced during the next price control period in 2022. This means that abstraction trading will help to reveal the value of water arising from water scarcity and abstraction rights should be better aligned with sustainable levels. This might suggest that third party resource providers will face appropriate constraints. We also note that transfer of abstraction rights would be limited under current abstraction licences and therefore it might be difficult for third party providers to enter the market on the basis of unsustainable abstractions. We will introduce the abstraction incentive mechanism (AIM) from 2016, which will provide companies with an incentive to address issues relating to over-abstraction from existing sources.

We note there may be a question about the consistency and reliability of the administratively determined scarcity values currently used in WRMPs, so we would need to consider the reliability of incorporating social values in AICs. In light of the Government's proposed abstraction reform and the potential to extend AIM beyond 2020, it would appear to be appropriate to reflect social costs from over-abstraction in the calculation of access prices, subject to further information on the reliability and accuracy of social values.

Other agreements

Some companies already have agreements in place to trade water.

We do not propose to reopen the terms of existing agreements, in the absence of a dispute, because that might lead to adverse consequences for customers and reduce regulatory predictability. Critically, the price at which a trade occurs cannot be considered in isolation of the other terms agreed between the parties. Intervening in the price of existing agreements may mean that the agreement becomes uneconomic and therefore prevents the trade from occurring. Even if the trade continues, intervening may lead to an increase in the price that companies pay for raw water and therefore raise prices for customers.

The access pricing regime will apply to companies that wish to access an incumbent's network to supply water to non-household retailers. Appointees will still be free to enter into their procurement arrangements and bulk supplies at agreed prices, subject to the pricing rules applying to bulk supply.

Our role in setting access prices

In this chapter, we consider the various roles that we can play in setting access pricing such as:

- providing guidance;
- setting principles to guide appointees when they are setting access prices; and
- setting the prices themselves.

It is important to note here that the new water supply and sewerage licensing (WSSL) regime introduced by the Water Act 2014 will require us to issue access pricing rules. In relation to the supply of water, access pricing rules will replace the statutory costs principle in the existing water supply licensing (WSL) regime for companies based wholly or mainly in England. The draft guidance issued by the Welsh Government has indicated that the access pricing rules for companies based wholly or mainly in Wales should continue to reflect the costs principle. We note these prices also need to be consistent with competition law.

Figure 7: Options for implementing an approach to access pricing

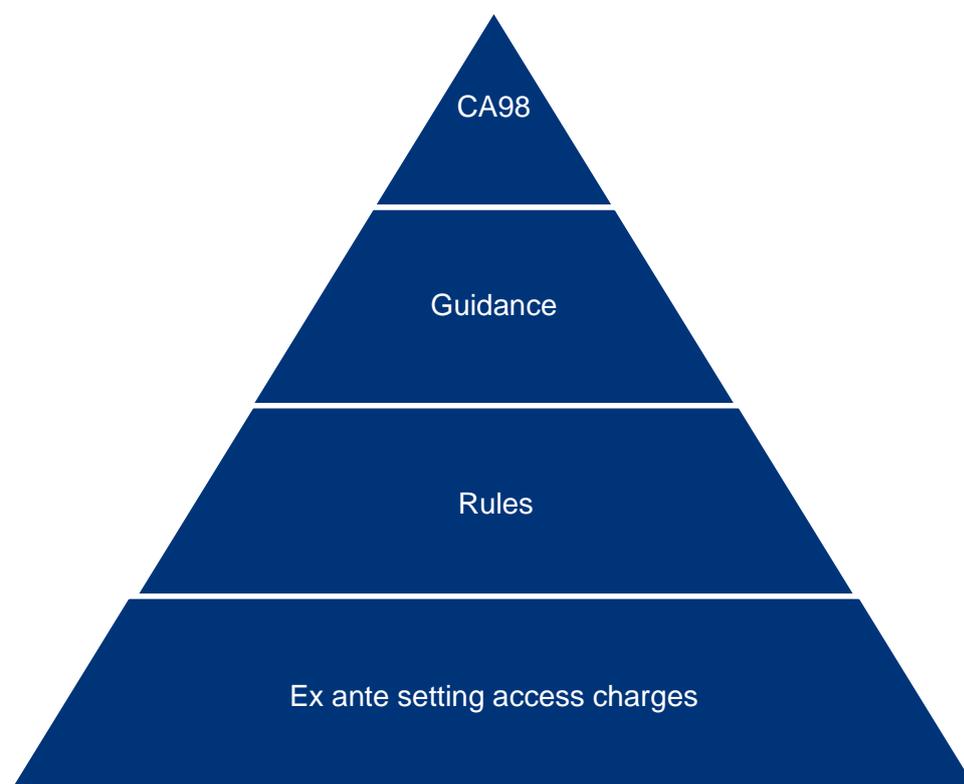


Table 4: Approaches to implementing access prices

Competition Law
<p>The Chapter II prohibition in the Competition Act 1998 (CA98) prohibits conduct by one or more undertakings which amounts to an abuse of a dominant position in a market. Abusive conduct may include margin squeeze in which a vertically integrated undertaking, by using the 'wholesale' price for the input or the end retail price, squeezes an efficient downstream competitor's margin rendering it unable to compete effectively. We have concurrent powers with the Competition and Markets Authority to enforce CA98 in the water and sewerage sector in England and Wales.</p> <p>Relying on CA98 alone would not be consistent with the Water Act 2014 requirements on Ofwat to set charging rules, and would not provide potential entrants with certainty of the terms and conditions they should expect from market opening. Clarity could take time because CA98 cases can take considerable time to pursue, particularly in nascent markets.</p>
Guidance
<p>Guidance can help ensure greater consistency across companies and promote the use of good practice in setting access prices. Guidance could cover:</p> <ul style="list-style-type: none"> • the cost measures used to set access prices; • the time periods and increments over which costs should be measured; • the level of granularity that should be adopted when quoting access prices (for example, reflecting regional, and other relevant, differences that might drive costs); and • identifying any other factors that one might think to be reasonable to take into account when setting access prices. <p>Guidance could also cover the process around the setting of access charges, such as:</p> <ul style="list-style-type: none"> • what information should be revealed by the parties, including cost and performance metrics; • when and how information must be provided; and • key milestones or gateways. <p>Guidance would enable us to provide clarity on how companies should set access prices. Under a guidance based approach, companies would not be bound to follow the guidance. Nevertheless, insofar as their approach was in conflict with our guidance, we would expect them to be able to articulate a robust rationale for any departure, including demonstrating compliance with competition law.</p>
Rules
<p>The main difference between guidance and rule would be that companies would not have discretion to depart from the 'rules'. However, rules could be set at a relatively high level, such as principles to govern the calculation of charges, the process to be followed (such as set out for guidance) or detailed rules covering the methodology for the calculation of charges.</p> <p>In addition to rules on setting the price we envisage that a separate enforcement process could include putting in place:</p> <ul style="list-style-type: none"> • conditions around the timeframes within which incumbent companies must quote access prices; • a right of recourse by third party providers to Ofwat that allows for us to provide independent review of, and challenge to, any quoted access prices; and • clarity as to the circumstances under which recourse may be appropriate.
Ex ante determination of access prices

Ofwat (The Water Services Regulation Authority) is a non-ministerial government department. We regulate the water sector in England and Wales. Our vision is to be a trusted and respected regulator, working at the leading edge, challenging ourselves and others to build trust and confidence in water.

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We could develop and set rules that would prescribe the access prices to be charged by appointees. The advantage of this approach is that it would provide the greatest clarity and certainty to market participants. On the other hand, the disadvantage is that it would require companies to provide large volumes of data to Ofwat in order to set prices and there would be greater risk that prices did not reflect the particular circumstances of companies and their wholesale customers. It would also be inflexible and require Ofwat to adjust prices when costs or circumstances changed. It would also be inconsistent with our wider approach to charging where we set rules that govern how companies set charges.

Deciding on our role in setting access prices

The policy decision as to what role we should play in developing and implementing access pricing is driven by a trade-off between:

- providing greater certainty to market participants; and
- allowing an appropriate level of flexibility.

We note that the approaches above are not mutually exclusive. We will be required to issue access pricing rules for the new WSSL regime, but it would be possible to develop both access pricing rules and guidance to cover the application of the rules. We also note that the Competition Act 1998 will apply under all approaches.

When we consider our proposals in a broader context, a key consideration is that there is some uncertainty as to how markets will develop, the speed of their development and the extent of their development. We do not favour an approach of Ofwat determining all access prices as we consider this would be a disproportionately costly and inflexible approach and inconsistent with our broader approach to charging.

At this point, we propose that we would develop access pricing rules setting out the principles and higher-level elements of the methodology proposed along with guidance to cover the more detailed application of the rules as this may provide more discretion to allow flexible application to individual circumstances. We also note the need for rules and guidance to adapt over time as the market evolves. We further recognise that further work will be needed in order to determine the scope and form of any rules and guidance – and this is something we propose to engage on further with stakeholders.